

# VALIDATION AND VERIFICATION REPORT

## Cultivo2 - Project 1

Document elaborated by



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<b>Project name</b>	Climate change mitigation project Cultivo2 - P1
<b>Customer</b>	Fundación Cataruben
<b>Event</b>	Validation and verification
<b>Quantification period of GHG emission reductions</b>	09/06/2017 - 9/09/2037
<b>Monitoring period</b>	09/06/2017 - 31/12/2021 for AR activities. 29/09/2017 - 31/12/2021 for REDD+ activities.
<b>Expected GHG reductions during the GHG emission reductions quantification period for AR and REDD+</b>	GHG removals (AR Activities) - Total amount: 109.292 tCO <sub>2</sub> e - Estimated annual average: 5.465 tCO <sub>2</sub> e  GHG emission reductions (REDD+ Activities) - Total amount: 38.189 tCO <sub>2</sub> e - Estimated annual average: 1.819 tCO <sub>2</sub> e
<b>GHG reductions during monitoring period for AR and REDD+</b>	Net removals (AR Activities) - Total amount: 24.940 tCO <sub>2</sub> e  Emission reductions (REDD+ Activities) - Total amount: 22.165 tCO <sub>2</sub> e - Estimated annual average: 4.433 tCO <sub>2</sub> e
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<b>Approved by</b>	José Luis Fuentes
<b>Audit Team</b>	Chief Auditor: Juan Camilo Serna Duque  Project Manager: Javier Cócera

	<p>Auditor: Daniel Bermejo          Technical Reviewer: José Luís Fuentes</p>
<p><b>Audit Criteria/Referential</b></p>	<ul style="list-style-type: none"> <li>● BioCarbon Registry v3.0 Standard, March 7, 2023.</li> </ul> <p>Methodological Documents AFOLU Sector:</p> <ul style="list-style-type: none"> <li>- BCR0001 Quantification of GHG Emission Reduction - GHG Removal Activities v.3.0, April 13, 2022.</li> <li>- BCR0002 Quantification of GHG Emission Reductions REDD+ Projects. Version 3.1, September 15, 2022.</li> </ul>

## TABLE OF CONTENTS

INTRODUCTION	3
1.1. Objective	4
1.3. Level of assurance and materiality	5
1.4. Project summary	6
2. AUDIT PROCESS	6
2.1. Audit team	6
2.2. Method and considerations	7
2.3. Documentary review	9
3. VALIDATION AND VERIFICATION FINDINGS	14
3.1. Project Name	14
3.2. Environmental authority with jurisdiction in the intervention area of the initiative	15
3.3. Intervention area	15
3.4. Project location	15
3.5. Technical description of the project	15
3.6. Estimated Project Costs	16
3.7. Project start date and duration	17
3.8. Description of Removal Activities and Activities to Reduce Deforestation and Degradation	17
3.9. Environmental conditions in the project area	18
3.10. Social conditions in the project area	18
3.11. Quantification of GHG reductions and removals	18
3.12. Double accounting	43
3.13. Legal requirements and land tenure management	44
3.14. Information management	46
3.15. Risk management - Permanence monitoring plan	46
3.16. Environmental and socioeconomic aspects	46
3.17. Consultation with stakeholders	47
3.18. Sustainable Development Goals	47
4. VERIFICATION FINDINGS	48
4.1. Monitoring of quantification of GHG reductions.	48
4.2. Project permanence monitoring	60
4.3. Monitoring the Sustainable Development Goals (SDGs)	60
4.4. Project GHG emission reductions and removals	61
5. CONCLUSION OF VALIDATION AND VERIFICATION	61
ANEXOS	62
Annex 1: Documentary evidence	63
Annex 2: Findings	67
Non-conformities (NCs)	67
Clarifications (CLs)	114
Future Actions (FAR)	121
Annex 3: Attendance list	122

## INTRODUCTION

### 1.1. Objective

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

- "That the project, its activities, methods, and procedures described in the Project Description (PD)/1/ document and its corresponding annexes, including the monitoring plan, comply with the criteria established in Section 1.2 of this report."
- That the activities, methods and procedures, included in the Monitoring Report (MR)/2/, have been implemented in accordance with the PD and the monitoring plan; and
- That the greenhouse gas (GHG) emissions reductions and/or removals reported for the monitoring period are materially accurate.

### 1.2. Scope and criteria

The scope of the validation and verification audit of the Cultivo2 - P1 Climate Change Mitigation Project was:

1) Validate the project activities, including its monitoring plan, GHG sources, sinks, and/or reservoirs, GHG emission reductions quantification period, baseline scenario, as well as its processes for managing legal and information requirements, maximum mitigation potential, and compliance with the Biocarbon Registry BCR0001 and BCR0002 guidelines and methodological documents.

2) Verify GHG emission reductions and/or removals, the implementation of activities, and their reported impact for the monitoring periods:

- June 9, 2017 - December 31, 2021 for GHG Removal Activities.
- September 29, 2017- December 31, 2021 for REDD+ Activities.

Specifically, the criteria of the following documents were used to evaluate this project:

- AFOLU Sector Methodological Document "BCR0001 Quantification of GHG Emission Reductions - GHG Removal Activities v.3.0, April 13, 2022"..
- BCR0002 Quantification of GHG Emission Reductions and Removals REDD+ Projects. Version 3.1, September 15, 2022.
- BioCarbon Registry Standard v3.1, July 25, 2023.
- Validation and Verification Manual. Version 2.1, February 13, 2023.

Tools and guidelines:

- Guidelines for the selection of equations, parameters and data for calculating GHG removals from forestry activities. Version 1.1, September 17, 2020.
- Tool for determining contributions to compliance with the Sustainable Development Goals (SDGs) of Greenhouse Gas (GHG) projects. v 1. July 13, 2023.
- REDD+ Safeguards. v 1.1. January 26, 2023.
- Avoidance of double counting. v 1. March 09, 2023.
- Monitoring, Reporting and Verification Tool. v 1. February 13, 2023.
- Avoidance of Harm" Tool and Environmental and Social Safeguards. V 1. March 07, 2023.
- Baseline and Additionality Tool. v 1.1. July 27, 2023.
- Permanence and risk management. v 1. March 7, 2023.

Certification and registration of GHG mitigation initiatives are established under the Biocarbon Registry program, if such initiatives or projects have been previously validated and verified by accredited conformity assessment bodies (CAB), as in the case of the CultivO2 - P1 climate change mitigation project.

In addition, the following documents were used as reference during the audit process:

- Directrices del IPCC de 2006 para los Inventarios Nacionales de GEI.
- Good Practice Guidance for Land Use Land-Use Change and Forestry (2003).
- Anexo de circunstancias nacionales NERF V.8. Colombia.
- ISO 14064:2019
  - o Parte 2: Specification with guidance, at the project level for quantification, monitoring and reporting of emission reductions or enhancements in greenhouse gas removals (2019).
  - o Parte 3: Specification with guidance for verification and validation of greenhouse gas declarations (2019)
- ISO 14065:2013 (EN) Greenhouse gases - Requirements for bodies performing validation and verification of greenhouse gases, for use in accreditation or other forms of recognition.

### 1.3. Level of assurance and materiality

The audit was conducted to provide a reasonable level of assurance of compliance with the criteria defined within the scope. Based on the audit findings, a positive assessment statement provides reasonable assurance that the project complies with the criteria set out in Section 1.2 and the GHG statement is materially correct and credible.

The nature and extent of validation and verification activities have been shaped in accordance with sections 11 a) - e) of the BCR Validation and Verification Manual. For all cases, the following criteria have been taken into account::

- a) The level of assurance of the validation and verification of the GHG mitigation Sector Project should not be less than 95%. The errors that were found in the spreadsheets were corrected, these errors never exceeded 5% error, with respect to the previous emission reductions. This ensures that the level of assurance is not less than 95%..
- b) The material discrepancy of the data supporting the baseline of the GHG mitigation Sector Project and the estimated GHG emission reductions or removals may be up to +- 5%. The calculations were evaluated and errors in the calculations were corrected, those errors were never greater than 5%, compared to the previous emission reductions, so AENOR assured that there was no material discrepancy in the calculation data.
- c) The consistency of the Sector Project's baseline GHG mitigation baseline in accordance with current national regulations and/or the methodology applied as appropriate. The values assessed for the Removals Activity are consistent with national reporting and for the REDD+ Activity with the NREF..
- d) The quantification of the mitigation results against the validated baseline, in accordance with the provisions of the national regulations in force and/or the methodology applied, as appropriate.
- e) Co-benefits assessment and indicators related to the Sustainable Development Goals.

Qualitatively, issues related to the document management and control system were also resolved during the audit, and errors in the reporting of current information in the PD were corrected, ensuring that the information presented in the PD/1/ and MR/2/ is accurate, as required by the BCR Standard.

The validation and verification process through document review and on-site audit ensured that there were no quantitative and qualitative discrepancies in a material way that would affect the calculation of emission reductions, in the sense of overestimating the calculation data.

## 1.4. Project summary

The climate change mitigation project CultivO2 - P1, is a grouped project that combines activities to reduce emissions from deforestation of forests and removals for planting Cashew and Cacao, involving producer families, generating economic incentives to farmers from the sale of carbon certificates, impacting the cycle of forest degradation, deforestation and increased coverage with sustainable tree crops in the agricultural frontier in private properties in the Andina and Orinoquia regions.

The expansion areas within the project design contemplate only the AR activity and no new areas will be included in the REDD+ activity.

The project is being developed in the departments of Arauca, Caldas, Casanare, Córdoba, Huila, Meta, and Vichada, where an area of 1,467.2 hectares of Cacao, 543.7 hectares of Cashew, and 1,405.8 hectares of forest are incorporated in a total of 69 properties. These properties represent small, medium, and large producers with crops ranging from 2 hectares to 617 hectares planted.

The responsible entity is Fundacion Cataruben, which acts as the project owner and enrolled the landowners through contracts for the life of the project, 20 years.

The environmental authorities that have jurisdiction in the project area are: Corporación Autónoma Regional del Alto Magdalena (CAM), Corporación para el Desarrollo Sostenible del área Especial La Macarena (CORMACARENA), Corporación Autónoma Regional de la Orinoquía (CORPORINOQUIA), Corporación Autónoma Regional de los Valles del Sinú y del San Jorge (CVS), and Corporación Autónoma Regional de Caldas (CORPOCALDAS), which exercise functions established in Article 31 of Law 99.

The impact at the socioecological level will allow the people participating in the implementation of the project to receive environmental, social, and economic benefits that will guarantee them an improved quality of life, contribute to guaranteeing their fundamental human rights, and generate sustainable rural development in a region of recent economic growth due to the advance of the agricultural frontier. There was no evidence of significant negative environmental or social impacts from the implementation of the project.

The start date of the CultivO2 - P1 Climate Change Mitigation Project is June 9, 2017 until June 9, 2037 for AR and REDD+ activities.

The first verified period corresponds to June 9, 2017 to December 31, 2021 for the AR activities and September 29, 2017 to December 31, 2021 for the REDD+ activity.

The validation confirms that the ex ante analysis of the project's GHG reductions has been carried out in an accurate, transparent and conservative manner, being estimated at a total of 109,292 tCO<sub>2</sub>e for the establishment of Cashew and Cacao crops; and 38,189 tCO<sub>2</sub>e for emission reductions from activities to avoid deforestation and degradation for a 20-year GHG reductions quantification period for AR and for REDD+.

For the first monitoring period, AENOR issues a positive verification opinion for total verified GHG emission reductions of 47,105 tCO<sub>2</sub>e, corresponding to 24,940 tCO<sub>2</sub>e generated by removals in Cashew and Cacao crops in the period from June 9, 2017 to December 31, 2021 and 22,165 tCO<sub>2</sub>e for activities to avoid deforestation and degradation in the period from September 29, 2017 to December 31, 2021.

## 2. AUDIT PROCESS

### 2.1. Audit team

The audit team consisted of the following members:

Name	Position
Juan Camilo Serna	Chief Auditor
Javier Cócera	Project Manager
Daniel Bermejo	Auditor
José Luis Fuentes	Technical Reviewer

The audit team is qualified in accordance with the AENOR qualification scheme for validation and verification projects for voluntary and regulated schemes applicable in Colombia.

The lead auditor is a forestry engineer, Specialist in International Cooperation with extensive experience in forestry projects, and relevant experience in social, ecological and economic aspects in local and regional environmental projects. He currently works at AENOR as a centralized auditor in AFOLU projects.

Daniel Bermejo is a forestry engineer with a master's degree in sustainable finance. He started his career in private consulting, working on issues such as climate risk analysis and TCFD risks, forestry development, sustainable banking standards with respect to agriculture and forestry, environmental footprint projects and sustainability reporting. He has been working at AENOR since the beginning of 2022 and has already participated as auditor in dozens of AFOLU projects in different carbon schemes, such as VCS, CCB, FCPF, Cercarbono and BCR. He is an expert in Climate, Community and Biodiversity issues and has worked in LATAM countries, North America, Africa and Europe. He is fluent in Spanish and English, and has a low to intermediate level of French.

Javier Cócera is a Climate Change auditor for AENOR. He has extensive experience in auditing, consulting and training activities related to environmental and carbon management projects. He has actively participated in the audit of international sustainable development projects in several carbon schemes, such as Clean Development Mechanisms (CDM), Verified Carbon Standard (VCS), Climate, Community and Biodiversity Standards (CCB), Gold Standard (GS) and carbon footprints (ISO 14067 and ISO 14064).

José Luis Fuentes is the director of AENOR's Climate Change Unit. He is a Forestry Engineer and holds a Master's degree in Business Administration and a postgraduate degree in Environmental Management. He has more than 15 years of experience in auditing, consulting and training activities related to environmental and carbon management projects. Jose Luis has been actively involved in auditing international sustainable development projects in several carbon schemes, such as Clean Development Mechanisms (CDM), Verified Carbon Standard (VCS), Climate, Community and Biodiversity Standards (CCB), Gold Standard (GS) and carbon footprints (ISO 14067 and ISO 14064). Jose Luis has extensive technical knowledge on the regulatory framework, policies and technical provisions emanating from the Paris Agreement, the Kyoto Protocol and the Conferences of the Parties.

### 2.2. Method and considerations

The validation and verification audit was conducted through a combination of document review, interviews and communications with the project proponent's staff, and interviews with property owners at the *in situ* visit. The project was assessed for compliance with the criteria described in

Section 1.2 of this report. As described below, findings were issued to ensure that the project complied with all requirements.

AENOR reproduced and verified 100% of the spreadsheets in the Excel file Calculations/24/ of the CultivO2 - P1 Climate Change Mitigation Project for the ex ante estimates during the quantification period of GHG emission reductions and the ex post estimates for the monitoring period of the two project activities.

Project boundaries of established and expansion areas for Cacao and Cashew, as well as deforested and degraded areas in the project area and reference area were 100% validated and verified using the GIS database.

Changes in carbon pools in the baseline and project scenario; as well as leakage were validated and verified at 100%. For the data provided for the estimates in the two AR and REDD+ activities of the project. AENOR performed a reasonable sampling of the data.

In addition to the review of compliance with the requirements of ISO 14064-2 (2019), the development of the validation and verification includes the strategic and risk analysis, with the audit team assessing the issues indicated in ISO 14064-3 (2019).

AENOR considers that the project holder and other technical collaborators are very knowledgeable in forestry projects, monitoring activities and the requirements in the BCR program for AFOLU projects, so the risks are minimal and assumable. However, AENOR performed the following sampling:

The activities where risks were assessed were the monitoring system evaluations (data flow, data control procedures, etc.) but mainly the quality of the raw data, as well as the sources and spreadsheet calculations. AENOR reproduced and verified 100% of the sheets attached to the PD/1/ and the other spreadsheets/24/ for the monitoring periods for the project area.

Project boundaries and land cover changes in the project area were also 100% verified using the GIS database.

Carbon stock changes and land use classes in the project area were also 100% verified, using the sources cited in the PD/1/.

100% of the sample plots for the AR component were checked with field and desktop activities.

As for the data provided for the reference region and emission factors, their correspondence with the most updated national official documents was verified.

AENOR performed a thorough and meticulous review of the spreadsheets to verify the correct application of the methodologies (formulas, equations, spreadsheets) and verified that the data required for the calculation of GHG removals and reductions were adequately provided. Based on the assessment performed, AENOR confirms with a reasonable level of assurance that the claimed emission reductions are free from material errors, omissions or inaccuracies.

AENOR confirms that sufficient evidence of the reported GHG reductions was provided and that there is a clear audit trail containing the evidence and records that validate the figure stated in this verification report since then:

- Sufficient evidence is available: the project holder provided 100% of the data used in the calculations to reach the final amount of reported emission reductions.
- Nature of evidence: Raw data were collected from reliable sources. They are detailed in the project documents and have been provided to the validation team and verified during interviews.
- Cross testing: AENOR verified the information collected through stakeholder interviews and by reproducing the calculations.

Some errors were identified and subsequently corrected. These findings are detailed in Annex 2. All non-conformities were successfully closed.

Based on the assessment performed, AENOR confirms with a reasonable level of assurance that the project complies with the BioCarbon Registry standard and the methodologies used; that the requested emission removals and reductions are free of material errors, omissions or misstatements.

In addition, AENOR confirms that sufficient evidence was submitted for the net anthropogenic GHG emissions removals and reductions reported and that there is a clear audit trail containing the evidence and records that validate the figure stated in this Validation and Verification Report since:

Sufficient available evidence: the project proponent has provided 100% of the data used in the calculations to achieve the final amount of reported GHG removals and emission reductions.

Nature of evidence: the raw data was obtained from credible and consistent sources. They are detailed in the project documents and these have been provided to the validation team, which are listed in Annex 1.

Collated evidence: AENOR cross-checked the information gathered through an *in situ* inspection of the project area and by reproducing the calculations.

Therefore, AENOR confirms that the figures indicated in the Project Description are correct and confirms that it is able to certify the requested net anthropogenic GHG reductions based on verifiable and credible evidence.

### 2.3. Documentary review

The documentary review was conducted from January 15 to 28, 2023. The project owner provided the information for the audit, which was reviewed in its entirety prior to the on-site visit, after this visit it was possible to generate a conclusion of the project against the audit criteria and its level of compliance. This cross-checking of information made it possible to identify the findings stated in Annex 2 - Requests for Corrective Actions, Clarifications and Future Actions.

The PD/1/ adjusted at validation, which includes project design information and methodological development of the AR and REDD+ activities, as well as supporting documentation was carefully reviewed to verify compliance with the verification criteria. The audit team reviewed the spreadsheets to reproduce the mitigation calculations to obtain the same results as those in the MR/2/.

The completeness of the project database was also assessed. Annex 1 of this report details the list of documents provided by the project proponent and reviewed by AENOR during the verification process.

The schedule of activities for the execution of the audit was previously established with the project developer because he is the one who knows the areas, the state of the roads, the available means of transportation and other variables, which allowed defining the planning for the development of the audit. Table 1 shows the Audit Plan.

**Table 1. Validation and Verification Audit Plan CultivO2 Project - P1**

ACTIVITIES	Location	Date	Duration
Travel to Yopal where the project offices are located.	Yopal – Offices	2023-01-27	1 h

ACTIVITIES	Location	Date	Duration
<p>Initial meeting</p> <ul style="list-style-type: none"> <li>- Presentation of the validation/verification team</li> </ul> <p>Comments and feedback on the project.</p> <ul style="list-style-type: none"> <li>- Introduction of the project</li> <li>- Presentation of the area</li> </ul> <p>Status of implementation of project activities.</p> <p>Desk review</p> <ul style="list-style-type: none"> <li>- GIS analysis.</li> <li>- Spreadsheets and supports to determine GHG reductions.</li> <li>- Land tenure and carbon rights</li> <li>- Other BCR Program requirements.</li> </ul>	Yopal – Offices	2023-01-28	8 h
<p>Project Activity Implementation Status.</p> <ul style="list-style-type: none"> <li>- Meetings: At Property in Saravena to confirm project activities.</li> <li>- Interviews with property owners.</li> <li>- Management capacities - evaluation of crops subject to removals (plot measurement).</li> <li>- Evaluation of project boundaries, deforestation control and management.</li> <li>- Activities implemented in the Project Activities and criteria for accessing the Wax Palm category.</li> </ul>	Saravena, Arauca	2023-01-29	8 h
<p>Project Activity Implementation Status.</p> <ul style="list-style-type: none"> <li>- Meetings: On Casanare properties to confirm project activities.</li> <li>- Interviews with Luker farm owners.</li> <li>- Management capacities in Luker farms.</li> <li>- Evaluation of crops to be cleared (measurement of plots).</li> <li>- Assessment of project boundaries, deforestation control and management.</li> <li>- Activities implemented in the Project Activities and criteria for access to the Wax Palm category.</li> </ul>	Villanueva, Casanare	2023-01-30	8 h
Travel to Yopal - Bogota to visit Project areas in Vichada	Villanueva – Yopal, Casanare	2023-01-31	8 h
Travel to Bogota - Puerto Carreño to visit the Project areas in Vichada.	Yopal, Casanare	2023-02-01	8 h
<p>Project Activity Implementation Status.</p> <ul style="list-style-type: none"> <li>- Meetings: In Vichada properties to confirm project activities.</li> <li>- Interviews with farm owners.</li> <li>- Improvement capacities in the farms.</li> <li>- Evaluation of the crops to be removed (measurement of plots).</li> <li>- Evaluation of project boundaries, control and management of deforestation.</li> <li>- Activities implemented in the Project Activities and criteria for accessing the Wax Palm category.</li> </ul>	Puerto Carreño, Vichada	2023-02-01	8 h

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
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ACTIVITIES	Location	Date	Duration
Project Activity Implementation Status. - Meetings: In Vichada properties to confirm project activities. - Interviews with farm owners. - Improvement capacities in the farms. - Evaluation of the crops to be removed (measurement of plots). - Evaluation of project boundaries, control and management of deforestation. - Activities implemented in the Project Activities and criteria for access to the Wax Palm category.	Puerto Carreño, Vichada	2023-02-02	4 h
Project Activity Implementation Status. - Virtual meetings: Properties in other regions to confirm project activities. - Virtual interviews with farm owners.	Bogotá	2023-02-03	4h
Closing meeting Closing visit	Bogotá	2023-02-03	1h

## 2.4. Interviews and *in situ* Inspection

The following table lists the parties consulted and the issues addressed during the validation and verification process.

**Table 2. Interviews conducted during the site visit.**

Part consulted	Topics covered
<b>Fundación Cataruben</b>	Several meetings and constant communication were held throughout the process with the Fundacion Cataruben team ( initial meeting, PD review meeting, follow-up and closure, etc.): - Objectives and expectations about the project. - Clarifications related to monitoring procedures and carbon calculations. - Estimates and assumptions for determining GHG data. - Controls in place to detect and correct any errors or omissions in monitoring parameters. - Financial issues, financial sustainability. - Internal benefit-sharing mechanism and investment plan for project activities. - Analysis of operating and measurement records. - Land ownership and tenure rights and legal requirements. - Carbon and biodiversity monitoring - Cacao and Cashew management plans. - Environmental impacts and SDGs. - Biodiversity baseline. - REDD+ Safeguards compliance. - Communication and grievance mechanism
<b>Luker Agrícola S.A.S</b>	Meetings were conducted with the company's technical and sustainability team, highlighting relevant issues (enrolled in the project, review of the PD, technical review of the Cacao crops, and monitoring): - Property rights and land tenure and legal requirements. - Monitoring, environmental and social aspects of the project.

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project CultivoO2 P1
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	<ul style="list-style-type: none"> <li>- Project boundaries review.</li> <li>- Review of Cacao monitoring plots.</li> </ul>
<b>Partners of the Americas (POA)</b>	<p>An interview was conducted with officials of this entity and their support for the enrolled, technical and financial support to promote the cultivation of Cacao in the country:</p> <ul style="list-style-type: none"> <li>- Enrolled and knowledge of the carbon project.</li> <li>- Database and strategic plan to support cacao farmers.</li> <li>- Technical bases for Cacao models.</li> <li>- Economic alternatives in the technical cooperation model with support from the U.S. office.</li> </ul>
<b>Propietarios (Arauca, Casanare y Vichada)</b>	<p>A sample (7 properties) of property owners were contacted for consultation on:</p> <ul style="list-style-type: none"> <li>- Objectives and expectations about the project.</li> <li>- Socialization process and the role of stakeholders.</li> <li>- Participation of landowners in project activities</li> <li>- Participation in decision making and governance structure (administration, communication, transparency).</li> <li>- Stakeholder relationship with the project development team.</li> <li>- Drivers of deforestation and land uses</li> <li>- Carbon and biodiversity monitoring</li> <li>- Social and environmental monitoring participation</li> <li>- Benefit sharing mechanism.</li> <li>- Definition of project activities and long-term commitment.</li> <li>- Project challenges and opportunities.</li> <li>- Cacao and Cashew crops</li> <li>- Review plots of Cacao and Cashew crops.</li> </ul>
<b>Entrevistas virtuales (Caldas y Córdoba)</b>	<p>A sample (14 properties) of property owners were contacted for consultation on:</p> <ul style="list-style-type: none"> <li>- Objectives and expectations about the project.</li> <li>- Socialization process and the role of stakeholders.</li> <li>- Participation of landowners in project activities</li> <li>- Participation in decision making and governance structure (administration, communication, transparency).</li> <li>- Stakeholder relationship with the project development team.</li> <li>- Drivers of deforestation and land uses</li> <li>- Carbon and biodiversity monitoring</li> <li>- Social and environmental monitoring participation</li> <li>- Benefit sharing mechanism.</li> <li>- Definition of project activities and long-term commitment.</li> <li>- Project challenges and opportunities.</li> <li>- Cacao crops.</li> </ul>

A detailed list of those attending the interviews is included in Annex 3.

For the field activities, we planned to cover most of the project area in which the forest areas and the Cacao and Cashew crops are distributed, for this reason the departments of Arauca, Casanare and Vichada were prioritized, while the departments of Caldas, Córdoba, Huila and Meta were covered with GIS review and virtual interviews, in some cases.

In addition to the interviews, the properties were visited in order to ensure the boundaries of the project, to show the state of conservation, the main threats and drivers of deforestation of the forests on the properties.

On the other hand, the remeasurement of plots for the Cacao and Cashew crops was carried out to validate and verify compliance with the measurement protocols and compare with the measurements reported for the quantification of removals for these crops.

The schedule of activities was previously established with the project developer because he is the one who knows the areas, the state of the roads, available means of transportation and other variables for the planning of the field schedule. The on-site inspection also made it possible:

- Ensure that the geographic area of the project is designed as reported in the Project Description, and the accompanying mapping information, and meets the requirements of the BCR Standard and the methodologies employed.
- Conduct a risk-based review of the project area to ensure that the project meets the eligibility requirements and applicability conditions of the methodologies.
- Conduct a risk-based review of the project area to cover the sampling area.
- In fulfillment of the above objectives, the auditor conducted an *in situ* inspection of the project area from 01/28/2023 and 02/03/2023.
- During the field reconnaissance, GPS waypoints were collected at boundaries and other important features, including the locations where photographs were taken of relevant areas
- An assessment of the implementation and operation of the proposed project through visual inspection and interviews with staff and community.
- A total of 4 Cacao plots and 3 Cashew plots were surveyed.

Areas were reviewed in GIS and project area and site surveys were completed to confirm the project boundaries, as well as to verify the baseline and associated forest use activities by landowners. Site inspections were also conducted to assess the consistency of cover.

The project boundary was visited with respect to baseline conditions and project stratification. The areas considered for the remote visit where information was obtained with field professionals were as follows.

AENOR defined the number based on the project area of the sample for the sites visited. These sites were randomly selected and identified in the field by using a GPS with an accuracy of <10 m.

## 2.5. Resolution of non-conformities

As a result of the validation and verification process, the audit team identified a series of findings as nonconformities (NC). NCs are issued due to:

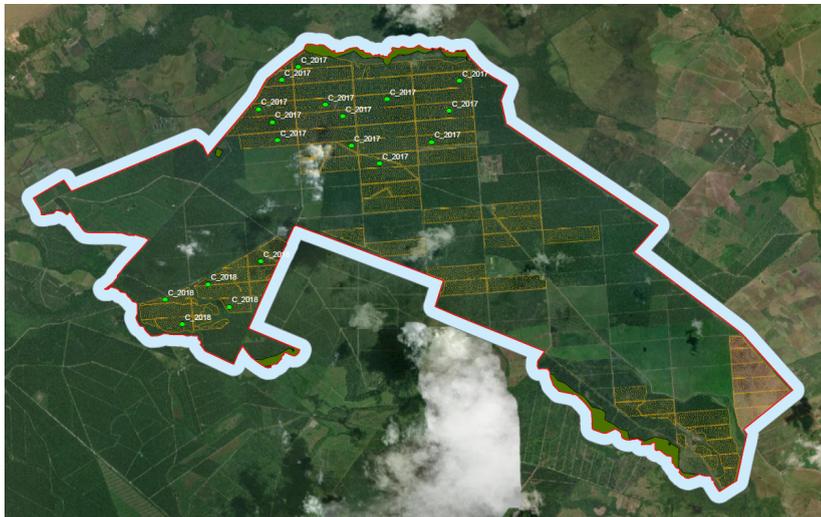
- Non-compliance with the criteria established in Section 1.2.
- Unjustified deviations from the monitoring plan or calculation methodology.
- Insufficient evidence provided to prove conformity.
- Errors in applying assumptions, data or calculations that would affect the estimation of emission reductions..

All NC (23 in total) for validation and for verification of these monitoring periods are included in this report, as well as the 11 CL (clarifications) issued (see Annex 2 of this report) and were closed prior to the issuance of carbon credit statements. Finally, no FAR (Future Actions) were submitted.

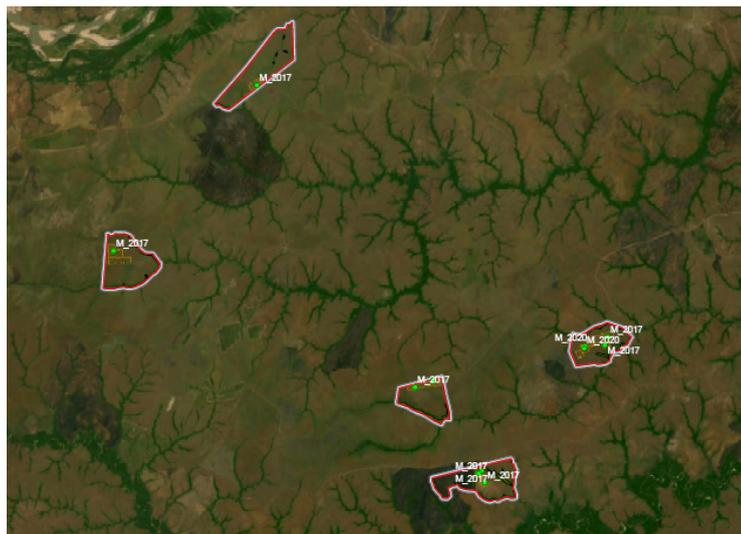
All findings of the AENOR audit team during the validation and verification process have been closed.



Location Project areas and Cacao plots in Arauca



Location Luker Agricola project areas and Cacao plots, Casanare



Location Project areas and Cashew plots Puerto Carreño, Vichada

### 3. VALIDATION AND VERIFICATION FINDINGS

#### 3.1. Project Name

The CultivO2 - P1 climate change mitigation project is a comprehensive strategy that combines REDD+ activities to prevent deforestation in forests and AR activities focused on accounting for removals through the establishment of cacao and cashew crops. The project aims to implement economic incentives to mitigate the threat of habitat loss associated with forests and to encourage the expansion of agricultural tree crops on private properties in the Andean and Orinoquia regions

Considering the name, Climate Change Mitigation Project CultivO2 - P1, it is consistent with the documentation and is recognized by landowners and other participants.

#### 3.2. Environmental authority with jurisdiction in the intervention area of the initiative

The environmental authorities that have jurisdiction in the project area are: *Corporación Autónoma Regional del Alto Magdalena (CAM)*, *Corporación para el Desarrollo Sostenible del área Especial La Macarena (CORMACARENA)*, *Corporación Autónoma Regional de la Orinoquia (CORPORINOQUIA)*, *Corporación Autónoma Regional de los Valles del Sinú y del San Jorge (CVS)* and *Corporación Autónoma Regional de Caldas (CORPOCALDAS)*, which exercise functions established in Article 31 of Law 99.

The environmental authorities with jurisdiction in the initiative's area of intervention were consulted by the project's owner, which was validated in the documents submitted, where there was no evidence of comments or recommendations regarding the project.

#### 3.3. Intervention area

The project area comprises 3,416.7 total hectares grouped into 69 private properties, with the following distribution: 1,467.2 hectares of Cacao, 543.7 hectares of Cashew and 1,405.8 ha of forest. Regarding the area of activities, 2010.9 ha correspond to AR removals and 1,405 ha to REDD+ activities.

The GHG Removal Activities contemplate the establishment since 2017 of Cacao and Cashew crops in the areas defined for these activities in the Orinoquia region and the Andina region, considering the aptitudes of each area for the establishment of these crops and compliance with applicable legal and environmental regulations.

In terms of REDD+ activities, the project avoids deforestation and the transformation of these natural ecosystems by implementing conservation and climate change mitigation activities, guaranteeing the provision of ecosystem services and reducing the factors and threats to these ecosystems on properties associated with the development of these Cacao and Cashew agricultural activities.

#### 3.4. Project location

The project is located in the Andina and Orinoquia regions, distributed in the departments of Arauca, Caldas, Casanare, Córdoba, Huila, Meta, and Vichada.

The Andina zone is represented in the project area by the central mountain range, mainly determined by the Magdalena hydrographic zone (Upper and Middle Magdalena), dominated by agroecosystems (coffee agroecosystem, crop mosaics and natural spaces, permanent crops, livestock "applied to the eastern mountain range"), natural vegetation cover such as sub-Andean and Andean shrublands, gallery forest, artificial territories, secondary vegetation, among others. Areas suitable for growing various crops, including Cacao, which is part of the project. The biome for the forest formations corresponds to Andean forests.

The landscape in the Orinoquia region is made up of flood plains and non-flood plains in the lowlands of the Meta River basin and the eastern mountain range, known as the eastern plains.

The areas suitable for Cacao crops in this region are the highlands and natural savannas of Arauca and Casanare, while Cashew crops are grown in the highlands associated with the department of Vichada. The forests correspond to gallery forests associated with the protection areas of the different rivers and streams of the Orinoquía.

The specific location of all the properties has been validated using the geographic limits of the area presented by the project manager on maps at an appropriate scale and included in a Geographic Information System (GIS) with each of the properties geo-referenced (WGS84 coordinate system).

### 3.5. Technical description of the project

The Cultivo2 - P1 climate change mitigation project consists of mitigating the effects of climate change by adopting measures to reduce CO2 emissions from deforestation and degradation and removals for planting Cacao and Cashew, involving producer families, generating economic incentives to farmers through the sale of carbon certificates.

The expansion areas within the project design contemplate only the AR activity and no new areas will be included in REDD+ activities.

The project is being developed in the departments of Arauca, Caldas, Casanare, Córdoba, Huila, Meta, and Vichada, where an area of 1,467.2 hectares of Cacao, 543.7 hectares of Cashew, and 1,405.8 hectares of forest are incorporated in a total of 69 properties. These properties represent small, medium, and large producers with crops ranging from 2 hectares to 617 hectares planted.

The start date of the Cultivo2 - P1 Climate Change Mitigation Project is June 9, 2017 until June 9, 2037 for AR and REDD+ activities.

For the calculation of avoided emissions from REDD+, the baseline projection in the project area was considered, minus project emissions (from deforestation and from degradation in the project area) minus leakage (from deforestation and from degradation in the leakage belt). The removals considered the growth of Cacao and Cashew crops as tree crops and agroforestry against the baseline agricultural cover. A reserve of 20% (where 10% remains in the project reserve and 10% in the standard) of the total GHG reductions quantified for the verified period was deducted from the total estimates and maintained as a reserve for uncertainty and risk of non-permanence.

The above steps are detailed in more detail in the corresponding sections of this report.

AENOR has validated that the PD/1/ document, which includes the MR/2/, accurately reflects the proposed project, which consists of implementing activities to avoid deforestation, as well as conserving forests and promoting tree crops to promote sustainable livelihoods among landowners. Through interviews with key project staff and stakeholders, the auditor's team confirmed the main objectives of the project activity.

Therefore, AENOR can confirm that the implementation of the project has been carried out in accordance with PD/1/. There are no material discrepancies between the project implementation and PD/1/.

The estimated project costs, project start date, project duration and the environmental and social conditions of the project were validated and verified during the validation and first verification of this project.

AENOR, after the review of the supporting documents and the information gathered during the in situ visit process, considers that the implementation of the project has been correct with respect to the PD/1/. And during this validation and first verification the activities carried out by the project were implemented.

After review of the evidence provided, stakeholder consultations and communications with the project proponent, AENOR confirms that the monitoring arrangements described in the monitoring plan are feasible within the project design and that the means considered for implementation,

including data management and quality control and assurance control processes are sufficient (the corresponding annexes with Fundacion Cataruben Documentary Procedure/35/ and Fundacion Cataruben Archiving Policy/36/ were reviewed). The details of the information flow control were verified, with defined delivery, review and approval officers and the key aspects for document management and control, as well as the structuring of files and documentation. This information was cross-checked during the audit process in discussions with the project developer team to ensure that GHG reductions ex post/15/16/ as a result of the project activity can be reported and verified in accordance with the MRV System principles and accounting rules set out in resolution 1447/2018.

### 3.6. Estimated Project Costs

The financial model/11/, justifies the costs associated with the implementation of the project and the origin of the economic resources necessary for the formulation and the different processes of socialization, implementation of activities, validation and verification, etc. of the project. AENOR verified the documentary information and contrasted it in an interview with Fundacion Cataruben and the companies participating in the project and the owners/3/4/5/.

### 3.7. Project start date and duration

The duration of the grouped project CultivO2 - P1 is 20 years, starting on June 9, 2017 until June 9, 2037 for AR and REDD+ activities; and the first verification period from the beginning of the crediting period for each project activity until December 31, 2021.

The project start date is the date on which conservation and mitigation activities that will result in effective GHG emission reductions begin to be designed and implemented in the case of REDD+ activities and the date on which effective removals begin to be generated for AR activities, i.e. from the acquisition or planting of trees.

AENOR checked this date with the letters of intent signed/6/ by the owners of the properties for the two ecosystems in reference, also according to the BCR standard, this date is taken as a reference, taking into account that Fundacion Cataruben formalized contracts with professionals who would carry out the initial phases of implementation of conservation actions, marking the beginning of compliance with the established activities. AENOR validated this date with the supports that demonstrate the investment of resources in the payroll of the year 2017/7/.

Additionally, AENOR checked that the start date of the project is within the 5 years prior to the start of the validation, since the signing of the contract with the OEC took place in June 2022/8/.

The activities were driven for the Forest ecosystem in terms of reducing emissions from deforestation starting in 2017, taking into account the multi-temporality analysis regarding changes in cover, the conservation status of forested areas and finally, the implementation of activities by the project owners. Regarding tree crops, the start date of their activities considers the purchase of inputs and tree planting; and coincides with the temporality analysis carried out for forest/non-forest cover within the Project boundaries.

In summary, documentary evidence was provided by the project proponent (letters of intent from landowners, legal documents and start date/6/7/).

AENOR, after review of the supporting documents and the information gathered in the audit process, considers that the project start date and duration of the project is adequate.

### 3.8. Description of Removal Activities and Activities to Reduce Deforestation and Degradation

The section describing the activities agreed and being implemented with the owners of the properties are described in the PD/1/ Section 11 and 14, which details the activities to be

considered in the establishment of Cacao and Cashew crops and methodologically develops the consideration of REDD+ activities.

The consideration of Cashew crops in AR activities is based on the potential of the tree species for biomass accumulation, in the planting designs different densities are managed according to the conditions of adaptation of the clones of this species, usually the densities per hectare are: 142 trees, 146 trees and 164 trees, because it is a species with a wide canopy coverage and the production and use of the fruit depends on this variable. According to the literature, this species has a life cycle that ranges from 25 to 50 years, which is why during the duration of the project (20 years) it is likely that there will be no renewals or harvesting/27/.

The Cacao crops included in the project have an agroforestry design that includes Cacao, banana and timber species. Planting densities tend to vary according to the design and topography, but forest cover is maintained due to the importance of shade for this type of crop. Biomass consideration is mainly part of the Cacao trees. Given that Cacao tends to have a cycle longer than 20 years, it is also likely that no renewals or harvests will be generated during the life of the project/27/.

The REDD+ activities described in the PD are the result of the analysis and characterization of the causes and agents of deforestation, which are grouped into two general activities:

1. Implement prevention and mitigation measures to reduce deforestation of natural forests.
  - Apply training and accompaniment processes through training to strengthen land planning, biodiversity conservation and sustainable forest management.
  - Identify and adopt the principles of forest governance for sustainable forest management.
  - Monitor terrestrial hot spots.
  - Generate alerts of changes due to deforestation, degradation and/or transformation of ecosystems in and around the project area.
2. Implement fauna and flora monitoring and conservation measures.
  - Monitor threatened ecosystems.
  - Conduct participatory monitoring of threatened species.

Evidence of progress in the implementation of these activities during the monitoring period can be found in the RM/2/ and the description of the forest inventory. With the in situ audit and supporting materials, AENOR was able to verify that the activities developed and to be developed have the support of the landowners, are in line with the socio-cultural and environmental reality of the project area and are aligned with the causes of deforestation in the area.

### 3.9. Environmental conditions in the project area

The 69 private properties are scattered among the departments of Arauca, Caldas, Casanare, Cordoba, Huila, Meta, and Vichada; the PD/1/ includes in section 2.4.2, a description of the environmental conditions respectively, in terms of geomorphology, soils, climate, vegetation and hydrography.

After the documentary review and the information and documentation collected by the audit team in the audit process, it was verified that the information collected in these sections comes from official sources that supply the consultation platform of the Information System for Colombia (SIAC), such as IDEAM, Von Humboldt Institute, Agustín Codazzi Geographic Institute, Colombian Geological Service. Therefore, AENOR considers that the information expressed in relation to environmental conditions is credible and sufficient.

### 3.10. Social conditions in the project area

Section 2.5 and 2.6 of the PD includes information on the social and economic conditions in the project area, based on a census conducted by the project proponent, describing the regime and

size of the properties, household composition, and economic activities around the properties and family income.

AENOR reviewed the information contained in this section and considers the information expressed in relation to social conditions to be credible and sufficient.

### 3.11. Quantification of GHG reductions and removals

#### 3.11.1. Quantification methodologies

For this validation/verification, Colombian regulations and the criteria of the BioCarbon Registry program have been taken into account, as follows:

-For the AR activity, the METHODOLOGICAL DOCUMENT SECTOR AFOLU/BCR0001 Quantification of GHG Emission Reductions v.3.0, April 13, 2022 was used.

- Guidelines for the selection of equations, parameters and data for calculating GHG removals from forestry activities. Version 1.1, September 17, 2020.

-For the REDD+ activity, the AFOLU/BCR0002 SECTOR METHODOLOGY DOCUMENT on Quantifying Emission Reductions and GHG Removals from REDD+ projects was used as a reference. Version 3.1, September 15, 2022.

- Protocol for national and subnational biomass estimation in Colombia. Institute of Hydrology, Meteorology and Environmental Studies - IDEAM; for biomass and carbon parameters.

- Resolution 1447 of 2018 Ministry of Environment and Sustainable Development, which aims to regulate the Monitoring, Reporting and Verification System (MRV) of mitigation actions at the national level, as related to the GHG Emissions Reduction and Removal Accounting System and the National Registry of Reduction of Greenhouse Gas (GHG) Emissions.

AENOR verified the relevance of these methodologies for the calculation of GHG emission removals/reductions in the baseline scenario, project scenario and leakage. This validation/verification was based on information provided by the project developer, contrasted during the audit process.

In this way, with the estimated information and data, an estimate of GHG removals by the establishment of Cacao and Cashew crops for the monitoring period 09/06/2017 to 12/31/. And 09/29/2017 to 12/31/2021 for avoided deforestation and degradation.

Quantification of mitigation results under these two methodologies is presented in calendar year vintages.

AENOR verified that the use of these two methodologies is consistent and that the conditions of applicability of these methodologies are met and the characteristics of the BCR Standard are met, it follows the guidelines dictated by the UNFCCC related to AR and REDD+; it has a mechanism for managing the risk of leakage and has a mechanism for managing the risk of non-permanence.

#### 3.11.2. ADDITIONALITY

AENOR considers that the project meets the additionality criteria for AR and REDD+ projects established in the BioCarbon Registry standard and methodologies.

##### Additionality AR Activity

The Project Holder submits a complete list of realistic and credible baseline scenarios in the areas where the AR Activity will be carried out, and specifies the most reasonable baseline scenario of what would occur in the absence of the proposed project activity, for which it selected the criteria in section C (carbon stock changes at the project boundaries, identifying the most likely land use, at the start of the project) of the baseline and additionality tool. v 1.1. July 27, 2023. In which the following steps were followed:

- Step 0. Preliminary screening based on project activity start date.

The start date for the CultivO2 - P1 Climate Change Mitigation Project is June 9, 2017 for the AR activities and for the REDD+ activity./7/8/.

- Step 1 Identification of alternative scenarios

The baseline represents the continuation of economic activities that have occurred historically, exist today, and are unlikely to change in the absence of the project activity.

Areas of non-renewable perennial crops, areas of transient or annual crops, extensive cattle ranching and fallow land have been the dominant land use practices for decades in the regions where the project/14/17/ is being developed. As a result of more favorable production practices encouraged by the lack of infrastructure and rural development, unsustainable livestock systems and agriculture have been the predominant land use in the area.

Unsustainable agriculture, together with overgrazing and lack of fertilization, further deteriorate the soil. According to evidence from project documentation and field interviews, inadequate soil conservation practices, along with burning and low-tech agriculture, generate permanent crops with little renewal, transient crops, degraded pastures and fallow areas that are prevalent in the project area. Therefore, the baseline scenario of the project activity corresponds to these activities, the evidence and justifications for which are expected to continue in the area in the absence of the project activity.

AENOR can attest that all assumptions and data used by the project participants to justify their choice of reference scenario are contained in the PD/1/ and supporting documents. All relevant documentation to establish the reference scenario is also cited and correctly interpreted in the PD/1/. The assumptions and data used in identifying the reference scenario are properly justified, supported by evidence and can be considered reasonable.

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

All identified scenarios, except one (afforestation land scenario), and their alternatives are subsistence agricultural activities for local farmers and comply with all applicable mandatory legal and regulatory requirements.

The alternatives presented include all plausible scenarios taking into account local and sectoral circumstances and the application of national laws and regulations/5/. Therefore, the list of alternatives is considered complete.

- Step 2. Barrier analysis

This step consists of identifying the barriers that would prevent the implementation of at least one alternative land use scenario, and is divided into three parts, the first is the Identification of barriers that would prevent the implementation of at least one alternative land use scenario, in this case the proponent identified the following barriers: barriers to investment, technological barriers, barriers related to local tradition, barriers due to local ecological conditions, barriers due to social conditions and other barriers. The TP also analyzed each barrier against each scenario based on secondary information, and provided documented and transparent evidence, and offers conservative interpretations of this documented evidence, as to how it demonstrates the existence and significance of all identified barriers.

In addition to the barrier analysis, the TP presents the financial analysis/11/ where the model for AR and REDD activities is presented together, which contemplates the areas of the first instance of the project. Given that this is a predominantly social project involving small producers, it is not feasible to carry out a separate financial analysis for the Removal Activities component and the REDD+ activities.

The results of the model show that the certification and registration of the project, and the associated benefits and incentives derived from this, diminish the impact of the identified barriers

and thus, it is demonstrated that the project is carried out for the estimated crediting period, therefore, the project is additional in the AR activity.

### *REDD Activity ADDITIONALITY*

The Project Holder submits a complete list of realistic and credible baseline scenarios in the areas where the REDD Activity will take place, and specifies the most reasonable baseline scenario of what would occur in the absence of the proposed project activity, by selecting the criteria in section C (carbon stock changes at the project boundaries, identifying the most likely land use, at project initiation) of the baseline and additionality tool. v 1.1. July 27, 2023. In which the following steps were followed:

- Step 0. Preliminary screening based on project activity start date.

The start date for the CultivO2 - P1 Climate Change Mitigation Project is June 9, 2017 for the AR activities and for the REDD+ activity./7/8/.

- Step 1 Identification of alternative scenarios

Areas of non-renewable perennial crops, areas of transient or annual crops, extensive cattle ranching and fallow land have been the dominant land use practices for decades in the regions where the project is being developed/14/17/. As a result of more favorable productive practices encouraged by the lack of infrastructure and rural development, unsustainable livestock and agricultural systems have been the predominant land use in the area. In addition to these scenarios, those associated with environmental and conservation projects have been identified.

According to evidence from project documentation and field interviews, inadequate soil conservation practices, together with burning and low-tech agriculture, generate permanent crops with little renewal, transitory crops, degraded pastures and fallow areas that prevail in the project area. Therefore, the baseline scenario of the project activity corresponds to these activities, the evidence and justifications for which are expected to continue in the area in the absence of the project activity.

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

All identified scenarios, except one (Forest Conservation - REDD scenario), and their alternatives are subsistence farming activities for local farmers and comply with all applicable mandatory legal and regulatory requirements.

The alternatives presented include all plausible scenarios taking into account local and sectoral circumstances and the application of national laws and regulations/5/. Therefore, the list of alternatives is considered complete.

- Step 2. Barrier analysis

This step consists of identifying the barriers that would prevent the implementation of at least one alternative land use scenario, and is divided into three parts, the first is the Identification of barriers that would prevent the implementation of at least one alternative land use scenario, in this case the proponent identified the following barriers: barriers to investment, technological barriers, barriers related to local tradition, barriers due to local ecological conditions, barriers due to social conditions and other barriers. The TP also analyzed each barrier against each scenario based on secondary information, and provided documented and transparent evidence, and offers conservative interpretations of this documented evidence, as to how it demonstrates the existence and significance of all identified barriers.

In addition to the barrier analysis, the TP presents the financial analysis/11/ where the model for AR and REDD activities is presented together, which contemplates the areas of the first instance of the project. Given that this is a predominantly social project involving small producers, it is not feasible to carry out a separate financial analysis for the Removal Activities component and the REDD+ activities.

The results of the model show that the certification and registration of the project, and the associated benefits and incentives derived from this, diminish the impact of the identified barriers and thus, it is demonstrated that the project is carried out for the estimated crediting period, therefore, the project is additional in the REDD+ activity.

### Conclusion

The approach used in PD/1/ to demonstrate additionality in the two project activities (AR and REDD) was assessed based on a document review, as well as through on-site discussions with the project team, key project proponents and landowners, as well as with the consultants involved in PD/1/. Interviews on this topic were also conducted with stakeholders during the in situ visit. The data, rationale, assumptions, justifications and documentation provided were verified using local knowledge and sector experience. In essence, the project is considered additional to the extent that, if traditional baseline uses prevail, activities that eventually differ from a forestry or agroforestry use.

AENOR considers that the project complies with these guidelines in relation to carbon stock changes, within the Project boundaries by identifying the most likely land use at the beginning of the project and correctly applying the steps of the tool designed by BCR.

Additionally, AENOR has been able to verify through documentary evidence and testimonies obtained from interested parties that the project is not a product of environmental license compensation activities, concessions or timber harvesting requests or requests for subtraction of national forest reserves; nor is it a product of preservation and restoration activities in strategic areas and ecosystems for which payments for environmental services for the reduction and capture of GHGs are accessed.

### 3.11.3. QUANTIFICATION OF GHG EMISSION REMOVALS - AR

The data and parameters used are detailed in the PD/1/ and supporting documentation for quantification AR/14/15/16/. The quantification of GHG emission reductions and removals was determined using data, parameters and equations contained in the methodology applied by the project proponent. All data parameters and calculations were evaluated by AENOR based on the information provided by the data processor to identify possible human errors. In conclusion, the spreadsheet formulas, conversions and aggregations are accurate and provide reliable results.

Section 11.1.1 of PD/1/, presents the applicability conditions of the methodology used by the project. AENOR reviewed the baseline scenario, land eligibility, leakage assessment, project preconditions and supporting information provided to justify the applicability of the project and concluded that the project proponent addresses each of these applicability conditions correctly and includes consistency between the requirements and the project activity, in the project description.

Through review and cross-checking, AENOR corroborated that the selected methodology and the methodological tools involved apply to the project activity and were correctly justified and applied.

#### 3.11.3.1 Consideration of carbon reservoirs

In the following table are the carbon pools used to account for carbon stocks in the CultivO2 - P1 Climate Change Mitigation Project, in line with Methodology BCR0001 Quantification of GHG Emission Reductions v.3.0, April 13, 2022.

Reservoir	Inclusion	Justification of choice
Aboveground biomass	YES	The change in carbon content in this reservoir is significant given the project activities.
Belowground biomass	YES	

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
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Reservoir	Inclusion	Justification of choice
Deadwood and litter	YES	The project areas do not present significant litter or Deadwood contents, so their increase is expected given the proposed crop management activities.
Soil organic carbon	YES	An increase in carbon content is expected with the implementation of project activities, in relation to the baseline scenario.

### 3.11.3.2 Land eligibility

According to the methodology, eligible areas correspond to those classified as non-forest or natural ecosystems within the project areas, which have not been transformed since the project start date and at least five years before and are not under forest cover.

AENOR verified that the areas within the geographical boundaries of the project correspond to the non-forest category at the beginning of the project activities and five years prior to the project start date and confirmed through multi-temporal analyses of official layers and with the on-site visit that the project boundaries are correctly determined.

The Corine Land Cover maps for 2016 and 2012 were identified from official sources such as IDEAM and IGAC and from the interpretation of satellite images from AVNIR-2, SPOT 1, SPOT 4 and Sentinel-2 sensors. In some properties, images were not available for 2012, in which case high-resolution satellite images as close to 2012 as possible were used. In order to determine the accuracy of the interpretation, field visits were made for the year 2016, in addition to using the AcATaMa Complement, which allows assessing the pressure of the interpretation. For the project, the accuracy is 100%, due to the fact that 50% of the interpreted coverages belong to weeded savannas or clean pastures before the implementation of Removal Activities.

AENOR checked the maps and information processing for the years 2012 and 2017 to arrive at the eligible areas for the AR component.

Additionally, the audit team was able to review the traceability that the project holder, previously defined the clearance areas and performed a multi-temporal analysis to determine the absence of forest or natural cover other than forest on the dates established by the Standard (at the beginning of the project activities, nor five years before the project start date). The inputs used were the non-forest forest maps generated by IDEAM and sensor images such as SPOT. Eligible areas are found in the geodatabase Version 1.3 for activity AR/21/.

As a result of the eligibility analysis, it was determined that the AR component has 2010.9 eligible hectares, of which 1,467.18 ha correspond to Cacao and 543.72 ha to Cashew, as shown in Table 11 of the PD. These areas would make up the first instance of the project.

AENOR verified that the Project boundaries are correctly determined and comply with the eligibility requirements mentioned above.

#### Expansion Areas Grouped project

The expansion areas are made up of agroecologically suitable areas for establishing Cacao and Cashew crops, connected to the crops or in properties evaluated by the project to include future plantings of these species. The expansion area comprises 5,886 ha distributed in the departments of Arauca, Casanare, Huila and Vichada.

**Table 3. Expansion areas for the AR activity.**

Department	Municipality	Crop	Expansion (ha)
ARAUCA	ARAUQUITA	CACAO	29,23

ARAUCA	ARAUQUITA	CACAO	14,87
ARAUCA	SARAVENA	CACAO	4,56
ARAUCA	ARAUQUITA	CACAO	3,7
ARAUCA	ARAUQUITA	CACAO	1,62
ARAUCA	ARAUQUITA	CACAO	5,33
ARAUCA	ARAUQUITA	CACAO	14,83
ARAUCA	SARAVENA	CACAO	1,02
ARAUCA	ARAUQUITA	CACAO	19,7
ARAUCA	SARAVENA	CACAO	19,07
ARAUCA	SARAVENA	CACAO	4,63
CASANARE	VILLANUEVA	CACAO	2413,17
HUILA	PITAL	CACAO	39,62
HUILA	AGRADO	CACAO	1,48
HUILA	AGRADO	CACAO	8,23
HUILA	PITAL	CACAO	4,42
HUILA	AGRADO	CACAO	1,28
HUILA	PITAL	CACAO	3,11
HUILA	PITAL	CACAO	1,01
HUILA	PITAL	CACAO	2,16
VICHADA	PUERTO CARREÑO	MARAÑON	608,67
VICHADA	PUERTO CARREÑO	MARAÑON	927,38
VICHADA	PUERTO CARREÑO	MARAÑON	960,54
VICHADA	PUERTO CARREÑO	MARAÑON	194,71
VICHADA	PUERTO CARREÑO	MARAÑON	601,66
<b>TOTAL</b>			<b>5.886</b>

These areas comply with project eligibility and clear criteria are established for their inclusion, which require compliance with the methodology, baseline and date after the last project monitoring.

AENOR verified that the boundaries for the project extension areas are correctly determined and comply with the eligibility requirements and criteria established for grouped projects.

### 3.11.3.3 Estimation of GHG removals ex ante

The removal considerations are associated with Cacao and Cashew crops which are eligible in light of the methodology BCR0001 Quantification of GHG Emission Reduction v.3.0, April 13, 2022, due to their tree conditions and agroforestry designs in the particular case of Cacao.

The data and parameters used are detailed in the PD/1/ and spreadsheets AR/14/15/16/ associated with the quantification of the project.

#### Stratification

In accordance with section 13 of the BCR0001 methodology, the stratification was defined, including identification of each crop, the year of sowing and the life zone; table 19 in PD/1/ describes the strata and discriminates the project areas by each one.

In the review of the information, the audit team concluded that this stratification is adequate for the project areas.

## Uncertainty management

The uncertainty for the calculation of removals took into account the considerations of the document, "Guidelines for the selection of equations, parameters and data for calculating GHG removals from forestry activities. Version 1.1, September 17, 2020."

The project uses regional Aboveground and Belowground biomass data for Cacao crops, and own data for the estimation of Aboveground biomass and factor (R:S) for Belowground biomass in Cashew. Thus, adjustments for discount factors will be taken into account in the monitoring of GHG removals from the project. In the case of the ex ante estimate, since it is not subject to uncertainty control, it is not included in the calculations.

## Quantification of Baseline Emissions

The project holder determined the baseline emissions estimate using the A/R Methodology tool "Carbon Stock Estimation and Carbon Stock Change of Trees and Shrubs in A/R CDM Project Activities Version 4". According to this tool, tree carbon stocks in the baseline can be counted as zero if one or more of the conditions presented in section 5.12 of the tool are met.

According to the TP, the use of sustainable agronomic practices and technical assistance will be of vital importance to minimize tree competition and that is why no trees will be felled or affected by project activities. Since the above conditions are met for both trees and pre-existing crops, the baseline carbon stock of the technical packages for Coffee and Cacao establishment will be counted as zero.

All parameters and calculations for the baseline were evaluated by AENOR, with the data processor to identify possible human errors. In conclusion, the spreadsheet formulas, conversions and aggregations are accurate and provide reliable results for baseline emissions.

## Quantification of project emissions

Project emissions were determined by changes in carbon content in project reservoirs minus project emissions.

$$\Delta C_{ACTUALt} = \Delta C_t - GEI_{E,t}$$

Where:

$\Delta C_{ACTUALt}$  Net present removals of GHGs by sinks, in year t; tCO2e

$\Delta C_t$  Changes in carbon stocks in the project, occurring in the selected pools, in year t; tCO2e

$\Delta GEI_{E,t}$  Increase in non-CO2 GHG emissions within the project boundaries as a result of project activities in year t; calculated with the tool "Estimation of non-CO2 GHG emissions resulting from biomass combustion attributable to project activity; tCO2e

Since woody biomass burning is not considered as part of the crop preparation and establishment process, the net removals in the project scenario are equivalent to the changes in carbon stocks occurring in the carbon pools.

## Estimation of changes in tree biomass.

- Cacao

The estimation of total biomass content in Cacao crops under the ex ante scenario was carried out by applying the growth model proposed by Ortiz, Riascos and Somarriba (2008)/41/, which relates tree age as a determinant variable.

Bt = Total biomass (kg/árbol)

Total biomass  
*T. cacao*

$$B_t = -2,02 + 0.19 * E - 3.7 \times 10^{-4} * E^2$$

E= Age in years

Based on these values, a simulation of the growth per Cacao tree was carried out in order to estimate the growth per life zone and planting density for each stratum.

**Table 4. Cacao crop growth values based on the equation of Ortiz, Riascos and Somarriba (2008).**

Year of planting	Total biomass of CACAO	
	Total biomass (kg/tree)	Carbon stock changes by total biomass (tCO2e/ha)
1	0,00	0,00
2	2,33	4,01
3	4,34	7,48
4	6,25	10,77
5	8,05	13,87
6	9,74	16,79
7	11,33	19,52
8	12,81	22,08
9	14,18	24,44
10	15,45	26,63
11	16,61	28,63
12	17,67	30,45
13	18,62	32,08
14	19,46	33,53
15	20,19	34,80
16	20,82	35,88
17	21,34	36,78
18	21,76	37,50
19	22,07	38,03
20	22,27	38,38

AENOR reviewed the source presented and the values reported in the PD/1/ to determine the annual growths of the Cacao species. Consequently, the values used correspond to a valid source and are adequate for the project removal estimates.

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
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- Cashew

Considering that there is no allometric model for the species in Colombia and in order to contribute with this information to have more accurate estimates for the project area, the project owner decided to build it with data from sampling.

The development of allometric models is represented in studies conducted in Africa (Awé Djongmo et al., 2021; Biah et al., 2018; Malimbwi, Eid & Chamshama, 2018), while for Colombia there are still no validated models that adapt to the characteristics of the project. In this sense, in order to reduce the level of uncertainty regarding the estimation of GHG removals, for the estimation of Aboveground biomass an allometric model was built from measurements taken in eligible crop plots for the project with ages of 1, 4 and 5 years. Likewise, in order to contemplate a longer period of time, measurements were taken in crop plots of 2, 11 and 15 years old, planted in areas adjacent to the project areas and with similar planting conditions/16/.

The study included a total of 62 plots that were established in the area, of which 11 correspond to crops planted in 2008, 10 in 2012, 26 in 2017, 6 in 2018, 6 in 2020 and 3 plots in 2021/16/.

The results of the study yielded the following model after an evaluation of 14 biomass models of which the following was the best selected with adjusted r<sup>2</sup>=0.992, standard error of the estimation (RMSE)=0.133 and sum of the square of the residuals (SCE)=5.37

$$LN(BA) = -3,777 + 3,158 (LN(D_{30})) - 0,118(LN(D_{30}))^2$$

Aboveground biomass estimated (kg/tree); D<sub>30</sub> is the diameter of the trunk measured at 30 cm from the ground (cm).

In order to evaluate the representativeness conditions for sampling and model fitting for Cashew, the audit team took into account the guideline established by CDM in the tool (Tool; AR-am-tool-18-v1.0.1), which determines the criteria to be taken into account for the development of equations, the number of samples and the acceptable values for model fitting. The criteria established in the tool are as follows:

**Table 5. Evaluation of the Cashew biomass model against the CDM Tool criteria; AR-am-tool-18-v1.0.1.**

Criteria CDM Tool; ar-am-tool-18-v1.0.1	Model	AENOR Conclusion
<p>5. A species- or species-group specific volume table or volume equation derived from trees growing under similar soil and climatic conditions as in the project area is considered appropriate, and therefore may be used for ex post estimation of tree stem volume, if at least the following conditions are met:</p> <p>(a) The equation is used in the national forest inventory or national GHG inventory. inventory, of the host Party;</p>	$LN(BA) = a + b(LN(D_{30})) + c(LN(D_{30}))^2$	<p>This type of model has been used in the national forest inventory and for biomass estimation.</p>
<p>(b) The equation has been used in the commercial forestry sector of the host Party for 10 years or more;</p>	<p>It is a model applied to calculate biomass and for Cashew species.</p>	<p>There are national studies in which national equations with this type of model are reported.</p>
<p>(c) The equation was derived from a data set of at least 30 sample trees, and the value of</p>	<p>For the construction of the model, 62 plots with different</p>	<p>The data are consistent with important age ranges for the species;</p>

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project CultivoO2 P1
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Criteria CDM Tool; ar-am-tool-18-v1.0.1	Model	AENOR Conclusion
<i>the coefficient of determination (R2) was not less than 0.85.</i>	ages were measured.  The R2 of the model is 0.996.	since it is one of the first models in Colombia, it is considered valid.  The model statistics comply with the adjustments required for these models.

Belowground biomass estimation for the species was based on the equation reported by Cairns et al., 1997, which relates this component to Aboveground biomass.

$$BRG = e^{(-1,085+0,9256*\ln(BA))}$$

Where, BA is Aboveground biomass and BRG is Belowground biomass.

Since the model selected by the TP relates the diameter of the trunk at 30 cm from the ground (D30), a model was constructed using simple linear regression analysis to establish the growth of the diameter at 30 cm with respect to the age of the crop, the model evaluated presents a coefficient of determination (r2) of 77% and is determined by the following equation:

$$D30 = 4,945 + 1,704 (\text{Age in years})$$

Where, D30 corresponds to the diameter of the trunk estimated at 30 cm from the ground (cm) and the age of the crop is expressed in years.

Considering that this model was built linearly, although it does not report a very high r2, it is considered valid for the projection of growth by the audit team in the design phase, since the monitoring will have the real values from direct measurements in the field.

Finally, the TP took samples to determine the density of Cashew wood and sent them to the laboratory for determination. The results from the CIAT/16/ laboratory showed an average wood density value of 0.46 g/cm<sup>3</sup>, with a standard deviation of 0.025. The sample took into account three plots within the 2008 and 2011 strata, and one plot from 2017; in each plot, samples were extracted from three individuals of good size and good phytosanitary condition by auger.

AENOR, based on the information presented and through an analysis of the field data and their processing, can determine that the information generated for the Cashew species is reliable and relevant for the estimation of the growth and biomass of the species within the Project boundaries CultivoO2 - P1, provided that the crops to be considered are within the ranges and measurement protocols/14/ with which the project information was generated.

In the final quantification of the carbon content for the total biomass of the tree and shrub component, the TP used 0.47 for the carbon fraction parameter, since there is no transparent and verifiable information available to justify a different value, the value proposed in AR-TOOL1 4 V4.2 (CDM) is taken.

Subsequently, the data obtained were multiplied by the universal constant 44/12 and the carbon content (ton CO<sub>2</sub>e) of the trees in the project scenario was estimated.

### **Estimation of changes in Deadwood (Mm) and litter (Hj)**

For the determination of these components, the default values provided by Tool 12 of CDM Methodology AR ACM0003, which establishes values based on Aboveground biomass according to precipitation conditions and elevation above sea level, were used. Since the TP considered these components within the stratification, it took the values from the Tool 12 tables for the Cacao and Cashew crops under these conditions in the Andina and Orinoquía regions.

The project manager provided a description of the values with which the audit team can confirm that the values used and presented in Table 24 of the PD, comply with the conditions of the area.

### **Soil organic carbon (SOC) estimation**

Ex-ante soil organic carbon stocks (SOC) were performed according to the "Tool for estimation of change in soil organic carbon stocks due to implementation of A/R CDM project activity". As suggested by the tool, it is assumed that the implementation of the project activity increases the SOC content of the land from the pre-project level to the level that is equal to the steady-state SOC content under native vegetation. The increase in SOC content in the project scenario occurs at a constant rate over a 20-year period starting from the planting year. The project meets the applicability conditions of this tool:

- For baseline cropland management practices in Tropical, montane, short-term or reserved cropland with no or very little tillage and no or few inputs.
- For baseline rangeland management practices in Tropical, montane, land is degraded to very degraded without inputs.
- And the project activity meets the following conditions: organic matter remains on site and is not removed, soil disturbance is in accordance with appropriate conservation practices, very limited to site preparation and will not be repeated within 20 years.

Estimation in selected carbon pools is performed for all project strata.

The project manager provided conversion factors, formulas and calculations in spreadsheet format to ensure that all formulas were accessible for review. The project manager also provided a step-by-step description of the calculations to ensure that the audit team understood the approach and could confirm its consistency with the methodologies. Where applicable, references for analysis methods or default values were verified with the appropriate source.

### **LEAKAGE**

As described in PD/1/, the project has not caused any change in activities that occurred prior to project implementation. Taking this into account, the leakage emission attributable to the displacement of agricultural activities in the Project Area is considered insignificant and is therefore measured as zero.

The auditor concludes that the leakage was appropriately considered and is justified and meets the requirements of the BCR standard.

### **Quantification of GHG Emission Reductions and Removals**

Based on information and estimation tools and files/15/. All data, conversion factors, formulas and calculations were provided by the project proponent in spreadsheet format to ensure that all calculations were accessible for review and detailed in PD/1/ (Table 28). The auditor considers that all assumptions, sources and data are indicated in PD/1/ and all relevant project information was fully confirmed and verified. Consequently, it can be concluded that the methodology was applied following all requirements, equations and methodological procedures. Also, AENOR was able to confirm that the sources used are correctly cited and properly interpreted in PD/1/ and spreadsheets/15/.

AENOR was able to determine that the equations, sources, assumptions, parameters and statistical procedures comply with the methodological and regulatory requirements. Additionally, AENOR evaluated the total calculations to assess the accuracy of the results for baseline emissions, project emissions, leakage and emission removals.

The calculation procedure employed by the project proponent for the ex-ante quantification of GHG reductions as a consequence of project implementation during the GHG emission reduction quantification period and its result is summarized below.

After applying the BCR0001 methodology formulas, the GHG emission removals from the establishment of the Cacao and Cashew crops as a result of the project activities were quantified ex ante at **109,292 tCO<sub>2</sub>e** for the 20-year GHG emission reduction quantification period.

**Table 6. Ex ante estimates for GHG removals in Cacao and Cashew crops.**

Year	GHG removals in the baseline scenario (tCO <sub>2</sub> e)	GHG removals in the scenario with project in CACAO (tCO <sub>2</sub> e)	GHG removals in Cashew project scenario (tCO <sub>2</sub> e)	Leakage	Net GHG removals (tCO <sub>2</sub> e)	Net annual removals (tCO <sub>2</sub> e/año)
2017	0,00	519	367	0,00	886	886
2018	0,00	4.333	707	0,00	5.041	4.155
2019	0,00	8.625	1.135	0,00	9.760	4.719
2020	0,00	12.726	1.786	0,00	14.512	4.752
2021	0,00	16.867	2.550	0,00	19.417	4.905
2022	0,00	21.643	3.461	0,00	25.104	5.687
2023	0,00	27.447	4.527	0,00	31.974	6.870
2024	0,00	32.858	5.752	0,00	38.610	6.636
2025	0,00	37.978	7.142	0,00	45.120	6.510
2026	0,00	42.822	8.696	0,00	51.518	6.398
2027	0,00	47.376	10.418	0,00	57.794	6.276
2028	0,00	51.653	12.312	0,00	63.964	6.170
2029	0,00	55.640	14.374	0,00	70.014	6.050
2030	0,00	59.349	16.610	0,00	75.959	5.945
2031	0,00	62.770	19.016	0,00	81.786	5.827
2032	0,00	65.913	21.598	0,00	87.511	5.725
2033	0,00	68.767	24.352	0,00	93.119	5.608
2034	0,00	71.342	27.279	0,00	98.621	5.502
2035	0,00	73.628	30.381	0,00	104.008	5.387
2036	0,00	75.638	33.654	0,00	109.292	5.284

### 3.11.3.4 Monitoring plan

Section 12 of the PD/1/, establishes the monitoring plan established for the CultivO2 - P 1 Climate Change Mitigation Project in terms of Project boundaries, Project activities, Crop management and biomass growth and Project removals, including the definition of indicators for monitoring, reporting and verification in the project action window. Monitoring is carried out in compliance with what is described in the validated monitoring plan. The monitoring plan describes the methodology used by the project manager to track and quantify GHG emission reductions or removals attributable to project activities.

The monitoring plan correctly presents the activities corresponding to the lines of action defined together with the property owners, and indicators and supports for monitoring these activities were presented, as well as the periodicity of measurement and the related actors.

All the activities to be implemented by the project were recorded and the relevant indicators are followed up to verify that the objectives of the activities have been met, to verify changes in forest areas and changes in carbon stocks in the selected reservoirs and to verify removals, GHG emissions in the baseline and project scenario and project leakage.

## PROJECT BOUNDARIES MONITORING PLAN

Regarding Project boundaries, the total areas of the project with respect to the management plan for the Cacao and Cashew crops will be developed at each periodic verification, following a Geographic Information System (GIS); and monitoring of disturbance events, as stipulated in the item Spatial and Temporal Boundaries of the Project Description Document. For the evaluation of the implementation of the monitoring plan, the GIS records have been analyzed and contrasted with the information reported by the project owners.

AENOR, after reviewing the periodicity and the activities described, considers that this monitoring responds to the periodic evaluation of the project areas, whether due to crop management or non-anthropogenic impacts. This monitoring is adequate to determine eligible areas through GIS during the life of the project.

## MONITORING PLAN FOR PROJECT ACTIVITIES

In accordance with the design of the project activities, a monitoring plan was established/25/, with measurable time periods for the following activities: Apply training and accompaniment processes through training cycles to strengthen silvicultural practices (installation, establishment, growth and development, harvest and post-harvest) and the characterization and implementation of silvicultural practices and sustainability to prevent the expansion of the agricultural frontier.

During the project visit, it was possible to verify with the owners of the properties the training and strengthening meetings that took place during the project monitoring period.

AENOR has verified the activities corresponding to the defined lines of action, the indicators and support for monitoring these activities, as well as the frequency of measurement and the related stakeholders.

## CROP MANAGEMENT AND BIOMASS GROWTH MONITORING PLAN

This monitoring plan establishes the criteria for setting up the plots to monitor the biomass and stratification of the planted plots. The indicator is tons of accumulated biomass per stratum, the unit of measurement is Ton/year and the monitoring frequency will be every four (4) years.

After the documentary review and the on-site audit process, by the audit team, AENOR considers that the information expressed in relation to this monitoring plan is credible, correct and that the project meets its proposed goals.

## REMOVAL MONITORING PLAN

The monitoring of project emissions is performed periodically according to the monitoring reporting periods, updating the activity data and emission factors, based on direct field measurements and use of equations reported to obtain values with low uncertainty and that comply with the requirements of the standard and the methodology, in this sense are monitored:

### - Monitoring quantification of net removals

The measurement of individuals will consist of recording dasometric variables for each Cashew tree within the 17.84 m<sup>2</sup> radius; in this way, location data will be recorded with respect to the central point (azimuth and horizontal distance), trunk diameter at 30 cm (d30), trunk height, total height and canopy cover/14/.

The measurement of dasometric variables and the use of allometric equations for the estimation of carbon stocks in planted plots will be carried out. The unit of measurement is net removals in the monitoring period (Ton CO<sub>2</sub>eq) and the monitoring frequency will be every four (4) years.

To calculate the change in carbon content in Cacao, for the first monitoring period, secondary data will be used (Leiva & Ramírez, 2021)/41/ taking into account the age and life zone of the planted lots. Thereafter, estimates will be made from the survey of plots and by using allometric models, such as the one proposed by Andrade et. al (2008)/37/.

The formulas used by the project comply with the BCR001 methodology and were checked by AENOR in the Excel calculation.

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
------------------------------------	---

The formulas for quantification in the monitoring plan are as follows:

Species	Model	Variable	Source
<i>Theobroma cacao</i>	$BA = 10^{(-1.625+2.63 \cdot \log(d_{30}))}$	<b>BA</b> = Biomass above ground (kg/tree) <b>D<sub>30</sub></b> = Diameter of trunk at 30 cm height (cm)	Andrade et. al., 2008
Relationship between Aboveground biomass and Belowground biomass	$BRG = e^{(-1.085+0.9256 \cdot \ln(BA))}$	<b>BRG</b> = Coarse root biomass (t/ha) <b>BA</b> = Aboveground biomass (t/ha)	Cairns et al., 1997
<i>Anacardium occidentale</i>	$LN(BA) = -3.777 + 3.158LN(D_{30})$	<b>BA</b> = Aboveground biomass (kg). <b>D<sub>30</sub></b> = Trunk diameter at 30 cm (cm).	Fundación Cataruben (locally developed model)

Source: Table 29 of the PD

The monitoring plans presented in the PD comply with the requirements established in the BCR standard and the BCR methodology used to calculate project removals. The procedures outlined for monitoring project activities and GHG emission reductions in the project area were verified. It was also verified how the monitoring plan is sufficient to perform the collection of all the necessary data to meet the applicability conditions of the methodology used; that they give sufficient information on carbon stock changes in the selected reservoirs; and sufficient information to estimate project emissions and leakage.

The monitoring plan correctly presented the activities corresponding to the lines of action defined together with the owners of the properties, and indicators and supports were presented for monitoring these activities, as well as the periodicity of measurement and the related actors.

All the activities to be implemented by the project were recorded and the relevant indicators will be followed up to verify that the objectives for the implementation of the activities have been met, to verify the changes in surface areas and changes in carbon stocks in the selected reservoirs, and to verify the project's emissions and leakage.

### 3.11.4. REDD+ PROJECT

#### 3.11.4.1 Land eligibility

According to the methodology, the eligible areas for an emission reduction project due to REDD+ activities are the areas covered by forests at least ten years before the start of the project.

AENOR verified that the areas in the geographical boundaries of the project correspond to the forest category at the beginning of the project activities and ten years before the project start date and confirmed through the Geodatabase that the project boundaries are correctly determined.

AENOR checked the forest and non-forest maps reported by the Forest and Carbon Monitoring System (SMBByC) for the years 2005 - 2016, these maps categorize the national territory into three

classes, forest, non-forest and no information, the latter correspond to areas that due to cloud cover or shadows effects could not be classified. The reason for using national data is to manage uncertainty, since the product is of national origin, it is not necessary to apply levels of precision.

These maps were processed with the support of geographic information system software, through the comparative analysis between them we looked for the areas that conserve the forest class during the reference period, these correspond to eligible areas.

Of the 15,644.5 ha of the project area, 1,411.72 ha (9%) were eligible native forest as shown in Table 37 of the PD.

AENOR verified that the Project boundaries are correctly determined and comply with the eligibility requirements mentioned.

### 3.11.4.2 Reference scenario for REDD+ actions

The reference region was selected based on the guidelines set forth in the AFOLU Sector Methodological Document - BCR0002 V3.1. section 8.2 reference region for baseline estimation.

The agroecological distribution of the areas corresponds to areas suitable for the cultivation of Cacao and Cashew, so the protection of forests to prevent the expansion of the agricultural frontier and timber consumption is an important component seen from the REDD+ project. The geographical area for the REDD+ component is the Andina and Orinoquía regions, which are suitable for this type of project.

However, the grouped project does not consider the expansion of the project areas in the future REDD+ activity.

To be consistent with the national reference level (NREF) submitted by Colombia to the UNFCCC in 2019, the Andina and Orinoquia biomes were selected, excluding the areas defined in Annex 2 of the NREF ", adjustment for national circumstances" these correspond to:

- Overlap corresponding to other REDD+ forestry projects
- National Natural Park Areas
- Indigenous Reserves

For the delimitation of the reference region for the Andes Biome, a document called Andes drivers was generated where the main deforestation drivers and the location in the Hydrobiome, Orobiome and Nechí-San Lucas Zonobiome Biomes are related to the biomes/19/.

For the Orinoquia biome, the main deforestation drivers were identified to delimit the reference area/19/.

The project owner included in the PDD, specifically in numeral 13.10.2 "reference region", a table that articulates in detail the compliance with the guidelines outlined in section 8.2 of BCR 0002. The following is a summary of how each criterion is complied with:

- Reference Region vs. Project Area: the Andes reference region covers 86.0% of the project area, while the Orinoquia region covers 57.0%.
- Accessibility of Deforestation Agents: The project areas and the reference region have a similar road network, which facilitates access by deforestation agents.
- Agent Interest: Land tenure conditions are comparable in both areas, making them prone to deforestation actions.
- Land Tenure and Right of Use: Both project and reference regions have similar land tenure characteristics, centered on private properties.

- Exclusion of Restricted Areas: Areas of difficult access have been excluded, according to IDEAM criteria and other relevant regulations.<sup>123</sup>

De este modo se establecieron las regiones de referencia, la extensión es de 28.065 hectáreas para la región Andina y 468.569 hectáreas para la región de la Orinoquía. El periodo histórico de deforestación y degradación: la estimación de la degradación y deforestación por el método de promedio histórico en la región de referencia y el área de fugas, se realizó para el periodo 2005 - 2016, esto teniendo en cuenta la información de cobertura boscosa disponible en bases de datos nacionales.

The audit team reviewed the methodology proposed in the PD to define the boundaries of the reference area and validated it with the data from the GDB of the REDD+/21/22/23/ activity provided by the project developer, verified that the reference scenario is correctly determined and complies with the guidelines of the BCR002 methodology used for the project.

#### 3.11.4.3 Identification of agents and drivers of deforestation

Section 13. 5 of the PD/1/ presents the steps for the identification of agents and drivers of deforestation, for its identification was made from the Information System for Rural Agricultural Planning SIPRA<sup>4</sup>, where support information is available for agricultural planning, these are characterized to determine what is the transforming effect on the territory, therefore it was the base input for the determination of the mobilization of agents at the same time the Validation was performed through an analysis of transformation of cover, where the land uses were associated with the previously identified agents.

#### 3.11.4.4 Description of REDD+ activities

Based on the analysis of the agents and causes of deforestation and degradation, the project holder establishes the main activities for their management and control in the project areas. Six (6) REDD+ activities are presented, which are classified into two groups: four (4) activities are focused on implementing prevention and mitigation measures to reduce deforestation and degradation of natural forests, while the other two (2) activities seek to implement fauna and flora monitoring and conservation measures.

The project holder has ensured adherence to the requirements stipulated in section 11 of BCR002, focusing primarily on satisfying the conditions set forth in items b, e, f, and g of the methodology. Project activities are formulated based on the work carried out with private property owners and the analysis of the causes and agents of degradation and deforestation in the project's area of influence. These activities seek to reduce emissions due to deforestation and forest degradation by addressing the direct or underlying causes identified.

Similarly, this has been achieved through relevant adjustments and updates to the monitoring plan, which now reflects a more precise articulation with the demands of the standard. Leaving traceability between activities and direct or underlying causes.

<sup>1</sup> <https://runap.parquesnacionales.gov.co/cifras>

<sup>2</sup> <https://sipra.upra.gov.co/nacional>

<sup>3</sup> Tool for determining contributions to the Sustainable Development Goals (SDGs) of Greenhouse Gas (GHG) projects. v 1. July 13, 2023.

<sup>4</sup> Guidelines for the selection of equations, parameters and data for calculating GHG removals from forestry activities. Version 1.1, September 17, 2020.

AENOR was able to verify the Agents of deforestation and degradation matrix/19/ and the REDD+ Activities Monitoring Plan/17/, which shows a relationship between the activities and the causes of deforestation and degradation in the project area.

### 3.11.4.5 Consideration of carbon reservoirs and emission factors

In the following table are the carbon pools used to account for carbon stocks in the Cultivo2 - P1 Climate Change Mitigation Project, in line with Methodology BCR0002 Quantification of GHG Emission Reductions and Removals REDD+ Projects. Version 3.1, September 15, 2022.

Compartment	Reservoir	Justification of choice
Live biomass	Aboveground biomass Arboreal vegetation	The change in carbon content in this reservoir is significant.
	Belowground biomass	The change in carbon content in this pool is significant.
Soils	Soil organic carbon	The change in carbon content in this pool is significant.

Dead organic matter (deadwood debris and litter) was excluded from the project, since its total value is not representative in carbon stocks.

#### Deforestation emission factors

Emission factors for deforestation were estimated according to the biomass content and SOC established for the Andes and Orinoquia biomes in the most recent NREF document, Numeral 7.4.3 C. Emission estimation.

Biome	BA (t/ha)	BS (t/ha)	BT (t/ha)	COS (t/ha)
Andes	154	35	189	125
Orinoquia	86	21	107	65

Fuente: MinAmbiente y IDEAM, 2019.

#### Aboveground biomass conversion to carbon and CO2 equivalents

According to IPCC (2006) and IDEAM (NREFF Colombia) 0.47 is used as the carbon fraction of dry matter.

To convert the amount of carbon (stored or emitted) by forest ecosystems, the IPCC (2003 - 2006) recommends using the factor of  $44/12 = 3.67$ . This factor results from dividing the atomic weight of a carbon dioxide molecule by the specific weight of carbon). In other words, the amount of tons of carbon stored in forests is multiplied by 3.67.

Total biomass (BT) is estimated from the sum of Aboveground biomass (BA) and Belowground biomass (BS). The carbon content of total biomass (CBF) is the product of the BT and the carbon fraction of dry matter (FC). The estimation of CBF<sub>eq</sub> is calculated according to the equation:

$$CBF_{eq} = BT \times FC \times 44/12$$

Where:

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
------------------------------------	---

$CBFeq$  = Carbon dioxide equivalent contained in total biomass; tCO<sub>2</sub>e

ha<sup>-1</sup>

$BT$  = Total biomass; t ha<sup>-1</sup>

$FC$  = Carbon fraction of dry matter (0,47)

The total carbon emission factor is estimated from the sum of the equivalent carbon dioxide contained in the total biomass and soil carbon pools. The values applied to the project are as follows.

Biome	CBTeq (tCO <sub>2</sub> e/ha)	COSeq (tCO <sub>2</sub> e/ha)	CTeq (tCO <sub>2</sub> e/ha)
Andes	325,71	22,92	348,63
Orinoquia	184,40	11,92	196,31

**Fuente:** Fundación Cataruben, 2022.

AENOR verified the use of updated data and official sources through the documentation submitted. The adjustment of the baseline with the Proposed Reference Level of Forest Emissions from Deforestation in Colombia for REDD+ Payment for Results under the UNFCCC in 2019 was also verified. The application of the most updated NREF over the geographical area of the project was verified, both in the PD, as well as in its annexes for calculating GHG emission reductions. Therefore, the uncertainty of the information for the calculation of the baseline is subject to the information generated by the IDEAM, due to its applied methodology that consists of processing information from the national inventory of forest plots, the consequent validations and statistical analysis, in order to ensure methodological rigor and consistency.

AENOR considers that the methodological rigor and consistency regarding the national GHG inventory and the national reference level, as well as the inventory through permanent plots, are covered by the source of information used by the project developer for the calculation of the baseline, the most updated and from official sources, documented in the Biomass Data Annex.

### 3.11.4.6 Estimation of ex ante reductions and removals

The validation and verification team performed an intensive review of all input data, parameters, formulas, calculations, conversions, resulting uncertainties and output data to ensure consistency with the criteria set forth in Section 13 of the PD/1/ and the calculation methodology employed.

The project manager provided conversion factors, formulas and calculations in spreadsheet format/20/ to ensure that all formulas were accessible for review. The project manager also provided a step-by-step description of the calculations to ensure that the audit team understood the approach and could confirm consistency with the methodologies. Where applicable, references for analysis methods or default values were verified with the appropriate source.

The following table summarizes the data and parameters used by the project proponent to calculate the ex-ante GHG emission reductions over the GHG emission reduction quantification period and which have been evaluated by AENOR:

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
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Data/Parameter available for validation	Value	Purpose of the data/parameter	Evaluation procedure
Forest area of reference region in 2005	Andes 39.475 ha  Orinoquía 546.591 ha	Estimated change in area covered by forest in the project area in the without-project scenario	<ul style="list-style-type: none"> <li>Value consistent with GIS database/19/.</li> <li>Correctly entered in the spreadsheet/20/.</li> </ul>
Forest area of reference region in 2017	Andes 28.065 ha  Orinoquía 468.569 ha	Estimated change in forest cover in the project area in the no-project scenario	<ul style="list-style-type: none"> <li>Value consistent with GIS database /19/.</li> <li>Correctly entered in spreadsheet/20/.</li> </ul>
CSBaño (ha) + %CN the reference region between 2010 and 2017.	Andes 1.037,27 ha  Orinoquía 7.092,91 ha	Annual historical deforestation in the reference region	<ul style="list-style-type: none"> <li>Calculation of Change in area covered by forest in baseline/19/.</li> <li>Correctly entered in spreadsheet/20/.</li> </ul>
Project area (forest) 2017.	Andes 44,84 ha  Orinoquía 1.366,88 ha	Estimated emissions in the baseline scenario.	<ul style="list-style-type: none"> <li>Value consistent with GIS database/19/.</li> <li>Correctly entered in spreadsheet/20/.</li> </ul>
Projected annual deforested area in the scenario with REDD+ project.	Valores múltiples	Estimated emissions in the baseline scenario.	<ul style="list-style-type: none"> <li>Calculation of the reproduced value/20/.</li> </ul>
Total biomass in the project area:	Andina 325,71 t/ha  Orinoquía 284,40 t/ha	Emission reduction estimate	<ul style="list-style-type: none"> <li>Proposed Reference level of Forest Emissions from Deforestation in Colombia for REDD+ Payment for Results under UNFCCC 2019.</li> <li>Correctly entered in the spreadsheet/20/.</li> </ul>
Soil carbon content	Andina 22,92 t/ha  Orinoquía 11,92 t/ha	Emission reduction estimate	<ul style="list-style-type: none"> <li>Proposed Reference level of Forest Emissions from Deforestation in Colombia for REDD+ Payment for REDD+ Results under the UNFCCC 2019.</li> <li>Correctly entered in spreadsheet/20/.</li> </ul>
Carbon fraction of dry matter (FC).	0.47	Estimated biomass carbon content	<ul style="list-style-type: none"> <li>NREFF Colombia and BCR002 methodology.</li> <li>Correctly entered in spreadsheet/20/.</li> </ul>

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project CultivoO2 P1
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Data/Parameter available for validation	Value	Purpose of the data/parameter	Evaluation procedure
Percentage increase in emissions in the leakage area due to the implementation of REDD+ activities, %Ef.	10%	Estimated emission reductions from avoided deforestation and degradation.	<ul style="list-style-type: none"> <li>The use of a default value of 10% is accepted in the BCR002 methodology.</li> <li>Correctly entered in the spreadsheet/20/.</li> </ul>

All values in the table above can be contrasted with the Deforestation and Degradation/20/ spreadsheet. In the calculations of emissions from deforestation, the emission factors for the Andina and Orinoquia Biomes established in the NREF submitted by Colombia to the UNFCCC in 2019 are included, this value was taken for carbon. Based on the data analysis and application of the aforementioned equation in the BCR002 methodology, the emission factor for the forest in the project area (Total Emission Factor) was determined. Likewise, the adjustment for national circumstances established by the NREF was included in the projection of the Baseline scenario.

The calculation procedure used by the project proponent for the ex-ante quantification of GHG reductions as a consequence of project implementation during the GHG emission reduction quantification period and its result is summarized below.

- The estimate of annual historical deforestation in the reference region.

The estimation of annual historical deforestation in the reference region is estimated by applying the equation:

$$CSB_{año} = (1/(t_2 - t_1)) \times (A_1 - A_2)$$

Where:

$CSB_{año}$  = Annual change in area covered by forest in the reference region; ha

$t_2$  = Final year of the reference period; año

$t_1$  = Initial year of the reference period; año

$A_1$  = Area of forest in the reference region, at the initial time; ha

$A_2$  = Area of forest in the reference region, at the end time; ha

- Projected annual deforestation in the REDD+ project scenario

The annual projected deforestation in the scenario with REDD+ project is calculated with the equation:

$$CSB_{proy,año} = CSB_{lb,año} \times (1 - \%DD)$$

Where:

$CSB_{proy,año}$  = Annual change in area covered by forest in the with-project scenario; ha

$CSB_{lb,año}$  = Annual change in the area covered by forest in the without-project scenario; ha

$\%DD$  = Projected decrease in deforestation due to implementation of REDD+ activities.

- Annual historical deforestation in the leakage area

Annual historical deforestation in the leakage area is calculated with the equation:

$$CSB_{f,año} = (1/(t_2 - t_1)) \times (A_{1,f} - A_{2,f})$$

Where:

$CSB_{f,año}$  = Annual change in area covered by forest in the leakage area, in the without-project scenario; ha

$t_2$  = Final year of the reference period; year.

$t_1$  = Initial year of the reference period; yr.

$A_{1,f}$  = Forested area of the leakage area at the starting time of the reference period; ha

$A_{2,f}$  = Forested area of the leakage area at the end of the reference period; ha

- Projected annual deforestation in the leakage area in the scenario with project

Projected annual deforestation in the leakage area in the scenario with REDD+ project is estimated with the equation:

$$CSB_{REDD+proy,f,año} = CSB_{f,lb} \times (1 + \%E_f)$$

Where:

$CSB_{REDD+proy,f,año}$  = Annual change in area covered by forest in the leakage area, in the scenario with project; ha

$CSB_{f,lb}$  = Annual change in the area covered by forest in the leakage area, in the without-project scenario; ha

$\%E_f$  = Percentage increase in emissions in the leakage area due to the implementation of REDD+ activities.

According to BCR002 methodology the value of 10% has been used by default.

- Projected annual deforestation in the REDD+ project scenario

The annual projected deforestation in the scenario with REDD+ project is estimated with the equation:

$$CSB_{REDD+proy,año} = CSB_{año} \times (1 - \%DD)$$

Where:

$CSB_{REDD+proy,año}$  = Change in the area covered by forest in the project area in the with-project scenario; ha

$CSB_{año}$  = Change in area covered by forest in the project area in the without-project scenario; ha

$\%DD$  = Projected decrease in deforestation due to implementation of REDD+ activities.

- Projected annual deforestation in the leakage area in the scenario with project

Projected annual deforestation in the leakage area in the scenario with REDD+ project is estimated with the equation:

$$CSB_{f,proy,año} = CSB_{lb,año} \times (1 + \%E_f)$$

Where:

$CSB_{f,proy,año}$  = Annual change in area covered by forest in the leakage area, in the scenario with project; ha

$CSB_{f,lb}$  = Annual change in area covered by forest in the area of leakage, in the baseline scenario; ha

$\%E_f$  = Percentage increase in emissions in the leakage area due to the implementation of REDD+ activities.

According to BCR002 methodology the value of 10% has been used by default.

The avoided deforestation emissions reduction in the scenario with project is estimated according to the equation:

$$RE_{DEF,REDD+proy} = (t_2 - t_1) \times (EA_{DEF,lb,año} - EA_{DEF,REDD+proy,año} - EA_{DEF,f,año})$$

Where:

$RE_{DEF,REDD+proy}$  = Emission reductions from avoided deforestation in the with-project scenario; tCO2e

$t_2$  = Final year of the reference period; year.

$t_1$  = Initial year of the reference period; year.

$EA_{DEF,lb,año}$  = Annual emission from deforestation in the baseline scenario; tCO2e

$EA_{DEF,REDD+proy,año}$  = Annual emission of deforestation in the project area; tCO2e

$EA_{DEF,f,año}$  = Annual emission from deforestation in the leakage area; tCO2e

After applying the above formulas from the BCR002 methodology, the GHG emission reductions as a result of the project's REDD+ activities were quantified ex ante at **38,189 tCO2e** for the GHG emission reduction quantification period (2017-2037).

**Table 7. Ex ante estimates for GHG emission reductions from REDD+.**

YEAR	$EA_{DEF,lb,año}$ (tCO2e)	$EA_{DEF,REDD+proy,año}$ (tCO2e)	$EA_{DEF,f,año}$ (tCO2e)	REDD total año
2017	5.130	258	3.342	382
2018	5.395	271	3.342	1.781
2019	5.323	268	3.342	1.713
2020	5.503	277	3.342	1.884
2021	5.642	284	3.342	2.017
2022	5.637	284	3.342	2.011
2023	5.631	283	3.342	2.006
2024	5.626	283	3.342	2.001
2025	5.620	283	3.342	1.995
2026	5.614	282	3.342	1.990
2027	5.609	282	3.342	1.984
2028	5.603	282	3.342	1.979
2029	5.597	282	3.342	1.974
2030	5.592	281	3.342	1.968
2031	5.586	281	3.342	1.963
2032	5.581	281	3.342	1.958
2033	5.575	280	3.342	1.952

YEAR	EADEF,lb,año (tCO2e)	EADEF,REDD+proy,año (tCO2e)	EADEF,f,año (tCO2e)	REDD total año
2034	5.569	280	3.342	1.947
2035	5.564	280	3.342	1.942
2036	5.558	280	3.342	1.937
2037	5.553	279	3.342	805
<b>Total</b>				<b>38.189</b>

AENOR reproduced the calculations and obtained the same results, and therefore considers that they are clearly and correctly represented in the spreadsheets provided. The formulas used comply with the monitoring plan and as reflected in the PD/1/, and the methodology and default values used are appropriate. Therefore, the net amount of GHG emission reductions estimated ex ante is considered accurate and realistic.

AENOR considers the calculation of the reference region to be correct and consistent with the NREF and therefore in compliance with the Biocarbon Registry standard. Emission estimation values from the NREF "Proposed reference level of forest emissions from deforestation in Colombia for payment for REDD+ results under the UNFCCC" submitted by Colombia in December 2019 were used, also included in the Methodological Document Sector AFOLU - BCR0002 Quantification of Emission Reductions and GHG Removals REDD+ Projects. Version 3.1, September 15, 2022.

AENOR checked the parameters available in the validation and references to documents where they are used or explained, by reviewing, reproducing and cross-checking the evidence provided by the project proponent. AENOR verified that the values of these parameters are appropriate and used correctly in the equations, according to the spreadsheets in the Excel/22/ workbook.

AENOR verified that the list of parameters used in the ex ante estimation is complete and consistent.

AENOR found no inconsistencies between the information in the PD, the technical annexes and the spreadsheets.

After a thorough and exhaustive review and reproduction of the calculations, AENOR considers that the parameters available in the validation are correct, credible and consistent and that the estimates are consistent with the emission factors and activity data from the national inventories. The quantification complies with that expressed in the PD, the calculations provided and the methodology applied. Therefore, AENOR considers that the ex-ante estimation results shown in the PD are credible, consistent and accurate.

### 3.11.4.7 Plan de monitoreo

Section 14 of the PD establishes the monitoring plan/17/ established for the CultivoO2 - P1 Climate Change Mitigation Project in terms of Project boundaries, REDD+ activities, REDD+ Safeguards and Emissions, including the definition of indicators for monitoring, reporting and verification in the project action window.

### PROJECT BOUNDARIES MONITORING PLAN

Regarding the Project boundaries, the total areas of the project, the eligible areas and the leakage belt will be developed in each periodic verification, following a Geographic Information System (GIS); the above as stipulated in the item Spatial and Temporal Boundaries of the Project Description Document.

## MONITORING PLAN FOR REDD+ ACTIVITIES

REDD+ activities are planned for 2017 to 2037 and include Implement prevention and mitigation measures to reduce deforestation and degradation of natural forests and Implement wildlife monitoring and conservation measures and action plans with deadlines in line with the progress of the project. The PD establishes the REDD+ activities with the proposed indicators, type, target and timeframe for compliance, as well as the unit of measurement.

AENOR has verified the activities corresponding to the defined lines of action, the indicators and supports for monitoring these activities, as well as the periodicity of measurement and the related actors.

After review of the evidence provided, consultations with stakeholders and communications with the project proponent, AENOR confirms that the monitoring arrangements described in the monitoring plan are feasible within the project design and that the means considered for implementation, including data management and quality control and assurance control processes are sufficient.

## REDD+ SAFEGUARDS MONITORING PLAN

In point 14.3. of the PD, the Climate Change Mitigation Project CultivoO2 - P1 has designed a series of activities with their respective indicators to monitor compliance with the REDD+ social and environmental Safeguards that have been defined for Colombia. The monitoring plan with the projection of the indicators to be measured for each Safeguards is presented.

There are 7 safeguards/29/ in the context of the Climate Change Mitigation Project CultivoO2 - P1 and in the Project Description the progress of the goals in the period 2017-2037 is evaluated according to the safeguards monitoring plan established in consistency with the REDD+ Safeguards tool. v 1.1. January 26, 2023.

According to correspondence with national legislation, international agreements and national policies. The project takes as its normative framework the national and international legislation that covers REDD+ projects in Colombia.

The project will share public information related to the project in a transparent manner; AENOR was able to check the web page where the legality of the project and the Foundation in general is evidenced. On the other hand, the project is being monitored annually on the RENARE platform, once it is back in operation or the mechanism established by the government for this purpose.

AENOR verified that a strategy will be created to disseminate information about the project through the website, social networks and WhatsApp communication, to disclose the socio-environmental benefits for the owners and their properties.

The full and effective participation of the landowners was verified through interview, in addition to evidence of the socialization process. In order to comply with the reversal risk management and leakage safeguards, the project establishes measures for displacement of emissions discounted by 20% (where 10% remains in reserve and 10% in the standard), according to BCR guidelines.

Therefore, after the documentary review and the on-site audit process, by the audit team, AENOR considers that the information expressed in relation to the safeguards is credible and correct and that the project complies with the safeguards for REDD+ submitted by Colombia to the UNFCCC.

## PROJECT EMISSIONS MONITORING PLAN

Project emissions monitoring is performed periodically according to the monitoring reporting periods, updating activity data and emission factors for both deforestation and degradation, following the parameters and guidelines of the BCR002 methodology in its most updated version, for the following parameters:

### **Annual deforestation in the project area.**

$$CSB_{f,año} = 1(t_2 - t_1) \times (AREDD_{+proy,1} - AREDD_{+proy,2})$$

**Annual deforestation in the leakage area.**

$$CSB_{f,año} = 1(t_2 - t_1) \times (A_{f,1} - A_{f,2})$$

**Annual degradation in the project area.**

$$DFPREDD_{+proy,año} = 1(t_2 - t_1) \times x (Anúcleo - Anúcleo-parche)$$

$$DFSREDD_{+proy,año} = 1(t_2 - t_1) \times x (Aperforado - Aperforado-parche)$$

**Annual degradation in the leakage area.**

$$DFP_{f,año} = 1(t_2 - t_1) \times x (Anúcleo,f - Anúcleo-parche,f)$$

$$DFS_{f,año} = 1(t_2 - t_1) \times x (Aperforado,f - Aperforado-parche,f)$$

The formulas used by the project comply with the BCR002 methodology and were checked by AENOR in the Excel calculation/20/.

The monitoring plans submitted/17/ comply with the requirements established in the BCR standard and the BCR002 methodology used for calculating REDD+ projects. The procedures outlined for monitoring project activities, Safeguards compliance and GHG emission reductions in the project area were verified. It was also verified how the monitoring plan is sufficient to effect the collection of all data needed to meet the applicability conditions of the BCR methodology used; that they give sufficient information on carbon stock changes in the selected pools; and sufficient information to estimate project emissions and leakage.

The audit team compared all parameters and indicators presented in the monitoring plan with the requirements of the methodology. For monitoring changes in carbon stocks, the requirements and list of parameters according to the BCR002 methodology were followed.

All activities to be implemented by the project were recorded and relevant indicators will be tracked to verify that activity implementation targets have been met, to verify changes in forest areas and changes in carbon stocks in selected reservoirs, and to verify project emissions and leakage.

### 3.12. Double accounting

March 09, 2023, the verification of the AR and REDD+ project area was carried out, together with the leakage belt to identify possible overlaps, consulting databases such as RENARE.

Section 3.2, "Double counting" of the PD, details the exhaustive review of the different standards such as BioCarbon Registry, Colcx, Cercarbon and Verra. The main purpose of this review was to contrast and collate the shapefiles of the different projects registered in the area of influence of the CultivO<sub>2</sub> project, with the explicit purpose of confirming the absence of overlaps and ensuring the non-existence of double counting. In the analysis, 56 projects located in the same departments where the CultivO<sub>2</sub> project has operations were identified. However, it is essential to highlight that, after matching and comparative analysis, no overlap or crossover with the areas designated for CultivO<sub>2</sub> was identified.

Additionally, the project developer provided geographic documentary evidence, which justifies the non-overlap with natural parks or other indigenous reserves or with other REDD+ projects.

The CultivO2 project is registered under the typology of "Low Carbon Development Projects and Programs (LCDP)". The initial feasibility phase is currently being reported. The TP expects the Ministry of the Environment to complete the maintenance of the application so that as soon as the project becomes feasible, the relevant project information can be reported.

Fundacion Cataruben requested the Ministry of Environment and Sustainable Development information on the estimated date for the platform to be operational again, however, the official response is that the date has not yet been determined (evidence is presented as 01/06/2023 RENARE platform information support.pdf ).

In addition to the above, AENOR found no evidence of double counting or that the project has or will participate in another GHG program or that the GHG emission reductions or removals generated by the project are included in an emissions trading program or any other mechanism that includes GHG emissions trading.

In consideration of compliance with the principles of relevance and conservatism of the BCR v3.0 standard and with numeral c of section 7 of the tool to avoid double counting vi, it is important to highlight that although the project includes AR and REDD activities, these do not generate a double benefit, that a ton of CO2e is not being used more than once to obtain remuneration. To reach this conclusion, AENOR took into account the following elements justified by the project:

1. The boundaries of the AR and REDD activities are totally differentiated, avoiding overlaps in the accounting areas of each activity.
2. The eligibility analysis for forest/non-forest areas totally excludes the areas of Cacao and Cashew crops, for which secondary and primary sources appropriate to the resolution of the study were used.
3. The activities to avoid emissions from deforestation and degradation do not include the planting of Cacao and Cashew crops, or other types of tree cover, making them two completely independent activities.
4. The use of the land where the forests are established is protective and as such, agricultural activities are not allowed in these areas. Cashew and Cacao crops are in accordance with the uses for this type of crops respecting protective zones.

In addition to these elements, the project owner includes in its analysis of the activities other elements that are in line with the differentiation of activities and independent reporting, which the audit team considers sufficient to conclude that the project does not generate double counting.

### 3.13. Legal requirements and land tenure management

AENOR considers that the project proponent has procedures in place to periodically evaluate compliance with legal requirements. Consistent with the above, the project complies with each of the regulations identified and presents, in the project document, a summary of how it complies with current regulations.

Regulation	Project compliance
Política de Bosques.	<ol style="list-style-type: none"> <li>1. Biodiversity conservation and sustainable forest management.</li> <li>2. Forest governance.</li> <li>3. Compatibility with national policies, programs, strategies and plans, as well as international agreements on climate change and combating deforestation.</li> </ol>
Política Nacional de Biodiversidad	
Plan Nacional de Prevención y Control de Incendios Forestales y Restauración de Áreas Afectadas.	
Política Nacional de Educación Ambiental.	AENOR can confirm that the project activities are in line with the stipulations of these national policies and regulations.

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
------------------------------------	---

Regulation	Project compliance
Plan de Acción Nacional de la Lucha Contra la Desertificación y la Sequía en Colombia.	<p>AENOR can confirm that the project activities are in line with the stipulations of these national policies and regulations to promote the conservation of ecosystems and prevention of deforestation.</p>
Política Nacional para la Gestión Integral del Recurso Hídrico.	
Estrategia Nacional de Prevención, Control, Seguimiento y Vigilancia Forestal.	
Política Nacional de Producción y Consumo Sostenible	
Estrategia Institucional para la Articulación de Políticas y Acciones en Materia de Cambio Climático en Colombia.	
Política Nacional para la Gestión Integral de la Biodiversidad y sus Servicios Ecosistémicos.	
Política para la Gestión Sostenible del Suelo.	
Política Nacional para la Gestión Integral de Residuos Sólidos.	
Política Nacional de Cambio Climático.	
Estrategia para la Implementación de los Objetivos de Desarrollo Sostenible (ODS) en Colombia.	
Política de Crecimiento Verde.	
Política Nacional para el Control de la Deforestación y la Gestión Sostenible de los Bosques.	
Política Pública para Reducir las Condiciones de Riesgo de Desastres y Adaptarse a los Fenómenos de Variabilidad Climática.	
Política Ambiental para la Gestión Integral de Residuos o Desechos Peligrosos.	
Política para Impulsar la Competitividad Agropecuaria.	
Ley 811 de 2003.	<ol style="list-style-type: none"> <li>Promote sustainable environmental management practices and strengthen the crop production line.</li> <li>Encourage producers of Cacao and Cashew crops to access economic benefits through the sale of carbon certificates.</li> <li>Promote the development of Cacao and Cashew crops in harmony with regulations and the environment.</li> </ol>
Plan Nacional de Extensión Agropecuaria 2020-2023 del Vichada.	
Buenas Prácticas Agrícolas (BPA).	
Decreto 1843 de 1991.	

AENOR did not detect any non-compliance with laws and regulations during the in situ audit or document review.

The AR component follows the methodological guidelines of the BCR0001 methodology for the inclusion of tree crop establishment activities such as Cacao and Cashew, using equations, parameters and duly supported values. On the other hand, the project includes the values of the NREF emissions estimate "Proposed reference level of forest emissions from deforestation in Colombia for payment for REDD+ results under the UNFCCC" presented by Colombia in December 2019. Also present in the Methodological Document BCR0002.

The project is being developed in 69 private rural properties located in the departments of Arauca, Caldas, Casanare, Córdoba, Huila, Meta, and Vichada, whose ownership is correctly demonstrated in accordance with the requirements of the BCR standard and the methodologies used.

The owners, who presented their citizenship card, public deed, INCODER (Colombian Institute of Rural Development) resolution, certificate of tradition and freedom, cadastral certificate and the title study of each property with its enrolled contract with the climate change mitigation project Cultivo2 - P1, prove to be the legitimate owners of the properties, in addition to the ownership of the rights over the carbon/5/6/. It was demonstrated that none of the properties have processes of claims for boundary limits, seizure processes, inheritance processes, easement processes, expropriations, or any other figure that alters the stability of the project, the good management of the forests or the commercialization of the certificates. In addition, it has been verified in the land restitution unit that none of the properties enrolled in the Cultivo2 - P1 project are in the restitution process according to Law 1448 of 2011 on victims and land restitution.

The preliminary identification of overlaps with areas belonging to ethnic communities is evidenced in Safeguards 3 where the rights of indigenous peoples and members of local communities are related and mapped. Cartographic information generated by the National Land Agency is used as input, specifically Legalized and Intended Indigenous Reserves, and the conclusion is that there are no overlaps with the aforementioned communities.

During the period December 2022 and May 2023, all the adjustments requested by the Ministry in the framework of the "Determination of the appropriateness and timeliness of Prior Consultation for Projects, Works or Activities" Support Radicados were provided, however, in June 2023 Fundacion Cataruben was notified about a TRASLAPE presented with indigenous communities called BAYONEROS and el VÍGÍA located in the department of Arauca, with two properties (SAN ISIDRO and el DIAMANTE), the Climate Change Mitigation Project Cultivo2 - P1 in consideration of this overlapping withdrew the properties, adjusted the area and presented this information to the Ministry of the Interior by means of an appeal/29/.

The audit team checked the administrative acts provided by the project proponent 100% and contrasted the information with the Geodatabase, confirming that the sources of information used for its construction were the official ones. Therefore, it considers that the information provided corroborates the legal quality of the land tenure and land use rights and the area in the Project boundaries.

### 3.14. Information management

The project proponent has a database that includes all relevant information for the proper monitoring of the implementation of its activities and the GHG emission reductions attributable to them. The audit team reviewed the documentation corresponding to this database, and considers it to be exhaustive, coherent, complete and in accordance with the requirements established in the BCR standard.

AENOR was able to verify with the in situ interviews that key personnel are fully trained and that the quality control and quality assurance procedures to identify, review and manage the inconsistencies found are strict and adequately implemented.

Interviews with staff and inspection of data and results demonstrated that the project managers possess all the competencies required to accurately monitor and report GHG emission reductions. The data presented to the audit team was clear and consistent and the processing steps could be traced back to the relevant sections of the monitoring methodology and plan with transparency..

### 3.15. Risk management - Permanence monitoring plan

For the project, physical, economic and social risks were evaluated, identifying a medium risk level in the 3 physical, economic and social categories, which means a greater incidence in the mitigation measures to be implemented and their accompaniment for compliance in each of the verifications managed by the project.

Therefore, a classification was made according to the possible risks that may occur throughout the project, with a measurable indicator and finally with a risk classification in 3 lines high, medium or low, while determining one or more mitigation actions.

AENOR was able to verify through the documentary review and the in situ visit that the risk is analyzed in a detailed and consistent manner, and did not detect during the review process any non-compliance with regulations or inconsistencies reported in the project.

#### Permanence Monitoring Plan

In accordance with the latest BioCarbon Registry Standard v3.1, July 25, 2023, March 7, 2023 and the Permanence and risk management tool. v 1. Deck 7, 2023, a 20% reserve (where 10% remains in reserve and 10% in the standard) is deducted and maintained on the total GHG reductions quantified for each verified period. This reserve is made in order to guarantee that if events occur that require the replenishment of credits placed in the market, they will be covered by this deposit.

Project permanence monitoring will be developed at each periodic verification previously stipulated by the project owner, under the indicators and procedures established in point 6.2 of the PD.

### 3.16. Environmental and socioeconomic aspects

Colombian legislation does not require the development of an environmental impact study for the establishment of Cacao and Cashew plantations, nor for REDD-type activities. However, as part of Fundacion Cataruben's environmental performance and in compliance with the requirements of the BioCarbon Standard and the "Avoidance of Harm" tool and environmental and social safeguards. V 1. March 07, 2023, an analysis of associated environmental and social impacts was performed.

The project's impact matrix did not identify negative impacts of great magnitude, and many of these correspond to potential impacts that could result from the project as implementation progresses. Most of the impacts identified were positive.

Among the positive impacts identified, the most important are those that generate benefits on environmental qualities such as water and biodiversity and improve socioeconomic conditions in the project's area of influence.

During the site visit and according to the documentary review, AENOR was able to conclude that the implementation and development of the project does not cause any severe potential environmental impact, the project owner provides support to highlight the benefits related to the recovery of cover by means of crops and forest conservation associated with the activities of the project implementation compared to the initial conditions.

### 3.17. Consultation with stakeholders

Fundacion Cataruben has received responses from the notified entities through different communication channels, such as email, phone calls and WhatsApp, with the purpose of coordinating the socialization of the initiative. Meetings have been planned with the various units

and support has been provided both by telephone and WhatsApp to address specific questions related to the project.

Additionally, personalized communication was conducted for each entity present in the project area through emails and interviews. During virtual and/or face-to-face meetings with stakeholders, relevant information was shared and potential areas for the project were assessed.

The project owner submitted the supports of the emails, meetings and presentations sent, however, no complaints or claims were received from the stakeholders. The audit team had access to the supports and was able to verify that the feedback to this information did not generate comments that would lead to their inclusion or changes in the design.

Finally, the Climate Change Mitigation Project CultivoO2 - P1, was submitted for public comment on the BCR registration page for one month (08/11/22 to 08/12/2022), at this date no comments were received.

### 3.18. Sustainable Development Goals

As part of the CultivoO2 climate change mitigation initiative, BioCarbon Registry<sup>5</sup>/24's TOOL ODS tool was used to identify the Sustainable Development Goals (SDGs) applicable to the project.

Climate change mitigation project CultivoO2 - P1 contributes to the fulfillment of the Sustainable Development Goals, which are adopted by the Colombian state as a member of the United Nations, and as part of the 2030 Agenda. From the adoption of the BCR tool for the AFOLU sector type REDD+ and GHG Removal Activities, it was identified that the initiative must show impact with the goals targets: 6 (Water and Sanitation: Ensure availability and sustainable management of water and sanitation for all), 12 (Responsible Production and Consumption: Ensure sustainable consumption and production patterns) and 13 (Climate Action: Take urgent action to combat climate change and its impacts) and SDG 15 (Life of terrestrial ecosystems: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss).

#### SDG Monitoring Plan

The Monitoring Plan establishes the indicators and activities for each of the identified SDGs and the frequency of follow-up and reporting. The following activities were identified within the plan and how they are reported:

- (6) Clean water and sanitation: (6.4.1) Change in water use efficiency over time.
  - i) Design a plan for saving and efficient use of water based on the diagnosis of water use that can improve the conditions of use and management of water in the Property.
- (13): Climate action: (13.2.2) Total greenhouse gas emissions per year.
  - i) Measured CO2E reduction/removal during project implementation.
- (15) Life of terrestrial ecosystems: (15.1.1) Forest area as a proportion of total area.
  - i) Conduct forest cover analysis.

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<sup>5</sup> Brown, S., M. Hall, K. Andrasko, F. Ruiz, W. Marzoli, G. Guerrero, O. Masera, A. Dushku, B. DeJong, and J. Cornell, 2007. Baselines for land-use change in the tropics: application to avoided deforestation projects. Mitigation and Adaptation Strategies for Climate Change, 12:1001-1026

(15.1.2) Proportion of sites important for terrestrial and freshwater biodiversity that are part of protected areas (project area), broken down by ecosystem type.

i) Identify and analyze areas important for terrestrial biodiversity.

AENOR was able to verify through the documentary review and the in situ visit that the identified SDGs correspond with the BCR tool and are reported according to the selected project activities (AR and REDD+), additionally, the sub-activities, indicators and monitoring frequency are in accordance with the requirements of the BCR standard.

## 4. VERIFICATION FINDINGS

### 4.1. Monitoring of quantification of GHG reductions.

Verification corresponds to the following monitoring periods with respect to quantification of GHG reductions:

- June 9, 2017 to December 31, 2021 for GHG Removal Activities.
- September 29, 2017 to December 31, 2021 for REDD+ forest conservation.

#### 4.1.1. Quantification of GHG reductions and removals

##### 4.1.1.1. Quantification of GHG reductions and removals ex post

The validation and verification team performed a review of all input data, parameters, formulas, calculations, conversions, resulting uncertainties and output data to ensure consistency with the criteria established in the calculation methodology used and the MR/2/.

The verification team reproduced the calculations to ensure the accuracy of the results. Where applicable, references for analysis methods or default values were verified with the appropriate source.

The data and parameters used by the project proponent to calculate the ex post GHG emissions reduction for the monitoring period and which have been evaluated by AENOR, as results of the project implementation took into account the following criteria.

#### Project boundaries

In consideration of the Project boundaries defined in the PD/1/, the project monitored the areas for each species and planting year. Through documentary review, the GIS/21/ information was reviewed with the eligible project areas planted within the monitoring period and the applicable coordinate system to track these in the field visit. Plantings in the project areas comprised plantings between 2017 and 2021, comprising a total area of 1,700.21 ha. However, considering the growth of the trees and their measurement within the inventory for the calculations, the areas planted between 2017 and 2019 for Cacao and 2017 and 2018 for Cashew are included. Thus, the total area for monitoring calculations is 1,378.45 ha.

Strata ID	Area (ha)	t1	t2
C_2017	745,98	2017	2021
C_2018	214,37	2018	
C_2019	15,67	2019	
M_2017	374,34	2017	2023
M_2018	28,09	2018	
<b>TOTAL</b>	<b>1.378,45</b>		

The removal considerations are associated with Cacao and Cashew crops which are eligible in light of the methodology BCR0001 Quantification of GHG Emission Reduction v.3.0, April 13, 2022, due to their tree conditions and agroforestry designs in the particular case of Cacao.

The data and parameters used are detailed in the MR/2/ and the AR/14/15/16/ spreadsheets associated with the quantification of the project.

### **Stratification**

In accordance with section 13 of the BCR0001 methodology, 12 strata were defined, including identification of each crop, the year of planting and the life zone. In the review of the information, the audit team concluded that this stratification is adequate for the project areas.

### **Quantification of emissions in the Baseline**

In consideration of the A/R Methodology "Estimation of carbon stocks and carbon stock change of trees and shrubs in A/R CDM project activities Version 4", the project in consideration of section 5.12 of the tool, determined that the baseline is equal to zero.

### **Quantification of project emissions**

Project emissions were determined by the changes in carbon content in the project pools minus project emissions.

$$\Delta C_{ACTUALt} = \Delta C_t - GEI_{E,t}$$

Where:

$\Delta C_{ACTUALt}$  Net present removals of GHGs by sinks, in year  $t$ ; tCO<sub>2</sub>e

$\Delta C_t$  Changes in carbon stocks in the project, occurring in the selected pools, in year  $t$ ; tCO<sub>2</sub>e

$\Delta GEI_{E,t}$  Increase in non-CO<sub>2</sub> GHG emissions within the project boundaries as a result of project activities in year  $t$ ; calculated with the tool "Estimation of non-CO<sub>2</sub> GHG emissions resulting from biomass combustion attributable to project activity; tCO<sub>2</sub>e

Since woody biomass burning is not considered as part of the crop preparation and establishment process, the net removals in the project scenario are equivalent to the changes in carbon stocks occurring in the carbon pools.

### **Estimating changes in tree biomass**

Aboveground biomass monitoring for Cashew and Cacao crops was carried out by means of temporary plots following the guidelines of the methodological document BCR0001 and the procedure of FC- GOP-18FC-GOP-18 Methodology Survey of Plots in Forest Crops and Plantations.

The selection of the number and location of sampling points is made according to the inventory design for biomass growth monitoring, based on the variation of biomass content in reference data and the area of each stratum defined for each crop. Thus, for the Cacao crop, 31 sampling points were defined for the 2017, 2018 and 2019 strata while for Cashew 26 sampling points were established for lots with 2017 and 2018 planting years.

Once the number of sampling points for each stratum was defined, they were randomly placed in eligible areas of the project for each type of crop. The sampling points for the Cacao crop were established in the departments of Córdoba, Caldas, Casanare and Arauca while for Cashew they were distributed in the department of Vichada.

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
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During the on-site visit, AENOR visited the selected plots (10 plots) according to the sampling plan and verified the location in each stratum, the size of the plots, the number of trees and the measurement protocols by re-measuring the plots.

- Cacao

Aboveground biomass in Cacao was calculated using the equation of Andrade et. al (2008). The equation used for the calculation of Aboveground biomass was the following:

$$BA=10^{((-1,625+2,63*\log(d30))}$$

Where BA corresponds to the estimated Aboveground biomass (kg/tree); D30 relates to the diameter of the trunk measured at 30 cm from the ground (cm).

AENOR, based on the measurement of the plots and the equation reported values to estimate the biomass are applicable to the project areas.

With this information, Aboveground biomass values were calculated for the 2018 and 2017 strata; based on the equation of Andrade et. al (2008). With these data, the following total biomass values were determined in the Cacao strata for the monitoring period.

**Table 8.** Biomass per hectare for the strata in Cacao crops during the monitoring period.

Strata ID	Area	t1	t2	Total biomass (t/ha)
C_2017	745,98	2.017	2021	10.08
C_2018	214,37	2.018		5.15
C_2019	15,67	2.019		1.88

**Source::** MR - Fundación Cataruben, 2023.

- Marañón

To determine the biomass content in the project activity models, equations were implemented to estimate Aboveground biomass constructed by the project with non-destructive sampling from measurements of the volume and density of the species. The equation used to calculate Aboveground biomass was as follows:

$$LN(BA) = -3,777 + 3,158(LN(D30)) - 0,118(LN(D30))^2$$

Where BA, corresponds to the estimated Aboveground biomass (kg/tree); D30 relates the trunk diameter measured at 30 cm from the ground (cm).

To convert the volume and biomass equations to ton CO2, the following parameters and values were used:

- The biomass carbon fraction content for all species is 0.47 (tn C/t.d.m). This value was adjusted to a more conservative one and reported in AR-Tool 14 Version 04.2/6//7/.
- Dj: wood density was estimated by laboratory measurement at 0.46 g/cm<sup>3</sup>. This factor is used to convert volume to biomass (tons).
- Rj: The root-stem ratio used to calculate Belowground biomass content was determined based on the equation of Cairns et al., 1997, which is conservatively used to determine Belowground biomass from Aboveground biomass.

Aboveground biomass monitoring for Cashew crops was carried out by means of temporary plots following the guidelines of the methodological document BCR0001 and the procedure of FC-GOP-18FC-GOP-18 Methodology Plot Survey in Forest Crops and Plantations/14/.

The selection of the number and location of sampling points is done according to FC-GPP-23. Inventory design procedure for biomass growth monitoring/14/, taking into account the variation of

biomass content in reference data and the area of each stratum defined for the Cashew crop. So, a total of 26 sampling points were defined for plots with planting years 2017 and 2018, which were randomly located in eligible areas of the project. The spatial distribution of the plots was carried out in the Cantarrana, El Manantial, La Prosperidad and Mataguaro properties in the municipality of Puerto Carreño, department of Vichada.

Aboveground biomass values for the 2018 and 2017 strata were calculated with this information; based on the allometric model adapted to the study area. With these data, the following total biomass values were determined in the Cashew strata for the monitoring period.

**Table 9.** Biomass per hectare for the strata in Cashew crops during the monitoring period.

ID Estrato	Area	t1	t2	Biomasa total (t/ha)
M_2017	374,34	2.017	2023	2.88
M_2018	28,09	2.018		0,70

Source:: MR - Fundación Cataruben, 2023.

### Uncertainty management

The uncertainty for the calculation of removals took into account the considerations of the document, "Guidelines for the selection of equations, parameters and data for calculating GHG removals from forestry activities. Version 1.1, September 17, 2020."<sup>6</sup>.

The project uses regional Aboveground and Belowground biomass data for Cacao crops, and own data for the estimation of Aboveground biomass and factor (R:S) for Belowground biomass in Cashew. Thus, adjustments for discount factors will be taken into account in the monitoring of GHG removals for the project.

The uncertainty calculation yielded values of 10.89% for biomass values in Cacao and 13.73% in Cashew. In this sense, under the guidelines of the BCR 0001 methodology, section 14.2, a 25% discount was applied for uncertainty management on the biomass average.

**Table 10.** Calculation of the uncertainty value.

Especie	Incertidumbre	bTREE	tVAL	Estrato	Wi	S2	n
Cacao	10,89%	10,663	1,701	2017	0,96	9,54	19
				2018	0,03	7,74	10
				2019	0,01	0,60	2
Marañón	13,73%	3,009	1,711	2017	0,93	1,42	21
				2018	0,07	0,01	5

Source:: Fundación Cataruben, 2023.

AENOR was able to verify that these factors were used correctly and in accordance with the rules of the standard and the uncertainty factor was applied appropriately according to the results.

### Carbon content in deadwood and litter (the quantification of sinks was included by updating the methodology AR-ACM0003 version 0.20).

<sup>6</sup>

<https://www.minambiente.gov.co/wp-content/uploads/2022/03/EICDGB-Bosques-Territorios-Vida.pdf>

For the estimation of this component, the methodological tool AR-TOOL12 "Estimation of carbon stocks and change in carbon stocks and litter in A/R CDM project activities"/6/ was used. The calculation of Deadwood is defined using the tool Equation 9.

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

The following parameters are used to calculate deadwood carbon stocks:

- The conservative default factor expressing deadwood carbon stocks as a percentage of tree biomass carbon stocks (DF<sub>dw</sub>) was estimated between 1% and 6%, according to the values recommended by AR-Tool 12 for the biomes that are part of the project.

Litter is estimated conservatively with predetermined factors to estimate the carbon content of this pool. The calculation of Deadwood is defined using AR-Tool 12 Equation 15

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

The following parameters are used to calculate litter carbon stocks:

- The default conservative factor expressing litter carbon stocks as a percentage of tree biomass carbon stocks (DF<sub>li</sub>) was estimated between 1% and 6%, according to the values recommended by AR-Tool 12 for the biomes that are part of the project.

Soil organic carbon stocks (sink quantification was included when updating the methodology AR-ACM0003 version 0.2.0).

$$\Delta SOC_{AL,t} = \frac{44}{12} \times \sum_i A_i \times dSOC_{t,i} \times 1year$$

The following parameters are used to calculate the carbon stocks in the SOC:

- The default conservative factor expressing soil carbon stocks for this the value of the project soils was taken according to their classification with dSOC<sub>t,i</sub> values varying from 0.66 to 0.176 depending for a 20 year period.

The project manager provided a step-by-step description of the calculations to ensure that the audit team understood the approach and could confirm its consistency with the methodologies. Where applicable, references for analysis methods or default values were verified with the appropriate source/14/15/.

## Leakage

According to the PD/1/, no leakage due to displacement of activities resulting from the execution of the project is considered.

Therefore, Lk= 0

Based on the information reviewed by the audit team, it is possible to say that there would be no leakage due to displacement of grazing since the carrying capacity of the surrounding land can support the livestock in the area.

AENOR, confirms that there are no leakages and that the assumptions considered by the TP for the monitoring period, and the provisions of the applied methodology and applicable tools are met.

### Quantification of GHG Emission Reductions and Removals

Based on information and estimation tools and files/15/. All data, conversion factors, formulas and calculations were provided by the project proponent in spreadsheet format to ensure that all calculations were accessible for review and detailed in MR/2/. The auditor considers that all assumptions, sources and data are indicated to be in accordance with the PD/1/ monitoring plan and all relevant project information was fully confirmed and verified. Consequently, it can be concluded that the methodology was applied following all requirements, equations and methodological procedures. Also, AENOR was able to confirm that the sources used are correctly cited and properly interpreted in PD/1/ and spreadsheets/15/.

AENOR was able to determine that the equations, sources, assumptions, parameters and statistical procedures comply with the methodological and regulatory requirements. Additionally, AENOR evaluated the total calculations to assess the accuracy of the results for baseline emissions, project emissions, leakage and emission removals.

After applying the BCR0001 methodology formulas, the GHG emissions removals from the establishment of the Cacao and Cashew crops as a result of the project activities were quantified ex post at **24,940 tCO2e** for the quantification period of Cacao (2017-2021) and Cashew (2017 - 2023).

**Table 11. Ex post estimates for GHG removals in Cacao and Cashew crops**

<i>Estratum</i>	<i>Area (ha)</i>	<i>GHG removals in Total Biomass (tCO2e)</i>	<i>GHG removals in Litter and Deadwood (tCO2e)</i>	<i>GHG removals in SOC (tCO2e)</i>	<i>Total project removals (tCO2e)</i>	<i>Total project removals with discount factor adjustment (tCO2e)</i>
C_2017	745,98	16.645,71	669,88	2.594,60	19.910,00	19.078,00
C_2018	214,37	2.471,65	98,07	451,29	3.021,00	2.897,00
C_2019	15,67	67,14	2,98	5,17	75,00	72,00
M_2017	374,34	2.441,08	95,78	412,19	2.949,00	2.827,00
M_2018	28,09	45,54	1,74	21,24	69,00	66,00
<b>Total</b>					<b>26.024</b>	<b>24.940</b>

AENOR reproduced the calculations and obtained the same results, and therefore considers that they are clearly and correctly represented in the spreadsheets provided. The formulas used comply with the monitoring plan and what is reflected in the PD/1/ and RM/2/, and the methodology and default values used are appropriate. Therefore, the net amount of GHG emission reductions estimated ex ante is considered accurate and realistic.

AENOR checked the parameters available in the validation and the references to documents where they are used or explained, by reviewing, reproducing and cross-checking the evidence provided by the project proponent. AENOR verified that the values of these parameters are appropriate and used correctly in the equations.

AENOR verified that the list of parameters to be monitored is complete and consistent with the information in the monitoring plan.

AENOR found no inconsistencies between the information in the PD/1/, the technical annexes and the spreadsheets/14/.

After a thorough and exhaustive review and reproduction of the calculations, AENOR considers that the parameters monitored and available in the validation are correct, credible and consistent and that the estimates present consistency with the emission factors and activity data from the national inventories. The monitoring information complies with the PD/1/, the calculations provided and the methodology applied.

#### 4.1.1.2. Monitoring the execution of project activities.

Compliance with the activities for this first verification period has had a positive balance. The indicators proposed for the implementation of the project activities have been met in most cases with progress in the established goals:

For the first activity: establishment of crops and restoration areas. It is reported for the period 2017 - 2021 a total of 1700.21 eligible ha AR verified with satellite images, both for Cashew and Cacao, giving compliance with 68% of the total goal which is 2,500 ha.

For the activity of applying training and accompaniment processes through training cycles that strengthen silvicultural practices (installation, establishment, growth and development, harvesting and post-harvest), the accumulated number of training cycles carried out each month is reported. A total of twelve (12) training sessions are reported, which make up six (6) training cycles. This represents 30% of the total goal proposed for this activity.

For the activity of characterization and implementation of silvicultural practices, the supports of 61 properties of the AR component are presented. The activities reported include: activity execution form, crop characterization, integrated management of Cacao PFS, monitoring of crop management, and social, economic, environmental and productive characterization. Thus, the total progress of this activity is 25%.

For the activity monitoring the effects of disturbance events. During the 2017 - 2021 period, it is reported that disturbances were detected on the areas enrolled in the project.

AENOR was able to check the progress of compliance with the goals with the documents presented in the Annex Monitoring of project activities.

On the other hand, it is shown that the activities with the landowners have been carried out gradually according to the duration of the enrolled contract, which ensure the conservation of the cultivated areas. The indicators provided comply with the periodicity and goals established in the monitoring plan.

The main activities that support compliance with the emissions mitigation activities for the monitoring period in the project properties were demonstrated with various supporting documents.

### 4.1.2. REDD+ PROJECT

#### 4.1.2.1. Quantification of ex post removals and reductions

The validation and verification team performed a review of all input data, parameters, formulas, calculations, conversions, resulting uncertainties and output data to ensure consistency with the criteria established in the calculation methodology used and the PD.

The verification team reproduced the calculations to ensure the accuracy of the results. Where applicable, references for analysis methods or default values were verified with the appropriate source.

The following table summarizes the data and parameters used by the project proponent to calculate the ex post GHG emission reductions for the monitoring period and which have been evaluated by AENOR:

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project CultivoO2 P1
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Data/Parameter available for verification	Value	Purpose of the data/parameter	Evaluation procedure
Area deforested annually under the project scenario in the CSBproy monitoring period.	Andes 44,84 ha  Orinoquía 1.366,88 ha	Estimated emissions in the project scenario.	<ul style="list-style-type: none"> <li>• Values consistent with GIS database/21/.</li> <li>• Correctly entered in the spreadsheet/20/.</li> </ul>
Area deforested in the leakage belt under the project scenario in the monitoring period.	Andes 113 ha  Orinoquía 885 ha	Estimated emissions in the project scenario.	<ul style="list-style-type: none"> <li>• Values consistent with GIS database/21/.</li> <li>• Correctly entered in spreadsheet/20/.</li> </ul>
Total biomass in the project area:	Andina 325,71 t/ha  Orinoquía 284,40 t/ha	Emission reduction estimate	<ul style="list-style-type: none"> <li>• Proposed Reference Level of Forest Emissions from Deforestation in Colombia for REDD+ Payment for Results under UNFCCC 2019. Bajo la CMNUCC de 2019.</li> <li>• Correctly entered in spreadsheet/20/.</li> </ul>
Soil carbon content.	Andina 22,92 t/ha  Orinoquía 11,92 t/ha	Emission reduction estimate	<ul style="list-style-type: none"> <li>• Proposed Reference level of Forest Emissions from Deforestation in Colombia for REDD+ Payment for REDD+ Results under the UNFCCC 2019.</li> <li>• Correctly entered in spreadsheet/20/.</li> </ul>
Carbon fraction of dry matter (FC)	0.47	Estimated biomass carbon content	<ul style="list-style-type: none"> <li>• NREFF Colombia and BCR002 methodology.</li> <li>• Correctly entered in spreadsheet/20/.</li> </ul>

The calculation procedure used by the project proponent for ex post quantification of GHG reductions as a result of project implementation during the monitoring period and its outcome is summarized below.

- Baseline emissions  
Validated baseline values are taken.
- Emissions from deforestation in the monitoring period.
- Emissions from degradation in the monitoring period.

The emission reduction units calculated by avoiding deforestation and degradation in the project area also include the discount of leakage emitted by the project identified in the ex - post assessment in the period September 29, 2017 to December 31, 2021. To the calculation of emissions due to ex ante leakage, 10% was added with conservative estimation according to the BCR methodology.

Thus, for the calculation of ex post avoided emissions in the period, the baseline projection in the project area was considered, minus project emissions (due to deforestation and degradation in the project area) minus leakage (due to deforestation and degradation in the leakage belt) in the monitoring period.

The monitoring of project emissions was carried out in accordance with the methodology established in numeral 14.5. The calculations can be found in the project's calculations annex, corresponding to the GDB/21/ and the calculation sheet/20/.

GHG emission reductions as a result of the project's REDD+ activities were quantified ex post at **22,165 tCO<sub>2</sub>e** for the first deforestation monitoring period (2017-2021).

**Table 12. Ex post estimates of emission reductions from deforestation in the project areas.**

YEAR	REDEF,REDD+proy (tCO <sub>2</sub> e)
2.017	1.225
2.018	5.164
2.019	5.092
2.020	5.272
2.021	5.412
<b>Total</b>	<b>22.165,0</b>

AENOR reproduced the calculations and obtained the same results, and therefore considers that they are clearly and correctly represented in the spreadsheets provided. The formulas used comply with the monitoring plan and as reflected in the MR/2/, and the methodology and default values used are appropriate. Therefore, the net amount of GHG emission reductions estimated ex ante is considered accurate and realistic.

AENOR checked the parameters available in the validation and references to documents where they are used or explained, by reviewing, reproducing and cross-checking the evidence provided by the project proponent. AENOR verified that the values of these parameters are appropriate and used correctly in the equations.

AENOR verified that the list of parameters to be monitored is complete and consistent with the information in the monitoring plan.

AENOR found no inconsistencies between the information in the PD, the technical annexes and the spreadsheets.

After a thorough and exhaustive review and reproduction of the calculations, AENOR considers that the parameters monitored and available in the validation are correct, credible and consistent and that the estimates present consistency with the emission factors and activity data from the national inventories. The monitoring information complies with the PD/1/, the calculations provided and the methodology applied.

#### 4.1.2.2. Monitoring implementation of REDD+ activities

Compliance with REDD+ activities in the first verification period has had a positive balance.

During the verification visit, it was possible to verify the different actions proposed to promote the removal of emissions from deforestation and degradation, including compliance with conservation and mitigation activities. The monitoring plan establishes two general activities as REDD+ activities, which include the following sub-activities.

##### **Implement prevention and mitigation measures to reduce deforestation and natural forest degradation.**

The sub-activity, apply training and accompaniment processes through trainings that strengthen land planning, biodiversity conservation and sustainable forest management, reports the

accumulated number of training cycles carried out in each month for the monitoring period 2017 - 2021. In total thirteen (13) trainings are reported which make up five (5) training cycles. Presenting as progress in compliance in the execution of the activity 25%.

The sub-activity, identify and adopt the principles of forest governance for the sustainable management of forests, reports 31 Properties with viable land characterization in the REDD+ component, presenting an advance in compliance in the execution of activities of 20.95%.

Regarding the sub-activity, conduct monitoring of terrestrial hot spots, the results of the permanent monitoring of hot spots with their respective supports for the period 2016 - 2021. Compliance of 25% of the execution of the activity is presented.

And the sub-activity, generate alerts of changes due to deforestation and/or transformation of ecosystems in the project area and its surroundings, presents the reports of the permanent monitoring of cover changes due to deforestation and/or transformation of ecosystems by department, which are part of the basis for the calculations.

#### **Implement fauna and flora monitoring and conservation measures.**

The sub-activity, monitor threatened ecosystems, presents a report on the permanent monitoring of threatened ecosystems by department, showing 20% progress in the implementation of the activity.

And the sub-activity, conduct participatory monitoring of threatened species, presents the analysis of the permanent monitoring of the presence of threatened species in the project area, monitoring maps of threatened species, as well as audiovisual support for participatory monitoring of species, presenting 20% progress in the implementation of the activity.

Section 3.2 of the MR/2/ presents the progress in meeting the proposed goals for this project verification period. AENOR was able to check the progress in meeting the goals with the documents presented in the annexes of the Monitoring of REDD+ activities.

#### **4.1.2.3. REDD+ Safeguards Monitoring**

The monitoring of REDD+ Safeguards reviews the compatibility of project activities with forestry programs and international agreements, the compilation of the different means of communication established to ensure transparency and effectiveness of governance structures, respect for ethnic communities with a presence in the territory, no environmental infractions, adoption of measures to address reversal risk management, as well as follow-up on measures to reduce emissions displacement.

The report on the 7 Safeguards is presented in the MR/2/ with the applicability and analysis of the tool provided below are the monitoring results.

Safeguards	Item	Indicator(s)	Report
Safeguards 1	Compatibility analysis: Documentary analysis listing all actions implemented under the project and relating each action to national forest policies and programs as appropriate.	# of compatibility reports completed	A report was prepared showing the analysis of the compatibility of project activities with (i) international agreements and (ii) national policies, strategies, plans and programs.
Safeguards 2	Forest governance analysis: Analysis that identifies forest governance structures in the territory and	# of management reports completed	Report showing how to ensure recognition of the initiative's forest governance structures.

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
------------------------------------	---

Safeguards	Item	Indicator(s)	Report
	demonstrates compliance with national, regional and local regulations. Special emphasis should be given to the differential approach in the management of information when applicable.		
Safeguards 3	<p><b>Mapping of communities in the territory and prior consultation:</b> the project owner must recognize and respect the rights of the communities present in the territory.</p> <p><b>Working sessions:</b> the project owner must implement working sessions with the communities and other mechanisms that allow the enrolled communities to be enrolled in the project.</p> <p><b>Conservation agreements:</b> The Project holder may propose new forms of sustainable use of the territory.</p>	<p># of socio-environmental characterizations performed</p> <p># of community mapping reports</p> <p># of geographic analyses carried out</p> <p># of contracts executed</p>	Report showing how Fundacion Cataruben signs conservation agreements with ecosystem managers (community members).
Safeguards 4	<p><b>Mechanisms for socialization and dissemination of information:</b> the project owner shall demonstrate with evidence that it has disclosed, socialized and shared the information with the communities in a transparent, clear, complete, inclusive and effective manner through the corresponding means.</p>	# of reports of dissemination and/or socialization of the project information carried out.	Report evidencing the implementation of communication and disclosure mechanisms to ensure full and effective stakeholder participation and (ii) a report evidencing how the comments made by the communities were addressed and how they were resolved.
Safeguards 5	Compatibility of the project with natural forest and biodiversity conservation measures under the voluntary carbon market standard.	<p># of reports of conservation activities implemented</p> <p># of certificates from CAR's specifying that the project has not</p>	- Report showing the implementation of training cycles aimed at project beneficiaries to encourage the conservation of ecosystems and their biodiversity..

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project CultivO2 P1
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Safeguards	Item	Indicator(s)	Report
		<p>incurred in environmental infractions.</p> <p># of reports of satellite analysis of changes in land use.</p>	<p>- Report showing compliance with applicable environmental regulations on the use and exploitation of natural resources.</p> <p>- Report showing that no activities involving the conversion of natural forests to other types of land use have been carried out.</p>
Safeguards 6	The Project owner shall take measures to reduce reversal risk management.	<p># of reports on reversal risk management follow-ups</p> <p># of contracts in which the items related to reversal risk management are evidenced.</p>	Report evidencing: (i) an analysis of the beneficiaries' permanence risk during the project's accreditation period, as well as (ii) an analysis of the reversal risk management faced by the project, or that it may face in the future, and how to mitigate them.
Safeguards 7	Adoption of measures to reduce displacement of emissions.	<p># of reports with identification of leakage and its causes.</p> <p># of response protocols implemented to minimize leakage.</p>	Report evidencing the identification of leakage and its causes, monitoring and actions to minimize them, as well as (ii) a report on the implementation of the protocol to respond to leakage that occurs within the framework of the project.

AENOR was able to check the progress in meeting the targets with the documents presented in the MR/2/ with respect to REDD+ Safeguards.

#### 4.2. Project permanence monitoring

The non-permanence assessment is a tool whose essential objective is to analyze the risk of a project against biophysical and socioeconomic risks, determine the impact on the development of the project, which may be reflected in the number of credits that a project must deposit in the reserve.

MR/2/ presents the evaluation of the Permanence for the Climate Change Mitigation Project CultivO2 - P1, where the indicators and reporting procedures for the project and the respective result are evidenced.

#### 4.3. Monitoring the Sustainable Development Goals (SDGs)

The Project Description for the SDGs was prepared for the monitoring period in RM/2/. The indicators described in the PD monitoring plan were selected for reporting.

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project CultivO2 P1
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SDG	Activity	Result
6 – Clean Water and Sanitation	<p>Activity 1: With respect to the diagnosis of water resource use and management based on the socio-environmental characterization, progress has been reported for 42 properties.</p> <p>Activity 2: Regarding the plan for saving and efficient use of water for the Properties, environmental management sheets have been considered for the protection of water resources and access to water. So far, 5 environmental management sheets have been generated.</p> <p>Activity 3: Activities through training, infographics, and measures per property; the diagnostic needs to be completed for all properties.</p>	The diagnosis and design of water saving and efficient water use plans for the 69 properties belonging to the CultivO2 initiative was carried out. An advance of 15.21% has been made with respect to the overall goal.
13 – Climate Action	Activity 1: Reduce total greenhouse gas emissions per year.	Monitoring of project emissions for the 2017-2021 period, recording an annual average of 230.86 tCO <sub>2</sub> e emitted each year, representing a 95.8% reduction in emissions compared to the annual baseline,
15 - Life of Terrestrial Ecosystems	<p>Activity 1: Increase forest area as a proportion of total area.</p> <p>Activity 2: Increase the proportion of sites important for terrestrial biodiversity.</p>	<p>PSBN indicator, which quantifies the proportion of the area covered by natural forest.</p> <p>PSBN= Result 2021 = 9,71</p> <p>Process for identifying areas of importance for biodiversity conservation on the properties belonging to the CultivO2 initiative. A 25% progress has been made with respect to the global target.</p>

AENOR was able to check the progress made in meeting the targets with the documents presented in the SDG Monitoring Report/2/.

#### 4.4. Project GHG emission reductions and removals

In the fourth chapter of the PD, the results obtained from the first monitoring (2017-2021) for the eligible areas for the Forest ecosystem, in terms of CO<sub>2</sub> emission reductions and compliance with REDD+ activities, are listed. As well as the results of the first monitoring (2017-2021) for removals by Cacao and Cashew crops, in terms of CO<sub>2</sub> emission reductions and removals and compliance with REDD+ and AR activities.

The following table summarizes the reductions of the project for areas of and REDD+ and AR.

**Table 13. Ex post estimates for emission reductions from forest deforestation and removals due to crop establishment in the project areas.**

Year	REDEF,REDD +proy (tCO <sub>2</sub> e)	AR Net removals of GHG (tCO <sub>2</sub> e)	Total
2017	1.225,0	-	1.225,0
2018	5.164,0	-	5.164,0
2019	5.092,0	-	5.092,0
2020	5.272,0	-	5.272,0
2021	5.412,0	24.940,0	30.352,0
<b>Totals</b>	<b>22.165</b>	<b>24.940</b>	<b>47.105</b>

#### 4.4.1. Measurement and data collection

AENOR reviewed the monitoring documentation/2/, in addition to the GIS database/21/ and considered that they are in accordance with the procedures described in the validated monitoring plan and the monitoring plan and checked if there were any differences that could cause an increase in the estimates of GHG emission reductions in the actual monitoring periods.

AENOR has confirmed that there are no significant material discrepancies between the actual monitoring system and the monitoring plan set out in the PD/1/ and the methodologies applied, so there is no overestimation of the requested removals and reductions. In addition, the project proponent effectively monitors the parameters required to determine the project reductions, as required by the monitoring plan and applicable methodology.

The reported parameters, including their source, monitoring frequency and review criteria, as indicated in the PD, were verified as correct. Necessary management system procedures, including responsibility and authority for monitoring activities, have been verified to be consistent with the PD. The knowledge of personnel associated with the project monitoring activities was found to be satisfactory by the audit team.

## 5. CONCLUSION OF VALIDATION AND VERIFICATION

AENOR has validated and verified that the climate change mitigation project CultivO2 - P1 complies with BioCarbon Registry Standard v3.1, July 25, 2023. The project has been implemented in accordance with the Project Description and the national applicable information included.

The validation and verification process was performed based on all BioCarbon Registry requirements. The findings of this report show that the project, as described in the project documentation, is in line with all applicable criteria for validation and verification.

The validation and verification consisted of the following three phases: i) desk review of the project design, monitoring plan and ex ante and ex post estimation of GHG removals and reductions; ii) in situ audit and stakeholder interviews; iii) resolution of outstanding issues and issuance of the final validation and verification report and opinion. During the course of the validation and verification process, clarifying and corrective actions were raised; all have been successfully closed as explained in the validation protocol annexed to this report.

The review of the Project Description documentation and additional documents related to the ex ante estimation and monitoring methodologies; and subsequent background research, follow-up

interviews and review of party comments have provided AENOR with sufficient evidence to validate compliance with the established criteria.

In detail, the validation findings can be summarized as follows:

- The project is in alignment with all the criteria of the BioCarbon Registry Standard v3.1, July 25, 2023.
- The additionality of the project is sufficiently justified in the PD/1/.
- The Monitoring Plan is transparent and adequate.
- The ex-ante analysis of the project's GHG reductions has been carried out in an accurate, transparent and conservative manner, estimated at a total of **147,481** tCO<sub>2</sub>e (AR: 109,292 tCO<sub>2</sub>e and REDD+: 38,189 tCO<sub>2</sub>e) for a GHG emission reduction quantification period of 20 years for the AR activity and 20 years for the REDD+ activity.

AENOR considers that the project manager performs the monitoring and reporting of its GHG mitigation actions in accordance with the principles of the MRV System and the accounting rules established in the BioCarbon Registry standard and that the results of the quantification of emission reductions are verifiable under ISO 14064-3:2019.

AENOR can issue a positive verification opinion for verified GHG emission reductions of 47,105 tCO<sub>2</sub>e (AR: 24,940 tCO<sub>2</sub>e and REDD+: 22,165 tCO<sub>2</sub>e) for the monitoring period (09/06/2017 - 31/12/2021) for removals by Cacao and Cashew crops; and the monitoring period of (09/29/2017 - 31/12/2021) for emission reductions by reduced deforestation and degradation.

AENOR has verified a reasonable level of assurance that these reductions have been achieved.

Bogota, October 30, 2023.



Juan Camilo Serna  
Auditor jefe

## ANEXOS

### Annex 1: Documentary evidence

N.º	Evidence
1	<b>Project Description Document:</b> - Cultivo2_BCR_DdP_V 4.1 .docx
2	<b>Monitoring Report:</b> - Cultivo2_REPORTE_MONITOREO_RM_V 2.1 .docx
3	<b>LEGAL DOCUMENTS FUNDACION CATARUBEN FOUNDATION:</b> - RUT ACTUALIZADO FUNDACION CATARUBEN.pdf - CERTIFICADO DE CAMARA DE COMERCIO 12-2022 - Cédula Representante legal
4	<b>LEGAL DOCUMENTS LUKER AGRICOLA:</b> - SP-P1-00X - CONTRATO CATARUBEN CASALUKER S.A - firmado (1) (2).pdf - RUT LUKER AGRICOLA SAS.pdf - RUT CASALUKER.png - Otrosi Emgesa_CasaLuker_12012021_firm (1).pdf - CAMARA DE COMERCIO 2021 LUKER AGRICOLA.pdf - Autorización proyecto Cataruben dic2021.pdf - Cédula Representante legal
5	<b>LEGAL DOCUMENTS C4D:</b> - USDA700 POS-003 Mod01 Cataruben 2022-04-28 to 2023-04-27-2.pdf
6	<b>Enrolled documents of enrolled owners of ARAUCA – CALDAS – CASANARE – CÓRDOBA – HUILA – META – VICHADA.</b> - <b>LEGAL DOCUMENTS:</b> Contract, Letter of Intent, Land Tenure Support Documents, Title Study, Citizenship Certificate(s), Confidentiality Agreement, Legal and Technical Eligibility Letter, Truth in Information Act, Meeting Minutes and other applicable documents. - <b>TECHNICAL DOCUMENTS:</b> Plan and Map of Eligible Areas.
7	<b>INITIATION OF ACTIVITIES SUPPORTS</b> - FC-GO-FT-019 ACTA DE CONSTITUCIÓN DEL PROYECTO CULTIVO2.pdf - Socialization of the start of implementation of activities: Arauca, Caldas, Huila Santander y Vichada. - Invoice Palmas de Casanare Property: facturas Granja Luker.pdf - Seedling purchase contract:: Mataguaro, Las Corocoras/Cantarra, La Prosperidad, Manantial. - Personal contract: Leidy Katherine Carvajal, Pedro Antonio Cardenas Bejarano, Diana Marcela Morales Pérez.
8	<b>Aenor Offer Cultivo2 Signed.pdf</b>
9	<b>STAKEHOLDER CONSULTATION</b> - BCR Standard Public Consultation: Fundacion Cataruben Mail - Request for information comments on public consultation on cultivO2 and Paramuno initiatives. - Stakeholder consultation database.xls - Socialization of institutions.
10	<b>LEGAL REQUIREMENTS MANAGEMENT PROCEDURE</b> - GJP-14. Gestión Req Legales y Otros V3.docx.pdf
11	<b>FINANCIAL MODEL</b> - MF CULTIVO2 General 2022
12	<b>PERMANENCE RISKS</b>

N.º	Evidence
	- Permanency Risk Monitoring Plan Cultivo2
13	<b>SUSTAINABLE DEVELOPMENT GOALS - SDGS</b> - SDG Monitoring Plan.xlsx
14	<b>PROJECT ACTIVITIES AND CROP MANAGEMENT</b> - AR monitoring plan.xlsx - Inventory design procedure for biomass (AR) growth monitoring.xlsx - GOP-18 Field Methodology Procedure Crop 2.docx (1).pdf - GOP- 23. Inventory design procedure for biomass growth monitoring (AR).docx (1).pdf
15	<b>AR REMOVALS</b> - Cuantificación de remociones - Cultivo2 V6.xlsx - AREAS_LINEA_BASE_FINALS_21JUNIO.xlsx - 1.Cuantificación de remociones – Cultivo2.V3.xlsx
16	<b>ALLOMETRIC CASHEW MODEL</b> - Informe Tecnico Marañon.pdf - Análisis de laboratorio: Reporte LFS-071 Final.pdf - Fase de campo: videos y soportes de las mediciones y toma de muestras.
17	<b>REDD+ - REDD+ ACTIVITIES</b> - Plan de Monitoreo Actividades REDD+ .xlsx
18	<b>REDD+ - REDD+ SAFEGUARDS</b> - 1. Salvaguardas REDD+ .xlsx
19	<b>DEFORESTATION AND DEGRADATION CHAIN OF EVENTS</b> - 1. Agentes de deforestacion y degradación.xlsx
20	<b>REDD+ EMISSIONS</b> - GOF-053.Cálculo de emisiones REDD + Cultivo2 V5.0
21	<b>GEODATABASE_V1.2:</b> - AR_CULTIVO2.gdb - Geodatabase_REDD+
22	<b>SIG PROCEDURES</b> - Emission Reduction Reporting under the REDD EARLY MOVERS -REM.pdf - INSTRUCTIVO INTERPRETACIÓN DE CORINE LAND COVER- ESCALA 1_15.000.pdf - GOP-21. Procedimiento para Determinar la Degradación y Fragmentación en Proyectos REDD+.pdf - FC-GOP-01 Procedimiento para determinar áreas elegibles - Proyectos REDD.docx - DRIVERS ORINOQUIA Descripcion.docx - DRIVERS ANDES Descripcion.docx - CARACTERIZACIÓN DE INSUMOS CARTOGRAFICOS PARA GENERACION DE CORINE LAND COVER _CULTIVO2.docx
23	<b>QUALITY CONTROL SIG</b> - Componente AR Especificación imágenes de alta resolución para confirmar áreas REDD.xlsx - IDENTIFICACION COBERTURAS CAMPO.pdf - AcATaMa: stratified_random_sampling_overra - Cartografia social CULTIVO2 AR_.pdf - SALIDAS GRÁFICAS
24	<b>SDG - MONITORING REPORT</b> - BCR TOOL ODS (CULTIVO2 - Periodo 2017-2021) ACT.xlsx - Annexes ODS15

N.º	Evidence
	<ul style="list-style-type: none"> <li>- Annexes ODS 06</li> <li>2- Annexes ODS 13</li> </ul>
25	<p><b>AR MONITORING</b></p> <ul style="list-style-type: none"> <li>- Reporte monitoreo AR.xlsx</li> <li>- Establishment of crops and monitoring of eligible areas</li> </ul>
26	<p><b>AR-ESTABLISHMENT OF CROPS AND MONITORING OF ELIGIBLE AREAS</b></p> <ul style="list-style-type: none"> <li>- Cronograma ciclo de capacitaciones - Actividades de Remoción - Cultivo2.xlsx – capacitaciones</li> <li>- REPORTE CAPACITACIONES - ACTIVIDADES DE REMOCIÓN - CULTIVO2.docx</li> <li>- Registros de asistencia</li> </ul>
27	<p><b>AR - Characterization and Implementation of Silvicultural Practices</b></p> <ul style="list-style-type: none"> <li>- Plan de manejo - Cacao - V2.pdf</li> <li>- Plan de manejo - Marañón - V2.pdf</li> <li>- Predios componente AR - Cultivo2 P1 y Anexos</li> <li>- CUMPLIMIENTO DIAGNÓSTICO USO DEL AGUA EN SAF.docx</li> </ul>
28	<p><b>AR - EVALUATION OF CROP GROWTH AND QUANTIFICATION OF REMOVALS</b></p> <ul style="list-style-type: none"> <li>- Tamaño Muestreal.xlsx</li> <li>- Remedaciones parcelas.pdf</li> <li>- Datos de campo biomasa Marañón – Junio.xlsx</li> </ul>
29	<p><b>SAFEGUARDS REDD+ COMPLIANCE</b></p> <ul style="list-style-type: none"> <li>- SAFEGUARDS 7 - CULTIVO2</li> <li>- SAFEGUARDS 6 - CULTIVO2</li> <li>- SAFEGUARDS 5 - CULTIVO2</li> <li>- SAFEGUARDS 4 - CULTIVO2</li> <li>- SAFEGUARDS 3 - CULTIVO2</li> <li>- SAFEGUARDS 2 - CULTIVO2</li> <li>- SAFEGUARDS 1 - CULTIVO2</li> </ul>
30	<p><b>TRAINING IN BIODIVERSITY CONSERVATION AND SUSTAINABLE MANAGEMENT</b></p> <ul style="list-style-type: none"> <li>- Attendance records</li> </ul>
31	<p><b>STRENGTHENING GOVERNANCE</b></p> <ul style="list-style-type: none"> <li>- Caracterizaciones socio-ambientales</li> <li>- Predios componente REDD+ - Cultivo2 P1</li> </ul>
32	<p><b>MONITORING HOT SPOTS</b></p> <ul style="list-style-type: none"> <li>- CULTIVO2_ INFORME DE MONITOREO PUNTOS DE CALOR y Anexos 2016 - 2021</li> </ul>
33	<p><b>REPORTS FOREST COVER DUE TO DEFORESTATION, DEGRADATION AND/OR TRANSFORMATION</b></p> <ul style="list-style-type: none"> <li>- 15.1.1. SUPERFICIE FORESTAL COMO PROPORCIÓN DE LA SUPERFICIE TOTAL_CULTIVO2</li> </ul>
34	<p><b>MONITORING OF THREATENED ECOSYSTEMS AND SPECIES</b></p> <ul style="list-style-type: none"> <li>- Threatened Ecosystems Report</li> <li>- Threatened Species Report</li> </ul>
35	<p><b>FUNDACION CATARUBEN DOCUMENTARY PROCEDURE</b></p>
36	<p><b>CATARUBEN FOUNDATION ARCHIVAL POLICY</b></p>
<b>Bibliographic sources</b>	
37	<p>Andrade (2008) Valoración biofísica y financiera de la fijación de carbono por uso del suelo en fincas cacaoteras indígenas de Talamanca, Costa Rica</p>

N.º	Evidence
38	Cabrera et al 2019 Colombian Forest Monitoring System: Assessing Deforestation in an Environmental Complex Country.
39	Cairns (1997) Root_biomass_allocation_in_the_worlds_upland_forest
40	Galindo et al.2014 Protocolo de procesamiento digital de imágenes para la cuantificación de la deforestación en Colombia v2.pdf
41	Ortiz, Riascos y Somarriba (2008) Ecuación de crecimiento encultivos de cacao.

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project CultivO2 P1
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## Annex 2: Findings

### Non-conformities (NCs)

NC ID	<b>01</b>	Date: 08/02/2023
<b>Description of NC</b>		
<p>According to the criteria set by the BCR standard, the Project Holder (TP - According to its acronym in Spanish) must demonstrate ownership rights over the project areas.</p> <p>Given this requirement, the TP needs to ensure that the documentation of the project participants is up-to-date and comprehensive, corresponding to their status: legal entity, natural person with legal tenure, or natural person with recognized tenure.</p> <p>During the documentary review, some missing documentation was identified, such as chamber of commerce records for legal entities, identification cards of representatives, and expired certificates of good standing, among other items.</p>		
<b>Response from project manager</b>		Date: 27/03/2023
<p>To comply with the BCR standard, the land tenure of the territory where the project is being executed has been verified in line with Colombian regulations. However, the landowners have been asked to provide the outstanding documents to affirm carbon ownership. While some of these documents have been submitted, the issuance of others still relies on public entities.</p> <p>It's vital to emphasize that with the documents provided to date, it's feasible to confirm the existence of land ownership, possession, or tenure, and consequently, the co-ownership of the carbon. This aspect is crucial to ensure the legality and success of the project, so it is essential to have all the necessary documents, and this has been carried out accordingly.</p> <p>The data has been incorporated into the folders of the corresponding properties in the PDD.</p>		
<b>Documentation provided by project manager</b>		
<a href="#">Documentos legales</a>		
<b>Evaluation of VVB</b>		Date: 04/05/2023
<p>The compliance information was reviewed almost in its entirety and the folders were updated; minor updates are missing and should be included in the documentation. .</p> <p><b>Closed.</b></p>		

NC ID	<b>5.1. 02</b>	Date: 08/02/2023
<b>Description of NC</b>		
<p>According to the established criteria of the BCR standard, the Project Holder must demonstrate carbon rights. Although the contracts meet the established criteria, they do not cover the entire project horizon.</p> <p>1. The TP must justify and present evidence that ensures the permanence of the owners for the entire project horizon.</p>		

2. The TP must provide the certification that indicates the presence or absence of ethnic communities.

**Response from project manager**

**Date:** 27/03/2023

1. The sixteenth clause of the enrolled contract specifies the project's execution period, ensuring the permanence of the owners throughout its duration. According to this clause, the contract's term is 15 years from its execution date. However, since the project benefits from a retroactive period of 5 years prior to the contract's subscription date, the total project duration is 20 years, thus satisfying its execution time.

It's important to note that there are 16 properties with contract durations of 12 years. However, to ensure the project's execution over the 20 years, the project owner utilizes the extension clause, which permits an extension of the enrolled period until the project's completion. This provision is crucial for ensuring the project's continuity and the realization of its long-term objectives.

The properties and their respective contract types are listed below.

DESCRIPTION	# PROPERTIES	PERCENTAGE %
TOTAL PROPERTIES WITH A 15-YEAR CONTRACT EXECUTION TERM	55	76%
TOTAL PROPERTIES WITH A 12-YEAR CONTRACT EXECUTION PERIOD	18	24%

2. To determine that no Ethnic Communities exist within the project area, the guidelines of BCR standard numeral 12 were adhered to. Initially, a request was made to the Ministry of the Interior for the "Determination of the Appropriateness and Timeliness of Prior Consultation for Projects, Works, or Activities," to which the reference number SCP-2099.1\_459 was assigned.

The request is currently marked as "In progress" and is awaiting a response from the Ministry of the Interior. All supporting documents for this request can be found under Safeguards number 3, with the evidence of submission located in the [NC 02](#).

**Documentation provided by project manager**

[Documentos legales](#)

[NC 02](#) , [3.2 Procedencia de consulta previa](#)

**Evaluation of VVB**

**Date:** 04/05/2023

1. The information backed by the signing of contracts for the project's duration is considered sufficient.

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
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2. Even though we are waiting for a response from the public entity, the project can proceed with a preliminary identification of any overlap with areas belonging to Ethnic Communities..

**Open.**

<b>Response from project manager</b>	<b>Date:</b> 29/06/2023
<p>1. Closed</p> <p>2. The preliminary identification of overlaps with areas belonging to ethnic communities is evidenced in <a href="#">Salvaguarda 3</a> where the rights of indigenous peoples and members of local communities are related and mapped. Cartographic information generated by the National Land Agency is used as input, specifically <a href="#">Resguardos Indígenas Legalizados y Pretendidos</a>, and the conclusion is that there are no overlaps with the aforementioned communities.</p> <p>Between December 2022 and May 2023, all the adjustments requested by the Ministry regarding the "Determination of the appropriateness and timeliness of Prior Consultation for Projects, Works, or Activities" were provided (<a href="#">Soporte Radicados</a>). However, in June 2023, Fundacion Cataruben received notification about a TRANSLAPE involving indigenous communities named BAYONEROS and El VÍGÍA, situated in the department of Arauca. This notification pertained to two properties: SAN ISIDRO and El DIAMANTE. Consequently, these properties have been excluded, and the project area has been updated. The next course of action involved a request to the Ministry to submit an appeal for reconsideration against Resolution No.ST.0922 dated June 26, 2023 <a href="#">Resolución NO procedencia</a>.</p>	
<b>Documentation provided by project manager</b>	
<a href="#">Resolución NO procedencia</a> ; <a href="#">Soporte Radicados</a>	
<b>Evaluation of VVB</b>	<b>Date:</b> 21/07/2023
<p>The TP submitted a response to RESOLUTION NUMBER ST-1158 OF AUGUST 10, 2023 from the Ministry of the Interior, which clarifies that prior consultation is not applicable for the project areas.</p> <p><b><u>Closed.</u></b></p>	

<b>NC ID</b>	<b>5.2. 03</b>	<b>Date:</b> 08/02/2023
<b>Description of NC</b>		
<p>The Project Holder must submit evidence to independently support the start date for the project activities: i) GHG Removal Activities (RA) and ii) Reducing Degradation and Deforestation (REDD+). (BCR Standard 10.4).</p> <p>While evidence such as the signature marking the beginning of the Mitigation Project formulation, letters of intent, and the hiring of personnel for project activities is provided, there are discrepancies in the some dates when compared to BCR Standard 10.4. These pieces of evidence do not align with the specified start date and do not reflect the effectiveness of the project in terms of GHG emission reductions (initiation of management strategies, conservation plans, supported with agreements or contracts) or in terms of GHG removals (site preparation, establishment or activities that support GHG removals).</p> <p>The evidence should clearly indicate the commencement of activities on the following dates:</p> <ol style="list-style-type: none"> <li>1. AR Activities: June 01, 2017.</li> <li>2. Reducing Degradation and Deforestation (REDD+): June 01, 2017.</li> </ol>		

**Note:** It is important to clarify and justify the date of enrolled in the project (contracts and other supports), since this date is later than the start date.

**Response from project manager**

**Date:** 27/03/2023

**Start date:** Below is the evidence to independently support the start date for the project activities. The start date was adjusted to: i) June 9 for AR activities and ii) September 29 for REDD+ activities.

1. For the start date of removal activities, small producers enrolled in the CultivO2 initiative were visited between February 6 and May 8, 2017. This was to define the schedule of activities (such as site preparation) for crop establishment (See [NC 03 "Cronograma de Bitácoras"](#)). After planning, the landowners commenced the crop establishment process, which was set for June 2017. For medium and large producers (those with more than 50 ha), we have attached documentation such as collection accounts, invoices, and contracts for the supply of planting materials (See [Soportes Actividades de establecimiento](#)). This provides evidence for the commencement of activities, specifically crop establishment that results in effective GHG removals. **The start date for AR activities is set as June 9, 2017**, given that the Luker and Mataguaro properties began their planting activities on this date.

Property - Department	Date	Support or evidence
Luker - Casanare	9 - 06 - 2017	Invoice of purchase of plant material <a href="#">Palmas de Casanare</a>
Mataguaro Vichada	9 - 06 - 2017	Purchase invoice for plant material <a href="#">Mataguaro.pdf</a>
Las corocoras / Cantarrana - Vichada	20 - 07 - 2017	Seedling supply and establishment contract <a href="#">Las Corocoras/Cantarrana.pdf</a>
La prosperidad - Vichada	07 - 2017	Cuentas de cobro compra de material vegetal <a href="#">La Prosperidad.pdf</a>
El Manantial - Vichada	07- 2017	Cuentas de cobro compra de material vegetal <a href="#">El Manantial.pdf</a>

2. For the start date of REDD+ activities, a socialization of the project was conducted to the properties on June 1, 2017, setting the stage for coordinating REDD+ activities. September 29, 2017, was established as the start date for these activities, as this is when the proposed project activities began implementation. On September 29, the training cycle commenced, focusing on enhancing land planning, biodiversity conservation, and sustainable forest management—essentially, measures to reduce deforestation/degradation (see [Cronograma de actividades implementadas.xlsx](#)).

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
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Documentation provided by project manager	
1. <a href="#">NC 03 "Cronograma de Bitácoras"</a> , <a href="#">Soportes Actividades de establecimiento</a> , <a href="#">Cronograma de actividades implementadas.xlsx</a>	
Evaluation of VVB	Date: 04/05/2023
<p>1. The information submitted allows supporting the start date for the AR activity on 9 - 06 - 2017. It is considered sufficient for this point.</p> <p>2. Although the training cycles are presented, there is no evidence of topics related to the control and management of deforestation. It is suggested to review the criteria of the BCR standard and the methodology related to start date (initiation of management strategies, conservation plans, supported with agreements or contracts).</p> <p>Open.</p>	
Response from project manager	Date: 29/06/2023
<p>1. Closed</p> <p>2. EThe objective of the training cycles of the REDD+ component is to reduce forest degradation and deforestation through an integrated and planned approach to the sustainable management of forest resources. As part of the forest management strategy, a training plan has been established for the project period, which is attached in the related documents.</p> <p>In order to provide greater clarity, the report of the trainings conducted within the framework of the forest management strategy for the monitoring period of this verification is attached. This report details the objectives, descriptions and the relationship of each training with concrete actions to avoid deforestation and forest degradation, as well as to carry out the control and management of deforestation.</p> <p>In addition to the above, conservation agreements with landowners are related, in which good sustainable practices, forest governance, land planning, monitoring of environmental risks (fires) and environmental education are promoted; which means the non-mobilization of transformation agents not only in the project area, but also in the leakage area.</p>	
Documentation provided by project manager	
<a href="#">Plan de capacitaciones CULTIVO2.xlsx</a> <a href="#">REPORTE DE CAPACITACIONES REDD+.pdf</a>	
Evaluation of VVB	Date: 21/07/2023
<p>The evidence presented is deemed sufficient.</p> <p><b><u>Closed</u></b></p>	

NC ID	<b>5.3. 04</b>	Date: 08/02/2023
Description of NC		
<p>According to paragraph 12 of the <i>BCR Standard</i>, GHG projects must demonstrate additionality with respect to the baseline scenario. In this regard, the project must independently comply this requirement</p>		

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
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for the two project activities: i) GHG Removal Activities (AR) and ii) Reducing Degradation and Deforestation (REDD+), as established in each methodology.

Additionally, the alternative development of carbon projects (AR and REDD+), as well as the national policies that motivate the development of Cacao and Cashew, within the regions that make up the project areas, should be considered.

**Note:** If there are steps that apply to both activities, they can be unified within the analysis.

<b>Response from project manager</b>	<b>Date:</b> 27/03/2023
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A baseline scenario analysis was generated independently for the two project activities (AR and REDD+).

<b>Documentation provided by project manager</b>
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[Resolución No. 000087 de 2022](#)

[Ley 811 de 2003](#)

[Plan Departamental de Extensión Agropecuaria - Departamento de Vichada 2020-2023](#)

<b>Evaluation of VVB</b>	<b>Date:</b> 04/05/2023
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A complement is presented in the analysis..

**Closed.**

<b>NC ID</b>	<b>5.4. 05</b>	<b>Date:</b> 08/02/2023
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<b>Description of NC</b>
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The conditions of applicability from the AFOLU Sector Methodological Document, BCR0001, titled "Quantification of GHG Emission Reduction Removal Activities. Version 3.0," establish criteria to be considered within the project areas.

The TP must justify and present support for the following conditions:

1. Criterion *b*).

According to the figures presented in the environmental description, some properties are located in flood zones. In Vichada there are project areas within the Bitá River RAMSAR.

2. Criterion *c*).

There is no evidence to conclude that the areas within the geographical boundaries of the project do not contain organic soils.

3. Criterion *e*).

During the visit to Luker Agrícola's properties, there was evidence of flood irrigation in Cacao crops.

4. Criterion *f*).

During the visit to Luker Agrícola's properties, there was evidence of channel drainage management in the planting areas.

5. Criterion *g*).

Justify compliance with this requirement regarding the use of agricultural machinery on Luker Agrícola properties.

**Response from project manager**

**Date:** 27/03/2023

1. **Criterion B:** Project activities (both removals and reductions) commenced in 2017. This was before the Bitá River was designated as a wetland complex of international importance in July 2018 ([Decreto 1235 de 2018](#)). Concerning their location in flood zones, as observed during the audit visit ([Plan Auditoria](#)) to the three properties listed in the table situated within the Bitá River Ramsar area, these properties **are not impacted by flooding events**.

PROPERTY	BENEFICIARY	LOCATION
El Manantial	Cauchobiz Colombia S.A.S	Vichada - Ramsar Río Bitá
La Prosperidad	Grupo TRS Sociedad por Acciones	Vichada - Ramsar Río Bitá
La Libertad	Grupo Caucol Sociedad	Vichada - Ramsar Río Bitá

2. **Criterion C:** The evidence used to determine that the geographical boundaries of the project aren't situated on organic soils is the "national soil correlation" layer. This layer is a Web Map Services (WMS) feature found on ArcGIS online under the same name, and it is managed by IGAC ([administrado por IGAC](#)). Upon review, it was determined that the properties listed in the table (which were excluded from the project) have soils with an organic carbon content exceeding 12%. These soils belong to the Andisols order.

PROPERTY	BENEFICIARY	LOCATION
La Esmeralda	Hugo Alexander Quiroga	Victoria - Caldas
Santa Ana	Mario Ramos	Victoria - Caldas

3. **Criterion E:** The Luker properties do not employ flood irrigation; instead, the method used is subirrigation. In this method, the water used for irrigation moves both vertically and laterally through the soil, with the water rising to the crop's root zone through capillarity.

In this system, both the moisture content and water tension in the soil are consistently monitored. This ensures that the crop's water needs are met, guaranteeing the rational use of irrigation water. Given that the irrigation technique fills all pore spaces in the soil and meets the soil's storage capacity (supporting documents describing this irrigation type are attached). Furthermore, the cacao plant is highly sensitive to waterlogging, so the crops cannot remain submerged for prolonged periods. Doing so could result in plant mortality, as detailed in the phytosanitary management guidelines for the cacao crop provided by the ICA in 2012 (See

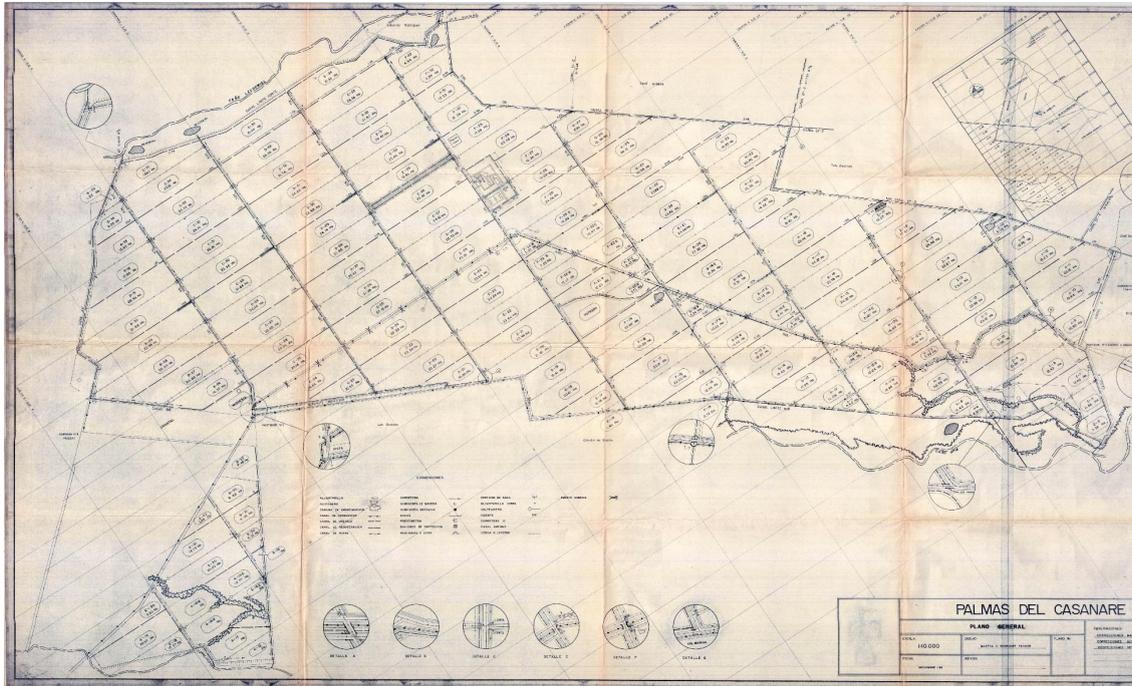
annex criterion E). In addition to the above, trials are being conducted in Luker properties with irrigation to optimize pre-existing processes, as shown below.



Localized irrigation implemented in Luker properties - Villanueva, Casanare. (Own source 2023)

4. **Criterion F:** The establishment of the Cacao crop in Luker Agrícola's properties began in 2017 covering an area of 635.49 Ha, and continuing with 180.96 Ha in 2018. The crops were adapted

to an irrigation and drainage infrastructure with open canal networks built since 1986 (see Annex Criterion F).



General map of palms of Casanare, 1991.



Aerial photograph of old palm plantations in Luker properties.

5. **Criterion G:** The establishment of the Cacao crop as a project activity caused minimal soil disturbance as it was implemented manually via hollowing, as evidenced in the provided photographs (See Annex Criterion G). Additionally, the agricultural machinery on the property is primarily used for harvesting along established pathways in the crop, a task performed after the manual removal of the cobs by workers (See Annex Criterion G). These practices do not result in significant soil disturbances and are in line with the BCR001 methodology's applicability conditions.



Receipt of planting material for Luker properties in 2017.



Planting material being placed using the hollow-hole method on Luker properties in 2017.



Planting of the material on Luker properties in 2017.



Harvesting of cacao crops on Luker properties in 2023

**Documentation provided by project manager**

[NC 5 Condiciones de aplicabilidad](#)

**Evaluation of VVB**

**Date:** 04/05/2023

1. Criterion *b*). Although the Bitá River was declared a RAMSAR site through Decree 1235 of 2018 subsequent to the project's initiation, this declaration should be considered an environmental factor when assessing the project and potential restrictions resulting from its activities. A more detailed analysis is

recommended. Moreover, the audit site visit took place during the dry season, which doesn't necessarily mean that the area is not prone to flooding. Technical evidence should complement this analysis.

2. Criterion c). The evidence presented is sufficient.
3. Criterion e). The evidence presented is sufficient.
4. Criterion f). The evidence presented is sufficient.
5. Criterion g). The evidence presented is sufficient.

Open.

Response from project manager

Date: 29/06/2023

**For Criterion B:** Based on the suggestion, a technical analysis was conducted to evaluate the environmental determinant of the Bitá River Ramsar, along with an examination of potential flood zones. The environmental zoning for the Bitá River POMCA is sourced from the "[IDE Corporinoquia](#)". It establishes that there are three category types within the zoning for the cultivation areas: ( I: Conservación y Protección Ambiental, Áreas de Protección, Áreas de Amenazas Naturales II: Conservación y Protección Ambiental, Áreas de Protección, Áreas de importancia Ambiental III: Uso Multiple, Areas para la producción agrícola, ganadera y de uso sostenible de Recursos Naturales, Áreas Agrosilvopastoriles) distributed as follows:

Predio	Zonificación Ambiental	AR (ha)	Viable
El Manantial	Conservación y Protección Ambiental, Áreas de Protección, Áreas de Amenazas Naturales	74,09	Si
	Uso Multiple, Areas para la producción agrícola, ganadera y de uso sostenible de Recursos Naturales, Áreas Agrosilvopastoriles	26,19	Si
La Prosperidad	Conservación y Protección Ambiental, Áreas de Protección, Áreas de Amenazas Naturales	17,15	Si
	Conservación y Protección Ambiental, Áreas de Protección, Áreas de importancia Ambiental	24,95	No
	Uso Multiple, Areas para la producción agrícola, ganadera y de uso sostenible de Recursos Naturales, Áreas Agrosilvopastoriles	7,85	Si
Mataguaro	Conservación y Protección Ambiental, Áreas de Protección, Áreas de importancia Ambiental	21,68	No
	Uso Multiple, Areas para la producción agrícola, ganadera y de uso sostenible de Recursos Naturales, Áreas Agrosilvopastoriles	178,20	Si

The "**viable**" column seeks to answer the question, "Is the activity of sustainable use of natural resources consistent with the zoning of the areas?" A response of "**NO**" suggests that the establishment of Cashew cultivation does not align with the zoning category as outlined by the POMCA Ramsar Rio Bitá and the technical guide for formulating watershed management and planning.

In this sense of the 350.1 hectares established in the Bitá River Ramsar.

Predio	Propietario	Componente	AR (ha)
El Manantial	Cauchobiz Colombia S.A.S. - Manuel Vicente Tejada	REDD + AR	100,28
La Prosperidad	Grupo Trs Sociedad Por Acciones Simplificada	REDD + AR	49,95
Mataguaro	Grupo Caucol Sociedad Por Acciones Simplificada	REDD + AR	199,88

Only 303.48 hectares qualify for enrolled and are distributed as follows: (See [2.3.4.SIGIA1.GeodatabaseV1.3\R\\_CULTIVO2\\_V1.3.](#)):”

Predio	Propietario	Componente	AR (ha)
El Manantial	Cauchobiz Colombia S.A.S. - Manuel Vicente Tejada	REDD + AR	100,28
La Prosperidad	Grupo Trs Sociedad Por Acciones Simplificada	REDD + AR	25,00
Mataguaro	Grupo Caucol Sociedad Por Acciones Simplificada	REDD + AR	178,20

To review the information, please refer to a document titled "[Informe técnico determinante ambiental Ramsar Río Bita.](#)" Accompanying this document is a .mpk (Map Package) file named "[Zonificación Ramsar.mpk](#)," which can be opened in ArcGIS. This file contains the layers used for the analysis and is stored in a Geodatabase titled "[Zampliadad\\_Poca\\_Bita.gb obtenida de la IDE Corporinoquia>Planes de Ordenación y Manejo de Cuencas.](#) Documento de Formulación del Plan de Ordenación y Manejo de la Cuenca del Río Bita”

#### Documentation provided by project manager

[INFORME TÉCNICO DETERMINANTE AMBIENTAL RAMSAR RÍO BITA](#)  
[FORMULACIÓN DEL PLAN DE ORDENACIÓN Y MANEJO DE LA CUENCA HIDROGRÁFICA DEL RÍO BITA](#)  
[ZAMPLIADA\\_POMCA\\_BITA.gdb](#)  
[Zonificación Ramsar.mpk](#)

**Evaluation of VVB**

**Date:** 21/07/2023

The information analysis and evidence are considered to be sufficient.

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
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**Closed.**

<b>NC ID</b>	<b>06</b>	<b>Date: 08/02/2023</b>
<b>Description of NC</b>		
<p>The applicability conditions of the AFOLU Sector Methodological Document, "Quantification of GHG Emission Reduction REDD+ Projects BCR0002. Version 3.1," specify criteria to be considered within the project areas.</p> <p>The TP must provide justification and evidence for the following:</p> <p>1. Criterion c).</p> <p>The analysis of the causes of degradation, are not in accordance with this affectation.</p> <p>2. Criterion d).</p> <p>Justify, based on this analysis, What is the real threat to the forests within the project's regions?.</p>		
<b>Response from project manager</b>		<b>Date: 27/03/2023</b>
<p>1. <b>Criterion C:</b> An analysis of the identified deforestation agents is attached (refer to (<a href="#">1. Agentes de deforestacion y degradación.xlsx</a>), which encompasses impacts from both degradation and deforestation.</p> <p>2. The updated analysis of deforestation agents addresses the impact on forests differentiated by regions.</p>		
<b>Documentation provided by project manager</b>		
<a href="#">1. Agentes de deforestacion y degradación.xlsx</a>		
<b>Evaluation of VVB</b>		<b>Date: 04/05/2023</b>
<p>1. and 2. The evidence presented is sufficient.</p> <p><b>Closed.</b></p>		

<b>NC ID</b>	<b>5.5. 07</b>	<b>Date: 08/02/2023</b>
<b>Description of NC</b>		
<p>The analysis of the legislation applicable to the project must include the description and compatibility of the project areas with the SINAP protected areas, forest reserves under Law 2ª, National Natural Parks, among others.</p>		
<b>Response from project manager</b>		<b>Date: 27/03/2023</b>
<p>The National System of Protected Areas (SINAP) comprises protected areas in Colombia, established to conserve and protect the country's biodiversity. This endeavor involves both the state and private individuals, who generate strategies in a joint effort to conserve ecosystems and their biodiversity. This</p>		

system is made up of various protected areas, including natural parks, nature reserves, and wildlife sanctuaries, among others.

National natural parks, regulated by Law 2 of 1959, aim to create a system of protected areas that safeguard biodiversity and natural resources for present and future generations. The law establishes the basis for the creation, management, and administration of these parks, as well as for scientific research and environmental education.

The flora and fauna sanctuaries regulated by decree 1791 of 1996 are protected areas created to preserve and conserve endangered, endemic, or conservation-important animal and plant species.

The Unique Natural Areas regulated by Decree 2372 of 2010 are another protected area of the SINAP. This decree establishes the provisions for the creation, management and administration of these areas, with the objective of protecting and conserving the biodiversity and natural resources present in them.

Likewise, forest reserves, also regulated by Decree 2372 of 2010, have the purpose of guaranteeing the conservation and sustainable use of the natural resources present in them. This decree establishes specific procedures and requirements for their creation and defines permitted and restricted activities in these areas.

It should be noted that, for the purposes of the Cultivo2 project, the four protected areas mentioned above are excluded in their entirety from the project, as they are areas that play a fundamental role in the conservation of biodiversity and natural ecosystems for the protection of the natural and cultural heritage.

However, the Civil Society Natural Reserves regulated by Law 611 of 2000, which seeks to promote the participation of society in the protection and conservation of the country's natural resources, through the creation of natural reserve areas that are managed by civil society organizations, can enter the project, as long as we comply with the legal and technical requirements necessary to guarantee the conservation of their ecosystems.

Cultivo2, is an environmental project that seeks to reduce GHG emissions, promoting the conservation of natural ecosystems, which is compatible with the conservation objectives of the RNSC, the SINAP and the regulations that complement it.

#### Documentation provided by project manager

5.6. This can be found in section 8. CLIMATE CHANGE ADAPTATION AND APPLICABLE LEGISLATION..

8.1 Compliance with Applicable Legislation (Regulatory References) OF THE PDD.

#### Evaluation of VVB

Date: 04/05/2023

1. 2. There is evidence that the project area overlaps with the "Distrito Regional de Manejo Intagrado – Serranía de Los Yarigues", the project activities are not compatible with this protected area.

Open.

#### Response from project manager

Date: 29/06/2023

The properties overlapping with the "Distrito Regional de Manejo Integrado - Serranía de Los Yarigues" are located in the primitive zone (areas that have not been altered or have suffered minimal human intervention in their natural structures - Decree 1076 of 2015) and are incompatible with the activities of the project, which is why they are excluded. Below is a list of the properties mentioned:

Property	Owner	Component
Acurucos	Benito Rodriguez Lopez	REDD+ AR

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
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El Taladro	Esperanza Amorocho Caicedo	AR
<b>Documentation provided by project manager</b>		
Attached <a href="#">geodatabase_v1.3\AR_cultivo2.gdb</a> \Dataset "AR_Area_proyecto" Feature Class "Area_De_proyecto.shp"		
<b>Evaluation of VVB</b>	<b>Date: 21/07/2023</b>	
The update of the information is considered pertinent.		
<b>Closed</b>		

<b>NC ID</b>	<b>08</b>	<b>Date: 08/02/2023</b>
<b>Description of NC</b>		
<p>According to the BCR standard, the TP must identify the applicable SDGs and demonstrate through criteria and indicators the project's contribution to them. Notwithstanding, the project identifies the applicable SDGs according to BCR TOOL SDGs, it is important to demonstrate during the life of the project the impact of the established actions and their contribution to each objective.</p> <p>To this end, the TP must consider the relevance in the design of the measures and their follow-up:</p> <ol style="list-style-type: none"> <li>1. Reference values. Have a baseline value supported as required by the BCR TOOL SDGs for each of the indicators.</li> <li>2. Indicators. Present result indicators and not management indicators where it is clear to identify the fulfillment of this against the goal in each monitoring.</li> <li>3. Targets. Establish goals in accordance with the indicator for the duration of the project.</li> <li>4. Monitoring frequency. The monitoring frequency should correspond to the monitoring periods and the measurement method for each indicator. Frequencies greater than 5 years do not allow for evidence of results consistent with monitoring.</li> </ol> <p><b>Observation:</b> The Monitoring Report should be adjusted according to the above elements in such a way that progress can be evidenced in the results for SDGs in the monitoring period.</p>		
<b>Response from project manager</b>		<b>Date: 27/03/2023</b>
<p>In accordance with the BCR Standard, the activities that contribute to the fulfillment of the SDGs were evaluated and concluded with the selection of 4 activities out of 7 initially proposed. The above, in order to provide results that show progress in the SDGs for the periods evaluated.</p> <ol style="list-style-type: none"> <li>1. Regarding the findings generated;</li> <li>2. The reference value for the BCR TOOL SDGs is established (see annex).</li> <li>3. The indicators were selected directly from the BCR TOOL ODS, and the result of the proposed activities allow for a clear measurement of the indicator's compliance.</li> <li>4. A measurable goal was established for the proposed activities and a column called "Formula" was added to measure overall compliance for the total duration of the project. It is clarified that the result of the activities is the input that contributes to the fulfillment of the SDG.</li> </ol>		

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project CultivO2 P1
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5. The monitoring frequencies are adjusted, defining frequencies of no more than 5 years.

**Documentation provided by project manager**

[2.1.5. ODS](#) ; [ODS CUMPLIMIENTO](#) ; [Reporte de Objetivos de Desarrollo Sostenible](#)

**Evaluation of VVB**

**Date:** 04/05/2023

1. - 4. The evidence presented is sufficient.

**Closed**

<b>NC ID</b>	<b>09</b>	<b>Date:</b> 10/08/2023
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**Description of NC**

According to the BCR standard, Co-benefits generated by the project can be identified and reported to achieve a special distinction. Accordingly, the project identifies the category Wax Palm.

1. As required by the standard, compliance for this category is considered adequate; however, the monitoring plan must include a baseline for each Co-benefits, and from there, indicators, targets and monitoring frequency must be established.

2. Targets should be adjusted in such a way that it is possible to evidence the follow-up of each indicator in each monitoring based on results, not on reports.

E.g.: Indicator: "Hectares planted with forest or agroforestry crops in areas with little or no vegetation".

Target: 3,000 ha planted.

Indicator: "Identification of species in the IUCN list".

Target: 10 records of species on the IUCN list in the project areas.

**Comment 1:** It is important to define the monitoring techniques: surveys, flora sampling, fauna sampling, etc.

**Comment 2:** The monitoring report should be adjusted according to the indicators and targets for the monitoring period.

**Response from project manager**

**Date:** 27/03/2023

Considering that the special categories related to Co-benefits are not a mandatory requirement as defined in the standard BCR 19, the project has chosen not to include these special categories. For the PDD 2.0 version, the information in items 15 and 32 related to Co-benefits is subtracted.

**Documentation provided by project manager**

DdP Versión 2.0

**Evaluation of VVB**

**Date:** 04/05/2023

1 - 2. Since the project desists from including the Wax Palm category, the finding does not apply.

**Closed.**

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
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<b>NC ID</b>	<b>10</b>	<b>Date: 10/02/2023</b>
<b>Description of NC</b>		
<p>According to numeral 20.1.1 of the <i>BCR Standard</i>, projects grouped in the AFOLU sector may add areas to the project (after validation), as long as they demonstrate compliance with the addition criteria (items: a.b.c.d.e.f.g,h,i).</p> <p>Although the project contemplates expansion, the expansion area must be identified during the validation process in accordance with the eligibility analysis for the current properties or new properties to be included in each activity and that will be subsequently included in a new instance.</p>		
<b>Response from project manager</b>		<b>Date: 27/03/2023</b>
<p>The addition of areas to the project (after validation) will only be made to the AR component (BCR0001) on the properties enrolled in the baseline, defining optimal areas (eligible from the cartographic point of view) for future plantings. In other words, no new properties will be enrolled.</p> <p>In this sense, a Feature Dataset called "<b>Areas Expansion</b>" is generated in the <a href="#">Geodatabase AR</a> with information on the interpretation of coverages for the corresponding years and their respective multitemporal where the eligible areas are defined in compliance with item a of numeral 20.1.1 Standard BCR.</p> <p>For item b, centers are generated on the eligible areas and crossed with the <a href="#">órdenes de suelo de Colombia</a>, the above for the applicability criterion on organic soils with organic carbon contents higher or higher than 12%. It is also verified that the areas within the geographical boundaries of the project do not belong to the forest and/or wetland category. Expansion areas, as they are included in the baseline properties, comply with land tenure conditions.</p>		
<b>Documentation provided by project manager</b>		
Geodatabase AR		
<b>Evaluation of VVB</b>		<b>Date: 04/05/2023</b>
<p>The evidence presented is sufficient.</p> <p><b>Closed.</b></p>		

<b>NC ID</b>	<b>5.6. 11</b>	<b>Date: 10/02/2023</b>
<b>Description of NC</b>		
<p>Present the supports of the cartographic and GIS processes in the project activities according to the requirements of the BCR001 methodology and BCR reference documents in such a way that the information complies with the criteria and principles established by the standard for the monitoring period:</p> <ol style="list-style-type: none"> <li>1. Complete the "gdb" with intermediate layers to determine eligible areas: Forest/Non Forest 2017, Forest/Non Forest 2007.</li> <li>2. Extend eligibility analysis to project expansion areas (shape for new plantings and REDD+ activities).</li> </ol>		

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
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3. Complete and document the interpretation procedure starting from the characterization of inputs to the final result of eligible areas: enhancements, cloud corrections, topology, use of social mapping, field data and quality control.
4. Justify the use of inputs to comply with the working scale of the project, since most of the images used do not reach the scale required for the project.
5. Describe and present the supports to elaborate the sowing matrix for the crops included in the project area. The area of the AR\_Eligible shape does not coincide with Table 21 "*Stratification of eligible areas for the AR component*" of the PD.
6. Adjust the overlap of the AR areas (crops) with the leakage belt defined for the REDD+ activity.

<b>Response from project manager</b>	<b>Date:</b> 27/03/2023
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1. Geodatabase component [AR actualizada](#) feature dataset >> categoría bosque.
2. [Geodatabase AR](#) > Feature Dataset "áreas expansión" shows the polygon of the Properties together with the polygon of the projected area for future planting and the eligible area accompanied by the respective Corine Land Cover analysis for the years 2013 - 2017.
3. [Procedimiento Elaboración Corine Land Cover Escala 1:15.000](#)
4. The BCR 0001 methodology requests a scale of 1:10,000. However, obtaining adequate inputs for the 2012 and 2016 temporality is very complex due to the costs of acquiring a service and above all the availability of satellite images for the particular area (images available on request), this availability is subject to previous organizations having decided to acquire images for the specific area. Due to the above, different queries were raised to the BCR standard exposing the Project boundaries in terms of eligibility and costs associated to the service, the suggested response was the following: << [Tratar de combinar vieiras escalas en lo posible 1:25.000](#) >>. However, at scale 25,000 only "Sentinel 2" was available as of 2016. In this search for images that could meet the scale of work, we managed to find free SPOT images (Resolution 10 m/Pixel) for the corresponding temporalities that supports a scale of 1:15,000 for 2010-2012 and Sentinel for 2016 with scale reduction we can obtain Resolution of 10 m/Pixel.
5. Table 21 "Stratification of eligible areas for the AR component" Chapter 2, Item 20.2 is updated. Stratification
6. The overlaps of the AR Areas with the REDD+ leakage belt are adjusted using the Quantum GIS - QGIS algorithm called "Diferencia". The result is a file called "Cinturón de fugas REDD+" which is located in the [Geodatabase componente REDD+](#), Feature dataset REDD Área de fugas.

<b>Documentation provided by project manager</b>
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1. [Soportes ítem 1.2](#)
2. [Soporte ítem 3](#)
3. [Soportes ítem 4](#)
4. [Soporte ítem 6](#)

<b>Evaluation of VVB</b>	<b>Date:</b> 04/05/2023
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1. The 2007-2016-2021 coverage layers do not present information.
2. The information presented is sufficient.
3. The document "**FC-GOG-01 Guía para verificación de áreas viables**" refers to the CO2Bio project.
4. The information presented is sufficient.
5. The information presented is sufficient.

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project CultivoO2 P1
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6. The information presented is sufficient. Open.	
<b>Response from project manager</b>	<b>Date:</b> 29/06/2023
<ol style="list-style-type: none"> <li>The information is updated, Dataset <a href="#">Dataset "AR área Proyecto"</a> including the CORINE Land Cover cartographic information "CLC 2012, CLC 2016 and CLC 2021". For forest, Dataset "Categoría bosque" &gt; feature class "<i>Bosque 2005, Bosque 2016, Bosque elegible 2005-2016</i>" is updated in the root of the geodatabase, a raster called "<i>Cross elegible 2005-2016</i>" is attached in .tif format, which is the result of crossing the 2005 forest map and the 2016 forest map.</li> <li>Closed</li> <li>The document is updated <b>FC-GOG-01 Guía para verificación de áreas viables.</b></li> </ol>	
<b>Documentation provided by project manager</b>	
<ol style="list-style-type: none"> <li><a href="#">"geodatabase_v1.3\AR_cultivo2.gdb\Dataset "AR_Area_proyecto"\Feature Class "Area_De_proyecto.shp"</a> is attached</li> <li>Evidence item 3 <a href="#">FC-GOP-01 Procedimiento para determinar áreas elegibles - Proyectos REDD</a></li> </ol>	
<b>Evaluation of VVB</b>	<b>Date:</b> 21/07/2023
The information is considered sufficient. <b>Closed</b>	

<b>NC ID</b>	<b>5.7. 12</b>	<b>Date:</b> 10/02/2023
<b>Description of NC</b>		
<p>In accordance with the BCR001 methodology for the quantification of GHG removals ex ante, the following requirements must be met:</p> <ol style="list-style-type: none"> <li>Define and characterize in the removals activity the types of crops included for quantification. With seeding systems (replanting, sowing, renewals, hybrids, etc.), seeding densities, fertilization, types of irrigation, etc.</li> <li>Submit management plans for all crop species included in the project (Cacao, Cashew, palm and rubber). The plans must identify the silvicultural management of the crop: pruning, felling, planting and/or renewals.</li> <li>The data and default values must be presented in the PD with their bibliographic sources and considerations for uncertainty management in accordance with the provisions of the BCR standard and the guidelines for the selection of equations, data and parameters of BCR.</li> <li>Present all the equations for the species used in the project (Cacao, Cashew, palm, rubber, native species and/or other crops), region of origin and relevant technical elements; attach the bibliography of all the equations used, describe the variables of each equation presented.</li> <li>Consider providing the equations for the growth of forest species for shade, which should be validated.</li> <li>Apply and describe the uncertainty management for all the equations used.</li> </ol>		

7. Present in the DD the default values used to quantify carbon contents in litter, Deadwood and soil organic carbon.
8. Consider crop management in the ex ante quantification (pruning, felling, sowing) if applicable.
9. Mechanisms should be sought to reduce the uncertainty levels of quantification, among which the following stand out:
  - Stratify not only by species and age, but also include regionalization (by biome, climate, or subregion). It is impossible to group a species in an environmental region as broad as the one defined by the project and not consider environmental effects.

**Response from project manager**

**Date:** 27/03/2023

1. A table is presented that lists the main characteristics of crop establishment, such as: practices implemented, arrangement, planting density, planting material (model), soil preparation activities, shade, risk, etc. [Prácticas establecimiento de cultivos](#)
2. Cacao and Cashew crop management plan is listed that contains the silvicultural description of the crops: pruning, felling, planting and renovation.
3. Sections 21.2.1, 21.2.2 and 21.2.3 of the PD adjust the default values used for estimating GHG removals in each of the reservoirs considered. Likewise, sections 20.1 and 20.3 establish the considerations for the selection of default values and uncertainty management.
4. Only Cacao and Cashew are chosen as project species. Similarly, in section 21.2.1 Carbon in total biomass, the values and/or equations used for ex ante calculations are updated. The bibliographic sources are attached in Annex [Ecuaciones alométricas](#).
5. Shade tree species are not included in the estimation of GHG removals. Therefore, the use of allometric equations or growth models is not taken into account.
6. According to the guidelines of the BCR001 methodology, section 14, discount factors are applied according to the origin of the models and data for the estimation of removals in the monitoring period.
7. In the PD, section 21.2.2 and 21.2.3, the values used for the estimation of carbon content in litter, Deadwood and soil organic carbon are included; which have as source the methodology document BCR001 sections 15.2.2 and 15.2.3.
8. Pruning, felling and/or planting activities are carried out according to the needs of the crops during their development, so they are not considered in the ex ante scenario. However, in the event of events that significantly affect the distribution of biomass content in the ex-post scenario, the established stratification will be adjusted.
9. The BCR001 methodology, section 13 establishes the following factors for stratification "For the scenario with project, stratification can be based on crop establishment plans (species / planting year)". However, in order to reduce uncertainty in the monitoring of removals, the stratification is adjusted by considering the following aspects:
  - a. Planting species: Cacao / Cashew
  - b. Year of planting of the crop lot
  - c. Conglomerate, according to analysis of environmental conditions (life zones) and geographic location:
    - i. Casanare - Arauca
    - ii. Santander - Caldas
    - iii. Córdoba
    - iv. Huila

Likewise, the ex-ante and ex-post removal calculation tool is updated, adjusting to this new stratification. ([1. Cuantificación de remociones - Cultivo2 V2](#)).

**Documentation provided by project manager**

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
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<p><a href="#">1. Cuantificación de remociones - Cultivo2 V2; Ecuaciones alométricas</a>  <a href="#">Plan de manejo - Marañón - V2.pdf</a>  <a href="#">Plan de manejo - Cacao - V2.pdf</a>  <a href="#">Prácticas establecimiento de cultivos</a></p>	
<b>Evaluation of VVB</b>	<b>Date:</b> 05/05/2023
<p>1. The information presented is sufficient.                  2. The information presented is sufficient.                  3. The sources used and equations are identified in the PD, the calculation sheet should not be attached (link <a href="#">1. Cuantificación de remociones - Cultivo2</a>) should be revised.                  4. The sources of the equations are presented.                  5. The information presented is sufficient.                  6. The spreadsheet should be attached no (link <a href="#">1. Cuantificación de remociones - Cultivo2</a>) should be reviewed.                  7. The information submitted is sufficient.                  8. The information submitted is sufficient.                  9. Calculation sheet to identify stratification should be attached no ( link <a href="#">1. Cuantificación de remociones - Cultivo2</a>) should be reviewed..</p> <p><b>Abierta.</b></p>	
<b>Response from project manager</b>	<b>Date:</b> 30/06/2023
<p>3, 6 y 9. The spreadsheet is updated under the new stratification, origin of the data and models used to estimate GHG removals.</p> <p>For the estimation of removals in Cacao crops, regional data are considered, therefore, a 10% discount is applied on the removals reported in the monitoring period. Regarding Cashew crop estimates, a 5% discount is applied due to the use of the ratio factor for Belowground biomass calculation. The calculations are shown in Sheet 4. Resumen_Monitoreo_2021 &gt; Column J.</p>	
<b>Documentation provided by project manager</b>	
<p><a href="#">1. Cuantificación de remociones - Cultivo2 V3</a></p>	
<b>Evaluation of VVB</b>	<b>Date:</b> 21/07/2023
<p>The information presented is considered relevant.</p> <p><b>Closed</b></p>	

<b>NC ID</b>	<b>5.8. 13</b>	<b>Date:</b> 10/02/2023
<b>Description of NC</b>		

In the conformity assessment of the Monitoring Plans submitted in accordance with the BCR001 methodology, the TP must consider the following requirements:

**1. Monitoring Plan AR Activities:**

- a. Consider within the monitoring of the areas the GIS component, as established in the methodology.
- b. Quantify the percentage of result based on the target not on the results of the period.

**2. Crop Management and Biomass Growth Monitoring Plan**

- a. Adjust targets based on activity, not, number of annual management reports.
- b. Quantify the percentage result based on the target, not, on the results for the period.
- c. Provide the complete protocol with the design of the biomass growth inventories. Type of sampling, sampling design (random, systematic), distribution of sample units, calculation of statisticians, sample size calculation, calculation of allowable sampling error (10% or less) and inventory confidence limits.
- d. Attach the complete protocol for the survey of field measurement plots by crop type.

**3. Permanence Risk Monitoring Plan.**

- a. Adjust targets based on activity, not, number of annual management reports.
- b. Quantify the percentage of outcome based on the goal, not, on the results for the period.

**4. Removal Risk Monitoring Plan**

- a. Provide all the equations for the species used in the project (Cacao, Cashew, palm, rubber), region of origin and relevant technical elements; attach the bibliography of all the equations used, describe the variables of each equation presented.
- b. Consider that the equations for the growth of forest species for shade, which must be validated.
- c. Apply and describe the uncertainty management for the equations used.
- d. Provide the data and parameters used for *ex post* quantification.

**Response from project manager**

**Date:** 27/03/2023

**1. Monitoring Plan AR Activities:** Project activities were structured in a single monitoring plan that includes monitoring of project boundaries, implementation of activities, biomass growth and quantification of removals, as established in the methodology BCR001 numeral 16 called "*Monitoring Plan*".

- a. The monitoring of areas is organized by the GIS component within the activity "*Establishment of crops and restoration areas*", raising the indicator as the "*Verification of eligible areas*" and monitoring through the evaluation of satellite images or field visits, as established in the methodology BCR001 numeral 16.1 "*Monitoring of Project boundaries*".
- b. The overall compliance percentage is adjusted based on the target and not on the result of the monitored period. To corroborate the overall progress, a new column called "*Formula*" has been added to clearly quantify the result based on the target.

**2. Crop Management and Biomass Growth Monitoring Plan:** The activities were incorporated into a single monitoring plan as mentioned above.

- a. For crop management and biomass growth there are two main activities that correspond to the "*Evaluation of the growth of planted plots*" and the "*Monitoring of disturbance events*". For the growth evaluation, the specific goal was adjusted; however, for the disturbance monitoring activity, the goal continues to be established based on the

monitoring reports broken down for the 20 years. According to the guidelines of methodology BCR0001 numeral 16.3, the identification and evaluation of disturbance events on planted areas is requested. This implies that the follow-up is presented in monitoring reports because it is not possible to generate a target for future disturbance events on the project areas.

- b. The overall compliance percentage is adjusted based on the goal and not on the result of the monitored period. This can be corroborated in the documents "AR Monitoring Plan" and "AR Monitoring Report" included below.
- c. The "[Procedimiento para el diseño de inventario de la iniciativa CULTIVO2](#)", is attached, which is based on the guidelines established by the methodological document BCR0001, and the CDM tools A/R Methodological Tool "Calculation of the number of sample plots for measurements within A/R CDM Project activities" Version 02.1.0 and A/R Methodological Tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities" Version 04.2.
- d. The "[Procedimiento completo para el Levantamiento de parcelas en Cultivos y Plantaciones Forestales.](#)" is attached.

### 3. Permanence Risk Monitoring Plan:

- a. According to methodology BCR0001, numeral 16.3 literal (a), an evaluation of the permanence and growth of planted lots, in the Project boundaries, is made by measuring growth plots. Based on the above, the project activity called "Evaluation of the growth of planted lots" was created, where the specific goal was adjusted.
- b. The overall compliance percentage is organized based on the goal and not on the result of the monitored period. This can be corroborated in the documents "AR monitoring plan" and "AR monitoring report" included below.

### 4. Risk monitoring plan for removals:

- a. Attached are the bibliographic sources of data and allometric equations used for estimating biomass contents in Cacao (*Theobroma cacao*).

In the case of Cashew (*Anacardium occidentale*), the origin of allometric models is centered mainly on studies developed in plantations on the African continent, so their applicability is not appropriate according to the guidelines established by the BCR Standard and the methodological document BCR0001. Consequently, in order to reduce the levels of uncertainty in the estimates, the TP will resort to the construction of its own model, adapted to the conditions of the project area.

Finally, allometric equations for palm and rubber are not presented, since they are not considered as potential species for cultivation in project areas, and therefore are not included in the removal estimates.

- b. The trees considered for carbon stock monitoring correspond to Cacao and Cashew trees planted after the project start date. Therefore, no equations are established to estimate the growth of shade tree species.
- c. In section 22.5 of the PDD, the description of uncertainty management is adjusted under the guidelines of the methodological document BCR0001. The applicable discount factors are adjusted in the removal estimation ([1. Cuantificación de remociones - Cultivo2 V2](#) > Hoja 4. Resumen\_Monitoreo\_2021)
- d. Section 22.5 describes the data and models to be considered for the quantification of removals in the monitoring period. The bibliographic sources of these data and models ([Ecuaciones alométricas](#)) are also attached.

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project CultivoO2 P1
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Documentation provided by project manager	
<a href="#">1. Plan de monitoreo AR.xlsx</a> ; <a href="#">Reporte monitoreo AR.xlsx</a> ; <a href="#">Procedimientos AR</a> <a href="#">1. Cuantificación de remociones - Cultivo2 V2</a> <a href="#">Ecuaciones alométricas</a>	
Evaluation of VVB	Date: 05/05/2023
<p>1a – b. The information presented is sufficient.</p> <p>2 a – d. The information presented is sufficient.</p> <p>3 a – b. The information presented is sufficient.</p> <p>4 a – d. The development of own models for Cashew (<i>Anacardium occidentale</i>), and the adjustment of the calculations is pending.</p> <p><b>Open.</b></p>	
Response from project manager	Date: 30/06/2023
<p>Allometric models were built to estimate the growth of trunk diameter and Aboveground biomass in Cashew, taking into account measurements made in eligible areas of the project and local crops with similar management conditions. The step-by-step procedures and calculations for its construction are detailed in the Technical Report and Annexes.</p> <p>Similarly, the GHG removal estimates were adjusted. For the ex ante scenario, the accumulated biomass projection during the quantification period was calculated using the diameter growth model at 30 cm (D30) and the model to estimate Aboveground biomass (kg).</p> <p>For the monitoring period, biomass estimates in Cashew crops with planting years 2017 and 2018, were made according to measurements from 26 plots surveyed in eligible areas of the project and the use of the allometric model developed.</p>	
Documentation provided by project manager	
<a href="#">Modelo alométrico Marañón</a> <a href="#">1. Cuantificación de remociones - Cultivo2 V3</a>	
Evaluation of VVB	Date: 21/07/2023
<p>The information provided is considered appropriate.</p> <p><b>Closed</b></p>	

NC ID	<b>5.9. 14</b>	Date: 10/02/2023
Description of NC		
<p>In the conformity assessment of the Monitoring Report of the removals submitted, according to the Monitoring Plan defined based on the BCR001 methodology, the TP must consider the following requirements:</p>		

- a. Present within the report the forest inventory design: the type of sampling, method for the distribution of plots (random with GIS, technical criteria, etc), stratification criteria according to the wide geographic distribution of the sample, sample size calculation and estimation of the biomass inventory sampling error in accordance with BCR.
- b. Present the measurement equipment used within the biomass inventory and its calibration process to reduce errors in the field.
- c. Present the uncertainty management of the data calculated for ex post removals, considering the equations, data and parameters used.
- d. According to the documentary and field review of the biomass inventory, material errors (discrepancies in measurements) and substantial errors (discrepancies in the procedure) were identified that require the project to review the data and adjust them in the field if necessary:
  - Discrepancies in the number of total plots provided in the PD, database and spreadsheets.
  - Errors in the inclusion of species other than Cacao and Cashew that were applied equations for these species (avocado, guadua, matarratón, etc).
  - The equation used for Cashew is not adequate for the species, the relevant equation should be sought and that meets the measurement criteria of the plots, since this equation was designed for a dap (1.3 m) and the measurements were of D30 (0.3 m), which overestimates the biomass. Additionally, uncertainty criteria should be applied.
  - In the audit, material differences were identified in the remeasurement of the plots, deviations greater than +/-10%, considering an average growth value.
  - There is no evidence of the training evidence of the technical measurement team.
  - Estimates of average biomass values per plot and statistical calculations are not reliable, nor traceable in the document, field files and spreadsheets, which generates a high uncertainty in the estimation of biomass values and therefore carbon.
  - They do not present plots in the "Cashew 2018" stratum and yet biomass was estimated for this stratum.
  - All inventory strata should have sample plots.

**Response from project manager**

**Date:** 27/03/2023

- a. The "[Procedimiento para el diseño de inventario de la iniciativa CULTIVO2](#)", is attached.  
Given that secondary data will be used for the first verification in Cacao crops, the application of this procedure will be taken into account for subsequent monitoring.
- b. The list of equipment required for the biomass inventory and its calibration process to reduce errors in the field is attached. Among the equipment used are: GPS, decameter, diameter tape, caliper, digital hypsometer and clinometer.
- c. In relation to the guidelines of the methodological document BCR0001, section 14; in the case of cacao crops, the discount factor of 10% is applied on the estimate of removals in the monitoring period, due to the use of "*Datos de biomasa aérea y subterránea regionales*" ([1. Cuantificación de remociones - Cultivo2 V2](#) > Hoja 4. Resumen\_Monitoreo\_2021 > Celdas J4:J13).  
  
Regarding Cashew crops, since the project's own data and model will be used to estimate Aboveground biomass, the uncertainty will be calculated according to the guidelines of the methodological document BCR0001 and that established in the Procedure for inventory design of the CULTIVO2 initiative.

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
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In relation to Cacao crops, in order to reduce bias in the data, the use of secondary data (Leiva & Ramírez, 2021) will be chosen for the estimation of removals in the period 2017-2021, which were developed from measurements in cacao lots in areas with similar climatic conditions.

For Cashew crops, since there is no suitable equation, the TP will develop an allometric model that fits the particular conditions of the project area.

For the development of the model and for the calculations of Aboveground biomass in Cashew, field measurements will be carried out by the project manager; in addition, theoretical and practical training will be provided to the field assistant on the [GOP-18](#) procedure..

**Documentation provided by project manager**

[Procedimientos AR](#); [Listado Equipos](#); [Procedimiento para el diseño de inventario de la iniciativa CULTIVO2.](#); [Capacitación profesionales](#)

<b>Evaluation of VVB</b>	<b>Date:</b> 10/05/2023
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4 a – b. The information is satisfactory.

4 c – d. 4 a – d. The development of own models for Cashew (*Anacardium occidentale*), and the adjustment of the calculations is pending.

**Open.**

<b>Response from project manage</b>	<b>Date:</b> //2023
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c. The construction of the allometric model for the estimation of Aboveground biomass in Cashew was carried out. The evidence can be reviewed in Cashew Allometric Model. Given that, for Belowground biomass estimation, the use of a ratio factor was considered, a 5% discount was made, according to the guidelines of the BCR0001 methodology.

d. From the total number of plots surveyed for the construction of the allometric model, 26 were taken into account for the estimation of biomass contents and GHG removals in Cashew crops, which were established in eligible areas of the project, corresponding to Cashew crops planted in 2017 and 2018. The new data and calculations can be reviewed at [E Y F. Evaluación crecimiento Cultivos y Cuantificación remociones](#) and [1. Cuantificación de remociones - Cultivo2 V3](#).

**Documentation provided by project manager**

[Modelo alométrico Marañón](#)  
[E Y F. Evaluación crecimiento Cultivos y Cuantificación remociones](#)  
[1. Cuantificación de remociones - Cultivo2 V3](#)

<b>Evaluation of VVB</b>	<b>Date:</b> 21/07/2023
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La información presentada se considera pertinente.

**Cerrada**

<b>NC ID</b>	<b>5.10. 15</b>	<b>Date:</b> 10/02/2023
<b>Description of NC</b>		

Present the supports of the cartographic and GIS processes in the project activities in accordance with the requirements of the BCR002 methodology and BCR reference documents in such a way that the information complies with the criteria and principles established by the standard for the monitoring period:

1. Complete the "gdb" with the intermediate layers to determine the eligible areas: Forest/Non Forest 2017, Forest/Non Forest 2007 for reference area, leakage area and project area.
2. Extend eligibility analysis to project expansion areas (shape for new plantings and REDD+ activities).
3. Complete and document the interpretation procedure starting from the characterization of inputs to the final result of the eligible areas: enhancements, cloud corrections, topology, use of social mapping, field data and quality control.
4. However, the information generated by IDEAM's SMyC presents an uncertainty within acceptable ranges, this was considered for a working scale of 1:100,000. The Cultivo2 project has a range of areas between 1 and 563 ha for which such a small scale is not adequate and therefore does not meet the accuracy of the interpretation required for these areas, and therefore the uncertainty.
5. Provide the cartographic inputs for the modeling of the reference area.
6. Provide the cartographic inputs for the modeling of the leakage area.
7. Provide cartographic inputs for calculating primary and secondary degradation in the project areas and in accordance with BCR002 methodology guidelines.
8. Include within the PD, complete and traceable information for the construction of emission factors based on the biomass map and the patch, core and perforated transitions.

**Response from project manager**

**Date:** 27/03/2023

1. [Geodatabase componente REDD+](#) Updated
2. The REDD+ component of the project does not consider expansion areas.
3. For the BCR002 methodology, the National Non-forest Forest (SMyC) maps (2005, 2016 and 2021) were used, so it was not necessary to interpret coverages or make corrections to the input. The REDD+ Component eligible areas procedure is attached.
4. The methodology generally allows for a minimum mappable scale ([MUC](#)) of 25 hectares. However, for other territories, especially artificialized and important ones considered from the interpreter's point of view, a MUC of 5 hectares can be used (Land cover monitoring, version 5, 5.1.1 Input selection, Table 1 MUC values and pixel size per scale). In this order of ideas the project will provide first hand information that evidences the forest areas.

Property	Beneficiary	Eligible forest
La Esmeralda	Abimael Antonio Castillo	1,10
Finca Buena Vista	Gerardo Alfonso Archila	1,12

	La Protección	Florentina Higuera	1,15
	La Cabaña	Esneider Quintero	1,45
	Finca Villa Esneda	Elda Esneda	1,49
	Finca Alto Viento	Carlos Fonseca	1,75
	Finca La Esperanza	Silveria Oyola	1,91
	Finca El Paraiso	Wilmar Gustavo Parra	1,98
	El Palmar	Fernando Wilches	2,6
	La Pradera	Gerardo Alfonso Archila	3,23
	Finca Las Marias	Maria Dueñes Prieto	3,73
	Finca El Paraiso	Hilda Murillo Rojas	4,57
	Los Planos	Berenice Bravo de Ramos	1,04
	La Union	Haison Alberto Idarraga	1,09
	El Pedregal	Cristina Aldemar Manrique	1,19
	El Retiro	Jose Nolberto Osario	1,57

5. Geodatabase REDD+ [Andes](#) y [Orinoquia](#) >> Feature Dataset "Drivers Andes" & Feature Dataset "Drivers RR Orinoquia"
6. Geodatabase REDD+ [Andes](#) y [Orinoquia](#) >> Feature Dataset "Drivers Andes" & Feature Dataset "Drivers RR Orinoquia"
7. Geodatabase REDD+ [Andes](#) y [Orinoquia](#) >> Feature Dataset "Degradación" & Feature Dataset "Degradación" additionally, a degradation and fragmentation procedure is attached..

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project CultivoO2 P1
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8. For the construction of the emission factors for primary degradation (Core to patch) and secondary degradation (Drilled to patch) the values established in Annex 3 of the document "[Estimación de la degradación de bosques de Colombia a través de un análisis de fragmentación](#)". This information will be included in PDD in chapter 29.3.2.

**Documentation provided by project manager**

- 3. [GOG-01 Guía para verificación de áreas viables\\_BCR0002-REDD.pdf](#)
- 4. [monitoreo-de-coberturas-de-la-tierra-en-las-areas-de-parques-nacionales-naturales\\_v\\_5.pdf](#)
- 7. [GOP-21. Procedimiento para Determinar la Degradación y Fragmentación en Proyectos REDD+.pdf](#)
- 8. [ONU\\_REDD\\_Estimacion de la degradacion de bosques de colombia.pdf](#)

**Evaluation of VVB**

**Date:** 10/05/2023

- 1. The areas provided in the features do not correspond to the areas in Table 28 of the PD. The project areas in the Andina zone include a property in the Magdalena Medio, justifying the inclusion with respect to the analysis provided.
- 2. Since no expansion areas are considered for REDD+, the information is considered adequate.
- 3. – 4. According to the information presented, the MUC would be for artificialized territories, what would be the procedure for forest and tree cover. The observation established in the document should be taken into account: "*MUC should not be confused with the size of the minimum object that can be seen in the image. Obviously, the former must be much larger than the latter, otherwise the risk of error increases considerably*" (Chuvieco, 2007).
- 5. – 6 – 7. The information is considered satisfactory.
- 8. The information presented is satisfactory.

**Open.**

**Response from project manager**

**Date:** 16/06/2023

- 1. Non-forest forest maps were used for the years 2005 and 2016, 2007 is not used because the input does not exist in the forest and carbon monitoring system. The geodatabase is updated. A review of the properties belonging to the REDD+ component was carried out and they do not include a property in Magdalena Medio. The properties enrolled in the initiative and located in Magdalena Medio are cacao farms (Component A/R) as shown in Table 28.
- 2. Closed
- 3. For the BCR0002 methodology, the National Non-forest Forest (SMBYC) maps (2005, 2016 and 2021) were used, so it was not necessary to interpret coverages, nor to make corrections to the input. The non-forest forest maps (raster format) are cut with the area of the Property (shapefile) for each year, then a cross classification is made (Forest Raster 2005, 2016) to determine which forest areas remained stable "eligible forest", then the raster is transformed to vector "Polygonize" areas are recalculated, any area less than 1 hectare is eliminated because it does not meet the forest criteria defined by IDEAM. The "[procedimiento áreas elegibles Componente REDD+](#)", is updated, while for the interpretation of coverage for the REDD component the "[Instructivo interpretación de corine land cover](#)" is used.
- 5. Closed
- 6. Closed
- 7. Closed

4. The Forest and Carbon Monitoring System - SMBYC, must comply with the relevant decisions of the United Nations Framework Convention on Climate Change - UNFCCC and the Intergovernmental Panel on Climate Change - IPCC. The main objective of the SMBYC is to monitor the forest and deforestation in the Colombian territory. For this purpose, the SMBYC developed the [protocolo de procesamiento digital de imágenes para la cuantificación de la deforestación en Colombia versión 2](#).

In the generation of the non-forest forest map, the definition of forest must be met, which indicates that it is "territory covered mainly by tree cover with a minimum canopy cover of 30%, a minimum canopy height "in situ" of 5 meters at the time of identification and a minimum area of 1.0 hectare". In this sense, the forest map is not constructed with the same criteria of the corine land cover that indicates a CMU of 25 hectares for a scale of 1:100,000. In this case, the minimum map unit is 1 ha in order to comply with the definition of forest in the country and the UNFCCC. On the other hand, Figure 1 establishes that areas smaller than 9 pixels, which correspond to approximately 1 ha, should be eliminated. Taken from (Galindo et al, 2014, pp28).

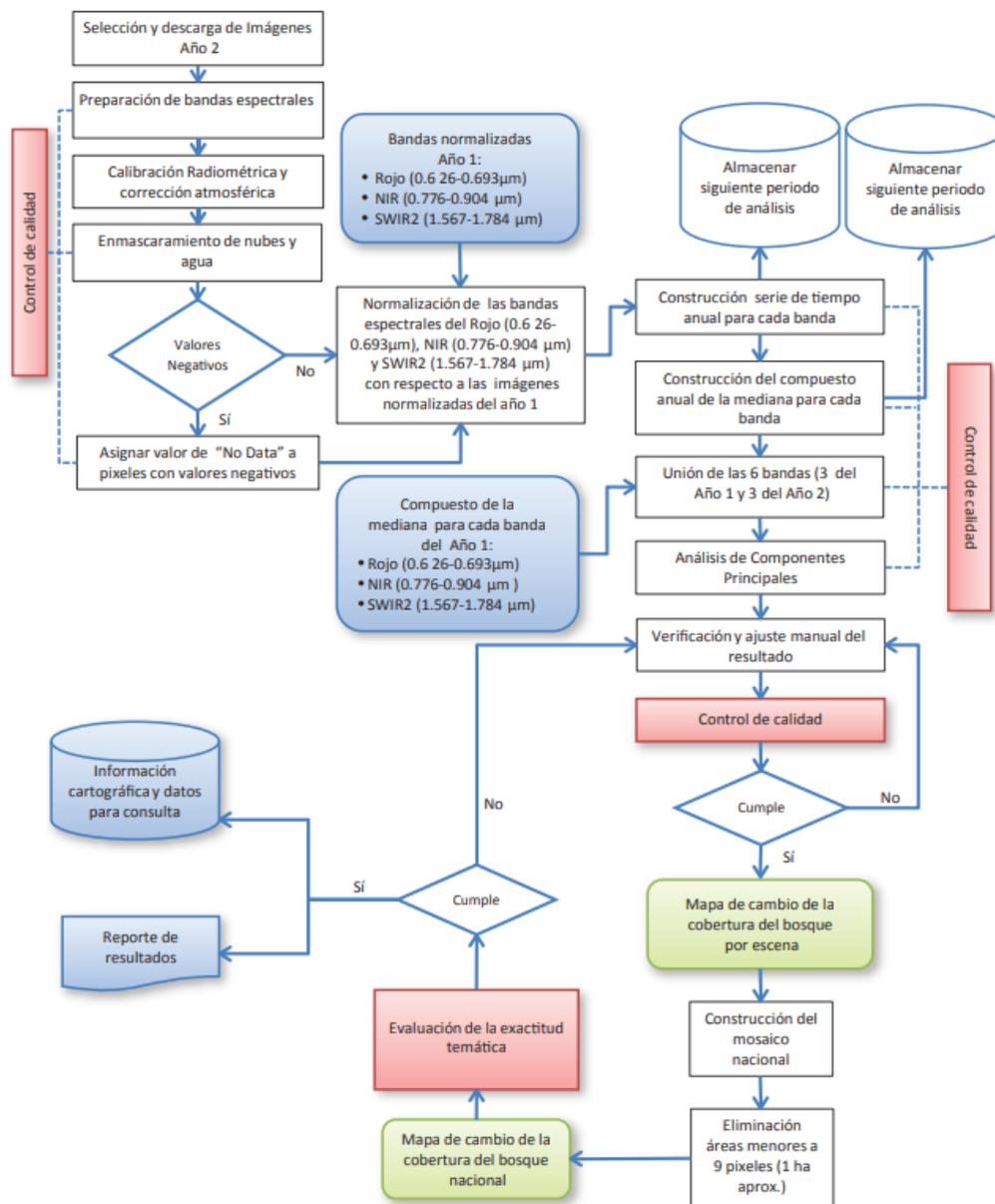


Figura 1. Diagrama del procesos metodológico

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
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This same indication is provided by the document called [Reporte de reducción de emisiones bajo el acuerdo REDD Early Movers \(REM\)](#), at the moment of indicating the quality control of the forest map, located on page 31, it textually indicates "Polygons of change smaller than one hectare in both deforestation and regeneration, according to the minimum cartographic area and the definition of forest".

A description of the SMByC processes is attached as a scientific document called [Colombian Forest Monitoring System: Assessing Deforestation in an Environmental Complex Country](#), Assessing Deforestation in an Environmental Complex Country", finally a document called "[Componente AR Especificación imágenes de alta resolución para confirmar áreas REDD](#)" excel where the codes of the high resolution images of sensors such as Quickbird (2.5 m/pixel), WorldView 3, 2 (2m/pixel), Ikonos, Ikonos 2 (4m/pixel), GeoEye-1 (1.5m/pixel) are registered, where the presence of forest was confirmed. According to the above, only forest areas smaller than 1 hectare are excluded.

#### Documentation provided by project manager

[Protocolo de procesamiento digital de imágenes para la cuantificación de la deforestación en Colombia v2](#)

[Reporte de Reducción de emisiones bajo el acuerdo REDD EARLY MOVERS -REM](#)

[Colombian Forest Monitoring System: Assessing Deforestation in an Environmental Complex Country](#)

[Componente AR Especificación imágenes de alta resolución para confirmar áreas REDD](#)

**Evaluation of VVB**

**Date:** 21/07/2023

The information presented is considered relevant.

**Closed**

<b>NC ID</b>	<b>5.11. 16</b>	<b>Date:</b> 10/02/2023
<b>Description of NC</b>		
<p>Considering what is established by the BCR002 methodology in numeral 8.2, regarding the reference region, the TP must:</p> <ol style="list-style-type: none"> <li>1. Although, the Andina region presents conditions for planting Cacao, the delimitation of this region is not biogeographically adequate, since different ecosystems and bioregions are included in a very coarse filter analysis, it includes: elevation zones of cloud forest, sub-paramo and paramo, among others. This region should be limited to the project areas.</li> <li>2. Although the Orinoquia region has conditions for planting Cacao and Cashew, the delimitation of this region is not biogeographically adequate, since different ecosystems and bioregions are included in a very coarse filter analysis, including: flooded savannahs and highlands. This region should be limited to the project areas.</li> </ol>		

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
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3. According to Brown et al. (2007)<sup>7</sup>: "For projects of less than 100 000 ha, the reference region should be between 20 to 40 times the size of the project area". Under this assumption it is not appropriate for the project to consider two reference areas of such dimensions.

**Comment:** Consideration should be given to distributing the project areas by cores and establishing an appropriate reference region for each core.

**Response from project manager**

**Date:** 27/03/2023

- Following the suggestions, the reference region was reduced taking into account the drivers for the expansion of the agricultural frontier, suitability for dual-purpose livestock, sheep and goats, as well as the exclusion of moorland complexes and conservation areas. The delimitation takes into account the natural regions established in the NREF. It is modified in the PDD Chapter 3 > Section 25.2. Reference region.
- For the delimitation of the reference region of the Orinoquia biome, the project includes properties that only have the REDD component, therefore the suitability for the cultivation of Cacao and Cashew is considered but the suitability of the soil for dual-purpose livestock, agricultural frontier, suitability for rice is more relevant. This new delimitation has similar characteristics of climate, soil, environmental supply and drivers. It is modified in the PDD Chapter 3 > Section 25.2. Reference region. The delimitation takes into account the natural regions established in the NREF.
- Under the assumption of Brown et al. (2007), a considerable reduction of the reference region is achieved. However, due to the nature of the project and the distribution of properties with similar characteristics, it is not possible to comply with the 20 to 40 ratio indicated by Brown. Furthermore, this ratio is applicable to projects developed under the VERRA Standard.

**Documentation provided by project manager**

[PDD CULTIVO2 V.2.0](#)

**Evaluation of VVB**

**Date:** 10/05/2023

2. In the project areas of the Andina zone, a property in the Magdalena Medio is included, justifying its inclusion with respect to the analysis presented.
3. The argument "it is not possible to comply" is not considered relevant, the TP must present a justification with applicable criteria to support the size of these areas. For this, the national guidelines and the BCR standard can be used. (2007) is a valid source for REDD+ projects, regardless of the applicable standard.

**Open.**

**Response from project manager**

**Date:** 30/06/2023

1.2. In the project areas of the Andina zone, a property in the Magdalena Medio was identified; however, this corresponds to the A/R component and therefore does not require an analysis in the REDD+ component. From another aspect, the reference region for the Andina biome was redefined according to the limits of the Nechí-San Lucas Tropical Humid Humid Zonobiome, Nechí-San Lucas Sub-Andean Orobioime and Nechí-San Lucas Hydrobiome, the geodatabase and activity data are updated.

<sup>7</sup> Sistemas agroforestales : funciones productivas, socioeconómicas y ambientales / Montagnini, Florencia... [et al.]. – 1o ed. – Cali, CO : CIPAV ; Turrialba, CR: CATIE, 2015. 454 p. : il. – (Serie técnica. Informe técnico / CATIE ; no. 402) ISBN 978-958-9386-74-3

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project CultivO2 P1
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3. The publication of Brown et al. (2007), makes a comparison of three models to project deforestation in six tropical regions, and proposes a methodology based on the analysis. Among the results of the comparison of projected deforestation baselines, the three models evaluated show differences in deforestation rates, especially in the models that rely heavily on population dynamics. The model that used a reference region (Analytical Domain) of almost 4,000 times the project size presented higher deforestation rates compared to the models that used a reference region of 30-38 times the project size. This is due to *"the influence of the highly concentrated population in cities and towns far from the area of interest"*.

*On the other hand, the results relate that "when human populations and their infrastructure are highly dispersed in the landscape, regardless of the existence of different biophysical-socioeconomic zones, the three models tend to converge in similar results, particularly in the short term (about 10 years)".*

The reference regions reflected in the cultivO2 initiative are not focused to a large extent on population dynamics, which leads to differences in deforestation rates when relating "Project Area - Reference Region". This implies that the delimitation of the reference regions of almost 4,000 times the project size responds to a distribution of dispersed properties in the landscape, which is congruent with the analysis presented in the Brown et al. (2007) publication and complies with the BCR002 methodology guidelines;

- The reference region for both biomes meet the condition of including all or part of the project area. This information can be verified through the [geodatabase](#) by cross-referencing the project areas with the reference region and in image 1 of the PDD, called *project location map*.
- The agents identified in the reference regions and described in the document Agents of deforestation and degradation and mapped in the drives documents of the Andes and Orinoquia region are present in the territory and can enter the project areas, given the above, the territories included in the project are of interest to the identified agents.
- The land tenure figures are mapped at the reference region level based on the information provided by the Agricultural Rural Planning Unit (UPRA), in its open data portal. The cartographic information is called the rural land tenure informality index at the municipal level, which allows identifying and delimiting areas with possible presence of informality at the property level. In PDD 4.4. Land tenure, a detailed review is carried out at the project area level.
- In order to comply with the criterion of areas with restricted access to agents and drivers of deforestation and degradation, for the reference region and the project areas, areas with Legalized and Intended Indigenous Reserves, Black Communities, Peasant Communities and the provisions of Article 329 of Decree Law 2811 of 1974, which establishes the different types of areas that make up the National Park system, are excluded.

For the national guidelines of the NREF: (Forest Emission Reference Level) the reference regions are located in the Andes and Orinoquia biomes, "the concept of biome defines extensive and uniform environments of the geobiosphere (Walter, 1980)" and corresponds to a homogeneous area in biophysical terms IDEAM (2019).

**Documentation provided by project manager**

[IDEAM.\(2019\). Propuesta de Nivel de Referencia de las emisiones forestales por deforestación en Colombia para pago por resultados de REDD+ bajo La CMNUCC](#)

**Evaluation of VVB**

**Date:** 21/07/2023

The information presented is considered relevant.

**Closed**

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
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<b>NC ID</b>	<b>17</b>	<b>Date: 10/02/2023</b>
<b>Description of NC</b>		
<p>Considering what is established by the BCR002 methodology in numeral 8.3, regarding the leakage area, the TP must:</p> <p>Clearly present the criteria considered in the multi-criteria analysis to determine the leakage cite and the response to the mobility of deforestation agents. Deforestation under a property boundary criterion is not considered sufficient to control the displacement of deforestation. Additionally, this buffer includes non-forest areas.</p> <p><b>Comment 1:</b> Relevant criteria that facilitate and limit the mobility of the main deforestation agents should be taken into account: access roads, market displacements, etc. The current leakage areas present non-forest cover with the buffer and some overlap with the AR activity areas.</p> <p><b>Comment 2:</b> Consideration should be given to distributing the project areas by nuclei and establishing the leakage area for each nucleus based on these analyses.</p>		
<b>Response from project manager</b>		<b>Date: 27/03/2023</b>
<p>The leakage belt is defined by the presence and mobility of deforestation drivers in the reference region, i.e. the same drivers that define the boundary of the region. In this sense, the range of mobility is limited to the distance between the Properties and the deforestation hotspots (Euclidean distance) accompanied by the forest loss 2005 to 2016. The leakage belt for the project areas located in the Orinoquia biome has an area of 4609 ha (46.09 km<sup>2</sup>) while the eligible forest area is 1366.88 hectares. The ratio between both variables is 1:3.4. The Andes biome has an area of 391 ha (3.91 km<sup>2</sup>) with eligible forest of 51.02 hectares. The ratio between both variables is 1:7.6. Additionally, the forest areas included in article 329 Decree Law 2811/1974 and the areas belonging to AR are excluded.</p> <p>The information is listed in <a href="#">Geodatabase REDD+ Orinoquia</a> &gt;&gt; feature dataset &gt;&gt; REDD Orinoquia Área Fugas &gt;&gt; Area Cinturón Fugas.</p> <p><a href="#">Geodatabase REDD+ Andes</a> &gt;&gt; feature dataset &gt;&gt; REDD Andes Area Fugas &gt;&gt; Area Cinturón Fugas.geodatabase REDD+ Andes</p>		
<b>Documentation provided by project manager</b>		
<a href="#">1.Geodatabase REDD+</a>		
<b>Evaluation of VVB</b>		<b>Date: 10/05/2023</b>
<p>The information presented is considered satisfactory.</p> <p><b>Closed.</b></p>		

<b>NC ID</b>	<b>5.12. 18</b>	<b>Date: 10/02/2023</b>
<b>Description of NC</b>		

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
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Considering what is established by the BCR002 methodology in numeral 11, regarding REDD+ activities, the TP should:

1. Demonstrate the relevance of the activities against the control of deforestation and degradation and the considerations to control the drivers and agents of deforestation in the properties.
2. Provide evidence of the participatory construction with the communities that are part of the project areas.
3. Discuss and support why, within the same area or Property, crop activities are not considered as a REDD+ activity to avoid deforestation. Consequently, removals from these actions should not be counted as an activity to avoid deforestation and degradation (no additionality)..

**Comment:** Under this last criterion the relevance of the two project activities (AR and REDD+) in the same Property should be reevaluated.

**Response from project manager**

**Date:** 27/03/2023

1. The direct or underlying cause that mitigates each REDD+ activity is added according to the identified deforestation agents REDD+ Activities Monitoring Report.
2. Attached is the schedule of logs in the Properties, which support the socialization of the project and generated the spaces for the participatory construction of the REDD+ Activities Monitoring Report.
3. Following the guidelines of the BCR Standard numeral 10 General Requirements specifically numeral 10.1 Project Types, the following is described. .

*"Projects in the AFOLU sector may include GHG Removal Activities and REDD+ activities".*

According to the above, it is possible to have REDD+ activities and Removal Activities simultaneously, as long as the requirements and methodological criteria are met..

On the other hand, the official definition of REDD+ established by the United Nations Framework Convention on Climate Change (UNFCCC) does not include crop planting as a REDD+ activity. The definition of REDD+ focuses on reducing greenhouse gas emissions related to deforestation and forest degradation, as well as conserving and enhancing **forest** carbon stocks. Therefore, although the planting of crops may have environmental and social benefits, it is not considered a REDD+ activity per se according to the official definition.

**Documentation provided by project manager**

[Reporte Monitoreo Actividades REDD+ .xlsx](#)

**Evaluation of VVB**

**Date:** 10/05/2023

1. Although the TP presents the list of activities, it is important to demonstrate how the design of these activities ensures effective monitoring of deforestation prevention through impact indicators. Review the monitoring methodologies and indicators for the following activities.

Direct or underlying cause	Activity	Monitoring methodology	OVV observation
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VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
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Inadequate implementation of industrial or traditional agricultural, livestock and mining activities.	Implement training and accompaniment processes through training to strengthen land planning, biodiversity conservation and sustainable forest management.	Application of training or workshops	The goal is measured in 20 trainings. However, it is not evident how these trainings achieve a concrete training objective to control the cause of deforestation: <i>"Inadequate implementation of industrial or traditional agricultural, livestock and mining activities"</i> .
Socioeconomic, cultural, demographic, political and institutional factors, in addition to illegal logging due to lack of governance and land planning.	Identify and adopt the principles of forest governance for sustainable forest management.	Characterization, implementation and follow-up in the execution of the activity (three phases): 1. Property characterization to the total REDD+ properties. (25%) 2. Generation of a property plan document for all REDD+ properties. (50%) 3. Monitoring of the implementation of the property plan for all REDD+ properties. (25%)	The goal of the indicator is weighted between characterization, land document and implementation: the three activities should be completed 100% to ensure an indicator that aims to control the direct cause.

2. The information presented is satisfactory.

3. The MADS<sup>8</sup> within the integral strategy to control deforestation and forest management "Forests Territories of Life" establishes within the lines for the control of deforestation the following activity "M2. Development of a forest economy and closing of the agricultural frontier", which establishes among its goals: "M.2.5. Develop and implement agro-environmental models in the rural stabilization strips of the agricultural frontier".

Therefore, it can be concluded that permanent tree crops such as Cacao and Cashew can be a strategy to control deforestation.

It is important for TP to analyze the compatibility of both activities against the standard.

**Open.**

<b>Response from project manage</b>	<b>Date: //2023</b>
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1.

Activity	Monitoring methodology	OVV Observation	TP Response
Implement training and accompaniment processes through training to	Application of training or workshops	The goal is measured in 20 trainings. However, it is not evident how	The project activity and the direct mitigating cause are adequately articulated.

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
------------------------------------	---

strengthen land planning, biodiversity conservation and sustainable forest management.		these trainings achieve a concrete training objective to control the cause of deforestation: <i>"Inadequate implementation of industrial or traditional agricultural, livestock and mining activities"</i> .	<p><i>"Inadequate implementation of industrial or traditional agricultural and livestock activities for sale and/or consumption"</i>.</p> <p>In addition to the above, a document describing the training and its objective to control deforestation through an integrated and planned approach for sustainable management of forest resources is attached. <a href="#">REPORTE DE CAPACITACIONES REDD+.pdf</a></p>
Identify and adopt the principles of forest governance for sustainable forest management.	<p>Characterization , implementation and follow-up in the execution of the activity (three phases):</p> <ol style="list-style-type: none"> <li>1. Property characterization to the total REDD+ properties. (25%)</li> <li>2. Generation of a property plan document for all REDD+ properties. (50%)</li> <li>3. Monitoring of the implementation of the property plan for all REDD+ properties. (25%)</li> </ol>	The goal of the indicator is weighted between characterization, land document and implementation: the three activities should be completed 100% to ensure an indicator that aims to control the direct cause.	<p>The three activities will be carried out on 100% of the properties enrolled in the initiative. As they are included in the same process that is developed over 20 years, the percentage they represent individually is different. This means that;</p> <ul style="list-style-type: none"> <li>--When 100% of the properties are characterized, <b>the OVERALL compliance advances 25%</b>.</li> <li>-When 100% of the Properties have generated the property plan document, <b>the OVERALL compliance advances by 50%</b>.</li> <li>-When 100% of the Properties have their implementation follow-up, the <b>OVERALL compliance advances 25% more</b>.</li> </ul> <p>Concluding when the three activities are fully developed in 100% of the properties, <b>the overall compliance will achieve 100%</b>.</p>

2. Closed

3. In carbon projects, REDD+ activities and Removal Activities (RA) can complement each other and, together, achieve broader and more ambitious objectives. The establishment of agroforestry systems can be considered both a REDD+ activity and an A/R (afforestation/reforestation) removal activity, depending on the objectives, approaches, and benefits they provide. An agroforestry system, as a REDD+ activity, aims to reduce greenhouse gas emissions from deforestation and forest degradation while promoting conservation and sustainable management of forests. This is achieved through an approach that defines a comprehensive strategy to control deforestation and manage forests in strategic areas.

Let's analyze the case of MAD'S "Bosques Territorios de Vida," where each measure and action is designed to address the *causes and agents of deforestation and degradation in Colombia, aiming to reduce GHG emissions by valuing the natural forest through sustainable forest management, conservation, and restoration of degraded forest areas or ecosystems (increasing carbon content)*. In the "M2. Development of a forest economy and closure of the agricultural frontier" line of action, the goal is to *"Develop and implement agro-environmental models in the rural stabilization strips of the agricultural frontier."*

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project CultivO2 P1
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<p>From the above, it can be concluded that a primary requirement is the strategic area (agricultural frontier and rural stabilization strip) where the agri-environmental model is developed and implemented—in other words, transition zones and forest boundaries that were previously forest ecosystems and conservation zones.</p> <p>Analyzing other authors who relate agroforestry systems as a REDD+ activity, <i>"An advantage of PFS with respect to mitigation is that they can avoid deforestation by providing timber products on already deforested lands, becoming an important tool for REDD+ programs."</i></p> <p>In summary, agroforestry systems, being a land management strategy that combines agricultural production with forest production, offer a timber alternative that can help reduce pressure on forests by reducing timber extraction for sale and/or self-consumption (whether legal or illegal).</p> <p>From the above, it can be concluded that, to consider an agroforestry system as a REDD+ activity, it is necessary to provide a harvestable forest component that allows the farmer to obtain timber resources and, thus, reduce the pressure on the forest.</p> <p>Considering the above, in the case of the crops implemented in the CultivO2 initiative, they do not correspond or relate to the conclusions mentioned above. The establishment of the crops is focused and aligned with the requirements of the BCR001 methodology, indicating that these areas do not correspond to the forest category at the beginning of the project and five years before. In other words, crop development is not focused on priority areas of the agricultural frontier, stabilization strips, or forest transition zones, and these areas were not previously forested ecosystems or conservation zones (as corroborated in the maps of eligible areas found in the technical documents of each VICHADA property).</p> <p>Regarding the forestry component as a strategy to reduce pressure on the forest, of the 24 properties that implement Removal Activities and REDD+, 97% of the crops do not provide a forestry component that serves as a timber alternative for producers. The remaining 3%, which does provide a forestry component, is not being quantified. In summary, the initiative only quantifies the areas of perennial crops, and in no case is a crop-related forestry component considered.</p> <p>Considering the above, the establishment of crops on the property seeks to protect soil and water, diversify income, and create employment in local communities, but it is not a REDD+ activity. Therefore, removals must be accounted for (there is additionality).</p>	
<b>Documentation provided by project manager</b>	
<a href="#">REPORTE DE CAPACITACIONES REDD+.pdf</a>	
<b>Evaluation of VVB</b>	<b>Date:</b> 21/07/2023
The information presented is considered pertinent..	
<b>Closed</b>	

<b>NC ID</b>	<b>19</b>	<b>Date:</b> 10/02/2023
<b>Description of NC</b>		

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
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In accordance with BCR002 methodology for the quantification of GHG emission reductions, the following criteria should be considered for ex ante and ex post quantification:

1. Include emission factors for the post deforestation scenario (identify land uses characterized by forest loss and quantify carbon for these areas in the baseline).
2. Adjust baseline and monitoring spreadsheets according to adjustments in the reference area and leakage area.

**Response from project manager**

**Date:** 27/03/2023

1. Under the guidelines of the methodological document BCR002, the inclusion of emission factors for the post-deforestation scenario is not requested; therefore, the quantification of carbon content for these areas is not estimated.
2. The baseline and monitoring adjustment is made in Annex 1. [1. GOF-053.Cálculo de emisiones REDD + Cultivo2 V2.xlsx](#), according to the changes reported in the reference area and leakage area. Likewise, the PDD is updated with tables and values related to emission reductions for the REDD+ component.

**Documentation provided by project manager**

1. [GOF-053.Cálculo de emisiones REDD + Cultivo2 V2.xlsx](#)  
[PDD CULTIVO2 V.2.0](#)

**Evaluation of VVB**

**Date:** 10/05/2023

1. The methodology specifies that Aboveground biomass (Ba), Belowground biomass (Bs) and Soil organic carbon (SOC) pools should be considered, however, the coverages are not specified, therefore, the post-deforestation scenario is not clear, and although it is more conservative to consider, the methodology does not specify this criterion. Therefore, the response is considered sufficient.

2. The information is considered sufficient.

**Closed.**

**NC ID**

**5.13. 20**

**Date:** 10/02/2023

**Description of NC**

In assessing the conformity of the Monitoring Plan for REDD+ activities in accordance with the provisions of the BCR002 methodology, the following must be taken into account:

**1. Monitoring the Implementation of Project Activities:**

a. REDD+ activities must respond to elements and criteria aimed at reducing deforestation and degradation, therefore, indicators and targets must respond to performance criteria created from the characterization of the properties and their needs, therefore, the baseline survey should not be a REDD+ activity, but the input to build the activities.

b. The monitoring of deforestation control activities should have a frequency of less than 5 years.

c. Consider that retroactivity for REDD+ activities imply actions since 2017, which should be reflected in the Monitoring Report executed with supports that demonstrate that project actions are constant and verifiable. In this sense, it must be supported that the conservation is due to the project and not

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
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to legal compliance on the part of the participants, such as: management plans, voluntary legal compliance in the organizations and/or requirements by funders such as Fedecacao, among others.

**Comment 1:** According to the adjustments to the activities and areas of the project, the Monitoring Report should be adjusted.

**Response from project manager**

**Date:** 27/03/2023

**1. Monitoring the Implementation of Project Activities:**

- a. REDD+ activities respond to elements and criteria aimed at deforestation and degradation of a group of properties, however the individual perspective of each property differs, being necessary a specific characterization. The characterization is separated as a project activity and is included as a contribution to a macro activity that aims to strengthen forest governance through the generation and implementation of property plans.
- b. The frequency of deforestation control activities is reduced to less than 5 years with the exception of the activity aimed at strengthening the forest governance structure. This activity is divided into phases that require time for execution, implementation and field follow-up.
- c. The monitoring report is organized in such a way that it concisely reflects the implementation of activities since 2017. The conservation on the project areas are due to the continuous accompaniment on the Properties that involves detecting possible events that damage the forest such as fires and acting efficiently against them. On the other hand, strengthening knowledge through training improves the landowners' understanding, generating greater ownership of their ecosystems and biodiversity. In addition to the above, the landowners sign a contract with the project owner and not with allies of the process that involves implementing activities to reduce deforestation and degradation on the Property. This can be seen in the *third clause. Obligations of the benefit that demonstrates the commitment to the project and not at the request of other actors.*

**Documentation provided by project manager**

[Reporte Monitoreo Actividades REDD+ .xlsx](#)

**Evaluation of VVB**

**Date:** 10/05/2023

1. a. Although the TP presents the list of activities, it is important to demonstrate how the design of these activities ensures effective monitoring of deforestation prevention through impact indicators. Review the monitoring methodologies and indicators for the following activities.

Direct or underlying cause	Activity	Monitoring methodology	OVV observation
Inadequate implementation of industrial or traditional agricultural, livestock and mining activities.	Implement training and accompaniment processes through training to strengthen land planning, biodiversity conservation and sustainable forest management.	Application of training or workshops	The goal is measured in 20 trainings. However, it is not evident how these trainings achieve a concrete training objective to control the cause of deforestation: <i>"Inadequate implementation of industrial or traditional agricultural, livestock and mining activities"</i> .

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
------------------------------------	---

Socioeconomic, cultural, demographic, political and institutional factors, in addition to illegal logging due to lack of governance and land planning.	Identify and adopt the principles of forest governance for sustainable forest management.	<p>Characterization, implementation and follow-up in the execution of the activity (three phases):</p> <ol style="list-style-type: none"> <li>1. Property characterization to the total REDD+ properties. (25%)</li> <li>2. Generation of a property plan document for all REDD+ properties. (50%)</li> <li>3. Monitoring of the implementation of the property plan for all REDD+ properties. (25%)</li> </ol>	The goal of the indicator is weighted between characterization, land document and implementation: the three activities should be completed 100% to ensure an indicator that aims to control the direct cause.
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b. – c. The information provided is sufficient.

**Open.**

<b>Response from project manager</b>	<b>Date:</b> 30/07/2023
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1.a.

Actividad	Metodología de monitoreo	Observación OVV	Respuesta TP
Implement training and accompaniment processes through training to strengthen land planning, biodiversity conservation and sustainable forest management.	Application of training or workshops	The goal is measured in 20 trainings. However, it is not evident how these trainings achieve a concrete training objective to control the cause of deforestation: <i>"Inadequate implementation of industrial or traditional agricultural, livestock and mining activities"</i> .	The project activity and the direct mitigating cause are adequately articulated. <i>"Inadequate implementation of industrial or traditional agricultural and livestock activities for sale and/or consumption"</i> . In addition to the above, a document describing the trainings and their formative objective to control deforestation through an integral and planned approach for the sustainable management of forest resources is attached. <a href="#">REPORTE DE CAPACITACIONES REDD+.pdf</a>
Identify and adopt the principles of forest governance for sustainable forest management.	<p>Characterization, implementation and follow-up in the execution of the activity (three phases):</p> <ol style="list-style-type: none"> <li>1. Property characterization to the total REDD+ properties. (25%)</li> <li>2. Generation of a property plan document for all REDD+ properties. (50%)</li> <li>3. Monitoring of the implementation of the property plan for</li> </ol>	The goal of the indicator is weighted between characterization, land document and implementation: the three activities should be completed 100% to ensure an indicator that aims to control the direct cause.	<p>The three activities will be carried out on 100% of the properties enrolled in the initiative. As they are included in the same process that is developed over 20 years, the percentage they represent individually is different. This means that;</p> <ul style="list-style-type: none"> <li>-When 100% of the properties are characterized, <b>the OVERALL compliance</b> advances 25%.</li> <li>-When 100% of the Properties have generated the property plan document, <b>the OVERALL compliance</b> advances by 50%.</li> <li>-When 100% of the Properties have their implementation follow-up, <b>the OVERALL compliance</b> advances 25% more.</li> </ul> <p>Concluding when the three activities are fully developed in 100% of the</p>

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project CultivoO2 P1
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	all REDD+ properties. (25%)		properties, <b>the overall compliance will achieve 100%.</b>
<b>Documentation provided by project manager</b>			
N/A			
<b>Evaluation of VVB</b>		<b>Date:</b> 30/07/2023	
The information provided is considered appropriate. <b>Closed</b>			

<b>NC ID</b>	<b>5.14. 21</b>	<b>Date:</b> 10/02/2023
<b>Description of NC</b>		
<p>The TP should consider providing day, month and year of the monitoring period for AR and REDD+ activities, not necessarily, these should be the same date.</p> <ul style="list-style-type: none"> <li>- <b>AR activities:</b> The start date (as established by BCR) and end date of the forest inventory.</li> <li>- <b>REDD+ activities:</b> The start date (as established by BCR) and end date of the last activity or deforestation monitoring (satellite image).</li> </ul> <p>According to the above the TP should establish the dates of monitoring.</p>		
<b>Response from project manager</b>		<b>Date:</b> 27/03/2023
<p>The information in the monitoring report is organized in detail.</p> <ul style="list-style-type: none"> <li>- <b>AR activities:</b> The start date is described in Nonconformance 03, regarding the forest inventory, the use of secondary data for the estimation of removals in cacao crops will be used for the first verification (See <a href="#">2.3.2. ACTIVIDADES REMOCIÓN</a> ).</li> <li>- <b>REDD+ activities:</b> The implementation of activities for the monitoring period is organized (See <a href="#">ACTIVIDADES DE PROYECTO REDD+</a> ), and a summary is generated in the schedule of activities implemented. Deforestation change alerts are generated annually using the non-forest forest map generated by the SMByC.</li> </ul>		
<b>Documentation provided by project manager</b>		
<a href="#">ACTIVIDADES DE PROYECTO REDD+</a> ; <a href="#">2.3.2. ACTIVIDADES REMOCIÓN</a> ; <a href="#">Cronograma de actividades implementadas.xlsx</a>		
<b>Evaluation of VVB</b>		<b>Date:</b> 10/05/2023
<p>Monitoring dates must be submitted in accordance with the closing of the NC3. <b>Open.</b></p>		
<b>Response from project manager</b>		<b>Date:</b> 29/06/2023
1. Monitoring related to the AR start date is organized by day, month and year.		

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project CultivO2 P1
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2. Monitoring development related to the REDD+ start date is organized by day, month and year.	
<b>Documentation provided by project manager</b>	
Monitoring report	
<b>Evaluation of VVB</b>	<b>Date:</b> 21/07/2023
The information provided is considered appropriate. <b>Closed</b>	

<b>NC ID</b>	<b>5.15. 22</b>	<b>Date:</b> 10/02/2023
<b>Description of NC</b>		
The TP must present as part of the quality control in the remediation of the plots, the estimates to comply with the 10% sampling intensity and the original formats of the remediation to cross-check this information.		
<b>Response from project manager</b>		<b>Date:</b> 27/03/2023
In the first verification, secondary data will be used to estimate removals in Cacao crops. In the case of Cashew, new plots will be surveyed for the construction of the allometric model and growth monitoring; once the sampling is completed, the quality control supports will be presented.		
<b>Documentation provided by project manager</b>		
<b>Evaluation of VVB</b>		<b>Date:</b> 10/05/2023
No supporting information is provided for this NC. <b>Open.</b>		
<b>Response from project manager</b>		<b>Date:</b> 01/07/2023
The Cashew crop plots were randomly selected and cover 15.3% of the plots established in the initial sampling. ( <a href="#">See anexo Cálculo de mediciones parcelas de monitoreo</a> ).		
For the Cacao crop, remeasurement of plots is not reported, because the estimates were made based on regional data.		
<b>Documentation provided by project manager</b>		
<a href="#">Ver anexo Cálculo de mediciones parcelas de monitoreo</a> .		
<b>Evaluation of VVB</b>	<b>Date:</b> 21/07/2023	

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
------------------------------------	---

The information presented is considered relevant.

**Closed**

<b>NC ID</b>	<b>23</b>	<b>Date: 10/02/2023</b>
<b>Description of NC</b>		
The TP must present evidence of compliance with the registration in RENARE and the mechanisms used to avoid double accounting, in consideration of numeral 26 of the BCR standard.		
<b>Response from project manager</b>		<b>Date: 27/03/2023</b>
<p>The CULTIVO2 initiative is registered in the National Registry for Greenhouse Gas Emission Reduction (RENARE) under the "Low Carbon Development Projects and Programs (PDBC)" line. The initial feasibility phase is currently being reported on the web platform and the organization is waiting for the Ministry of the Environment to complete the application maintenance process and then proceed with the generation of the project's informative report, once the pertinent feasibility has been determined.</p> <p>Due to the fact that the RENARE platform is undergoing maintenance, it is not possible to directly review the enrolled properties; however, to guarantee that there is no double accounting, a contract of enrollment is signed with the owners where in the eighth clause called "Exclusivity of the area" it is specified that the registered eligible area may not participate in another climate change mitigation PROJECT or be used for compensation activities of the biotic component, considering the fully identified area to be exclusive to the PROJECT.</p>		
<b>Documentation provided by project manager</b>		
<a href="#">2.1.1.4. Documentos vinculación Propietarios</a>		
<b>Evaluation of VVB</b>		<b>Date: 10/05/2023</b>
The information presented is considered sufficient.		
<b>Closed.</b>		

## Clarifications (CLs)

<b>CL ID</b>	<b>5.16. 01</b>	<b>Date: 08/02/2023</b>
<b>Descripción de NC</b>		
<p>Aclarar en el encabezado del PD del proyecto versión 1.0: que este documento, corresponde a un documento conjunto de PD y Reporte de Monitoreo (RM), que es un Proyecto agrupado, la Fecha de elaboración, el Programa de registro, la Entidad (s) responsable (s) y demás información que se considere pertinente.</p> <p><b>Nota:</b> Asegurar que el nombre de los archivos concuerde con las versiones de los documentos.</p>		
<b>Response from project manager</b>		<b>Date: 27/03/2023</b>

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
------------------------------------	---

An informative table was attached using the guide procedures found on the Biocarbon Registry web page.	
<b>Documentation provided by project manager</b>	
PDD document	
<b>Evaluation of VVB</b>	<b>Date:</b> 10/05/2023
No clarifying information is included on the joint PD and Monitoring Report (MR) document. The heading or summary should indicate what is related to the monitoring results. <b>Open.</b>	
<b>Response from project manager</b>	<b>Date</b> 10/05/2023
A division of the PDD & RM documents of the project is made, in which the results are related at the macro level through a summary, as well as for the monitoring period (2017-2021). On the other hand, in numeral 2, general description of the project, the monitoring results are related.	
<b>Documentation provided by project manager</b>	
PDD & RM of the project	
<b>Evaluation of VVB</b>	<b>Date:</b> 21/07/2023
The information presented is considered pertinent. <b>Closed.</b>	

<b>CL ID</b>	<b>5.17. 02</b>	<b>Date:</b> 08/02/2023
<b>Description of NC</b>		
<p>Clarify the following information within the PD version 1.0:</p> <p>a. In Chapter 1, numeral 2. GENERAL TERMS, include bibliographic sources of the terms presented, review the relevance of including definitions in accordance with the project objectives and activities, e.g.: types of crops included in the project, terminology applicable to REDD+ projects, etc.</p> <p>b. In Chapter 1, numeral 2. SUMMARY, briefly describe: the Program of Registry, methodologies used (AR and REDD+), start date, project duration, types of crops included, areas of project expansion, ex ante results, monitoring period and ex post monitoring results.</p> <p>c. Clarify the term "<i>phase 1</i>" in the PD, in the BCR Standard these areas are referred to as Instances.</p> <p>d. Clarify throughout the document the crops included within the AR activity, in different paragraphs the following are mentioned: Cacao, Cashew, palm and rubber, however, only Cacao and Cashew are being considered in the other chapters of the PD.</p>		
<b>Response from project manager</b>	<b>Date</b> 27/03/2023	
No response submitted		

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project CultivO2 P1
------------------------------------	---

<b>Documentation provided by project manager</b>	
No response submitted	
<b>Evaluation of VVB</b>	<b>Date:</b> 10/05/2023
<p>a. – b - d - . There is no response or adjustment related to this NC.</p> <p>c. Ok</p> <p><b>Open.</b></p>	
<b>Response from project manager</b>	<b>Date</b> 10/05/2023
<p>a. Done</p> <p>b. The information was incorporated in section 2, project description.</p> <p>d. The information related to Palm and Rubber was removed throughout the document.</p>	
<b>Documentation provided by project manager</b>	
PDD	
<b>Evaluation of VVB</b>	<b>Date:</b> 21/07/2023
<p>The information presented is considered sufficient.</p> <p><b>Closed</b></p>	

<b>CL ID</b>	<b>03</b>	<b>Date:</b> 08/02/2023
<b>Description of NC</b>		
<p>Clarify legal documentation and present supports for the following participants:</p> <ul style="list-style-type: none"> <li>- Casa Luker and Luker agricultural companies.</li> <li>- Partners of the Americas (POA). Missing approval signature of the CEO POA in the document Purchase Order for Services.</li> </ul>		
<b>Response from project manager</b>		<b>Date</b> 27/03/2023
<ul style="list-style-type: none"> <li>- The companies Casa Luker and Luker agrícola provide documents that legally support their incorporation, which are in their respective folders.</li> <li>- In the particular case of the purchase order for services from Partners of the Americas (POA), both parties have agreed and accepted the terms and conditions set forth in the document, including the red text handled by the participating party in the project, and therefore the contract has been perfected.</li> </ul>		
<b>Documentation provided by project manager</b>		
<p><a href="#">LINK CARPETA CASA LUKER Y LUKER AGRICOLA</a></p> <p><a href="#">LINK CARPETA DOCUMENTOS PARTNERS OF THE AMERICAS (POA) C4D</a></p>		

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project CultivO2 P1
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<b>Evaluation of VVB</b>	<b>Date:</b> 10/05/2023
The information presented is sufficient. <b>Closed.</b>	

<b>CL ID</b>	<b>04</b>	<b>Date:</b> 08/02/2023
<b>Description of NC</b>		
<p>In the description of biotic, meteorological and water resource characteristics of the project, the following should be clarified:</p> <p>a. The types of ecosystems in the project areas are grouped into the Andean and Orinoquía biomes, without considering the number of ecosystems immersed within these biomes (it is suggested to review Ecosystems Map IDEAM 2017).</p> <p>b. The economic description only includes the Andina region, the Orinoquía region should be included.</p> <p>c. The description of social aspects only includes the Orinoquía region, the Orinoquía region should be included.</p> <p>d. Consider that the project areas respond more to climatic conditions associated with the cultivation of Cacao and Cashew than to a region in general, which implies that the socio-environmental characterization should be mainly focused on these areas.</p> <p><b>Comment:</b> It is recommended to sectorize the project by nuclei and adjust the description to these more specific zones, which is more in line with the reality of the project.</p>		

<b>Response from project manager</b>	<b>Date</b> 27/03/2023
<p>a) The description is made taking into account the classification by natural regions, as it is done in the NREF document, without taking into account the ecosystems immersed in these.</p> <p>b) The social description of the barriers was developed by departments including the Andina and Orinoquia regions.</p> <p>c) ok</p> <p>d) The socio-environmental conditions are directed to the departments with enrolled areas of Cashew, Cacao and REDD+ components.</p>	

<b>Documentation provided by project manager</b>
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PDD
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<b>Evaluation of VVB</b>	<b>Date:</b> 10/05/2023
The information presented is sufficient. <b>Closed.</b>	

<b>CL ID</b>	<b>05</b>	<b>Date:</b> 08/02/2023
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VALIDATION AND VERIFICATION REPORT	Climate change mitigation project CultivO2 P1
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Description de NC	
<p>In numeral 13.1 of the Additionality Analysis, the following should be clarified:</p> <ol style="list-style-type: none"> <li>1. Do not use data from departments that are not part of the project area such as Antioquia and Putumayo.</li> <li>2. Revise the description of the oil activity in the Andina region; the information presented responds more to the Magdalena Medio, without including the other zones.</li> </ol>	
Response from project manager	Date 27/03/2023
<ol style="list-style-type: none"> <li>1. The information for the department of Putumayo is deleted.</li> <li>2. This was revised and adjusted.</li> </ol>	
Documentation provided by project manager	
DdP	
Evaluation of VVB	Date: 10/05/2023
<p>The information presented is sufficient.</p> <p><b>Closed</b></p>	

CL ID	06	Date: 08/02/2023
Description of NC		
<p>Clarify in the SDGs Monitoring Plan and Monitoring Report with the results with those presented in the BCR TOOL ODS. The PD values, matrices and tools differ.</p>		
Response from project manager		Date 27/03/2023
<p>The monitoring report is adjusted to express the direct contribution of the activities on the SDGs. The coincidence of the information reported in the PD, SDG monitoring plan, SDG monitoring report and the TOOL ODS tool is verified.</p>		
Documentation provided by project manager		
<p><a href="#">Reporte de Objetivos de Desarrollo Sostenible</a></p>		
Evaluation of VVB		Date: 10/05/2023
<p>The information is sufficient.</p> <p><b>Closed.</b></p>		

CL ID	07	Date: 08/02/2023
Description of NC		

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project CultivO2 P1
------------------------------------	---

Adjust the equation " *Relation between Aboveground biomass and Belowground biomass*" in Table 23 of the PD, the divisor is missing in the equation.

**Response from project manager**

**Date** 27/03/2023

The source of the equation is adjusted. Therefore, the equation proposed by Cairns et. al (1997) for the calculation of biomass in coarse roots does not include the divider.

**Documentation provided by project manager**

[ECUACIONES ALOMÉTRICAS](#)

**Evaluation of VVB**

**Date:** 05/05/2023

**Closed**

**CL ID**

**08**

**Date:** 08/02/2023

**Description of NC**

In the evidence for the monitoring of project activities, different photos, presentations and trainings are presented. However, the dates are not included in these records, which does not provide evidence of their execution within the monitoring period.

The dates of the records presented should be included to support the report.

**Response from project manager**

**Date** 27/03/2023

The monitoring report is updated to clarify the implementation schedule for each of the activities month by month. Additionally, the information is organized to provide clarity on the dates when the activities are to be carried out.

**Documentation provided by project manager**

[Reporte monitoreo AR.xlsx](#)

[Reporte Monitoreo Actividades REDD+ .xlsx](#)

[Cronograma de actividades implementadas.xlsx](#)

**Evaluation of VVB**

**Date:** 05/05/2023

The information presented is considered sufficient.

**Closed.**

**CL ID**

**09**

**Date:** 08/02/2023

**Description of NC**

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
------------------------------------	---

It is suggested to include within the Monitoring Report a timeline with the project implementations for AR and REDD+ according to the monitoring periods defined in the indicators of the PD Monitoring Plan and its execution level for the monitoring period.	
<b>Response from project manager</b>	<b>Date</b> 27/03/2023
The monitoring report is updated to clarify the implementation schedule for each of the activities month by month	
<b>Documentation provided by project manager</b>	
<a href="#">Reporte monitoreo AR.xlsx</a> <a href="#">Reporte Monitoreo Actividades REDD+ .xlsx</a> <a href="#">Cronograma de actividades implementadas.xlsx</a>	
<b>Evaluation of VVB</b>	<b>Date:</b> 05/05/2023
The information presented is considered sufficient. <b>Closed.</b>	

<b>CL ID</b>	<b>10</b>	<b>Date:</b> 08/02/2023
<b>Description of NC</b>		
Adjust within the PD and RM, due to errors of form: use of capital letters for capital names (several are in lower case), adjustment of table numbering, spelling and editing review.		
<b>Response from project manager</b>	<b>Date:</b> 27/03/2023	
Se realizó los ajustes a la numeración de tablas y ortografía en general		
<b>Documentation provided by project manager</b>		
Adjustments were made to table numbering and spelling in general.		
<b>Evaluación de VVB</b>	<b>Date:</b> 05/05/2023	
The information presented is considered sufficient. <b>Closed.</b>		

<b>CL ID</b>	<b>11</b>	<b>Date:</b> 08/02/2023
<b>Description of NC</b>		
Provide consultation supports to the Land Restitution Unit and the VITAL window, to demonstrate that the Properties do not present situations of dispossession or abandonment due to the armed conflict.		

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project CultivO2 P1
------------------------------------	--

<b>Response from project manager</b>	<b>Date:</b> 27/03/2023
Supporting documents of the consultation with the Land Restitution Unit and the VITAL window are attached, showing that the properties enrolled in the project do not present situations of dispossession or abandonment due to the armed conflict, each support is found in the folder of each property.	
<b>Documentation provided by project manager</b>	
<a href="#">Link documentos legales</a>	
<b>Evaluation of VVB</b>	<b>Fecha:</b> 05/05/2023
The information presented is considered sufficient. <b>Closed.</b>	

### Future Actions (FAR)

N/A

VALIDATION AND VERIFICATION REPORT	Climate change mitigation project Cultivo2 P1
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### Annex 3: Attendance list

**ATTENDANTS MEETINGS**

Date: 28-01-2023 - 01-01-2023

ID	NAME	COMMUNITY/ENTITY	POSITION	CONTACT CELPHONE/MAIL	SIGNATURE
	Pablo Ramirez	Proyecto C4D	Chief of Party	pramirez@partners.net	Pablo R
	Felipe Rojas	IOA - C4D	Técnico Director	frojas@partners.net	Felipe Rojas
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	Ella E Dora P	Saravena	pto: ARTURO	ekoesuena@gmail.com	Ella E Dora P
	Lorenzo Niño	Saravena	MonteAdentro		Lorenzo Niño
	Jennifer Galea Daza	Saravena	Dilla esneza	jennifergaleadaza@gmail.com	Jennifer Galea Daza
	Ariel Mendieta O	Saravena	La Esperanza	mendietaariel77@gmail.com	Ariel Mendieta O
	Sandra Duarte Ch	Villanueva / Catambor	Ge Oporativa	opativad@catambor.org	Sandra Duarte Ch
	John Freddy Maldonado	villanueva / Catambor	Ste cultivo2	cacao@catambor.org	John Freddy Maldonado
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	José Fernando	Biocaucho	Amistador	CL3012507301	José Fernando

Temas: Reunión de Auditoria CultivO2 - Productores de Caldas y Córdoba

#	Nombre y Apellido	Cédula	Municipio / Vereda	Celular	Correo
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9	Luisa Fernanda Bello Rojas	1115865575	Fundación Cataruben	3102088384	carbono@cataruben.org
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11					
12					