JOINT VALIDATION & VERIFICATION REPORT

PARAMUNO PROJECT 1

Conformity Assessment Body | 

Validation & Verification Report PROJECT ID

Project Title	*PARAMUNO Project 1*
Project ID	*BCR-CO-635-14-003*
Project holder	*Fundacion Cataruben*
Project Type/Project activity	*AFOLU (Agriculture, Forestry, and Other Land Use)*
Grouped project	*This project is ungrouped*
Version number of the Project Document to which this report applies	*2.4* *25/01/2024*
Applied methodology	*Methodological Document AFOLU Sector / BCR0002 Quantification of GHG Emission Reductions REDD+ Projects, Version 3.1 / September 15, 2022* *Methodological Document AFOLU Sector/ BCR 0003 Quantification of GHG Emission Reductions / Activities that prevent land use change and improve management practices for peatlands and other wetlands in high mountain ecosystems Version 3.0 / August 31, 2022*
Project location	*Colombia - Andean Region.* *Cities where the project is located:* ● *Boyacá: Arcabuco, Chinavita, Duitama, Gachantiva, Paez, Pajarito, Paya, San Eduardo, Santa Maria y Sogamoso.* ● *Caldas: Pácora y Salamina.* ● *Casanare: Aguazul, Chameza, Monterrey, Pore,* *Sacama, Tamara y Yopal.*

	• *Cauca: Inza, Purace, San Sebastian y Totoro.* • *Cundinamarca: Guasca, Venecia, Choachi, Paratebueno y Ubaque* • *Norte De Santander: Salazar y Toledo.* • *Quindío: Córdoba, Génova y Salento.* • *Santander: Bolívar, Carcasi, Charalá, Gambita, Mogotes y Zapatoca.* • *Tolima: Chaparral, Rioblanco, Roncesvalles y San Antonio De Calarma.* • *Valle Del Cauca: El Cerrito, Guadalajara De Buga, Jamundí, Sevilla y Tuluá.*
Project starting date	*01/08/2017*
Quantification period of GHG emissions reductions/removals	*01/08/2017 to 31/07/2037*
Estimated total and mean annual amount of GHG emission reductions/removals	*Total amount of GHG emissions reductions/removals (2017-2037):* ***1.434.332*** *tCO2e* *Estimated average annual amount of GHG emission reductions/removals (2017-2037):* ***68.302 tCO2e***
Monitoring period	*01/08/2017 to 31/12/2021*
Total amount of GHG emission reductions/removals	*Total amount of GHG emissions reductions/removals: (2017-2021): 477.625 tCO2e* *Average annual amount of GHG emission reductions/removals (2017-2021): 95.525 tCO2e*
Contribution to Sustainable Development Goals	*ODS 6: Clean water and sanitation* *ODS 13: Climate action* *ODS15: Life and land*
Special category, related to co-benefits	*Orchid*
Version and date of issue	*1.3* *25/01/2024*

Work carried out by	*Lead Auditor: Diana Rauchwerger Londoño.* *Technical Expert: Fabián Andrés Patiño Oviedo.* *Technical Reviewer: Cesar Augusto Marín Corba.*
Approved by	CAMILO ANDRES MONTAÑA SALAMANCA Firmado digitalmente por CAMILO ANDRES MONTAÑA SALAMANCA Fecha: 2024.02.08 13:13:47 -05'00' *Camilo Andrés Montaña Salamanca*

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1 Executive summary

PARAMUNO Project 1 is an initiative within the AFOLU sector and is part of the REDD+ mechanism (Reducing Emissions from Deforestation and Forest Degradation, plus conservation, sustainable management of forests, and enhancement of forest carbon stocks). The project aims to address deforestation and forest degradation while promoting the conservation and sustainable management of forests and ecosystems present on 154 private properties that make up the project.

The project proponent provided sufficient evidence that allows establishing that the start date of its activities corresponds to August 1, 2017, for activities that prevent changes in land use and improve management practices for peatlands and other wetlands in high mountain ecosystems. Additionally, it includes REDD+ activities. The accreditation period is 20 years (from August 1, 2017, to August 1, 2036). The audit team confirms that the ex-ante analysis of the project's GHG reductions was conducted accurately, transparently, and conservatively, estimating a total of 1,434,332 tCO2e (average estimated annual 68,302 tCO2e).

In the verification phase, the total net emissions, and absorptions of greenhouse gases ex post for the monitoring period (01/08/2017 - 31/12/2021) amount to 477,625 tCO2e (467,474 tCO2e for forests and 10,151.00 tCO2e for peatlands and other wetlands in high mountain ecosystems).

In this context, the audit conducted by the VERSA team for the validation and verification of PARAMUNO Project 1 had the main objective of assessing whether the project activities have a significant effect on reducing greenhouse gas (GHG) emissions associated with the loss of natural ecosystems. The audit also aimed to evaluate whether these activities promote sustainable development and ensure compliance with the defined criteria for the project according to applicable legal regulations, the methodologies used for calculating emission reductions, and the effectiveness of the methods defined by the project proponent to ensure compliance with the principles governing the audit process.

2 Objective, scope and criteria

The validation and verification process undertaken by VERSA's audit team for PARAMUNO Project 1 comprised a comprehensive evaluation of historical data and an on-site verification visit. The objectives of this process were as follows:

- *Provide an independent third-party opinion on the evaluation of activities, methods, and procedures outlined in the Project Document Format (DdP) and in the Monitoring Report (RM) of the Greenhouse Gas (GEI) PARAMUNO Project 1.*

- *Determine the project's compliance with the principles and verification criteria established by the relevant regulations and Standard BCR, v3.2.*
- *Evaluate the project owner's ability to demonstrate land eligibility in accordance with the requirements outlined in section 12.1 of Standard BCR, V 3.2.*
- *Verify the material accuracy of greenhouse gas emissions reductions reported for the first monitoring period.*

In accordance with Proposal No. GEI-P-101 Legal Agreement No. VERSA-P-0133 21/02/2023, the audit criteria are as follows:

- *ISO 14064-2:2019 and ISO 14064-3:2019*
- *Interpretación Nacional de Salvaguardas Sociales y Ambientales para Proyectos REDD+*

The project was validated and verified under the BCR Standard, version 3.2 dated 23rd September 2023, and the following methodologies and tools were implemented:

- *Methodological Document for AFOLU Sector / BCR0002 Quantification of GHG Emission Reductions from REDD+ Projects. Version 3.1, 15th September 2022.*
- *Methodological Document for AFOLU Sector / BCR0003 Quantification of GHG Emission Reductions - Activities preventing land use change and improving peatland and other wetland management practices in high mountain ecosystems of Projects. Version 3.0, 31st August 2022.*
- *Baseline and Additionality Tool Version 1.2 dated September 27, 2023.*
- *Tool to demonstrate compliance with REDD+ safeguards Version 1.1, dated January 26, 2023.*
- *No net harm Environmental and social safeguards (NNH) Version 1.0 dated March 7, 2023.*
- *Tool for determining contributions to the achievement of Sustainable Development Goals (SDGs) Version 2.0, dated March 1, 2022.*
- *"Avoid Double Accounting" (ADC) Tool Version 1.0, dated March 9, 2023.*
- *Monitoring, Reporting, and Verification (MRV) Tool Version 1.0 dated February 13, 2023.*
- *Permanence and Risk Management Tool Version 1.0 dated March 7, 2023.*
- *The project document was developed using the GHG project template in its version 2.0 as of September 2023.*

3 Validation and verification planning

PARAMUNO Project 1 is an initiative in the AFOLU sector and is part of the REDD+ mechanism (Reducing Emissions from Deforestation and Forest Degradation, plus conservation, sustainable management of forests, and enhancement of forest carbon

stocks). This mechanism aims to address deforestation and forest degradation while promoting the conservation and sustainable management of forests and ecosystems present in the project.

In this context, the audit conducted by the VERSA team for the validation and verification of PARAMUNO Project 1 had the objective of assessing whether the project activities have a significant impact on reducing greenhouse gas (GHG) emissions associated with the loss of natural ecosystems. Additionally, it was evaluated whether these activities promote sustainable development and established compliance with the criteria defined for the project, applicable legal regulations, methodologies used for calculating emission reductions, and the effectiveness of the methods defined by the project proponent, thereby ensuring compliance with the principles governing the audit process.

The level of assurance agreed with the client to identify possible errors, omissions, underestimations or overestimations in the validation and verification process was set at 95%. Consequently, various stages were conducted during the audit, including strategic analysis, risk assessment, and the design of evidence collection, as detailed in Chapter 3.1.

A thorough review of 100% of the documents provided by the project proponent was carried out, along with interviews with stakeholders. The risk assessment indicated a low probability of finding material misstatements or non-compliance with criteria. The consistency of the baseline of the Greenhouse Gas (GHG) Mitigation Sectoral Project with current national regulations and/or applied methodology was also examined, confirming that the assessed values for the Reductions Activity align with national reports and, for the REDD+ Activity, with the NREF.

Regarding the quantification of mitigation results against the validated baseline, following current national standards and/or applied methodology, and the assessment of co-benefits and indicators related to sustainable development goals, the audit team concluded that the assurance level for PARAMUNO Project 1 was not less than 95%. Therefore, it can be stated that after conducting the validation and verification activities, VERSA's audit team found no material discrepancy in the data supporting the quantification of GHG emission reductions.

3.1 Validation and verification plan

The step-by-step process of validation and verification for PARAMUNO Project 1 carried out by the VERSA audit team is detailed below:

- *Pre-agreement and economic agreement between VERSA and Cataruben: At this stage, the two companies defined the type of commitment for the development of the validation and verification process of the project. The contract defined the assurance level, objectives, criteria, scope, and materiality threshold according to the needs of the intended user. This process took place on August 12, 2022.*

- *Validation and verification planning: This included strategic analysis, risk assessment, and the design of the audit plan. This process took place from February 27, 2013, to March 1, 2023.*
- *Execution of validation and verification activities: Due to the complexity of the project identified during strategic analysis and risk assessment activities, an on-site visit was conducted in accordance with the FOR 109 Audit Plan for Validation and Verification of VERSA version 4.0, which includes the sampling plan. This process took place from March 20, 2023, to March 28, 2023.*
- *Completion of validation activities: The sufficiency and adequacy of evidence were evaluated with respect to the previously established validation and verification criteria. The evidence provided by the Project Proponent was carefully reviewed to establish compliance and monitoring (as applicable) with the following: establishment and analysis of barriers, identification and mitigation of risks, threshold of relative importance, project area delimitation, ownership and rights over carbon, permanence, monitoring of project GHG emissions and/or removals; establishment of actions to comply with REDD+ activities related to monitoring of SDGs, agreements signed by Colombia before the United Nations Framework Convention on Climate Change (UNFCCC), and applicable national legislation. This process took place from March 28, 2023, to September 26, 2023.*
- *Technical review: This process was carried out by a competent and independent professional from the audit team responsible for the audit activities, appointed by VERSA and approved by the client, following the guidelines of ISO IEC 17029:2019 No: 7 and 9.6, ISO 14065:2020 No: 7 and 9.6, ISO 14066:2014 No: 3.1 and 7, and ISO 14064-3:2019 No: 8. This process took place from September 26, 2023 to October 18, 2023.*
- *Issuance of the final validation and verification report, drafting of the validation and verification opinion in accordance with the requirements of section 5.3.7 of ISO IEC 17029:2019, and submission of the registration request to the BIOCARBON REGISTRY standard. This process took place on 10 October 2023.*

3.2 Audit team

The following Table 1 lists the audit team selected by VERSA for the audit process:

Table 1 lists the audit team selected by VERSA for the audit process.

Role/Qualification	*Name*	*Type of involvement*		
		Desk review	*Site visit/Interviews*	*Reporting*
Lead Auditor	*Diana Rauchwerger*	*x*	*x*	*x*
Sectoral Expert	*Fabián Patiño*	*x*	*x*	*x*

Role/Qualification	Name	Type of involvement		
		Desk review	Site visit/Interviews	Reporting
Technical reviewer	Cesar Marín	x		x
Approver	Camilo Montaña	x		x

Annex 1 outlines how the team meets the necessary requirements for carrying out validation and verification, providing a detailed account of the documentation supporting the competencies of the validation and verification team, in accordance with the provisions outlined in the BCR Validation and Verification Manual. In addition to the above, the audit team is suitably qualified in accordance with the VERSA qualification scheme.

3.3 Level of assurance and materiality

The validation process conducted by the VERSA team was carried out independently and meticulously documented, adhering to the criteria and objectives set by the audit team for the Validation and Verification process, as outlined in Section 2, Objectives, and Criteria of this document. This analysis was grounded in risk assessment, following the guidelines specified in section 5.1.7 Materiality Thresholds of ISO 14064-3-2019 (for detailed insights, refer to section 5.9, Risk Management, in this document). As a result, the agreed confidence level with the project proponent for the validation statement is 95%, along with the methodology and timing for collecting evidence or proof to attain a reasonable level of confidence, in compliance with relevant requirements. Additionally, it was determined that materiality is below 5% for the project.

In line with the above, an evaluation was made affirming that the proposed mitigation actions of the project, targeting climate change mitigation, deforestation control, and reduction of greenhouse gas emissions stemming from changes in land use, are genuine, effective, quantifiable, verifiable, supplementary, transparent, and ensure their sustained impact over time. This assessment aligns with the criteria outlined in sections 2 and 3.4 of this document. Consequently, the VERSA audit team confirmed the GHG project's possession of coherent and transparent procedures for addressing omissions and/or errors affecting the GHG statement, considering a materiality threshold below 5%.

3.4 Sampling plan

In order to comprehensively understand the activities and procedures proposed in the Project Design Document (DdP) by PARAMUNO Project 1 and establish their connection to Greenhouse Gas Emissions (GEI), the audit team designated by VERSA (whose designation

is detailed in Table 2 of section 3.2 of this document, and in Annex 1, there is a description of their experience as an audit team), focused on validation activities during strategic planning. This assessment was carried out considering the evidence provided by the project holder in the AFOLU sector for REDD+ projects.

During this phase, potential types of material misstatements associated with how the GEI project addresses actions that are real, effective, measurable, verifiable, additional, transparent, and permanent over time were analysed. The audit team evaluated the likelihood of occurrence of these material misstatements to establish an effective evidence collection path.

In this context, 100% of the evidence provided by the project manager was examined, ensuring its compliance with the defined criteria for Validation and Verification activities, as detailed in Chapter 2 of this report. Furthermore, the environmental integrity of the proposed measures to mitigate climate change, control deforestation, and reduce greenhouse gas emissions resulting from changes in land use in the PARAMUNO Project 1 area was assessed.

Figure 1. Audit Process to Evaluate Consistency of Actions Proposed by PARAMUNO Project 1 to Ensure Environmental Integrity Compliance.

Below, in Table 2, you will find a description of the procedures developed for the evidence collection carried out by the audit team in the validation service of Project PARAMUNO 1. These procedures are aligned with the criteria defined by the standards ISO 14064-2:2019, ISO 14065:2013, and IAF MD 6:2014.

Table 2. Evidence Sampling Plan for PARAMUNO Project 1.

Parameter or Requirement	*Evidence*	*Sampling Plan*	*Environmental Integrity Compliance*

Project proponent, developers/management team, on-site local team.	*Inquiry, confirmation and interviews*	*The validation was carried out through a 100% review of the evidence presented by the project manager, and through interviews with the project proponent, developers/management team, and the on-site local team.* *Sampling approach: The audit approach was non-statistical and risk-based, analyzing 100% of the information provided by the project proponent.*	*1. Baseline:* *A detailed assessment was conducted on how the project describes and substantiates, with evidence, the territorial scenario addressing who the actors responsible for deforestation are, what motivates them, and the associated historical practices. During the document review, significant findings were identified, as detailed in findings 5, 7, 8, 9, 15, and 18.* *Additionally, an evaluation was carried out on how the project envisions the future deforestation scenario in the project area if these historical practices persist over time. The objective was to anticipate the extent of forest area loss that could occur if these practices continue.* *The evaluation focused on determining the number of carbon dioxide tonnes that the project declares*
Carbon calculations in the baseline scenario (ex ante) and with the project (ex post).	*Recalculation and confirmation*	*In the execution of these activities, crucial factors such as the origin, relevance, and compliance with applicable legal standards were considered in the selection of emission factors. The selection and management of data, along with the supporting documentation of the declared information on Greenhouse Gas Emissions (GHGs) in the project, were also addressed. Furthermore, special attention was given to the design and maintenance of the information system related to GHGs.* *The validation was performed by reviewing 100% of the evidence presented by the project manager and conducting interviews with the project proponent and management team.* *Sampling approach: The audit approach was non-statistical and risk-based, analyzing 100%*	

		of the information provided by the project proponent.	*as being prevented from being emitted into the atmosphere, ensuring their transparency and reliability. In line with this, the audit team reviewed how the project developed and implemented the guidelines outlined in the Project Design Document (DdP) for accounting under BCR 0002 and BCR 0003 methodologies, respectively. Findings 13, 16, and 19 were identified during the document review.*
Permanence risks of benefits and permanence analysis.	*Inquiry, confirmation and interviews*	*The audit team reviewed 100% of the documentation provided by the proponent of the initiative to identify potential deviations or non-compliance with the defined criteria (section 2 of this document). In addition to the above, this risk was also assessed through interviews with project beneficiaries to determine their interest in the implementation of project activities, their level of commitment, and their interest in remaining throughout the project's duration.* *Sampling approach: The audit approach was non-statistical and risk-based, analyzing 100%*	*Additionally, the procedures developed by the GHG project were validated to prevent potential overlaps with other GHG initiatives (GHG projects and GHG programs)* *3.Additionality: Through interviews and document review, the audit team aims to validate that the actions proposed by the GHG project truly contribute to*

		of the information provided by the project proponent.	*addressing climate change. In this regard, it was confirmed that:* *-The proposed actions to prevent deforestation lead to a real reduction in carbon dioxide emissions.* *-Reductions are not accounted for if they would have occurred anyway, even without the actions proposed by the project.* *-Reductions are not accounted for if they are already part of national regulations or obligations.* *4. Permanence: At this point, the audit team, through interviews and document review, seeks to identify how the proposed actions in the territory aim to*
Conservation and Implementation of High Mountain Ecosystem Conservation Activities	*Inquiry, confirmation and interviews*	*In the field, interviews were conducted to document how the project has been carrying out its activities with the aim of ensuring that the project explains and justifies: determine how Catarubén, together with the community, delineates conservation and implementation of forest conservation activities.* *Sampling approach: The audit approach was non-statistical and risk-based, analyzing 100% of the information provided by the project proponent.*	

Conservation and Implementation of Forest Ecosystem Conservation Activities	Inquiry, confirmation and interviews	In the field, interviews were conducted to document how the project has been carrying out its activities with the aim of ensuring that the project explains and justifies: determine how Catarubén, together with the community, delineates conservation and implementation of paramo conservation activities. Sampling approach: The audit approach was non-statistical and risk-based, analyzing 100% of the information provided by the project proponent.	control deforestation and reduce emissions by transforming practices that negatively impact the area. Additionally, it is sought to establish how the GHG project ensures that there will be no return to practices leading to forest loss throughout the project implementation. 5. Social and Environmental Safeguards The audit team, through document review and interviews, seeks to establish how the GHG project demonstrates alignment with the provisions outlined by the BCR program and Law 2294 of 2023, concerning the national interpretation of social and environmental safeguards for projects in the AFOLU sector. 6. Avoiding leakage:
Plans for the Management of the High Mountain Ecosystem and the Forest Ecosystem	Inquiry, confirmation and interviews	In the field, interviews were conducted to document how the project has been carrying out its monitoring activities with the aim of ensuring that the project explains and justifies: the project complies with the verification activities of the defined criteria; verify through interviews the participation of project beneficiaries and the status of activities carried out on their premises for the monitoring period and confirm how the project holder complies with the national interpretation of social and environmental safeguards. Sampling approach: The audit approach was non-statistical and risk-based, analyzing 100% of the information provided by the project proponent.	

Stakeholders' Rights.	*Inquiry, confirmation and interviews*	*Validation confirmed that the project holder has mechanisms and processes in place to ensure the respect for the rights of all involved in the GHG project, especially regarding social and environmental safeguards for Colombia.* *Sampling approach: The audit approach was non-statistical and risk-based, analyzing 100% of the information provided by the project proponent.*	*The audit team, through document review and interviews, aims to establish how the GHG project demonstrates that it has tools to prevent the implementation of certain actions in the territory, avoiding deforestation and forest degradation. It ensures that these measures do not force the community to relocate within or outside the project area to continue practices leading to deforestation.* *7. Uncertainty:* *The audit team, through document review and recalculations, determines that measurements, calculations, values used, and methodologies'*
Financial Matters, Financial Sustainability.	*Inquiry, confirmation and interviews*	*Through the review of 100% of the documentation provided by the GHG project manager, the audit team seeks to confirm that the project has procedures in place to ensure its economic viability. Additionally, it has mechanisms to guarantee accountability and access to information, ensuring transparency and the efficiency of forest governance in the GHG project.* *Sampling approach: The audit approach was non-statistical and risk-based, analyzing 100% of the information provided by the project proponent.*	

Identification and Consultation of Stakeholder Groups. Training/Benefits/Satisfaction	*Inquiry, confirmation and interviews*	*Through document review and field interviews, the audit team aims to identify that the project proponent has mechanisms in place to ensure that all those involved in the project can access transparent and timely information related to project activities. In this regard, it is validated that the information is transparent, easily accessible, clear, appropriate, and comprehensive.* *Sampling approach: The audit approach was non-statistical and risk-based, analyzing 100% of the information provided by the project proponent.*	*approaches will always have a level of uncertainty or doubt, and this is managed with a conservative approach. The goal is to ensure that decision-making is better informed and that results are reliable, comparable, consistent, and reproducible.*
Project Conflicts, Barriers, or Challenges. Complaints/ Grievances/ Conflicts	*Inquiry, confirmation and interviews*	*Through document review and interviews during the field visit, the aim is to establish that the GHG project has a defined mechanism for addressing complaints, grievances, and suggestions. At this point, the audit team has a series of questions to identify whether all those involved in the GHG project are aware of the procedures of the Cataruben Foundation to file a complaints, grievances, and suggestions.* *Sampling approach: The audit approach was non-statistical and risk-based, analyzing 100% of the information provided by the project proponent.*	

Stakeholder Consultation. Meetings/Document Exchange	*Inquiry, confirmation and interviews*	*In the documentary review and interviews, the audit team aims to establish how the GHG project ensures, to the extent possible, that all information related to REDD+ is:* *-Transparent.* *-Easily accessible, available, and within reach of anyone interested.* *-Clear, appropriate, and easy to understand.* *-Comprehensive* *Sampling approach: The audit approach was non-statistical and risk-based, analyzing 100% of the information provided by the project proponent.*	
Project Communication	*Inquiry, confirmation and interviews*	*In the document review and interviews, the audit team seeks to establish how the GHG project ensures that it has appropriate and timely information dissemination channels for communication with all project stakeholders* *Sampling approach: The audit approach was non-statistical and risk-based, analyzing 100% of the information provided by the project proponent.*	

Tools specific to the BCR program	*Inquiry and confirmation*	*In the document review, the audit team seeks to establish how the GHG project ensures the implementation of all available tools from the BCR programme.* *Sampling approach: The audit approach was non-statistical and risk-based, analyzing 100% of the information provided by the project proponent.*	

In accordance with the information gathered in Table 2, the audit team has developed the audit plan following the guidelines set by VERSA in the documents: FOR-109 AUDIT PLAN VALIDATION AND VERIFICATION OF GHG Version 06, RISK ASSESSMENT VALIDATION AND VERIFICATION PRO-113 Version 04, and VALIDATION AND VERIFICATION OF GHG PRO-108 Version 12, which are aligned with the criteria defined in the accreditation framework established by the National Accreditation Body Colombia (ONAC), and the other criteria described in Section 2 of this report.

The validation and verification activities spanned over a period of 10 months. The strategic planning phase unfolded from 27/02/2023 to 28/02/2023. The field visit took place from 20/03/2023 to 25/03/2023, concluding with the closing meeting for findings. The findings were delivered on 30/03/2023. On 21/07/2013, the CATARUBEN Foundation provided the initial response to the findings alongside the strategic planning. The audit plan was submitted on 29/02/2023. The second round of findings from the CATARUBEN Foundation occurred on 14/08/2023. The second review of findings transpired on 01/09/2023, and ultimately, on 22/12/2023, the validation and verification report were issued along with the validation and verification opinion.

Regarding the identification of inherent risks, the validation and verification team assessed the susceptibility of individual or aggregated project parameters to potential material errors before considering the impact of any implemented internal control activities. For more detailed information on the analysis of identified risks, including their description, justification for observation, and a classification of the probability of risk occurrence, please refer to Section 5.9, titled "Risk Management," in this report.

4 Validation and verification procedures and means

4.1 Preliminary assessment

For the validation and verification planning process, strategic analysis, risk assessment, and audit plan design were included. This process took place from February 27th to March 1st, 2023. An analysis of the evidence related to the PDD, and the RM was carried out. During this audit process, it has been verified that the information used for carbon estimates in the PDD, and the RM aligns with accepted principles and practices in the management of REDD+ activities.

The PDD and MR of the REDD+ initiative complies with the requirements established in: Methodological Document AFOLU Sector / BCR0002 Quantification of Greenhouse Gas Emission Reductions from REDD+ Projects. Version 3.1, September 15, 2022, and Methodological Document AFOLU Sector / BCR0003 Quantification of Greenhouse Gas Emission Reductions - Activities that Avoid Land Use Change and Improve Peatland and Other Wetland Management Practices in High Mountain Ecosystems of Projects. Version 3.0, August 31, 2022

4.2 Document review

To fulfill the objectives set for the validation and verification activities, the VERSA audit team conducted a thorough and detailed review of 100% of the evidence provided by the Project Proponent. This information was cross-referenced with the criteria defined for the validation and verification process, as described in section 2 of this document, such as: as Resolution 1447 of 2018, ISO 14064-3:2019, and the BCR STANDARD. From differentiated responsibility to common responsibility. Version 3.2. September 23, 2023 (the list of the documentation reviewed for validation is in Annex 3) to assess its compliance with validation/verification criteria and the user's intended objectives in a documented manner.

The evaluation of the information in line with to the following characteristics:

- *Comprehensive: Ensured that the expected content was present in the document.*
- *Accurate: Ensured that the content aligned with reliable sources, such as standards and regulations.*
- *Coherent: Reviewed the document's consistency with itself and related documents (evidence).*
- *Updated: Verified that the content was up-to-date and complied with guidelines established by the latest regulations applicable to the Colombian carbon market, the national interpretation of social and environmental safeguards for REDD+ projects in Colombia, the latest version of ISO 14064-2:2019, and BCR Standard documents in general.*

During this activity, it is relevant to mention that the Lead Auditor, during the Strategic Planning activity, conducted a documentary review that included:

- *A review of the Project Document, the applied methodology, including applicable tools, modules, monitoring plan, and quality assurance and control procedures.*
- *A review of the Monitoring Report and project implementation.*
- *A review of the data and information presented to validate its integrity.*
- *An assessment of compliance with the regulatory framework related to carbon management, applicable regulations to validate the regularity of the activity.*
- *An evaluation of documents proving land tenure and/or carbon rights for the project.*
- *An evaluation of the controls established to ensure the quality of information and project document control.*
- *Other justifying documents (maps, spreadsheets, etc.).*

Based on all the gathered evidence, it can be concluded that the criteria defined for this validation are appropriate and were consistently implemented over time. Emissions and removals are significant, and the evidence provided by the Cataruben Foundation is complete, correct, coherent, up-to-date, supports the audit scope, and is sufficient to substantiate the reported greenhouse gas reductions and/or removals.

The project has traceability of tests and records, validating that the Project Proponent provided 100% of the data used in the calculations to obtain the final quantity of reported emission reductions. Raw data comes from reliable sources and is included in the Project Design Document (PdD).

4.3 Interviews

The interviews began on March 13, 2023, at the offices of the Catarubén Foundation in the city of Yopal, with the presence of the project personnel. On that day, a review of the Project Design Document (DdP) and the Monitoring Report was carried out with both physical and digital evidence. The field phase took place from February 20 to 24. In total, 16 beneficiaries located in the departments of Casanare, Boyacá, Tolima, Quindío, and Valle del Cauca were visited and interviewed. Additionally, on February 23, a virtual visit was conducted with xxx beneficiaries, as shown in Table 4 (the description of the aspects consulted, and the results of the interviews are detailed further in section 4.4 On-site visit). The virtual interviews were conducted following the protocols defined by VERSA as established in IAF MD4:2018.

Table 4. Interviews PARAMUNO Project P1.

NAME	*ROLE*
Fundación Cataruben	
Sandra Duarte	*Superlíder Carbono*
Shirley Rojas	*Líder geoespacial*
Adriana Galán	*Coordinadora jurídica*
Daniela Orjuela	*Líder Iniciativa PARAMUNO Project 1*
Jhoana Albarracín	*Apoyo jurídico*

Marinela Camargo	Coordinadora calidad
Ludy Pérez	Líder jurídico
Edwin Hincapié	Superlider Biodiversidad
Juan David Arévalo	Monitoreo biodiversidad
Jhoan Martínez	Coordinador SIG
Laura Jiménez	Coordinador Unidad Beneficios Económicos
María Camila Fajardo	Coordinadora Implementación
Laura Sanabria	Coordinadora Cuantificación
Miguel Wilches	Superlider Agua
Alonzo Rosillo	Coordinador Unidad Salvaguardas
OWNERS	Interview type
Gladis Miriam Rodríguez	Site interview
José Hernando Ramírez	
Nery Londoño López	
Ernesto Forero Ramírez	
Miguel Barragán	
Santiago Barragán	
Raúl Iglesias	
Andrés David Drew	
Gustavo Lloreda	
Juan Carlo Lloreda	
Gustavo Adolfo Echeverry	
Néstor Salazar	
Miguel Forero	
Anyandi Pérez	
Fernando Montoya	
Mónica Macias	

Virtual interview
In the course of the field audit stage, the project confronted geographical dispersion across two mountain ranges, giving rise to notable logistical challenges. To address this issue, a decision was made to conduct virtual interviews on 15th March rather than opting for in-person meetings. This

approach streamlined communication and collaboration among participants. The utilization of virtual interviews aided in overcoming geographical limitations, fostering efficient meetings, instantaneous exchange of information, and enhanced flexibility in scheduling. The implementation of virtual interviews has demonstrated itself as a strategic resolution for sustaining effective collaboration within a geographically dispersed setting, thereby securing the continual success of the project	
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4.4 On-site visit

The cycle of interviews with the project owners took place from March 20th to March 25th, 2023. In total, interviews were conducted with a total of 15 owners located in the departments of Casanare, Boyacá, Tolima, Quindío, and Valle del Cauca. The purpose of these interviews was to identify various key aspects.

The cycle of interviews with the project owners took place from March 20th to March 25th, 2023. In total, interviews were conducted with a total of 15 owners located in the departments of Casanare, Boyacá, Tolima, Quindío, and Valle del Cauca. The purpose of these interviews was to identify various key aspects:

- How they meet the Fundación Cataruben and their level of understanding of the contract, DDP, and the specific activities of the REDD+ project.
- The negotiation process for the percentages of carbon credits to be certified through the project's REDD+ development.
- The relationship they have had with Fundación Cataruben.
- The governance system in place.
- The types of agricultural systems developed on the associated owners' properties and the forest species they currently utilize.
- Expectations generated regarding the activities proposed by the Project Proponent.
- Difficulties encountered throughout the project process.
- The empowerment process and the participation of women in the community in general.
- Start date and types of activities carried out to implement the PARAMUNO Project 1.
- How their daily tasks have been influenced by the implementation of the project's activities and how it has impacted the community of owners overall.
- The main state entities present in the territory and the services they cover.

- *Knowledge of how to access the Fundación Cataruben's complaints and claims system if needed.*

In general, it was found that the PARAMUNO Project 1, ensures the guarantee of owners' rights, respects the local knowledge of the territory, and the activities/events carried out periodically by Fundación Cataruben strengthen relationships between neighbors (governance structures present in the territory), ensuring the integrity of natural ecosystems within the project.

Owners are familiar with and describe the management processes of the REDD+ initiative, as they have been invited to various socialization and accountability events. They have a clear understanding of the results and how the resources obtained from the project's benefits have been invested. Additionally, it is evident that the community of owners understands and identifies the types of benefits generated by the project. They recognize that the Proponent of the GHG initiative has clear procedures and rules that ensure equitable distribution among all participants.

Owners expressed that educational programs and the recognition of flora and fauna on their properties have strengthened their technical capabilities. Some even mentioned that they have set up their own camera traps to monitor the wildlife on their properties voluntarily."

4.5 Clarification, corrective and forward actions request

The team at VERSA identified certain aspects in PARAMUNO Project 1 that require correction, improvement, or clarification to ensure the project's compliance with the guidelines of the BCR program.

During the stage conducted by the audit team, a total of 14 CARs and 3 CLs were identified, all of which were successfully addressed in two Findings Rounds. Subsequently, the Technical Reviewer identified 3 additional CARs, all of which were successfully resolved.

4.5.1 Clarification request (CLs)

After conducting this assessment, three (3) Clarification Requests (CL) were identified during the validation and verification process. These requests were closed due to the appropriate responses provided by the project proponent, which met the corresponding requirements. All relevant adjustments are included in the Project Document (PDD), the Monitoring Report (MR), and in the evidence provided by the greenhouse gas project proponent.

4.5.2 Corrective actions request (CARs)

The VERSA team identified 17 Corrective Action Requests (CARs), which can be considered as major non-conformities that need to be addressed in the event of a breach of a requirement of the standard, national regulation, or greenhouse gas (GHG) program. CARs can arise from (among other things):

- *Material misstatement: A material misstatement is understood as an error that could affect the intended user's decision regarding the GHG inventory or project (ISO 14064-3:2019).*
- *Any situation that may influence the project or inventory's ability to achieve the quantification, reduction, and/or elimination of real, measurable, and verifiable GHG emissions.*
- *Any situation posing a risk that may prevent the monitoring and/or calculation of GHG emissions, reductions, and/or eliminations.*

4.5.3 Forward action request (FARs)

No FARs were identified during the validation/verification process; all findings were successfully closed.

In Annex 2, below, provide a summary of any CLs, CARs and FARs raised, including the response provided by the project holder, any resulting changes to the project documents and, the conclusion.

5 Validation findings

The mitigation initiative has successfully demonstrated the implementation of effective procedures and strategies to address identified risks, encompassing environmental aspects (floods and heat points - thermal variations), financial considerations (non-profitability, low market demand, and contractual non-compliance), and social factors (carbon ownership). Additionally, a monitoring plan has been established throughout the 20-year quantification period (2017 to 2038) with the aim of ensuring the persistence of these measures.

The proponent has provided appropriate, precise, and objective evidence supporting the conduct of a detailed analysis to classify identified risks based on their level of criticality, probability of occurrence, impact, and direct or indirect impact on the project. This analysis has enabled the formulation of specific measures to effectively manage the risks.

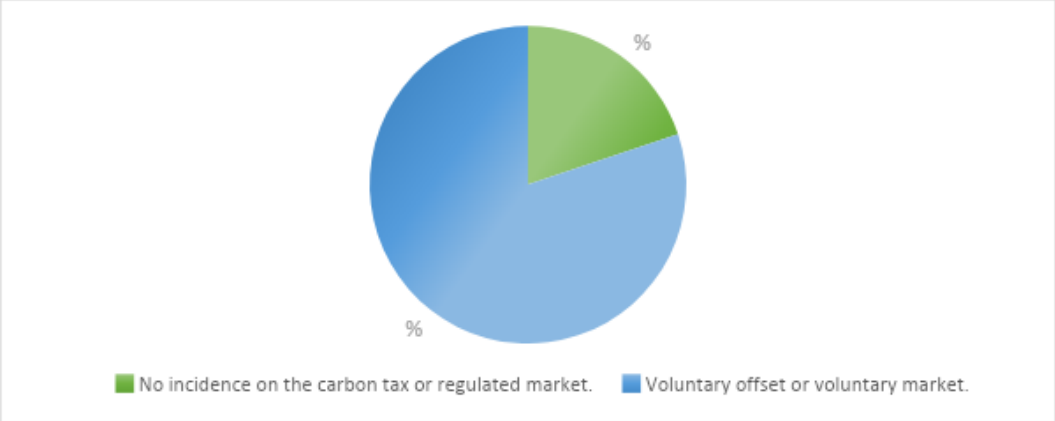
Following the completion of the document review process and on-site audit, it is concluded that the information presented regarding safeguards aligns with the general principles of the national interpretation of environmental and social safeguards for REDD+ projects in Colombia.

5.1 Project description

PARAMUNO Project 1 is an initiative within the AFOLU (Agriculture, Forestry, and Other Land Use) sector, emphasizing efforts to mitigate climate change. Its primary objective is the conservation of forests and biodiversity through the prevention of deforestation, degradation, and the transformation of natural ecosystems, achieved by implementing conservation measures. Furthermore, the project aims to generate income for ecosystem

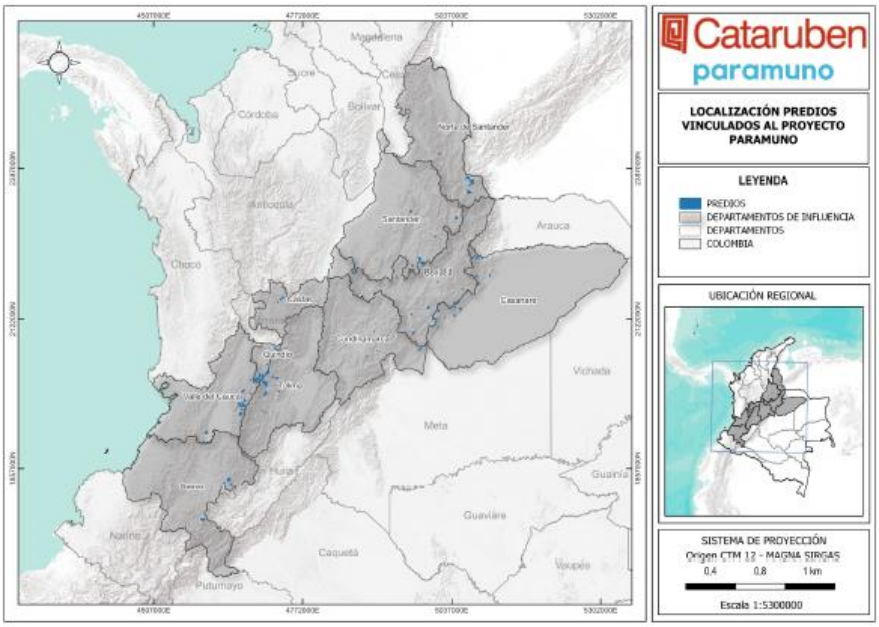
managers by commercialising carbon credits. These certificates will be distributed in the voluntary market, as illustrated in Graph 1.

Graph 1. Carbon Credit Certificate Commercialization. PARAMUNO Project 1



Located in the Andean Region of Colombian territory, PARAMUNO Project 1 is characterized by its mountainous topography, resulting in diverse geography, including fertile valleys and high mountains. The project is situated in the high mountain landscapes of various departments, including Boyacá, Caldas, Casanare, Cauca, Cundinamarca, Norte de Santander, Quindío, Santander, Tolima, and Valle del Cauca, as depicted in Image 1.

Image 1. Geographical Location of PARAMUNO Project 1.



Taken from: Cataruben, 2023.

It is estimated that the project will achieve a reduction of approximately 1,936,951 tCO2e. This will result in preventing changes in land use in high mountain ecosystems and mitigating deforestation and forest degradation in the Andes Mountain range in Colombia. The eligible area for high mountain ecosystems is 2,839.9 hectares, and for the REDD+ project, it is 18,909.8 hectares, involving 154 landowners located in the central and eastern mountain ranges.

According to the project incorporation records and the letters of intent duly signed by the owners, submitted as part of the evidence provided by the titleholder, PARAMUNO Project 1 began its activities on 1st August 2017 and is projected to conclude on 1st August 2036. The first monitoring report with the quantification periods is presented in Table 5 below.

Table 5. Quantification period of GHG emissions reductions/removals of PARAMUNO Project 1.

Ecosystem	***Type of activity***	***Start date***	***End date***
High mountain	*Activities that prevent land use change and improve management practices for peatlands and other wetlands in high mountain ecosystems*	*01/08/2017*	*31/07/2037*
Forest	*Quantification of GHG Emission Reductions REDD+ Projects*	*01/08/2017*	*31/07/2037*

Taken from: Cataruben, 2023.

The audit process developed by VERSA's audit team for the validation and verification of the Greenhouse Gas (GHG) Mitigation Initiative PARAMUNO Project 1 corresponds to an objective assessment of the emissions reduction and/or removals resulting from the project activities during the evaluation period, in accordance with the requirements set forth by ISO 14064-2:2019 and ISO 14064-3:2019 standards.

In this context, the audit process encompasses a thorough review of compliance with the defined criteria for the project, applicable legal regulations, methodologies used for calculating emissions reduction, and the effectiveness of the methods defined by the project owner to ensure adherence to the principles governing the audit process.

The project successfully demonstrates its alignment with the goal of reducing greenhouse gas emissions resulting from deforestation and forest degradation. It also aims to generate co-benefits for project partners by proposing the development of a series of activities focused on conservation and climate change mitigation. These activities aim to prevent deforestation, degradation, and transformation of natural ecosystems in the eligible areas of the project in the central and eastern mountain ranges.

5.2 Project type and eligibility

PARAMUNO Project 1 is a REDD+ Initiative and is part of the AFOLU sector, which encompasses greenhouse gas emissions and/or removals attributable to project activities in the agriculture, forestry, and other land use sectors. The project successfully demonstrates its alignment with its goal of reducing GHG emissions from deforestation and forest degradation and generating co-benefits for project partners by proposing the development of a series of activities focused on conservation and climate change mitigation. These activities aim to prevent deforestation, degradation, and transformation of natural ecosystems present in the eligible areas of the project in the central and eastern mountain ranges (Table 6).

Table 6. Project type and eligibility

Eligibility criteria	*Evaluation by validation body*
Scope of the BCR Standard	*Agriculture, Forestry, and Other Land Use AFOLU*
Project type	*- Activities in the AFOLU sector, other than REDD+.* *- REDD+ activities*

Eligibility criteria	Evaluation by validation body
Project activity(es)	Greenhouse Gas Emission Reductions from REDD+ Projects.
Project scale (if applicable)	N/A

5.3 Grouped project (if applicable)

PARAMUNO Project 1 does not consider the inclusion of areas after validation; therefore, only the areas corresponding to the Forest and Peatlands and other Wetlands ecosystems in high mountain ecosystems were validated.

5.4 Other GHG program

During the documentary review, it was confirmed that the Project Holder has mechanisms to review standards and programs to prevent double accounting, following a three-phase procedure:

(a) Mapping of projects in the national territory registered in standards and programs such as BioCarbon Registry, Cercarbono, ColCX, and VERRA,

(b) Once the projects are identified, cartographic information is downloaded and stored in vector format in a geodatabase

(c) Finally, the ArcGIS software's intersection algorithm is executed, where vector files representing the areas of PARAMUNO Project 1 overlap with the areas of other projects. The analysis of the results is a shapefile that allows identifying that the project does not present any overlap with other projects or greenhouse gas programs (GHG).

(d) The evaluation also considered possible alignments with Law 2 of 1959, the absence of overlaps with protected areas (SINAP), potential overlaps with mining titles, and areas of exploration and exploitation of hydrocarbons. As a result of evaluating all possible scenarios of overlap in the project area, the audit team found that there are no compatible or incompatible overlaps with other programs or projects in the project area.

In this regard, it is possible to affirm that the project areas do not present overlaps, and the project complies and is consistent with the criteria established in section 1.2 of this document, with the requirements of the BCR Standard, version 3.1 dated July 25, 2023, the Methodological Document of the AFOLU Sector / BCR0002 Version 3.1, and BCR0003 Version 3.0, and the BCR TOOL Avoiding Double Counting v 1.0, dated March 9, 2023. The main objective of this procedure is to confirm the absence of overlaps and ensure the absence of double accounting. In this analysis, 55 projects were identified in the same departments

where PARAMUNO Project 1 is located, and no type of overlap or intersection with the designated project areas was identified.

5.5 Quantification of GHG emission reductions and removals

The design of the activities to carry out the verification and validation of the project was conducted following the requirements and guidelines established in the methodological documents of the AFOLU sector of the BCR program, specifically in the methodological document AFOLU sector / BCR0002 Quantification of Greenhouse Gas Emission Reductions from REDD+ Projects, Version 3.1, and in the methodological document AFOLU sector / BCR0003 Quantification of Greenhouse Gas Emission Reductions - Activities that avoid changes in land use in continental wetlands and improve management practices of peatlands and other wetlands in high mountain ecosystems of Projects, Version 3.0.

Below, the project activities designed to reduce and remove greenhouse gas emissions are detailed, while allowing the conservation of biodiversity and meeting the current and future needs of the involved rural communities. Section 3 of the Project Document (PD) includes information on the methodological conditions for calculating the emission reductions of the project in accordance with the activities contemplated. For this, the Project Proponent relied on the selected methodologies, which describe each of the conditions, parameters, assumptions, and methodological development around the properties that are part of the project. The audit team reviewed the information contained in this section and considers that it is credible and sufficient in the scenario of formulation and quantification of ex ante reductions.

5.5.1 Start date and quantification period.

According to the dates of the project's founding 154 minutes and the letters of intent duly signed by the owners, submitted as part of the evidence provided by the titleholder, PARAMUNO Project 1 started its activities on August 1, 2017, and is projected to conclude on August 1, 2036. The first monitoring report with the quantification periods is presented in Table 7 below.

Table 7. Quantification Periods for the First Monitoring of PARAMUNO Project 1.

Ecosystem	***Type of activity***	***Start date***	***End date***
High mountain	*Activities that prevent land use change and improve management practices for peatlands and other*	*01/08/2017*	*31/12/2021*

	wetlands in high mountain ecosystems		
Forest	*Quantification of GHG Emission Reductions REDD+ Projects*	*01/08/2017*	*31/12/2021*

Taken from: Cataruben, 2023.

5.5.2 Application of the selected methodology and tools

5.5.2.1 Title and Reference

The validation and verification process undertaken by VERSA's audit team for PARAMUNO Project 1 comprised a comprehensive evaluation of historical data and an on-site verification visit. The objectives of this process were as follows:

- *Provide an independent third-party opinion on the evaluation of activities, methods, and procedures outlined in the Project Document Format (DdP) and in the Monitoring Report (RM) of the Greenhouse Gas (GEI) PARAMUNO Project 1.*
- *Determine the project's compliance with the principles and verification criteria established by the relevant regulations and Standard BCR, v3.2.*
- *Evaluate the project owner's ability to demonstrate land eligibility in accordance with the requirements outlined in section 12.1 of Standard BCR, V 3.2.*
- *Verify the material accuracy of greenhouse gas emissions reductions reported for the first monitoring period.*

In accordance with Proposal No. GEI-P-101 Legal Agreement No. VERSA-P-013321/02/2023, the audit criteria are as follows:

- *ISO 14064-2:2019 and ISO 14064-3:2019*
- *Interpretación Nacional de Salvaguardas Sociales y Ambientales para Proyectos REDD+*

The project was validated and verified under the BCR Standard, version 3.2 dated 23rd September 2023, and the following methodologies and tools were implemented:

- *Methodological Document for AFOLU Sector / BCR0002 Quantification of GHG Emission Reductions from REDD+ Projects. Version 3.1, 15th September 2022.*
- *Methodological Document for AFOLU Sector / BCR0003 Quantification of GHG Emission Reductions - Activities preventing land use change and improving peatland and other wetland management practices in high mountain ecosystems of Projects. Version 3.0, 31st August 2022.*
- *Baseline and Additionality Tool Version 1.2 dated September 27, 2023.*
- *Tool to demonstrate compliance with REDD+ safeguards Version 1.1, dated January 26, 2023.*

- *No net harm Environmental and social safeguards (NNH) Version 1.0 dated March 7, 2023.*
- *Tool for determining contributions to the achievement of Sustainable Development Goals (SDGs) Version 2.0, dated March 1, 2022.*
- *"Avoid Double Accounting" (ADC) Tool Version 1.0, dated March 9, 2023.*
- *Monitoring, Reporting, and Verification (MRV) Tool Version 1.0 dated February 13, 2023.*
- *Permanence and Risk Management Tool Version 1.0 dated March 7, 2023.*
- *The project document was developed using the GHG project template in its version 2.0 as of September 2023.*

5.5.2.2 Applicability

During the validation activities, it was possible to confirm that the project proponent successfully demonstrated compliance with each of the applicability conditions of the two methodologies that have been evaluated, as presented in the following:

Table 8. Applicability Conditions of the Methodologies Used by PARAMUNO Project 1.

Applicability conditions of methodology BCR0002 – REDD+ are as follows:	***Analysis of the OVV***
a) The areas within the geographical boundaries of the project fall under the forest category (according to national definitions of forest for the Clean Development Mechanism) at the commencement of project activities and ten years prior to the project start date.	*The analyses conducted by the initiative's proponent to define the Forest and Non-Forest areas were thoroughly reviewed, and it is confirmed that this information was obtained from the Forest and Carbon Monitoring System portal - SMByC - IDEAM.* *Therefore, it is consistent with the guidelines of Article 40 of Resolution 1447 of 2018. It was also possible to establish that the areas within the geographical boundaries of the project are classified as forest at the commencement of project activities and ten years before the project start date. This was confirmed through the Geographic Database (GDB), verifying that the project boundaries are accurately determined.*

b) The identified causes of deforestation may include, among others: agricultural frontier expansion, mining, timber extraction, and infrastructure expansion.	*The degradation causes established by the project proponent for the project baseline, as detailed in the Project Document (PD), are the following: expansion of agricultural frontier, mining, timber extraction, and infrastructure expansion.* *The audit team verified that the information provided by the project proponent, and the sources consulted, include data and reports from recognized, current sources, and, in some cases, are of official origin.*
c) The reduction of deforestation or degradation is not expected to occur in the absence of the Project	*The VERSA audit team reviewed the procedures outlined in Chapter 3.1.1 "Applicability conditions of the methodology" and the sections contributing to its development.* *The team confirmed the origin and validity of the consulted information. It was found that these are aligned with the requirements set out in Section 4 of methodology BCR 0002 in its version 3.1. Consequently, it is concluded that the analyses are coherent and consistent, the information presented for compliance with this item is accurate, and the consulted information is current and sourced from a recognized authority.*
d) It is possible that, in the areas within the project boundaries, carbon reserves in soil organic matter, litter, and dead wood may decrease or remain stable.	*The VERSA team conducted an analysis of the procedures developed by the project to demonstrate the applicability of this item and of the consulted sources. It was found that the information used in this analysis is current and comes from recognized sources.* *It is important to note that the project proponent successfully demonstrated the historical trend of decreasing carbon deposits, despite the existence of Law 1930 of 2018, which regulates provisions for the comprehensive management of páramos in Colombia.*
e) The quantification of greenhouse gases (GHGs) other than CO_2 must be included in the	*It was confirmed that the project has a specific procedure for including emissions of*

quantification of emissions caused by forest fires (if applicable) during the monitoring period.	*greenhouse gases other than CO2 in the accounting, in the event of fires occurring in eligible areas with woody vegetation. The procedure is coherent and consistent with the requirements of ISO 14064-2:2019 and methodology BCR 0002 V3.1.*
Applicability conditions of methodology BCR0003 – REDD+ are as follows:	*Analysis of the OVV*
a) Project activities prevent land use change in high mountain ecosystems and/or project activities improve management practices of peatlands and other wetlands, reducing degradation and promoting their restoration;	*The audit team assessed the coherence and consistency of the three proposed project activities: 1) Implementing measures for the prevention and mitigation of land-use change, 2) Implementing monitoring and conservation measures for flora and fauna, and 3) Implementing measures to reduce consumption for water conservation. The goal was to ensure the conservation of páramos, wetlands, and peatlands. It was determined that these activities are in alignment with the project's objectives.* *However, their successful implementation depends on the level of commitment demonstrated by the landowners on their farms.*
b) Drivers of land use change may include commercial agriculture of subsistence, livestock and other agricultural activities, surface mining, infrastructure development and urban expansion;	*It was validated that the project conducted an identification of the actors responsible for degradation and deforestation in the project area. Coherent and consistent evidence was found regarding the mechanisms defined by the project to include the identified drivers as an integral part of the activities carried out in the project implementation areas.*
c) Activities that cause peatland degradation may include drainage, removal or alteration of vegetal cover, infrastructure construction, peat extraction, eutrophication, water extraction and/or diversion, and fires;	*It has been validated that the project for the high mountain ecosystem will conduct satellite monitoring of soil changes, implement a land management plan that identifies and executes a conservation action plan. Additionally, a water-saving and efficient use plan will be developed for both households and premises in general.*

	However, the successful implementation of these plans depends on the level of commitment demonstrated by the landowners on their farms.
d) The greenhouse gas removal activities proposed by the project to prevent land-use change do not include peat drainage or other wetlands;	*It was validated that, within the contractual agreements and during interviews conducted by the VERSA audit team, beneficiaries commit to not draining peat bogs and/or wetlands to prevent the alteration of the hydrological regime of these ecosystems. However, the implementation of this commitment depends on the level of awareness that the project proponent can generate and the willingness of beneficiaries to refrain from taking actions that could affect peat bogs and/or wetlands.*
e) Carbon reserves in soil organic matter (including peat) may decrease, considering the external pressures in the project area, as evidenced in the chapter on drivers influencing land-use change.	*The project proponent managed to demonstrate, in section 3.2.1.1.6 of the chapter on drivers generating land-use change, that they conduct a consistent analysis. It shows that carbon reserves in soil organic matter (including peat) can decrease, considering the external pressures present in the project area.*

The audit team reviewed how the project consistently and coherently applies the methodologies and tools that are part of the established criteria for project validation. It was confirmed that the versions used by it are the most recent and are valid for the date of project registration submission.

5.5.2.3 Methodology deviations (if applicable)

The PDD and the monitoring plan comply with all the requirements of the applied methodologies, and no related evidence was found indicating potential deviations.

5.5.3 Project boundary, sources and GHGs

During the strategic analysis stage conducted by the audit team, a 100% review of the evidence provided by the project proponent regarding the selection of carbon reservoirs for the high mountain and ecosystem was carried out. It was successfully demonstrated that this selection aligns with the inventory design procedures for biomass growth monitoring, specifically in section 7.1: Carbon Pools, as established by the IPCC Good Practices Guidance (2003, 2006) and adopted in the methodological documents BCR0002 and BCR0003.

In Table 9, the selected carbon pools are described to quantify carbon stocks in the project areas of the High Mountain Ecosystem.

Table 9. Selection of HME carbon reservoirs and GHG sources.

CARBON RESERVOIRS			
Carbon pool	***Selected (Yes/No)***	***Justification/Explanation***	
Aboveground biomass	*Yes*	*The audit team found that the justification and explanation provided by the project proponent to consider changes in carbon content in this pool are significant and comply with what is stated by Kauffman et al., 2016; IPCC, 2006.*	
Belowground biomass	*Yes*	*According to the bibliographic records, it is appropriate to consider this reservoir, as the increases in storage in this deposit are significant in carbon stocks, especially considering roots larger than 2 mm.*	
Deadwood and litter	*No*	*According to the bibliographic records, it is correct not to consider this reservoir, as the increases in storage in this deposit are insignificant.*	
Soil organic carbon	*Yes*	*The audit team found that the justification and explanation provided by the project proponent to consider changes in carbon content in this pool are significant and comply with what is stated by Kauffman et al., 2016*	
Project GHG sources in HME.			
Source	***GHG***	***Selected (Yes/No)***	***Justification/Explanation***
Burning of woody biomass	*CO_2*	*YES*	*The project has a mechanism that allows including emissions that occur when fires happen in eligible areas with woody vegetation cover during the monitoring period.*
	CH_4		
	N_2O		
Alteration of the water regime	*CH_4*	*NO*	*It was confirmed that the project excludes wetland areas; therefore, it does not apply.*
	CO_2		
	CO_2	*NO*	*It was confirmed that the project excludes wetland areas; therefore, it does not apply.*
	CH_4		

Drainage of peatlands	N2O		

In Table 10, the selected carbon pools are described to quantify carbon stocks in the project areas of Forest Ecosystem.

Carbon pool	**Selected (Yes/No)**	**Justification/Explanation**
Aboveground biomass - arboreal vegetation	Yes	The audit team found that the justification and explanation provided by the project proponent to consider changes in carbon content in this pool are significant and comply with what is stated by Kauffman et al., 2016; IPCC, 2006.
Aboveground biomass - Non-arboreal vegetation	No	It is appropriate not to consider this reservoir because the establishment of permanent crops is not considered.
Belowground biomass	Yes	According to the bibliographic records, it is appropriate to consider this reservoir, as the increases in storage in this deposit are significant in carbon stocks, especially considering roots larger than 2 mm.
Deadwood and litter	No	According to the bibliographic records, it is correct not to consider this reservoir, as the increases in storage in this deposit are insignificant.
Soil organic carbon	Yes	The audit team found that the justification and explanation provided by the project proponent to consider changes in carbon content in this pool are significant and comply with what is stated by Kauffman et al., 2016

Project GHG sources in FOREST.			
Source	**GHG**	**Selected (Yes/No)**	**Justification/Explanation**
Burning of woody biomass	CO2	NO	The project has a mechanism that allows including emissions that occur when fires happen in eligible areas with woody vegetation cover during the monitoring period.

Carbon pool		Selected (Yes/No)	Justification/Explanation
	CH_4	YES	It is confirmed that the GHG project has mechanisms to include in the accounting the presence of emissions in the event of fires occurring in eligible areas with woody vegetation cover during the monitoring period.
	N_2O		

For this project validation and verification process, as mentioned earlier, the sources of information and data used to estimate emission factors were assessed and approved for project reduction estimates. In this regard, the project proponent successfully demonstrates that they have procedures aligned with the requirements of the national greenhouse gas (GHG) inventory and national reference levels.

5.5.3.1 Eligible areas in the GHG project boundaries (for AFOLU projects)

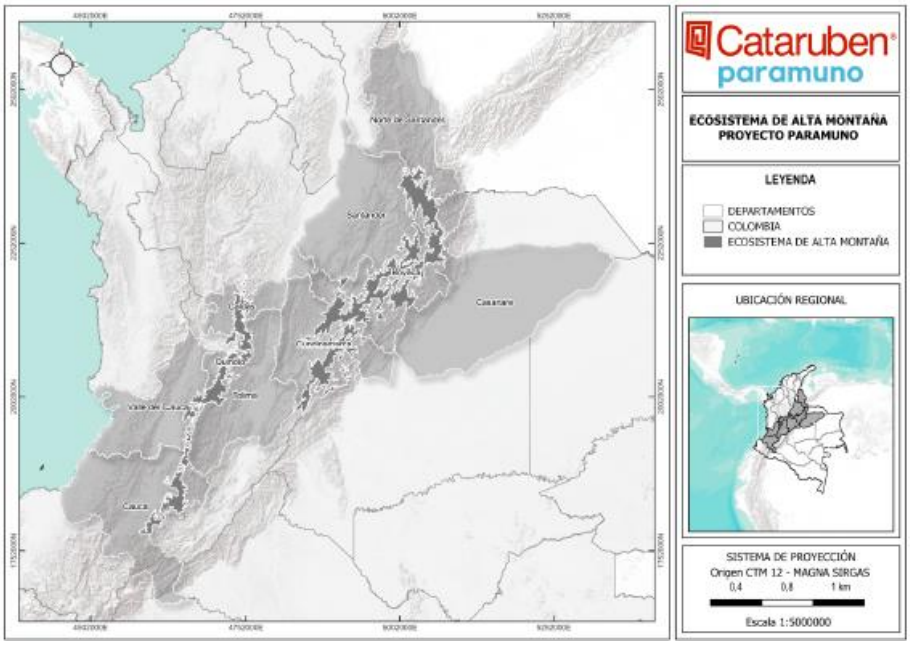
The audit team's assurance involved reviewing cartographic information and the results of defining eligible areas within 153 properties associated with the paramo and forest ecosystems identified in the central and eastern mountain ranges, respectively.

Accordingly, the GIS information associated with eligibility and project boundary identification provided by the project proponent is consistent and complies with the criteria established for this validation and verification process (Image 2 and 3, Table 10 and 11)

High Mountain Ecosystem

The delimitation of the high mountain ecosystem for the project was carried out in accordance with the definition provided by Sarmiento et al. 2013. To establish the upper limit of the forest, a digital model of Colombia and the contour lines from IGAC were used to set the upper limit of the forest at the altitude level of 2700 meters above sea level. Additionally, the map of annual mean temperature was utilized, as this zone is characterized by a temperature of 12°C.

Image 2. Geographic boundaries of High Mountain Ecosystem (EAM)



Source: Cataruben Foundation, 2023

Table 10. Eligible areas for the High Mountain Ecosystem PARAMUNO Project 1.

MOUNTAIN RANGE	***ELIGIBLE AREAS (HA)***	***PROPORTION***
Central Mountain Range	*2.197,7*	*77,39 %*
Oriental Mountain Range	*642,2*	*22,61 %*
TOTAL	***2.839,9***	***100,0 %***

The project proponent used 1:25,000 scale maps and the PhotoInterpretation Assisté par Ordinateur (PIAO) method for visual interpretation of land cover based on textures and color, following the Corine Land Cover methodology. Additionally, it was verified that this interpretation was properly supported by field surveys.

The Corine Land Cover analysis was conducted for the period 2012 and 2016, identifying natural vegetation cover belonging to the Páramo strata. The sensors used were Rapideye and Sentinel Constellation, respectively. Subsequently, a ten-year multitemporal analysis was carried out to determine which covers remained natural and could be incorporated into the project as eligible areas.

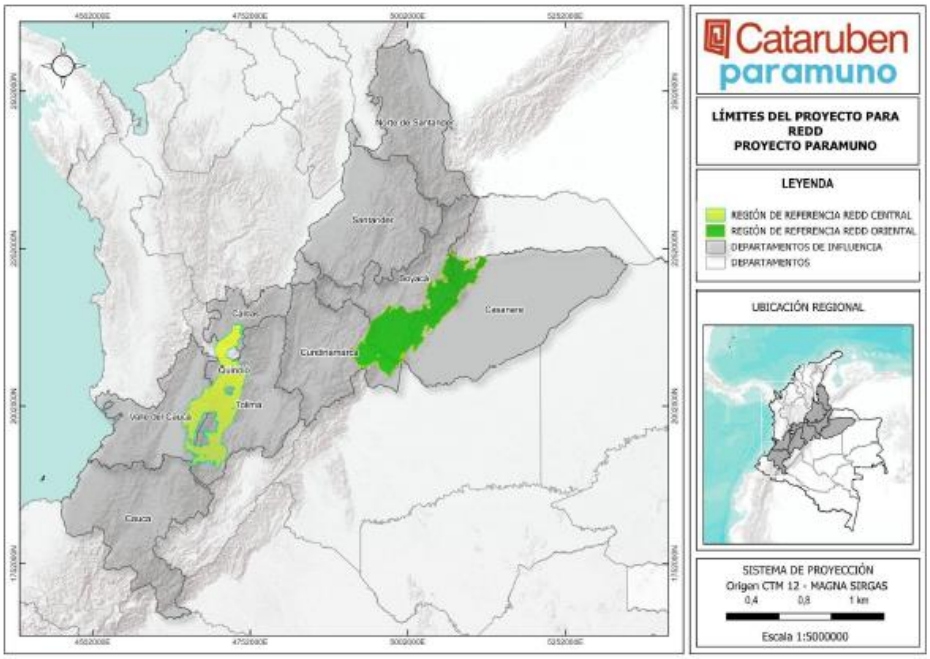
Table 11. Criteria for Establishing the Reference Region, BCR0003

CRITERIA	***Justification/Explanation***
The reference areas are in the high mountain region where the project area is situated or in adjacent areas if the identification of transformation drivers demonstrates that pressures (activities modifying natural ecosystems) originate from areas outside the region but could reasonably affect it in the future.	*Compliance: it was validated that the project proponent has well-defined procedures that align with the requirements established in the BCR 0003 v3.0 methodology. It is important to highlight that the reference region for the eastern and central mountain ranges covers 100% of the project areas. The description found in section 3.2.1.1.3.1 is consistent with the criteria defined for project validation.* *In this regard, historical periods of land cover change indicate that changes in land cover over different periods are primarily evident in the border zone of the reference region. This phenomenon suggests that the pressures leading to changes originate from areas external to the region and have the potential to further impact high mountain ecosystems.*
The agents and causes of land use changes identified in the reference area can have access to the project area.	*Compliance: The procedures developed to determine both the project areas and the reference region have been validated. It was confirmed that the latter groups private property owners with similar interests. The review of secondary information demonstrates that the geographical area where the project is located has a high historical rate of land use changes associated with the high population index (IDEAM,2005)*
The land tenure figures, and land use rights must be identified in the reference area.	*Compliance: The project proponent successfully demonstrates through consultation in the SIPRA that land tenure conditions exhibit notable similarities both in the reference region and in the project areas. This is because both exclusively cover private land parcels, with land tenure modalities comparable to those observed in the project areas (Ownership, Possession, and Tenure).*

Forest Ecosystem

According to Image 3, the REDD+ chapter of the PARAMUNO project 1. is in the Andean biome, precisely in the foothills of the Central and Eastern Mountain ranges. This led to the definition of 2 reference regions due to the differences between the two mountain ranges.

Image 3. Geographic boundaries of Forest Ecosystem.



Source: Cataruben Foundation, 2023

Table 12. Eligible areas for the Forest Ecosystem PARAMUNO Project 1.

MOUNTAIN RANGE	***ELIGIBLE AREAS (HA)***	***PROPORTION***
Central Mountain Range	*10.111*	*53.5 %*
Oriental Mountain Range	*8.798,8*	*46.5 %*
TOTAL	***18.909,8***	***100 %***

To delimit the project areas corresponding to the forest category, the project proponent generated forest maps using the Google Earth Engine (GEE) development engine for the years 2012, 2016, and 2021. The images used were from Rapideye and Sentinel. Additionally, maps of forest and non-forest areas generated by the Forest and Carbon Monitoring System (SMByC) were used as input. The accuracy of the maps generated by GEE is 99.47%, 92.61%, and 94.68%, respectively, using the BCR0002 methodology.

The eligible areas (Table 13) result from a cross-classification between the Forest-Non-Forest layers for the years 2005-2016, where only permanent forest in both time periods, i.e., stable/conserved forest, is selected. These analyses are carried out using Quantum GIS (QGIS) free software.

Table 13. Criteria for Establishing the Reference Region, BCR0002

CRITERIA	***Justification/Explanation***
The reference region may include all or part of the project area.	*Compliance. The reference region includes 100% of the project area.*
The agents and causes of land use changes identified in the reference area can have access to the project area.	*Compliance: The procedures developed to determine both the project areas and the reference region have been validated. It was confirmed that the latter groups private property owners with similar interests. The review of secondary information demonstrates that the geographical area where the project is located has a high historical rate of land use changes associated with the high population index (IDEAM,2005)*
The project area is of interest to the agents identified in the previous criterion.	*Compliance: The project proponent successfully demonstrates through consultation in the SIPRA that land tenure conditions exhibit notable similarities both in the reference region and in the project areas. This is because both exclusively cover private land parcels, with land tenure modalities comparable to those observed in the project areas (Ownership, Possession, and Tenure).*
The land tenure figures and land use rights must be characterized in the reference region.	*Compliance. The project proponent managed to demonstrate that in the reference region, it only includes areas of private properties where owners have land use rights through a thorough study of titles. No evidence was found indicating that the project includes areas of collective tenure*

Exclude areas with restricted access to agents and drivers of deforestation and degradation.	*Compliance: It is evident that the project excludes areas in which agents have restricted access, according to criteria related to slope and proximity to roads (criteria used by IDEAM to define inaccessible forest, in accordance with Annex 1 of the NREF: adjustment for national conditions). Additionally, collective territories and categories from the Single Registry of Protected Areas (RUNAP) are also excluded.*

Based on the information provided, the audit team considers that the methodology for establishing the geographical boundaries and eligible areas of the project presented in the PDD is comparable and reliable according to the principles defined by the MRV system for mitigation actions at the national level in Article 9 of Resolution 1447 of 2018.

5.5.4 Baseline or reference scenario

The project was found to meet the criteria established in section 1.2 of this document. In accordance with this, the consistency of the project's baseline aligns with the requirements of the BCR Standard, version 3.1 dated July 25, 2023, and the Methodological Document Sector AFOLU / BCR0002 Version 3.1 and BCR0003 Version 3.0.

In addition to the above, it was identified that the project's baseline for Reducing Emissions from Deforestation and Forest Degradation (REDD+) activities complies with the Forest Emission Reference Level (NREF) in its latest version. The application of the NREF was in accordance with current regulations, and the project appropriately used the methodology for carbon calculations.

5.5.5 Additionality

The Project Proponent provides a comprehensive list of baseline scenarios supported by historical evidence from the areas where activities will take place in both forest and high mountain ecosystems. The aim is to establish the most reasonable baseline scenario of what would occur in the absence of the proposed project activity. To achieve this, the criteria from section C (changes in carbon reserves at the project boundaries, identifying the most likely land use at the project's outset) of the Baseline and Additionality Tool, version 1.1, were selected. The following steps were followed in the Table 14:

Table 14. Steps of the Baseline and Additionality Tool for PARAMUNO Project 1.

Step 0.	*Preliminary selection based on the project activity start date:* *According to the evidence provided by the project proponent (letters of intent from the beneficiaries, endorsements for the implementation of project activities, and affiliation contracts), it is possible to establish that the start date of the PARAMUNO Project 1 Climate Change Mitigation Project is 17/08/2017 for both the High Mountain Ecosystem and the Forest Ecosystem activities, as can be observed in Section 5.5.1 and Table 7 of this document.*
Step 1.	*Identification of alternative scenarios:* *The PARAMUNO Project comprises ten departments (Cauca, Valle del Cauca, Tolima, Quindío, Boyacá, Caldas, Casanare, Cundinamarca, Santander, and Norte de Santander), covering a total area of 23.5 million hectares, equivalent to 20% of the national territory. These departments are situated between the central and eastern mountain ranges and boast diverse ecosystems, ranging from high mountain areas starting at 2,700 meters above sea level to cloud forests, high Andean forests, Paramos, and glaciers (IDEAM, 2009).* *The project confirmed the execution of an analysis based on secondary information regarding the historical land uses in the reference area of the PARAMUNO Project. This analysis addressed the relationships with the environmental surroundings, forms of utilization and exploitation of natural resources, and settlement patterns present in each subregion. The aim was to establish potential conflicts of land use related to the greenhouse gas (GHG) project. Among the identified activities are agriculture, livestock farming, mining, timber activity (legal and illegal), illicit crops, industrial areas, and tourism.* *Additionally, it was successfully demonstrated that the identified drivers are integral parts of the activities that have historically taken place in the project implementation areas. This interconnection is evident in the project's activity execution plan, where direct links are established between the identified drivers of change and the corresponding project areas.*
Sub-step 1b.	*Consistency of credible scenarios of alternative land use with applicable mandatory laws and regulations:*

Step 2.	*Barrier analysis:* *The project identified several barriers, including those related to investment, institutional, social, and land tenure. The project owner analyzed each barrier in different scenarios using secondary information, providing well-documented and transparent evidence. Conservative interpretations were adopted to demonstrate the existence and significance of these barriers. Additionally, a joint financial analysis was conducted for both ecosystems. The barrier analysis supports the demonstration of additionality in the PARAMUNO Project 1, emphasizing that the conservation and greenhouse gas (GHG) emission reduction actions go beyond what would be done without the economic incentives from the sale of carbon credits. These barriers are crucial to proving the project's real and effective contribution to GHG emission reduction.*
Sub-step 2a.	*Identification of barriers that would hinder the project implementation:* *In relation to the project activities, it is analyzed that the barriers that would hinder the implementation of the Paramuno Project if carbon market participation is not considered are: investment barriers, institutional barriers, those arising from social conditions, and those related to land tenure.*
Sub-step 2b.	*The identified barriers would not hinder the implementation of at least one of the identified land-use alternatives (except for the project activity):* *The GHG project successfully demonstrates compliance with the requirements of methodologies BCR002 and BCR003 by illustrating the conflict of land use identified in the baseline scenario. These conflicts are not affected by the previously mentioned barriers, taking into consideration that national and regional development regulations and plans drive development in the region. In this context, agriculture and livestock continue to play a crucial role in the project area, serving as the primary source of income for landowners. Based on the above, it can be affirmed that the project promotes the adoption of practices aimed at reducing land use conflicts, the effective management of environmentally strategic areas, the identification and zoning of protected areas, and overall territorial planning.*

Sub-step 3.	Project Registration Impact: The proposed activities aim to mitigate and reduce the pressure exerted by actors identified as drivers of deforestation and degradation in the project area. The benefits and incentives identified by the greenhouse gas (GHG) project are: (a) Net anthropogenic greenhouse gas removal through sinks; (b) The financial benefit of income generated from the sale of Verified Carbon Credits (VCC), including the certainty and predefined timing of income. (d) Attracting new stakeholders who contribute the capacity to implement new technology/practices.

The method employed to demonstrate additionality in both project activities (High Mountain Ecosystem and Forest) was assessed through the review of primary information and on-site interviews. During these interviews, the perceptions and level of engagement of the project beneficiaries regarding the development of greenhouse gas (GHG) project activities were investigated. Essentially, the project is considered additional to the extent that the activities, by prevailing over traditional baseline uses, historically demonstrate significant pressure on ecosystems in the GHG project area. Furthermore, it was shown that the implementation of the proposed actions will contribute to reducing these pressures.

The audit team considers that the project complies with the established guidelines regarding changes in carbon reserves within the project limits, identifying land use with higher probability at the project's outset, and correctly applying the steps proposed by the Additionality Tool V1.1, the Methodological Document Sector AFOLU / BCR0002 Quantification of Greenhouse Gas (GHG) Emission Reductions from REDD+ Projects. Version 3.1., and the Methodological Document Sector AFOLU / BCR0003 Quantification of GHG Emission Reductions - Activities that prevent land use change and improve peatland and other wetland management practices in high mountain ecosystems of Projects. Version 3.0.

5.5.6 Conservative approach and uncertainty management

The agreed-upon level of assurance with the client to identify potential errors, omissions, underestimations, overestimations, or misinterpretations in the validation and verification process was set at 95%. Consequently, various stages were conducted during the audit, including strategic analysis, risk assessment, and the design of evidence collection.

A thorough review of 100% of the documents provided by the project proponent was carried out, along with interviews with stakeholders. The risk assessment indicated that the likelihood of finding incorrect statements or significant non-compliances with criteria is low. The consistency of the baseline of the Greenhouse Gas (GHG) Mitigation Sectoral Project with current national regulations and/or applied methodology was also examined. It was confirmed that the assessed values for the reduction activity are consistent with national reports and, for the REDD+ activity, with the National REDD+ Framework (NREF).

Regarding the quantification of mitigation results compared to the validated baseline, in accordance with current national standards and/or applied methodology, and the evaluation of co-benefits and indicators related to sustainable development goals, the audit team concluded that the assurance level for the PARAMUNO Project 1 was not less than 95%. Therefore, it can be stated that following the validation and verification activities, the VERSA audit team found no material discrepancy between the data supporting the quantification of greenhouse gas emission reduction results.

1.1.1 Quantification of Greenhouse Gas Emission Reduction

During the audit process, the parameters for identifying greenhouse gas emissions in the baseline scenario were evaluated, and their compliance was validated considering the criteria defined by:

- *BCR Standard, version 3.1 dated July 25, 2023.*
- *Methodological Document AFOLU Sector / BCR0002 Quantification of Greenhouse Gas Emission Reductions from REDD+ Projects. Version 3.1. September 15, 2022.*
- *Methodological Document AFOLU Sector / BCR0003 Quantification of Greenhouse Gas Emission Reductions - Activities that avoid land use change and improve peatland and other wetland management practices in high mountain ecosystems of Projects. Version 3.0. dated August 31, 2022.*

High Mountain Ecosystem

The project proponent, to quantify greenhouse gas (GHG) emissions and removals in activities preventing land use change and improving peatland and other wetland management practices in high mountain ecosystems, has incorporated thoroughly justified and recognized criteria (see Tables 15 and 16). For more details on the quantification, please refer to section 3.6.3.4.1 Emission Reduction due to Land Use Change in High Mountain Ecosystems (EAM) in the PdD and Anexo 1.1. / 2. CAP. E. ALTA MONTAÑA / 2.3 Cuantificación / Cálculo de emisiones EAM PARAMUNO V4.

Table 15. Emission factors for the High Mountain Ecosystem

Páramo Cordillera Central	*Carbon in total biomass 16.6tC/Ha* *Source: Torres et al., 2012.*
	Adjusted Carbon in Total Biomass 15.6 tC/Ha *Source: Torres et al., 2012.*
Páramo Cordillera Oriental	*Carbon in total biomass 13.9 tC/Ha* *Source: Torres et al., 2012.*

	Adjusted Carbon in Total Biomass 13.07 tC/Ha *Source: Torres et al., 2012.*
Organic soil carbon value in the páramo region of the department o Boyacá	*161.39 COS (t/ha) Source: IGAC & Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, 2018*
Organic soil carbon value in the páramo region of the Macizo	*169.18 COS (t/ha) Source: IGAC & Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, 2018*
Organic soil carbon value in the páramo region of the department of Santander	*158.65 COS (t/ha) Source: IGAC & Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, 2018*
Organic soil carbon value in the páramo region of the departments of Viejo Caldas-Tolima	*152.96 COS (t/ha) Source: IGAC & Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, 2018*

Table 16. Emission Reduction from Avoided Transformation of High Mountain Ecosystems

Year	***Greenhouse Gas Emissions in the baseline scenario (tCO2e)***	***Greenhouse Gas Emissions in the project scenario (tCO2e)***	***Estimated Net Greenhouse Gas Reduction (tCO2e)***
2017	*2.440,82*	*244,08*	*895*
2018	*2.415,27*	*241,53*	*2.125*
2019	*2.390,00*	*239,00*	*2.102*
2020	*2.365,00*	*236,50*	*2.080*
2021	*2.340,27*	*234,03*	*2.057*
2022	*2.315,81*	*231,58*	*2.035*
2023	*2.291,61*	*229,16*	*2.014*
2024	*2.267,67*	*226,77*	*1.992*
2025	*2.244,00*	*224,40*	*1.971*
2026	*2.220,57*	*222,06*	*1.950*
2027	*2.197,40*	*219,74*	*1.929*
2028	*2.174,48*	*217,45*	*1.908*
2029	*2.151,81*	*215,18*	*1.888*
2030	*2.129,38*	*212,94*	*1.868*
2031	*2.107,19*	*210,72*	*1.848*

2032	2.085,24	208,52	1.828
2033	2.063,52	206,35	1.808
2034	2.042,04	204,20	1.789
2035	2.020,79	202,08	1.770
2036	1.999,77	199,98	1.751
2037	1.978,97	197,90	1.011
Total	46.241,58	4.624,16	38.619
Estimated Annual Average	2.201,98	220,20	1.839

Source: Cataruben, 2023

The Estimated Net Greenhouse Gas Reduction in the project scenario over a period of 20 years is 38.619 tCO2e to be reduced due to avoided transformation in high mountain ecosystems. The emission projection within the project boundaries can be reviewed in Annex 1.1 / Chapter 2.E. High Mountain / 2.3 Quantification / Emission Calculation EAM PARAMUNO V4.

Forest Ecosystem

The project proponent, to quantify greenhouse gas (GHG) emissions and removals in the GHG Emission Reduction Activities of REDD+ Projects, has incorporated well-justified and recognized emission factors (see Table 18). Detailed step-by-step calculations are available for review 3.6.3.4.1 Emission Reduction from Avoided Deforestation in the PdD.

The audit team verified 100% of the calculations carried out by the project proponent for PARAMUNO Project 1, which are available in the chapter 3.6.3.4.1 Reducción de emisiones por Deforestación evitada, it was conducted following the guidelines established in methodology BCR0003, section 11.4. In this section, the relationships between the changes recorded in eligible natural coverage and the defined emission factors are established (see Table 17).

Table 17. Emission Factors for the Forest Ecosystem

BIOMA ANDES	BA (t/Ha) 154	BS (t/ha) 35	BT (t/Ha) 189	COS (tC/Ha) 125
Primary degradation	Mean difference in aboveground biomass: 117.46 t/Ha	Difference in total biomass 146.14 t/Ha.	Difference in carbon content in total biomass: 68.69 t/Ha.	DBTi 251,85 CO2e

Secondary degradation	Mean difference in aboveground biomass: 83.23 t/Ha	Difference in total biomass: 103.21 t/Ha	Difference in carbon content in total biomass: 48.51 t/Ha.	DBTi 177.86 CO2e

Table 18. Projection of emission reduction from avoided deforestation during the analysis period 2017-2037.

Year	**Greenhouse Gas Emissions in the baseline scenario (tCO2e)**	**Greenhouse Gas Emissions in the project scenario (tCO2e)**	**Estimated Net Greenhouse Gas Reduction (tCO2e)**
2017	95.847,36	20.766,41	30.324
2018	126.298,07	25.526,72	98.467
2019	130.574,00	26.335,96	101.934
2020	133.141,64	26.791,67	104.046
2021	134.467,53	26.995,37	105.168
2022	134.547,91	26.817,83	105.426
2023	85.360,03	17.011,42	66.045
2024	83.099,67	16.580,96	64.215
2025	81.669,50	16.295,43	63.070
2026	80.281,07	16.018,06	61.959
2027	78.919,02	15.745,97	60.869
2028	77.582,54	15.478,98	59.799
2029	76.271,12	15.217,01	58.750
2030	74.984,27	14.959,95	57.720
2031	73.721,50	14.707,70	56.710
2032	72.482,34	14.460,17	55.718
2033	71.266,32	14.217,26	54.745
2034	70.072,98	13.978,89	53.790
2035	68.901,89	13.744,97	52.853
2036	67.752,60	13.550,52	51.898
2037	66.624,68	9.109,41	32.207
Total	1.883.866,06	374.310,65	1.395.713
Estimated Annual Average	89.707,91	17.824,32	66.463

Column 4 indicates the projected annual reductions over a period of 20 years, totaling 1,395,713 tCO2e reduced due to avoided deforestation. The emission projection due to deforestation within the project boundaries (tCO2e/ha-year) can be observed in Annex 1.1 / Chapter 3. REDD+ / 3.2. REDD+ QUANTIFICATION / Emission Calculation REDD+ PARAMUNO V4.

It was possible to confirm that the project holder implements procedures to ensure the accuracy of emission calculations, considering the uncertainty associated with the accuracy of maps and field information through:

(a) the use of high-resolution satellite images and field visits to verify the presence of natural vegetation cover,

(b) the determination of uncertainty in emission factors through secondary information and standard deviation,

(c) the generation of forest-nonforest maps using Google Earth Engine with remote sensor data.

In general terms, according to the information provided by the project manager, it was established that the accuracy of the maps, assessed through control points, did not exceed 90%, in compliance with the criteria defined for the validation and verification process.

5.5.7 Leakage and non- permanence

High Mountain Ecosystem

In the description of the leakage area, as presented in section 3.2.1.1.5, Leakage Area EAM, of the Project Document (DdP), it has been verified that the project's activity complies with the requirements established in the methodological documents mentioned in the methodology BCR0003 Item 7.1.3, Leakage Area. Consequently, the project has determined that 100% of the leakage areas are within the reference region of the high mountain ecosystem, and all areas follow the same criteria for defining the High Mountain Ecosystem (EAM).

This analysis is based on spatial proximity analysis, allowing the determination of land-use change distribution. It considers the relationship between the distance of the properties included in the project and the historical trend of deforestation events. Consequently, a leakage area was defined where land cover is vulnerable to land-use change, covering a surface of 2,794 hectares. Within this area, natural vegetation covers are monitored, totaling 574.9 hectares as of the project's start date. The distribution is defined in Table 19.

1.1.1.1.1.1 *Table 19. Component EAM - Paramo, Leakage.*

MOUNTAIN RANGE	***Leakage (ha)***	***Land Covers in the Leakage Area.***
Central Mountain Range	*612,0*	*398,9*
Oriental Mountain Range	*2.182,0*	*176*
Total	***2.794,0***	***574,9***

Source: Cataruben, 2023

Table 20. Emission Reduction in the Leakage Area from Avoided Transformation of High Mountain Ecosystems

Year	***Greenhouse gas emissions attributable to leaks (tCO2e)***
2017	*48,77*
2018	*48,77*
2019	*48,77*
2020	*48,77*
2021	*48,77*
2022	*48,77*
2023	*48,77*
2024	*48,77*
2025	*48,77*
2026	*48,77*
2027	*48,77*
2028	*48,77*
2029	*48,77*
2030	*48,77*
2031	*48,77*
2032	*48,77*
2033	*48,77*
2034	*48,77*

2035	48,77
2036	48,77
2037	48,77
Total	1.024,13
Estimated Annual Average	48,77

Source: Cataruben, 2023

Forest Ecosystem

In the description of the leakage area, as outlined in section 3.2.1.2.3 Leakage Areas REDD of the Project Document (DdP), it has been verified that the project's activity complies with the requirements established in the methodological document BCR0002 Item 8.3, Leakage Area.

The project determined the emissions resulting from leaks through a proximity analysis, allowing the establishment of the deforestation distribution. It was validated that the processes for evaluating forest loss within the temporal boundaries of the baseline of the REDD+ component were conducted from 2005 to 2016. This previous process defined that, on average, deforestation has a mobilization area consistent with the methodology of 11,862 ha, of which 5,929 ha are defined as forest in Table 21 and can be affected by deforestation activities.

The spatial proximity analysis determined that the leakage area corresponds to 63.0% of the project areas. The step-by-step calculations can be reviewed in the annex Geodatabase_REDD+v4\gdb_cordillera\areas_fugas for each mountain range.

1.1.1.1.1.2 Table 21. Component Forest Ecosystem, Leakage.

MOUNTAIN RANGE	Leakage (ha)	Land Covers in the Leakage Area.
Central Mountain Range	5.864	2.591
Oriental Mountain Range	5.998	3.338
Total	**11.862**	**5.929**

Source: Cataruben, 2023

Table 22. Projection of emission reduction in the Leakage Area from avoided deforestation during the analysis period 2017-2037

Año	Emisiones de GEI atribuibles a fugas (tCO2e)
2017	2.304,11
2018	2.304,11
2019	2.304,11
2020	2.304,11
2021	2.304,11
2022	2.304,11
2023	2.304,11
2024	2.304,11
2025	2.304,11
2026	2.304,11
2027	2.304,11
2028	2.304,11
2029	2.304,11
2030	2.304,11
2031	2.304,11
2032	2.304,11
2033	2.304,11
2034	2.304,11
2035	2.304,11
2036	2.304,11
2037	2.304,11
Total	48.386,21
Estimated Annual Average	2.304,11

5.6 Monitoring plan

The assessment carried out by the VERSA authoring team to determine whether the monitoring plan proposed by Project PARAMUNO 1 was based on compliance with the proposed monitoring activities and the methods mentioned in section 8 of the BCR Standard involved the execution of the following steps:

Assessment of National Circumstances and Project Context (a): The monitoring plan was scrutinized to ensure alignment with national circumstances and the specific context of the GHG Project. This involved verifying that the plan takes into account relevant national regulations, policies, and conditions impacting the project.

Review of Monitoring Good Practices (b): The plan was assessed for the incorporation of monitoring good practices suitable for the follow-up and control of GHG mitigation activities. This involved checking whether the plan adheres to industry standards and guidelines for effective monitoring.

Evaluation of Data Quality Procedures (c): Procedures outlined in the monitoring plan were reviewed to ensure they adhere to the requirements of ISO 14064-2, focusing on measures in place to guarantee the quality of the monitored data.

Regarding the demonstration by the Project Holder that verified carbon credits are quantified, monitored, reported, and verified through the application of the BCR Tool "Monitoring, reporting, and verification (MRV)," a comprehensive assessment was conducted. This involved scrutinizing the project's documentation and data to verify that the MRV process outlined in the BCR Tool is effectively implemented.

Based on the assessment, it is concluded that the monitoring plan aligns with national circumstances, incorporates monitoring best practices, and follows procedures for ensuring data quality under ISO 14064-2. The Project Holder has effectively demonstrated the quantification, monitoring, reporting, and verification of carbon credits through the application of the BCR Tool "Monitoring, reporting, and verification (MRV)." As a result, the monitoring plan is deemed compliant with the requirements of the applied methodology and referenced tools.

Likewise, the monitoring plan complies with the guidelines established by the BCR0002 V3.1 methodology for the Forest ecosystem. Consequently, it covers the detailed monitoring described in section 16.2 of the Project Design Document (PDD) for project boundaries, REDD+ project activities, compliance with REDD+ safeguards, and project emissions.

The VERSA audit team, following the strategic planning phase and on-site auditing process, assesses that the information related to the monitoring plans encompasses tracking project activities and the presentation of greenhouse gas (GHG) mitigation goals, primarily focused on preventing deforestation. However, it is important to note that the effectiveness of implementing these measures depends on the level of awareness that the project proponent can instill among the beneficiaries, who are responsible for carrying out the project activities on their properties.

a) necessary data and information to estimate GHG reductions or removals during the quantification period.

High Mountain Ecosystems

After completing the strategic planning phase, the audit team proceeded to review 100% of the spreadsheets. It was confirmed that the procedure used for monitoring emissions in the High Mountain ecosystem is fully in line with the requirements set out in BCR0003V3.0.

This procedure explicitly states that, during each verification period, a comprehensive monitoring of activity data must be undertaken. The emission factors to be considered are those initially validated, as detailed in section 5.5.7 of this report.

Forest ecosystem

After completing the strategic planning phase, the audit team proceeded to scrutinise 100% of the spreadsheets. It was confirmed that the procedure used for monitoring emissions in the Forest ecosystem is fully in line with the requirements set out in BCR0002V3.1.
This procedure explicitly states that, during each verification period, a comprehensive monitoring of activity data must be undertaken. The emission factors to be taken into account are those initially validated, as detailed in section 5.5.7 of this report.

b) data and supplementary information for determining the baseline or reference scenario.
In the strategic analysis to comprehend the activities and complexity of the project, all relevant information from the AFOLU director was considered, with a particular focus on the Colombian context regarding the development of the baseline and reference scenario for REDD+ projects.
In addition to the above, the relevance of the procedures developed in the project to establish GHG limits was evaluated. The selection of the baseline scenario was also examined, considering the needs of the intended user and compliance with Resolution 1447 of 2018.
It was determined that the data collection frequencies and control operations are suitable, the backup and recovery systems are sufficiently robust, and the content of the GHG statement is appropriate. Evidence related to compliance with BCR 0002 version 3.1 and BCR 0003 version 3.0 methodologies was found.

c) specification of all potential emissions that occur outside the project boundaries, attributable to the activities of the GHG Project (leakage).

The audit team assessed both the proposed approach and the assumptions inherent to the delimitation and estimation of project leaks. It also examined the applicability of the projection in relation to the proposed activity related to greenhouse gases. Additionally, the accounts of data and information used in the projection were evaluated, taking into account their suitability, integrity, and accuracy within the methodological framework.

d) information related to the assessment of environmental and social effects of the project activities.

The interview cycle with project owners took place from March 20th to March 25th, 2023. In total, interviews were conducted with 15 owners located in the departments of Casanare, Boyacá, Tolima, Quindío, and Valle del Cauca. The purpose of these interviews was to identify various key aspects, such as:

- *How they became acquainted with the Cataruben Foundation and their level of understanding of the contract, DDP, and the project's activities.*
- *How the negotiation process for the percentages of carbon credits certified by the development of the REDD+ project unfolded.*
- *The nature of their relationship with the Cataruben Foundation.*
- *The governance system in place.*
- *The types of agricultural systems developed on the properties of associated owners and the forest species currently being utilized.*
- *Expectations generated regarding the activities proposed by the Project Holder.*
- *Difficulties encountered throughout the project process.*
- *The empowerment process and participation of women in the community in general.*
- *Start date and types of activities carried out to begin implementing the PARAMUNO Project 1.*
- *How their daily tasks have been influenced by the implementation of the project's activities and its overall impact on the community of property owners.*
- *The main state entities present in the territory and the types of services they provide.*
- *The level of knowledge on how to access the complaint and claims system of the Cataruben Foundation, if needed.*

In general, it was found that the PARAMUNO Project 1 ensures the rights of property owners, respects the local knowledge of the territory, and the activities/events periodically carried out by the Cataruben Foundation strengthen relationships among neighbors (governance structures present in the territory), safeguarding the integrity of natural ecosystems in the project.

Property owners are familiar with and describe the management processes of the REDD+ initiative, as they have been invited to various socialization and accountability spaces. They have a clear understanding of the results and how the resources obtained from the project benefits have been invested. Additionally, it is evident that the community of property owners understands and identifies the types of benefits generated by the project, acknowledging that the GEI initiative's Holder has clear procedures and rules that ensure equitable distribution among all participants.
Property owners expressed that educational programs and the recognition of flora and fauna on their properties have strengthened their technical capabilities.

Some even mentioned that, on their own initiative, they have set up camera traps to monitor the wildlife on their properties.

e) procedures established for the management of GHG reductions or removals and related quality control for monitoring activities.
The project correctly applied the "Tool for determining contributions to the achievement of Sustainable Development Goals (SDGs) for Greenhouse Gas (GHG) mitigation projects," following the provisions established by the BioCarbon Registry standard. This assessment was conducted in line with the AFOLU - REDD+ project sector.

Upon reviewing all the collected evidence, no material misstatements related to this numeral were identified, and all identified non-conformities were successfully addressed.

f) description of the methods defined for the periodic calculation of GHG reductions or removals and leakage;
In section 17, the PdD (Project Development) outlines the measures to be considered for the implementation of methodologies. These measures are fundamentally based on the geographical, social, economic, and environmental information that characterizes CO2Bio P2-2, along with the quality assurance and control actions related to this.

g) the assignment of roles and responsibilities for monitoring and reporting the variables relevant to the calculation of reductions or removals.
In Chapter 17 of the PDD, the processes for reviewing information are established, detailing the following criteria: Information Management Stages, Responsible Parties, and Controls. Table 85 outlines the control over the documents obtained in various phases of the project.
This allows for the identification of quality control in monitoring and the assignment of roles and responsibilities to ensure quantification in accordance with the methodology and the latest versions of standard documentation.

h) criteria and indicators related to the contribution of the project to sustainable development objectives.

El proyecto has defined mechanisms to monitor the achievement of the Sustainable Development Goals (SDGs). It has been verified that, through the review of evidence presented by Cataruben and during the field visit, the project holders of PARAMUNO Project 1 have demonstrated familiarity with the following SDGs:

- *6: Clean Water and Sanitation*
- *13: Climate Action*
- *15: Life on Land*

The use of the Tool for determining contributions to the achievement of the SDGs was verified. This information was cross-checked during the audit process in the strategic planning phase through the review of 100% of the evidence provided by the project manager.

i) procedures associated with the monitoring of co-benefits of the special category, as applicable.

During the supervision process of special categories related to additional benefits, it has been verified that the project has established robust and customized procedures designed to effectively manage the monitoring of additional benefits within the special category of Orchid. These procedures have been organized as follows:

Biodiversity Conservation: It was found that the Cataruben Foundation has been conducting workshops and training sessions with property owners and the community in general since November 2019 to November 2021. These sessions cover the functions and importance of high mountain ecosystems, climate change, bird watching, mitigation measures, and adaptation to climate change, benefiting 114 people in the project's influence areas.

Report on Invasive Species: For the report on invasive species, the PARAMUNO Project 1 created a matrix to monitor the probability of introducing invasive species into the area of interest.

Community Benefits: According to the provided evidence, the Cataruben Foundation has been conducting aimed at raising awareness on topics such as land planning, productivity strengthening, sustainable management, conservation agriculture, and adaptation processes to climate change, among others.

Gender Equity: It is concluded that the project has ample and sufficient evidence demonstrating the impact of activities on leadership and the appreciation of the role played by women in the community.

After the VERSA audit team reviewed all the project's documentary evidence, as well as consultations with the Cataruben Foundation, associated property owners, and other stakeholders, the audit team confirms that the monitoring methodology described in the Project Document (PdD) is viable within the project's design. Additionally, the set of resources provided for its implementation, including data management and quality control processes, is considered adequate. The outlined procedures for monitoring and evaluating the project are also deemed satisfactory.

5.7 Compliance with applicable legislation

VERSA confirmed the compliance capacity with applicable legal requirements for the greenhouse gas mitigation project, as established in the Project Document (DdP) and Monitoring Report formats. This verification involved identifying the standards, laws, or resolutions and conducting an analysis of their application and compliance context. The

auditing team at VERSA, as a validation and verification organization, has confidence in the transparency, consistency, and traceability of the information provided by the project holder.

In addition to the above, the project also has measures in place to continuously monitor potential changes in relevant legislative aspects that may impact the activities of the PARAMUNO Project 1.

Table 23. Monitoring Compliance with Standards or Laws

Standard or Law	***Applicability/ Compliance***	***Justification/Explanation***
Forest Policy. *National Biodiversity Policy.* *National Plan for the Prevention and Control of Forest Fires and Restoration of Affected Areas.* *National Policy on Environmental Education.* *National Action Plan for Combating Desertification and Drought in Colombia.* *General Forestry Law.* *National Policy for the Integrated Management of Water Resources.* *National Strategy for the Prevention, Control, Monitoring, and Surveillance of Forestry.* *National Policy for Sustainable Production and Consumption.* *Institutional Strategy for the Articulation of Policies and Actions on Climate Change in Colombia.*	*Strengthening Governance Structures* *Implementation of Conservation Actions and Participatory Land Planning* *Monitoring and Mitigation of Disturbance Events Leading to the Loss of Eligible Areas.*	*VERSA verified 100% of the documentary evidence developed by the Project Holder provided in relation to current national regulations, the objectives of national forest programs, and international conventions and agreements on the subject. It was found that these are aligned and compatible with the objectives set forth in national policies, programs, strategies, and international agreements.* *In addition, during interviews conducted with property owners during the field visit, the audit team found that the overall impact of these activities is positive. The topics covered have been easy to understand, innovative, interesting, and have promoted the development of conservation activities and the implementation of sustainable productive models on different properties associated with the project.* *It was also found that the project has had positive impacts on land legalization and the updating of records of economic activities of*

Standard or Law	Applicability/ Compliance	Justification/Explanation
National Policy for the Integrated Management of Biodiversity and its Ecosystem Services. Policy for Sustainable Soil Management. National Policy for the Integrated Management of Solid Waste. National Climate Change Policy. Strategy for the Implementation of Sustainable Development Goals (SDGs) in Colombia. Green Growth Policy. National Policy for the Control of Deforestation and the Sustainable Management of Forests. Public Policy to Reduce Disaster Risk Conditions and Adapt to Climate Variability Phenomena. Environmental Policy for the Integrated Management of Hazardous Waste. Policy to Promote Agricultural Competitiveness		project participants with the tax authority (DIAN). During the audit activities, the compatibility of the measures proposed by the Paramuno P1 project for the conservation of high-altitude ecosystems and páramos was reviewed. This aligns with the objectives outlined in current national regulations, national forest programs, and international conventions and agreements related to the subject. During the field visit, the owners of the properties associated with the project demonstrated their approval and interest in participating in the implementation of these measures and the importance of these measures in the conservation of ecosystems and biodiversity present on their properties. Based on the above, VERSA considers that the initiatives proposed by the Paramuno P1 project encourage the interest of associated property owners in the protection and conservation of ecosystems and associated environmental services in the eligible areas of the project.

5.8 Carbon ownership and rights

During the audit, it was verified that the Project Holder conducted a meticulous review of land tenure or legal ownership for 153 private properties. This was accomplished through a thorough examination of titles with the purpose of determining the legal status of these

properties. The process involved a legal analysis of various documents, such as Certificates of Tradition and Freedom, Adjudication Resolutions (previously issued by INCODER, now the National Land Agency A.N.T.), public deeds or judicial judgments, cadastral certificates, sales contracts, proof of property tax clearance, property tax payments, plans or maps, among other relevant elements.

In addition to the above, it is important to highlight that the responsible party for the PARAMUNO Project 1 demonstrated that none of the properties associated with the project are in the process of restitution, nor do they have conflicts related to dispossession or abandonment due to the armed conflict. Likewise, it was verified that there are no sanctions or environmental infractions on these properties, and they do not have any disciplinary, judicial, or criminal records.

Based on the above, it is concluded that the analyses conducted by the project holder are appropriate and enable the determination of which properties do not present any irregularities such as liens, mortgages, or other title limitations. Therefore, the carbon rights in this case belong to the owners who make up the project.

5.9 Risk management

During the development of the strategic planning stage carried out by the VERSA audit team, it was possible to verify through the review and analysis of the information provided by the project holder and the criteria defined for validation and verification, as described in section 1.2 of this document, that the project has defined mechanisms that ensure compliance with the guidelines defined in the TOOL for Permanence and Risk Management, version 1, March 7, 2023. The project identifies and presents measures to mitigate the risks associated with GHG projects, for this, it created a matrix with risks in the environmental, financial, and social dimensions related to the execution of the project activities.

Table 29. Risk Identification Plan

DIMENSION	RISK	RISK ASSESSMENT	MITIGATION AND MONITORING	ASSESSMENT
Environmental	Fire	Medium	(a) Biomass removal to prevent it from acting as fuel in a fire. (b) Establishment of firebreaks. (c) Implementation of firebreak strips. (d) Avoidance of burns during critical summer periods. (e) Monitoring of heat points in Colombia.	The measures outlined in the Project Design Document to mitigate the risk are coherent and consistent with the project's objectives, aligning with the guidelines of validation and verification criteria. For the High Mountain and Forest Ecosystems, it was confirmed, based on the evidence provided, that there were no incidents of fire, and a 25% progress was achieved during this monitoring period
	Flood	Low	Do not place houses near water sources and maintain control over the maximum flood levels that occur on the properties each year.	The measure is consistent with the Validation and Verification criteria, especially with the guidelines established by BCR standard v3.2 and the Permanence and Risk Management TOOL v1. During the monitoring period, it was reported that these risks did not occur in the GHG project áreas.

DIMENSION	RISK	RISK ASSESSMENT	MITIGATION AND MONITORING	ASSESSMENT
Financial	Profitability	Medium	(a) Reduce costs and expenses without affecting operational efficiency and quality. (b) Increase the inventory of carbon certificates. (c) Increase the number of transactions through the sale of carbon certificates (this is a viable action due to market trends in mitigating climate change, the country's commitments in the international context, and the project's value as a non-traditional market). (d) Seek financial leverage through cooperation.	The measure is consistent with the Validation and Verification criteria, especially with the guidelines established by BCR standard v3.2 and the Permanence and Risk Management TOOL v1. In the financial model, in the results and cash flow tab, it was evident that the project continues to be profitable, and there are sufficient resources for the implementation of project activities.
	Market	Medium	(a) Geographical expansion of the market niche. (b) Negotiations for sales that establish a stable exchange rate in unstable markets. (c) Strengthening of long-term business alliances.	The measure is consistent with the Validation and Verification criteria, especially with the guidelines established by BCR standard v3.2 and the Permanence and Risk Management TOOL v1.
	Offer	Medium	(a) Implementation of land acquisition strategies. (b) Beneficiary profile analysis (selection and evaluation). (c) Marketing strategy to improve the sale price of	The measure is consistent with the Validation and Verification criteria, especially with the guidelines established by BCR standard v3.2 and the Permanence and

DIMENSION	*RISK*	*RISK ASSESSMENT*	*MITIGATION AND MONITORING*	*ASSESSMENT*
			carbon credit vouchers (CCV)	*Risk Management TOOL v1.*
	Country financial risk	*Medium*	*(a) Financial capacity to cope with macroeconomic conditions.* *(b) Market diversification for sales.* *(c) Monitoring of macroeconomic conditions.* *(d) Establishment of international reserves in strong currencies*	*The measure is consistent with the Validation and Verification criteria, especially with the guidelines established by BCR standard v3.2 and the Permanence and Risk Management TOOL v1.* *After reviewing the financial model, it was possible to establish that the eligible hectares of the initiative have a sufficient stock of CCV to not affect the financial sustainability of the initiative's operations in implementing conservation actions for both ecosystems (High Mountain and Forest).*

DIMENSION	RISK	RISK ASSESSMENT	MITIGATION AND MONITORING	ASSESSMENT
Social	Dispute over land tenure"	Medium	Conduct a title study prior to the contract signing, maintain constant communication with property owners regarding the legal status of the property, and perform a property check and/or update the Certificate of Tradition and Freedom whenever necessary.	The measure is consistent with the Validation and Verification criteria, especially with the guidelines established by BCR standard v3.2 and the Permanence and Risk Management TOOL v1. It was confirmed that out of the two ecosystems in the project, 41 properties have eligible areas for the High Mountain ecosystem and 113 for the Forest ecosystem. Through the title study (including encumbrances, precautionary measures, limitations to ownership, or situations that may affect it) provided by the Catruben Foundation, it demonstrates how it ensures the right to carbon for the 154 participants in the GHG project.
	Low stakeholder participation"	Low	Promote spaces for participation and knowledge exchange both virtually and in-person, aiming to coordinate and strengthen the implementation of the proposed project activities.	The measure is consistent with the Validation and Verification criteria, especially with the guidelines established by BCR standard v3.2 and the Permanence and

DIMENSION	RISK	RISK ASSESSMENT	MITIGATION AND MONITORING	ASSESSMENT
			Additionally, implement the PRQS (Participation, Representation, Quality, and Satisfaction) attention mechanism	Risk Management TOOL v1.

In accordance with the above, it was possible to verify through documentary review and on-site visits that the risk is analyzed in a detailed and coherent manner. However, the project adheres to the Biocarbon Registry standard guidelines.

This involves deducting a 20% reserve from the Verified Carbon Credits during the accreditation and verification periods, as applicable. The certifying body of the project undertakes this process by placing the reserved credits into an account. This measure aims to ensure the preservation and non-transformation of the conservation areas throughout the project's validity. Furthermore, the engagement contracts explicitly state that parties are allowed to access only 10% of the total reserved by the certifying entity after surpassing the verification period under which they were granted.

1.2 5.10 Environmental aspects

Following the documentary review conducted by the VERSA audit team, it has been identified that the project has clearly defined mechanisms allowing for the assessment and measurement of environmental performance, as well as potential impacts that may arise from the project's implementation. This aligns with the guidelines set forth by the BioCarbon Standard and the tool for "Avoiding Harm" and environmental and social safeguards, version 1, March 07, 2023. In this context, the project possesses two matrices:

1. *Paramuno.xls Environmental Assessment Matrix (1.3.2): This matrix addresses physical aspects such as soil, water, and atmospheric components, as well as biotic elements like fauna and flora. No impacts with negative values are observed in this assessment; on the contrary, the identified impacts were mostly positive. This is consistent, as the implementation of these activities is expected to create environmentally favorable conditions for the restoration, rehabilitation, and sustainability of the ecosystems present in the project.*
2. *GAF-F10. Foundation Cataruben.xlsx Matrix of Environmental Aspects and Impacts (1.3.1): In this matrix, a comprehensive evaluation is conducted on how the project holder identifies risks associated with its activities, covering aspects*

such as water consumption, energy consumption, paper consumption, emission of refrigerant gases from air conditioning use, chemicals for hygiene, generation of organic and electronic waste, expiration and deterioration of first aid kit elements, use of fire extinguishers, leaks or spills of chemicals, fuel consumption, domestic discharges, noise generation, use of advertising, material consumption, and electricity consumption. The evaluation and identification of these impacts enable the company to understand how its activities generate impacts and, thus, implement measures for more efficient resource use.

In conclusion, the evidence provided by the project holder supports the claim that the project has specific mechanisms to comply with the requirements of the BioCarbon Standard and the "Avoiding Harm" tool, as well as environmental and social safeguards (Version 1.0).

5.10 Socioeconomic aspects

The assessment focused on whether the project holder conducted an analysis of the significant socioeconomic effects of project activities within the project boundaries. This involves a thorough examination of the assumptions made during the analysis and a justification of the review results. Steps taken to evaluate the demonstration that project activities do not cause any net harm to local communities and society in general:

- *Analysis of Socioeconomic Effects: The first step involved scrutinizing the analysis conducted by the project holder on the significant socioeconomic effects of project activities within the defined project boundaries. This analysis would consider factors such as gender equity, training, communication with stakeholders, and forest governance in the territories. Additionally, it assessed economic elements including access to financial goods and services, economic benefits of the project, formalization of environmental services as an economic activity, and the implementation of sustainable productive practices.*
- *Assumptions Used: The team assessed the assumptions made during the socioeconomic analysis. This includes evaluating the data sources, methodologies employed, and any assumptions regarding the project's interactions with local communities.*
- *Justification of Review Results: The assessment critically examined the justification provided by the project holder for the results of their socioeconomic analysis. This involves ensuring transparency and clarity in how the conclusions were reached.*

Regarding the use of the BCR Tool for No Net Harm (NNH) Environmental and Social Safeguards:

Application of BCR Tool: The evaluation included a check on whether the project holder applied the BCR Tool for No Net Harm (NNH) Environmental and Social Safeguards during their impact assessment. This involves confirming that the tool was used to identify, assess, and manage potential adverse environmental and social impacts.

Based on the assessment, it was concluded that the project holder had indeed conducted an analysis of the significant socioeconomic effects of project activities within the project boundaries. The assumptions used were deemed reasonable, and the review results were justified with clear and transparent reasoning.

In terms of the No Net Harm (NNH) safeguards, it was confirmed that the project holder applied the BCR Tool, ensuring that potential adverse impacts on local communities and society were identified, assessed, and addressed appropriately.

The overall conclusion is that the project activities, as assessed through the socioeconomic analysis and application of the NNH safeguards, do not cause net harm to local communities and society in general. This conclusion is reached by considering the robustness of the analysis, the transparency of the assumptions, and the effectiveness of the safeguards applied.

6 Verification findings

6.1 Project and monitoring plan implementation

6.1.1 Project activities implementation

The verification process for PARAMUNO Project 1, conducted by VERSA's audit team, was carried out through a comprehensive analysis of all the evidence provided by the Cataruben Foundation. Additionally, information was gathered in the field through interviews with project beneficiaries, and the data described in the Monitoring Report (MR) document in its version 2.3 was scrutinized.

The verified information encompasses project monitoring, project activity execution, project sustainability, project emissions, activity data, changes in land use in the project area, annual changes in land use in leakage areas, greenhouse gas (GHG) emissions during the analysis period, emission reduction due to project activities, quality control and quality assurance procedures, and finally, a review of information processing, as well as data recording and file system.

The verified monitoring period is succinctly summarized in Table 25.

Table 25. First Verification Period of PARAMUNO Project 1

Ecosystem	Activity	Start date	End Date
Hight Mountain	Activities that prevent changes in land use and enhance peatland and other wetland management	01/08/2017	31/12/2021

	practices in high-mountain ecosystems		
Forest	*Activities for the reduction of greenhouse gas emissions in REDD+ projects*	*01/08/2017*	*31/12/2021*

The Cataruben Foundation is the entity responsible for the development and implementation of the activities detailed in the Monitoring Report

Hight Mountain Ecosystem

The project, aimed at reducing changes in land use in high-mountain ecosystems, has implemented various actions during the verification period. These actions have been assessed at 100% by the audit team. Below, some of the implemented measures are detailed:

a) *Satellite monitoring of land use change:*
   - *Implementation since 2017.*
   - *100% compliance in this monitoring period.*
   - *The overall compliance of the activity is 20%.*

b) *Land planning management and promotion of sustainable practices:*
   - *Initiated in August 2017.*
   - *Overall compliance of 13.7%.*
   - *For the monitoring period (August 2017 to December 2021), a compliance of 91.3% is reported.*

c) *Training cycle to strengthen knowledge in the conservation of high-mountain ecosystems and governance structures:*
   - *Activity conducted by the Cataruben Foundation.*
   - *Overall compliance of 30%.*
   - *A goal of conducting a total of 20 training sessions is established during the project's duration.*

d) *Monitoring of terrestrial heat points:*
   - *Initiated in 2017.*
   - *100% compliance in the monitoring period.*
   - *No evidence of heat points in properties was found during the analysis.*

e) *Monitoring of threatened ecosystems:*
   - *Identified 15 properties with some threatened ecosystems.*
   - *1 property with endangered ecosystems and 14 with ecosystems in a vulnerable state.*

f) *Participatory fauna monitoring:*
   - *Started in 2017.*
   - *8.3% compliance with the goal for the monitoring period.*

g) *Zoning of areas with the presence of threatened or strategic species:*
   - *Analysis of overlap between property areas and potential distribution of threatened species.*
   - *100% compliance in the monitoring period.*

h) *Development of a conservation plan for water resource importance zones:*
   - *Activity in progress since 2017.*
   - *Overall progress towards the goal is 25%.*

i) *Characterization of zones important for water resources:*
   - *Activity in progress since 2017.*
   - *Overall progress towards the goal is 23%.*
   - *Activities include the Conservation Plan for Zones of Importance for Water Resources and a report focused on properties with High-Mountain Ecosystem*

Forest ecosystem

a) *Satellite Monitoring of Deforestation Changes*

The objective of this activity is to maintain at least 90% of REDD+ areas throughout the project's execution. The Cataruben Foundation is responsible for monitoring, with reports submitted every four years. The overall compliance for the activity is 20%, while achieving 100% for the monitoring period (2017-2021). Initiated in 2017, it involves a multi-temporal analysis of eligible forest areas to identify deforestation. Deforestation is prevalent, especially in the central mountain range, primarily due to illegal logging and the decline in forest carbon capture capacity. Supporting documents are in Annex 3.1.1.1 Deforestation Change.

b) Training Cycle to Enhance Knowledge in Strategic Ecosystem Conservation

The activity involves conducting training cycles to strengthen knowledge related to the conservation of strategic ecosystems. The project aims to conduct a total of 20 training sessions, with the first held on August 6, 2017. The overall compliance is 30%, achieving 100% for the monitoring period (2017-2021). Six training cycles covered various themes, and supporting documents are in Annex 3.1.1.2 Training Cycle.

c) Monitoring of Terrestrial Heat Points

Continuous monitoring of heat points in eligible REDD+ areas, representing abnormal temperature increases, including wildfire detection. The goal is to track 100% of identified heat points. Executed since 2017, achieving 25% overall compliance. During the monitoring period (2017-2021), 100% compliance was reported, with a 25% project progress. Eighteen heat points were recorded, with supporting documents in Annex 3.1.1.3 Heat Point Monitoring.

d) Land Planning Management and Promotion of Sustainable Practices

Involves collaboration with landowners to develop plans for sustainable resource use and forest ecosystem conservation. Three phases include land characterization, implementation plans, and plan execution monitoring. The overall compliance is 14.5%, with a 96.7% completion for the monitoring period (2017-2021). Twenty landowner groups were surveyed, and documents are in Annex 3.1.1.4 Land Planning Management.

e) Monitoring Threatened Ecosystems

The activity involves systematic data collection to assess the state of threatened ecosystems. Identified 137 properties with threatened ecosystems, including 2 in critical condition, 4 shared critical and vulnerable ecosystems, 2 endangered, and 129 vulnerable. Supporting documents in Annex Threatened Ecosystems in REDD+ Properties.

f) Participatory Fauna Monitoring

Monitoring involves bio-acoustic sampling every five years, with 8.3% overall compliance. Bio-acoustic sampling is an efficient method for monitoring wildlife. Secondary information from the IUCN Red List and spatial data were used for zoning areas with threatened or strategic species. Supporting documents in Annex 3.1.1.3 Fauna Monitoring.

g) Zoning Areas with Threatened or Strategic Species

Zonification focuses on areas with threatened or strategically important species, achieving 25% overall compliance. Overlap analysis identified 1 property in category 1, 33 in category 2, and 17 in category 3. Documents in Annex Presence of Threatened Species in Properties.

h) Characterizing Water Resource Use in Conservation Areas

Activity aims to diagnose water resource use and detect negative impacts, with 25% overall compliance. Supporting documents in Annex 3.1.1.5 Characterization of Water Resource Use.

i) Developing a Conservation Plan for Water Resource Conservation Areas

Addresses the need for a conservation plan for high-mountain ecosystems. In execution since 2017, with 23% overall compliance. Two activities, the Water Resource Conservation Plan and a Report focused on REDD+ Properties, were completed. Supporting documents in Annex 3.1.1.6 Water Resource Conservation Plan.

j) Current Progress and Upcoming Training:

- *9.4% of the diagnostic stage completed (130 properties characterized).*
- *14.0% of the design stage completed (130 properties with Water Resource Conservation Plans).*
- *A total progress of 23.38% for the proposed activity.*
- *Future training focused on water source protection, good agricultural practices, and water harvesting on properties.*

6.1.2 Monitoring plan implementation and monitoring report

During the verification period, the project reported a total reduction of 477,625 tCO2e, with an annual average of 95,525 tCO2e. The methodologies employed for the development of the monitoring report are outlined in the "AFOLU Sector Methodological Document / BCR0002 Quantification of Greenhouse Gas Emission Reductions from REDD+ Projects, Version 3.1, 15th September 2022," and the "AFOLU Sector Methodological Document / BCR0003 Quantification of Greenhouse Gas Emission Reductions - Activities Preventing Land Use Change and Improving Peatland and Other Wetland Management Practices in High-Mountain Ecosystems of Projects, Version 3.0, 31st August 2022." Furthermore, the project has incorporated certain tools provided by the standard to ensure quality in the quantification and management of emission reductions.

The criteria established for this verification are described in Chapter 2 of this document. The authorship process was carried out with an assurance level not lower than 95%, and the material discrepancy of the data supporting the baseline and the estimation of greenhouse gas emission removals or reductions did not exceed 5%. The consistency of the baseline and mitigation results was evaluated against the validated baseline, as stipulated in the two selected methodologies for the forest and high-mountain ecosystems. It was verified how the project monitors compliance with co-benefits and indicators related to sustainable development goals.

6.1.2.1 Data and parameters

Below, you will find a list of the most important parameters that were monitored in the monitoring report (Table 26).

Table 26. Data and parameters

High Mountain Ecosystem		
Parameter	***Value and Source***	***QA/QC***
Páramo Cordillera Central	*Carbon in total biomass 16.6tC/Ha* *Source: Torres et al., 2012.*	*The emission factor of recognized origin is consistent with and remains as reported in the Project Design Document (PDD).*
	Adjusted Carbon in Total Biomass 15.6 tC/Ha *Source: Torres et al., 2012.*	
Páramo Cordillera Oriental	*Carbon in total biomass 13.9 tC/Ha* *Source: Torres et al., 2012.*	
	Adjusted Carbon in Total Biomass 13.07 tC/Ha *Source: Torres et al., 2012.*	
Organic soil carbon value in the páramo region of the department o Boyacá	*161.39 COS (t/ha) Source: IGAC & Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, 2018*	*This emission factor is derived from a study conducted by the IGAC (Geographic Institute Agustin Codazzi).*
Organic soil carbon value in the páramo region of the Macizo	*169.18 COS (t/ha) Source: IGAC & Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, 2018*	

Organic soil carbon value in the páramo region of the department of Santander	*158.65 COS (t/ha) Source: IGAC & Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, 2018*	
Organic soil carbon value in the páramo region of the departments of Viejo Caldas-Tolima	*152.96 COS (t/ha) Source: IGAC & Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, 2018*	

Forest Ecosystem				
BIOMA ANDES	***BA (t/Ha) 154***	***BS (t/ha) 35***	***BT (t/Ha) 189***	***COS (tC/Ha) 125***
Primary degradation	*Mean difference in aboveground biomass: 117.46 t/Ha* *Source:* IDEAM, 2019	*Difference in total biomass 146.14 t/Ha.* *Source:* IDEAM, 2019	*Difference in carbon content in total biomass: 68.69 t/Ha.* *Source:* IDEAM, 2019	*DBTi 251,85 CO2e* *Source:* IDEAM, 2019
Secondary degradation	*Mean difference in aboveground biomass: 83.23 t/Ha* *Source:* IDEAM, 2019	*Difference in total biomass: 103.21 t/Ha* *Source:* IDEAM, 2019	*Difference in carbon content in total biomass: 48.51 t/Ha.* *Source:* IDEAM, 2019	*DBTi 177.86 CO2e.* *Source:* IDEAM, 2019
QA/QC				
This emission sources stem from official channels; hence, the project in this regard is aligned with the provisions outlined in Resolution 1447 of 2018				

Parameter	***Value***	***Souce***	***QA/QC***

Identify and strengthen mechanisms for social and community participation at both local and regional levels.	*Number of individuals trained.*	*Fundación Cataruben*	*These indicators are crucial to ensure the additionality and sustainability of the project*
The project yields short-term and long-term benefits to small-scale productive projects involving community members in the project area.	*Number of beneficiaries trained / Number of beneficiaries connected or involved*		
The activities outlined in the Greenhouse Gas Mitigation Project result in a net average increase in income for local producers.	*Percentage increase in income from activities within the Project compared to the productive activities already implemented on the premises*		

6.1.2.2 Environmental and social effects of the project activities

In the Monitoring Report (MR), a detailed tracking of identified risks that could arise as a result of project activities was undertaken. Specifically, attention was given to Risk 7, related to potential disputes over land tenure, and Risk 8, associated with limited stakeholder involvement.

In addition to the above, a comprehensive monitoring of the Economic Impact Assessment was implemented, ensuring compliance with safeguards, the Sustainable Development Goals (SDGs), and the additional co-benefits proposed for the project. A close examination was conducted on the potential impact of these actions on the social aspects of the study, such as gender equity, training, communication with stakeholder groups, and forest governance in the territories. Similarly, the economic elements of the study were assessed, including access to financial goods and services, economic benefits derived from the project, formalization of environmental services as an economic activity, and the implementation of sustainable productive practices.

During the documentary review phase and in the interviews conducted with beneficiaries, the audit team uncovered evidence indicating that, for this initial verification period, the negative impact of these activities on the project is low. Beneficiaries express a keen interest in actively participating in the project's development, holding high expectations for its implementation, and placing trust in the role played by the Cataruben Foundation. However, Risks 7 and 8 have a significant impact on the additionality and sustainability of the project. The successful implementation of some activities is contingent on the level of awareness and sensitivity achieved through the training provided by the Cataruben Foundation.

It is crucial to consider that Risks 7 and 8 have a direct impact on the additionality and sustainability of the project in the medium and long term. The effective implementation of certain activities depends on the level of awareness and sensitivity achieved through the training provided by the Cataruben Foundation. Additionally, the market for certificates currently experiences volatile prices, posing a risk to the profitability of the project and the continuity of the beneficiaries. Therefore, constant monitoring is of utmost importance.

6.1.2.3 Procedures for the management of GHG reductions or removals and related quality control for monitoring activities

During the visit to the facilities of the Cataruben Foundation and throughout the documentary review phase, the Project Holder successfully demonstrated the development and implementation of quality control and assurance procedures. These procedures encompass manuals, guides, and formats that have proven to be relevant, appropriate, sufficient, and consistent, fully aligning with the criteria established by the BCR v3.1 Standard, as well as the BCR0002 v3.1 and BCR0003 v3.0 methodologies.

6.1.2.4 Description of the methods defined for the periodic calculation of GHG reductions or removals, and leakage.

During the audit, a thorough review of 100% of the Excel spreadsheets was conducted, confirming that the procedures for determining reductions and removals in the leakage area align with what is described in the Project Design Document (PDD). This process involves a spatial proximity analysis concerning deforestation hotspots in the baseline, aiming to define the optimal region where deforestation events occur (BCR0002) V3.2, as well as activities that prevent land use change and improve management practices for peatlands and other wetlands in high mountain ecosystems (BCR0003) V 3.0. This analysis takes into account the potential displacement of emissions due to the presence of the project.

Additionally, an analysis was carried out considering environmental factors that contribute to emission displacement, excluding areas with restricted access for deforestation/degradation agents and transformation of natural vegetation covers. The Geodatabase and GIS procedure documents identify the leakage area and respective procedures.

Based on the information provided by the Project Holder and the quality control conducted by the audit team on the outputs and shapefile layers of the project areas and leakage areas,

it can be ensured that these areas comply with the methodological guidelines established in each applied methodology. Furthermore, during the on-site visit by the audit team, control points were taken in these areas to validate the coverage and the quality of the interpretation.

6.1.2.5 Assignment of roles and responsibilities for monitoring and reporting the variables relevant to the calculation of reductions or removal

The project proponent successfully demonstrated the existence of procedures and manuals to ensure and control the quality of implementing methodologies for various projects outlined in the Methodological Document of the Sector. These procedures are applied across all phases of the project, taking into consideration applicable legal and technical requirements. This approach is aimed at fulfilling the following aspects:

- *Ensure the proper development and management of the project.*
- *Identify and control resources for carrying out activities throughout all project stages.*
- *Implement manuals, procedures, guides, and formats deemed necessary for the project.*
- *Apply the methodologies for quantifying Greenhouse Gas Emission Reductions.*

All these efforts align with the requirements of ISO 9001/2015, ISO 14001/2015 standards, as well as legal and regulatory requirements, and those of the integrated management system of Fundación Cataruben.

6.1.2.6 Procedures related whit the assessment of the project contribution whit the Sustainable Development Goals (SDGs)

It is confirmed that the Monitoring Report of the PARAMUNO Project 1 is aligned with the activities described in the Monitoring Plan of the Project Document Format (DdP). The information provided in the monitoring report satisfactorily meets the criteria of accuracy, transparency, consistency, and coherence.

In monitoring the Sustainable Development Goals (SDGs), it has been verified that, through the review of the evidence presented by Cataruben and during the field visit, the project holders of Paramuno P1 have demonstrated, through the definition of relevant criteria, activities, and indicators, that since the beginning of its implementation, it has effectively contributed to achieving the following Sustainable Development Goals:

- *SDG 6: Clean Water and Sanitation*
- *SDG 13: Climate Action*
- *SDG 15: Life on Land*

To demonstrate compliance with the validated and verified SDGs, the responsible party for the Paramuno P1 project used the Tool for determining contributions to achieving the SDGs. This information was cross-referenced during the audit process in the strategic planning phase by reviewing 100% of the evidence provided by the project owner.

6.1.2.7 Procedures associated with the monitoring of co-benefits of the special category, as applicable.

During the supervision process of special categories related to additional benefits, it has been verified that the project has established robust and customized procedures designed to effectively manage the monitoring of additional benefits within the special Orchid category. These procedures have been organized as follows:

Biodiversity Conservation: It was found that Cataruben Foundation has been conducting workshops and training with landowners and the community in general since November 2019 to November 2021 related to the functions and importance of high-mountain páramo ecosystems, climate change, bird watching, measures for climate change mitigation and adaptation, benefiting 114 people from the project's influence areas.

Invasive Species Report: For the invasive species report, the Paramuno P1 project created a matrix to monitor the probability of introducing invasive species to the area of interest.

Community Benefits: According to the evidence provided, Cataruben Foundation has been conducting training with the community from 2017 to 2021 aimed at raising awareness of topics such as land planning, productivity enhancement, sustainable management, conservation agriculture, and climate change adaptation processes, among others.

Gender Equality: It is concluded that the project has ample and sufficient evidence demonstrating the impact of activities on the leadership and valuation of the role that women play in the community.

After the VERSA audit team reviewed all the project's documentary evidence and consulted with Cataruben Foundation, associated landowners, and other stakeholders, the audit team confirms that the monitoring methodology described in the monitoring plan is feasible within the project design. Additionally, the set of resources planned for its implementation, including data management and quality control and assurance processes, is considered appropriate. Furthermore, the procedures outlined for project monitoring and evaluation are deemed satisfactory.

6.2 Quantification of GHG emission reductions and removals

6.2.1 Methodology deviations (if applicable)

For this monitoring period, there are no deviations reported for either of the two methodologies: BCR002 and BCR004.

6.2.2 Baseline or reference scenario

Hight Mountain

Through the recalculation and review of 100% of the spreadsheets provided by the project lead, the audit team was able to demonstrate that the quantification of greenhouse gas emissions for this reference period in the páramo areas was conducted in accordance with the guidelines defined in methodology BCR0003, section 11.4. This section outlines the historical changes in the scenario without the project for the eligible natural coverage and the defined emission factors, as detailed in the mentioned section.

It was confirmed that emission sources come from recognized scientific studies and originate from areas with ecosystem conditions like those presented in the eligible areas. Thus, the emission factors are the same as reported in the PDD, with soil carbon content for the Eastern Mountain range at 29.36 tCO2e/ha and for the Central Mountain range at 29.18 tCO2e/ha. For total biomass, values of 47.91 tCOe/ha and 57.21 tCO2e/ha were established for the Eastern and Central Mountain ranges, respectively.

It was verified that the historical averages of changes in páramo coverages follow the same methodologies outlined in the PDD, and a transformation rate of 1.3% for areas located in the Eastern Mountain range and 0.9% for the Central Mountain range was established. Thus, the projection of changes in the baseline scenario and the calculation of reference emissions presented in Table 27 are correct according to the guidelines of methodology BCR0003 v3.0.

1.2.1.1 Table 27. Reference Emissions in High Mountain Ecosystems (Páramo) for the Monitoring Period

Stratum	*YEAR*	*CSCNlb (ha)*	*CTeq (tCO2e/ha)*	*Greenhouse Gas Emissions in the Baseline Scenario (tCO2e/ha)*
Páramo_C-Oriental	*2017*	*8,69*	*77,09*	*670,00*
	2018	*8,57*		*660,93*
	2019	*8,46*		*651,98*
	2020	*8,34*		*643,16*
	2021	*8,23*		*634,46*
Páramo_C-Central	*2017*	*20,45*	*86,58*	*1.770,82*
	2018	*20,26*		*1.754,34*
	2019	*20,07*		*1.738,01*
	2020	*19,89*		*1.721,84*
	2021	*19,70*		*1.705,81*

Surce: Fundación Cataruben, 2023

The step-by-step calculations can be found in the Annex 1.1. / 2. CAP. E. ALTA MONTAÑA / 2.3 Cuantificación / Cálculo de emisiones EAM PARAMUNO V4 / 1. Línea Base EAM.

Forest Ecosystem

The audit team, through analysis and recalculations, was able to demonstrate that PARAMUNO Project 1 applied the same procedures defined in the PDD. The quantification of greenhouse gas emissions (GHG) due to deforestation of forests for the reference period was carried out in accordance with the guidelines set forth in methodology BCR0002, section 13.4, where the mentioned equations were applied for this purpose.

The emission factor for total carbon corresponds to those used in the PDD, using the values related to the Reference Levels for the Andes biome, with a value of 348.63 tCO2e/ha. To estimate the annual change in forest areas in the reference scenario, based on historical averages, a deforestation rate of 0.8% for the eastern mountain range and 2% for the central mountain range was calculated. The estimated coverage changes values for the period 2018-2022 were adjusted for national conditions using the official values of the most recent NREF. Thus, Table 28 presents the projection of changes in the scenario without the project and the calculation of reference emissions from deforestation of forests.

Table 28. Reference Emissions from Forest Deforestation for the Monitoring Period

Stratum	*Year*	*Nationals Circumstances Adjustment (%)*	*CSBlb + %CN*	*CTeq (tCO2e/ha)*	*Greenhouse Gas Emissions in the Baseline Scenario (tCO2e/año)*
C_Oriental	*2017*	*-*	*72,09*	*348,63*	***25.132,85***
	2018	*31,77%*	*94,99*		***33.117,55***
	2019	*38,58%*	*99,09*		***34.543,73***
	2020	*44,59%*	*102,26*		***35.649,51***
	2021	*49,62%*	*104,60*		***36.466,22***
C_Central	*2017*	*-*	*202,84*		***70.714,52***
	2018	*31,77%*	*267,28*		***93.180,52***
	2019	*38,58%*	*275,45*		***96.030,27***
	2020	*44,59%*	*279,65*		***97.492,13***
	2021	*49,62%*	*281,11*		***98.001,31***

The step-by-step calculations can be found in Annex 1.1. / 3. REDD+ CAP. / 3.2. REDD+ QUANTIFICATION / GOF-053. REDD+ Emissions Calculation PARAMUNO V4 / 1. Deforestation.

The project was found to meet the criteria established in section 2 of this document. In accordance with this, the consistency of the project's baseline aligns with the requirements of the BCR Standard, version 3.1 dated July 25, 2023, and the Methodological Document Sector AFOLU / BCR0002 Version 3.1 and BCR0003 Version 3.0.

In addition to the above, it was identified that the project's baseline for Reducing Emissions from Deforestation and Forest Degradation (REDD+) activities complies with the Forest Emission Reference Level (NREF) in its latest version. The application of the NREF was in accordance with current regulations, and the project appropriately used the methodology for carbon calculations.

It was found that the project meets the criteria established in section 1.2 of this document. Accordingly, the consistency of the project's baseline aligns with the requirements of the BCR Standard, version 3.1 dated July 25, 2023, of the AFOLU Sector Methodological Document / BCR0002 Version 3.1, and BCR0003 Version 3.0.

In addition to the above, it was identified that the project's baseline for Emission Reduction activities due to Deforestation and Degradation (REDD+) complies with the Forest Emission Reference Level (NREF) in its latest version. The NREF was applied according to current regulations, and the methodology for the project's carbon calculations was appropriately utilized.

6.2.3 Mitigation result

The mitigation initiative successfully demonstrated that it has procedures and strategies in place to manage identified risks, including environmental risks (floods and heat points-thermal variations), financial risks (non-profitability, low market demand, and contractual non-compliance), and social risks (carbon ownership). Additionally, it has mechanisms for ongoing monitoring activities over a 20-year quantification period (2017 to 2038) to ensure their persistence.

The project owner provided adequate, precise, and objective evidence showcasing an analysis to classify identified risks based on their criticality, probability of occurrence, impact, and direct or indirect effect on the project. This analysis informed the design of measures to manage risks effectively.

Following the process of document review and on-site audit, it is deemed that the information related to safeguards adheres to the general principles for the national interpretation of environmental and social safeguards for REDD+ projects in Colombia.

6.2.3.1 GHG emissions reduction/removal in the baseline scenario

In section 6.2.2, greenhouse gas emissions in the baseline scenario are presented.

6.2.3.2 GHG emissions reduction/removal in the project scenario

Through the technical review of the information and recalculation, the audit team was able to determine that PARAMUNO Project 1 used the same procedures outlined in the Project Design Document (PDD) for monitoring, and these procedures align with the requirements of methodologies BCR0003 and BCR0002.

For the interpretation of paramo coverages (herbaceous and shrublands) in the project areas, it was necessary to apply the Corine Land Cover methodology for the year 2021 (Corine Land Cover Interpretation Instruction). Sentinel 2 remote sensing images were employed, which were calibrated and validated with on-site observations and high-resolution images from Worldview 1 and GeoEyes. The coverage change analysis was conducted through a multi-temporal analysis between eligible areas and those in the year 2021.

Regarding methodology BCR0002, forest coverages for the year 2021 were generated through digital image processing, specifically using supervised classification in the Google Earth Engine platform and quality control in ArcGIS Pro. Additionally, the uncertainty of the information was calculated using the AcATaMa plugin for QGIS, which yielded a value of 0.98 (consistent with the methodology). This analysis allowed the identification of existing forest in various project areas for the year 2021. Fugitive monitoring involved reviewing the forest change in the fugitive area through a multi-temporal analysis between eligible areas and the year 2021, documenting disturbances and/or reductions in the eligible forest area.

High Mountain Ecosystem

To assess annual changes in avoided transformation of natural vegetation cover in High Mountain Ecosystems, the VERSA audit team verified 100% of the estimates in the high mountain ecosystem and found no evidence suggesting deviations in the calculations. Therefore, the results are reliable, as depicted in Table 29. The analyses and processes carried out by Cataruben estimate that the historical average of changes in páramo cover corresponds to a transformation rate of 1.3% for areas located in the Eastern Andes and 0.9% for the Central Andes.

Table 29. Project Emission Reduction Report for avoided transformation in páramo ecosystems (EAM Component).

YEAR	***Baseline greenhouse gas emissions*** *(tCO2e)*	***Greenhouse gas emissions from the project*** *(tCO2e)*	***Greenhouse gas emissions from leaks*** *(tCO2e)*	***Net reduction of GHG*** *(tCO2e)*
2017	*2.440,82*	*85,30*	*0*	*981*
2018	*2.415,27*	*85,30*	*0*	*2.330*
2019	*2.390,00*	*85,30*	*0*	*2.305*
2020	*2.365,00*	*85,30*	*0*	*2.280*
2021	*2.340,27*	*85,30*	*0*	*2.255*

YEAR	Baseline greenhouse gas emissions (tCO2e)	Greenhouse gas emissions from the project (tCO2e)	Greenhouse gas emissions from leaks (tCO2e)	Net reduction of GHG (tCO2e)
Total	11.951,35	426,49	0	10.151
Total Estimated annual average	2.390,27	85,30	0	2.030

Source: Cataruben, 2023

During the period 2017-2021, monitoring of greenhouse gas (GHG) emissions in the páramo stratum was conducted. In this manner, the avoided transformation of natural vegetation cover in high mountain ecosystems achieved a net reduction of 10,151 tCO2e. Out of this total, 32.63% of the carbon credits go to the voluntary market, and 67.37% goes to the regulated market. The step-by-step calculations can be referenced in Annex 1.1. / 2. CAP. E. HIGH MOUNTAIN / 2.3 Quantification / EAM PARAMUNO V4 Emissions Calculation / 1. Baseline_EAM.

Forest Ecosystem

To assess the monitoring of emissions from deforestation and degradation during the period 2017-2021, the VERSA audit team verified 100% of the estimates in the REDD+ component and found no evidence suggesting deviations in the calculations. Therefore, the results are reliable, as shown in Table 30.

Table 30. Emission Reduction for the forest ecosystem during the monitoring period 2017-2021.

YEAR	Baseline greenhouse gas emissions (tCO2e)	Greenhouse gas emissions from the project (tCO2e)	Greenhouse gas emissions from leaks (tCO2e)	Net reduction of GHG (tCO2e)
2017	95.847,36	21.949,53	0	30.791
2018	126.298,07	21.949,53	0	104.349
2019	130.574,00	21.949,53	0	108.624
2020	133.141,64	21.949,53	0	111.192
2021	134.467,53	21.949,53	0	112.518
Total	620.328,61	109.747,67	0	467.474
Total Estimated annual average	124.065,72	21.949,53	0	93.495

Source: Cataruben, 2023.

During the period 2017-2021, greenhouse gas (GHG) emissions monitoring was conducted in the forest ecosystem of the REDD+ component, resulting in a net reduction 467.474tCO2e, as detailed in Table 19. For the commercialization process, 33.66% is allocated to the voluntary market, and 66.34% of the certificates go to the regulated market.

This analysis reinforces the reliability and compliance of the Monitoring Report of the Paramuno P1 project with the standards and practices established in the field of REDD+ and the quantification of greenhouse gas emission reductions. No leaks are reported in both ecosystems for this monitoring period.

6.3 Environmental and social effects of the project activities and no net harm

For the monitoring period, the Project Proponent carried out a tracking of the contributions to the Sustainable Development Goals of the project, as well as environmental aspects and compliance with safeguards. Additionally, an assessment of potential environmental and social impacts was conducted, summarized in the Socioeconomic Evaluation Matrix. The "Avoiding Harm" tool and environmental and social safeguards were used. Version 1, March 07, 2023.

No evidence suggesting negative impacts generated by the implementation of activities was identified. On the contrary, positive impacts were highlighted, such as the strengthening of forest governance and the enhancement of capacities for the implementation of sustainable productive systems in the associated lands.

6.4 Sustainable Development Goals (SDGs)

It was verified that the climate change mitigation project correctly used the BioCarbon Registry TOOL ODS to identify the Sustainable Development Goals (SDGs) applicable to the project. In this regard, the audit team found evidence suggesting that the implementation of project activities contributes to the achievement of the Sustainable Development Goals.

During the documentary review and interviews with project participants, it was established that the proposed activities by PARAMUNO Project 1 have a substantial impact on the Sustainable Development Goals (SDGs). This validation was conducted using the "Tool for determining contributions to the achievement of Sustainable Development Goals (SDGs) in greenhouse gas mitigation projects," developed by BioCarbon Registry, also known as TOOL ODS.

The choice of ecosystems was carried out in a cohesive manner, identifying the default SDGs according to version 2.0 of the "TOOL ODS." This approach makes logical sense as the activities are directly linked to three specific SDGs: 6. Clean water and sanitation, 13. Climate action, and 15. Life on land. The selection of indicators and targets applicable to the SDGs was done in accordance with the guidelines set by the tool.

ODS 6: Clean Water and Sanitation:

The PARAMUNO Project 1 has mechanisms in place to specifically address Sustainable Development Goal (SDG) 6.4, focusing on increasing the efficient use of water resources and ensuring sustainability in the extraction and supply of freshwater. The project is also aligned with indicator 6.4.1, aiming to progressively increase efficiency in water use over time.

To achieve these goals, four methodological stages were designed to directly impact water use efficiency. These stages involve characterizing water supply sources, implementing a plan for water savings and efficient use, introducing management sheets in personalized plans, and monitoring the implementation of these sheets.

The first stage, equivalent to 10% of the contribution to SDG 6, focuses on conducting a detailed diagnosis of water use within the project scope. The second stage, contributing 15%, concentrates on creating personalized plans to reduce the water footprint of each property. The third stage, contributing 55%, involves the ten-year implementation of management sheets in efficient water use and savings plans. The fourth stage, contributing 20%, is dedicated to monitoring the implementation of management sheets for two years.

ODS 13. Climate action:

In the context of SDG 13, the aim is to supporter initiatives globally, nationally, and locally that alleviate greenhouse gas emissions, enhance resilience to extreme climate events, and improve the adaptive capacity of vulnerable communities. The overarching goal is to foster a more sustainable and secure future, safeguarding ecosystems and ensuring the well-being of both present and future generations.

The project proposes monitoring greenhouse gas emissions arising from deforestation events and/or the transformation of natural vegetation covers within the identified project areas. Additionally, there is a strong emphasis on reducing emissions resulting from project activities throughout the execution period, with the goal of decreasing the total annual greenhouse gas emissions. A comprehensive projection of annual emissions in the absence of the project has been formulated, considering historical rates of deforestation, the transformation of natural covers, and a defined emission factor. This projection yields an average value of 96,923.59 tCO2.

Evaluating compliance with the set target in each monitoring period involves comparing the reference value with the annual emissions identified in the project scenario. The expectation is a noticeable decrease compared to the baseline scenario, indicating progress towards the outlined objectives. As an auditor, it is vital to scrutinize the accuracy and reliability of the data supporting these projections, ensuring that the methodologies used align with industry standards and regulatory requirements.

ODS 15. Life on land

The effectiveness of the proposed activities to fulfil SDG 15 was assessed, revealing that the actions outlined in the DdP and implemented in the RM align with the objectives of sustainable forest management, desertification prevention, and biodiversity preservation.

The proposed activities are linked to increasing the forest area as a proportion of the total surface, enhancing the proportion of significant terrestrial biological diversity areas, and expanding the coverage of protected areas for key mountainous biological diversity locations. The formulation of indicators to measure and monitor these activities is coherent and consistent with the requirements of the "TOOL ODS."

6.5 Climate change adaptation

During the document review and field visit, it was confirmed that PARAMUNO Project 1 integrates climate change mitigation and adaptation with the aim of reducing greenhouse gas (GHG) emissions and enhancing resilience to current and future impacts associated with climate change and climatic variability. The project aligns with National Climate Change Policies, addressing the following strategic lines:

- *Does it consider any of the strategic lines proposed in the National Climate Change Policies and/or address aspects framed in the country's regulations where the project is implemented?*

  PARAMUNO Project 1 successfully demonstrates that its proposed activities in the DdP and those implemented in the RM are focused on climate change prevention and adaptation. Faced with the predicted increase in extreme weather events, the project aims to reduce greenhouse gas (GHG) emissions and enhance the resilience of the project area to current and future impacts of climate change and climate variability.

  To achieve these objectives, the project shows alignment with National Climate Change Policies, following two key strategic lines:

  (a) Territorial Strategies: Through comprehensive agropecuary technological assistance actions on farms, it promotes efficient land use. The conservation of natural coverages, restoration of degraded areas, implementation of agroforestry systems, and support for family farming are prioritized.

  (b) Ecosystem Management and Conservation Strategies: It incorporates actions for ecosystem management and conservation in territorial planning, considering their contribution to emission reduction and increased territorial adaptation.

- *Enhance the conservation conditions of biodiversity and its ecosystem services in the areas of influence outside the project's boundaries (e.g., natural coverage in*

environmentally significant areas, biological corridors, water management in watersheds, among others).

One of the project's objectives is related to the conservation of flora and fauna through the implementation of activities that will allow monitoring threatened ecosystems not only in the project areas but also in the reference area. The project successfully demonstrates that it has mechanisms aimed at fulfilling this objective, such as participatory monitoring, zoning of areas with threatened species, and the development and implementation of a conservation plan for areas of importance for water resources.

- *Implements activities that contribute to sustainable and low-carbon productive landscapes.*

Through the documentary review and interviews conducted with beneficiaries, it was possible to establish that the project has a strategy to address this point. This involves providing training and targeted technical assistance to interested beneficiaries, through which knowledge transfer will take place, and skills will be developed according to the productive activity they intend to implement. The goal is to optimize land use, enhance competitiveness, and build resilience to the effects of climate change.

- *Designs and executes adaptation strategies based on an ecosystemic approach:*

It was verified that the GHG project has strategies such as land plans and conservation plans for areas of importance for water resources, as well as activities that will allow monitoring threatened ecosystems not only in the project areas but also in the reference area, demonstrating alignment with the ecosystemic approach.

- *Comprehensive actions that promote efficient land use, considering, for example, the conservation of existing natural cover, consistent use with the vocation and agroecological conditions of the territory, family farming, and agricultural technological transfer to enhance competitiveness, thus reducing vulnerability to climate change.*

The project demonstrates alignment with this principle by proposing the implementation of comprehensive actions that promote efficient land use, considering the conservation of natural cover, respecting the vocation and agroecological conditions of the territory, promoting family farming, and transferring agricultural technology. This commitment is established through a contract aiming for property owners to acquire responsibilities for the conservation of areas related to the project. The Cataruben Foundation assumes responsibilities focused on conducting follow-ups and monitoring to ensure the conservation of these areas, also providing support to implement good agricultural practices, such as relevant training.

- *Reduction of GHG emissions from agricultural activities compared to the scenario without the project (e.g., replacing pastures in livestock feeding and using cultivation methods that reduce emissions through crop management):*

Regarding the reduction of greenhouse gas (GHG) emissions from agricultural activities, the project successfully demonstrates its objective to implement sustainable practices, manage water sources effectively, and undertake social and environmental actions to prevent deforestation and changes in land use in the project areas.

- *Actions directly related to climate change adaptation measures, such as the use and management of temperature-resistant seeds, water management through water capture, rain and/or recycling, drainage and irrigation, planting around watercourses to prevent erosion, soil management with practices reducing compaction, and techniques to reduce fertilizer use.*

To comply with this item, the project owner includes actions directly related to climate change adaptation measures, such as the use of temperature-resistant seeds, water management through efficient water capture, planting trees around watercourses to prevent erosion, and soil management practices that reduce compaction and employ techniques to reduce fertilizer use.

In this context, the project enhances the conditions for conserving biodiversity and ecosystem services both within and beyond the project boundaries, covering areas of special environmental interest, biological corridors, and watershed management, among others. Additionally, it implements activities contributing to sustainable and low-carbon productive landscapes. Adaptation strategies are designed and executed based on an ecosystem approach, involving comprehensive actions for efficient land use. This includes conserving existing natural coverages, consistent use with the territory's vocation and agroecological conditions, supporting family farming, and transferring agricultural technology to increase competitiveness and reduce vulnerability to climate change.

Furthermore, specific measures are implemented to reduce GHG emissions in agricultural activities, such as replacing pastures in livestock feed and applying cultivation methods that minimize emissions associated with crop management. Actions directly related to climate change adaptation include using and managing seeds resistant to temperature variations, water management through rainwater harvesting and/or recycling, implementing drainage and irrigation systems, strategic planting around watercourses to prevent erosion, and applying soil management practices to reduce compaction, along with techniques to decrease fertilizer use.

6.6 Co-benefits (if applicable)

PARAMUNO Project 1 successfully demonstrated that the project adheres rigorously to the BCR standard in its latest version (3.0) and the "No Net Harm" tool to address and showcase additional social and environmental benefits, also known as co-benefits. Below is a summary

of the results of the Co-benefits analysis in the Orchid Paramuno category (see sheet "Co-benefits Report").

- *Biodiversity Conservation:*
  a) *Implementation of Criterion 1 through the conduct of 7 training sessions, covering 11.67% of the total planned during the entire project execution.*
  b) *No high incidence of the appearance or use of invasive species is evident due to preventive and mitigation measures.*
  c) *Satellite monitoring of land use change, land planning management, training for high mountain ecosystem conservation, and others pose no risk of introducing invasive species.*
- *Community Benefits:*
  a) *Recognition of the vulnerability of forest and high mountain ecosystems in Colombia to climate change.*
  b) *The project comprehensively addresses social and environmental aspects, conducting training from 2017 to 2021 focused on REDD+ and EAM ecosystems.*
  c) *Co-benefits promote resilience and benefit local communities, strengthening participation, productive projects, and increasing income.*
- *Gender Equity:*
  a) *The Orchid Category of the BCR V.3 Standard and national legislation address gender equity, considering legal determinants and promoting the full and effective participation of women.*
  b) *Colombia has a legal framework seeking gender equality, citizen participation, autonomy, labor rights, protection against violence and discrimination, among others.*

6.7 REDD+ safeguards (if applicable)

It was found that the project proponent, within the project's own activities, complies with the principles of the National Interpretation of Social and Environmental Safeguards. The following table provides a summary of compliance with social and environmental safeguards by the PARAMUNO Project 1:

Cancún Safeguard	National Safeguard Interpretation.	Instruments for enforcing the safeguards identified in the Emission Reduction Project.	Analysis of compliance with the Safeguard
A. In accordance with national forest programs and international agreements	1.A Compliance with National Legislation	C1: Satellite monitoring of changes due to deforestation and degradation. C2: Conduct a series of training sessions to enhance knowledge in the conservation of strategic ecosystems. C3: Implement continuous monitoring of terrestrial heat points. C4: Manage land-use planning and promote the implementation of sustainable productive practices. B1: Monitor threatened ecosystems. B2: Conduct participatory monitoring of fauna. B3: Zone areas with the presence of threatened species. A1: Characterize the use and management of water on the property. A2: Develop a conservation plan for areas of importance for water resources.	The initiative demonstrates compliance with the principles of the current national legal framework applicable to carbon markets during the validation/verification period. Additionally, it establishes procedures for periodic monitoring (every 7 years) to assess the impact of these policies on the development of project activities and to take necessary actions. Supporting evidence is found in the "Support Folder for Compliance with Safeguard 1." Moreover, the project implements procedures to ensure compliance with this safeguard. This includes the implementation of a training program to enhance knowledge in the conservation of strategic ecosystems among the project beneficiaries. Additionally, there is continuous satellite monitoring of terrestrial heat points,

Cancún Safeguard	***National Safeguard Interpretation.***	***Instruments for enforcing the safeguards identified in the Emission Reduction Project.***	***Analysis of compliance with the Safeguard***
			land-use planning management, promotion of sustainable productive practices, monitoring of ecosystems identified as threatened, participatory fauna monitoring, zoning of areas with threatened species, characterization of water use and management on the property, and the development of conservation plans for critical water resource areas. These actions align with the goals outlined in Colombia's most recent NDC and certain milestones in the country's REDD+ policy and regulations.

Cancún Safeguard	***National Safeguard Interpretation.***	***Instruments for enforcing the safeguards identified in the Emission Reduction Project.***	***Analysis of compliance with the Safeguard***
B. Transparency and effectiveness of forest governance structures	*2.B Transparency and effectiveness of forest governance structures*	*C2: Conduct a series of training sessions to enhance knowledge in the conservation of strategic ecosystems.*	*The initiative successfully demonstrates that it has mechanisms in place to ensure access to information for making suggestions, complaints, or claims related to the implementation of project activities. Additionally, it was established that the information provided by the project manager is transparent, comprehensive, easily accessible, available, and appropriate. During interviews, landowners expressed that the information is easy to understand.* *Evidence: Radio Spots, Digital Documents, Emails, Face-to-Face and/or Virtual Meetings, Workshops and/or Training sessions that show how information is disseminated, and activities or documents conducted.*

Cancún Safeguard	National Safeguard Interpretation.	Instruments for enforcing the safeguards identified in the Emission Reduction Project.	Analysis of compliance with the Safeguard
	3.B Accountability	C4: Manage land-use planning and promote the implementation of sustainable productive practices.	According to the interviews conducted by the audit team during the field visit, it was confirmed that the communities participating in the initiative are aware that they are the owners of it, that their opinions are valued by the project, and that they agree with the percentage distribution of resources. The project holder has demonstrated that the community and other stakeholders clearly understand how they can bring their complaints, claims, and requests to the company.
	4. Recognition of forest governance structures	C4: Manage land-use planning and promote the implementation of sustainable productive practices.	De acuerdo con las entrevistas realizadas por el equipo auditor durante la visita en campo y la evidencia suministrada por el responsable del proyecto el equipo auditor corroboró que el proyecto cuenta con evidencia amplia y suficiente que sustenta que el proyecto identificó los sistemas

Cancún Safeguard	***National Safeguard Interpretation.***	***Instruments for enforcing the safeguards identified in the Emission Reduction Project.***	***Analysis of compliance with the Safeguard***
			de gobernanza existentes, los respeta como autoridades responsables de la toma de decisiones y fortalece los vínculos entre capitanes al proporcionar canales de comunicación entre estos.
	B5.Capacity Strengthening	*C2: Conduct a series of training sessions to enhance knowledge in the conservation of strategic ecosystems.*	*The person in charge of the initiative successfully demonstrated having defined procedures to raise awareness and empower the community involved in the project regarding climate change. This was confirmed during the review of the provided documentary evidence and through virtual and in-person interviews with the project beneficiaries.*
	C6. Free, Prior, and Informed Consent	*C2: Conduct a series of training sessions to enhance knowledge in the conservation of strategic ecosystems.*	*According to Resolution ST-1501 of October 17, 2023, it can be observed that in PARAMUNO Project1, it is not necessary to carry out prior consultation with the ROM, Black, Indigenous, and Palenqueras*

Cancún Safeguard	National Safeguard Interpretation.	Instruments for enforcing the safeguards identified in the Emission Reduction Project.	Analysis of compliance with the Safeguard
			communities. Additionally, it has training cycles that ensure the participation of 100% of the project beneficiaries.
	C7. Respect for Traditional Knowledge	C2: Conduct a series of training sessions to enhance knowledge in the conservation of strategic ecosystems	As a result of the documentary review and interviews with property owners, it was possible to determine that the project has a training procedure for beneficiaries that is respectful of the knowledge and uses that they currently have for their territories. The strategies outlined by the project align with the restrictions imposed by Law 1930 of 2018.
	C8. Benefit Distribution	C4: Manage land-use planning and promote the implementation of sustainable productive practices	According to the interviews conducted by the audit team during the field visit and the evidence provided by the project manager, the audit team confirmed that the communities acknowledge being in agreement with the distribution percentages of carbon

Cancún Safeguard	***National Safeguard Interpretation.***	***Instruments for enforcing the safeguards identified in the Emission Reduction Project.***	***Analysis of compliance with the Safeguard***
			credit proceeds resulting from the project implementation.
	C9.Territorial Rights	*C2: Conduct a series of training sessions to enhance knowledge in the conservation of strategic ecosystems*	*During the documentary review conducted by the VERSA audit team, it was possible to examine 100% of the files verifying land ownership, and Resolution ST-1501 of October 17, 2023, allowed establishing that this project is composed of a rural farming community, which demonstrated to be the landowner. Additionally, during interviews with the landowners, they expressed that the activities implemented during the first verification period of the project do not conflict with their land use practices, and they have not been adversely affected by the project's implementation.*

Cancún Safeguard	National Safeguard Interpretation.	Instruments for enforcing the safeguards identified in the Emission Reduction Project.	Analysis of compliance with the Safeguard
	D10. Participation	C2: Conduct a series of training sessions to enhance knowledge in the conservation of strategic ecosystems. C4: Manage land-use planning and promote the implementation of sustainable productive practices.	During the on-site visit, collective interviews confirmed that the initiative's owner ensures community participation. In addition to this, there is a mechanism in place that explains how the project stages are carried out
	E11. Forest Conservation and Biodiversity	C3: Implement continuous monitoring of terrestrial heat points. B1: Monitor threatened ecosystems. B2: Conduct participatory monitoring of fauna. B3: Zone areas with the presence of threatened species.	During the review of the evidence provided by the Cataruben Foundation, it is possible to identify that the project has tools to identify and delimit the strategic ecosystems present in the eligible areas of the project in the Design Document. It was also possible, through documentary review and interviews with beneficiaries, to establish the progress of implementing project activities for the first verification period.
	E12. Provision of Environmental Goods and Services.	A1: Characterize the use and management of water on the property. A2: Develop a conservation plan for areas of importance for water resources.	It was identified that the project has 2 activities defined in the Design Document (DdP) to ensure the conservation of natural forests, biological diversity, and resources in general to enhance

Cancún Safeguard	***National Safeguard Interpretation.***	***Instruments for enforcing the safeguards identified in the Emission Reduction Project.***	***Analysis of compliance with the Safeguard***
			other social and environmental benefits. The activities align with the validation and verification criteria described in Chapter 1.2 of this document by promoting the protection and conservation of High-Mountain and Forest ecosystems.
	F13. Environmental and Territorial Planning	*C4: Manage land-use planning and promote the implementation of sustainable productive practices.*	*It was identified that the project has one activity defined in the Design Document (DdP) to ensure the implementation of more sustainable systems for the conservation of natural forests, biological diversity, and resources in general to enhance other social and environmental benefits. The activities align with the validation and verification criteria described in Chapter 1.2 of this document by promoting the protection and conservation of High-Mountain and Forest ecosystems.*

Cancún Safeguard	***National Safeguard Interpretation.***	***Instruments for enforcing the safeguards identified in the Emission Reduction Project.***	***Analysis of compliance with the Safeguard***
	F14. Sectorial Planning	*C4: Manage land-use planning and promote the implementation of sustainable productive practices.*	*It was identified that the project has an activity to ensure that it has sectorial planning tools aimed at the conservation of natural forests, biological diversity, and resources in general to enhance other social and environmental benefits. The activities align with the validation and verification criteria described in Chapter 1.2 of this document by promoting the protection and conservation of high-mountain and forest ecosystems.*
	G15. Forest Control and Surveillance to Prevent Emission Displacement.	*C1: Satellite monitoring of changes due to deforestation and degradation.*	*It was identified that the project has an activity to ensure that activities causing degradation and deforestation do not shift to other areas. The activity aligns with the validation and verification criteria described in Chapter 1.2 of this document by incentivizing the protection and conservation of high-mountain and forest ecosystems.*

6.8 Double counting avoidance

In accordance with the guidelines outlined in the tool to Prevent Double Accounting, version 1, dated March 9, 2023, the validation and verification of the project area and leakage for High Mountain and Forest Ecosystems were conducted. This process involved a thorough analysis of potential overlaps with other GHG projects, utilizing available databases from standards and programs such as BioCarbon Registry, Cercarbono, ColCX, and VERRA.

The primary objective was to juxtapose and compare the shapefiles or coordinates of different projects registered within the influence zone of PARAMUNO Project 1, with the purpose of confirming the absence of overlaps and ensuring the absence of double accounting. In this analysis, 55 projects were identified in the same departments where PARAMUNO Project 1 is located, and no type of overlap or intersection with the designated project areas was identified.

The assessment also considered possible alignments with Law 2 of 1959, the absence of overlaps with protected areas (SINAP), potential overlaps with mining titles, and areas of hydrocarbon exploration and exploitation. As a result of evaluating all possible scenarios of overlap in the project area, the audit team found that there are no compatible or incompatible overlaps with other programs or projects in the project area.

6.9 Stakeholders' Consultation

The audit team verified the evidence provided by the project proponent, including emails, meetings, and presentations submitted. It was confirmed that the company has established procedures to address complaints, suggestions, and claims. In compliance with item 16 of the BRC Standard version 3.2, the Cataruben Foundation conducted a consultation process with representatives from governmental and non-governmental entities in the territories where the Paramuno project was implemented. The purpose of this consultation was to inform about the activities and design of the project, providing access to all information related to its environmental and social impacts.

A total of 281 entities participated in this process, utilizing various communication channels such as phone calls, emails, WhatsApp messages, and physical correspondence. The Cataruben Foundation employed personalized virtual meetings as the primary communication mechanism for the project's socialization, allowing for the detailed and comprehensive presentation of aspects and the scope of the Paramuno project.

6.9.1 Public Consultation

During the public consultation period, 56 comments were received from the public. The public consultation process was inclusive. The project holder demonstrated a commitment to transparency and engagement by considering all relevant comments. A response was provided for each comment. The overall conclusion is that the public consultation was effective in incorporating public opinion into the GHG project, contributing to a more robust and informed initiative.

The evidence provided by the proponent suggests that no complaints or claims were received from stakeholders during this period.

7 Internal quality control

During the visit to the facilities of the Cataruben Foundation and throughout the documentary review phase, the Project Owner successfully demonstrated the development and implementation of quality control and assurance procedures. These procedures include manuals, guides, and formats that have proven to be relevant, appropriate, sufficient, and consistent, fully complying with the criteria set forth by BCR Standard v3.1, as well as methodologies BCR0002 v3.1 and BCR0003 v3.0

8 Validation and verification opinion

The audit team conducted independent validation and verification of the "PARAMUNO Project 1" in accordance with the following documents and regulations:

- *BCR Standard, V 3.1 dated July 25, 2023.*
- *Methodological Document Sector AFOLU / BCR0002 Quantification of GHG Emission Reductions from REDD+ Projects. Version 3.1, September 15, 2022.*
- *Methodological Document Sector AFOLU / BCR0003 Quantification of GHG Emission Reductions - Activities Avoiding Land Use Change and Improving Peatland and Other Wetland Management Practices in High Mountain Ecosystems of Projects. Version 3.0, August 31, 2022.*
- *ISO 14064-2:2019 Standard.*

It has been verified that all activities established in the validation and verification process have been executed successfully. Additionally, it is confirmed that the statement related to Greenhouse Gas (GHG) Emissions lacks substantial and material discrepancies, ensuring a 95% assurance level as stipulated in Resolution 1447 of 2018.

The project has been designed with a 20-year projection (2017 to 2038), precisely aligning with the requirements set out in BCR Standard V3.1, particularly in its section 10.5. The

baseline periods for the REDD+ component span from 2005 to 2016, while for the High Mountain Ecosystem (HME), they extend from 2002 to 2018. This projection is consistent and coherent with all evidence reviewed and documented during the audit process and aligns with the requirements stipulated in Resolution 1447 of 2018, Article 14.

It is validated that the PARAMUNO Project 1 has a projection of total GHG reductions for deforestation and forest degradation over 20 years for the High Mountain Ecosystem of 38.619 tCO2e and for the REDD+ component of 1,395.717 tCO2e, as shown in Table 31

Table 31. Emission Reductions for the Period 2017-2036

COMPONENT	***TOTAL ESTIMATED REDUCTIONS (tCO2e)***	***AVERAGE ANNUAL ESTIMATION (tCO2e)***
High Mountain Ecosystem (HME)	*38.619*	*1.839*
*Forest Ecosystem**	*1.395.713*	*66.463*
TOTAL	***1.434.332***	***68.302***

It is verified that for the monitoring period from 2017 to 2021, the total estimated reduction in Greenhouse Gas Emissions (GHG) was 477.625 tCO2e. These reductions can be traded in the voluntary or regulated market and meet the requirements for opting out of the carbon tax, as stipulated in Decree 926 of 2017.

Table 32. EMISSION REDUCTION MONITORING PERIOD 2017-2022

Ecosystem	***Baseline GHG Emissions (tCO2e)***	***Project GHG Emissions (tCO2e)***	***Net GHG Reduction (tCO2e)***
High Mountain			
Average Annual Estimate	*2.390.27*	*85.30*	*2.030*
TOTAL	***11.951,35***	***85.30***	***10.151***
Forest			
Average Annual Estimate	*124.065,72*	*21.949,53*	*93.495*

TOTAL	***620.328,61***	***109.747,67***	***467.474***

The lead auditor from VERSA recommends a positive validation and verification opinion. The validation process unfolded as follows: i) strategic planning, monitoring plan, and ex ante and ex post estimation of GHG reductions; ii) on-site audit and interviews with stakeholders; iii) resolution of outstanding issues and issuance of the final validation report and opinion. Clarifying and corrective actions were proposed during the validation process, all of which have been successfully closed, as explained in section 12.1 of this report.

The review of the Project Description documentation and additional documents related to ex ante estimation and monitoring methodologies, along with background research, follow-up interviews, and review of stakeholder comments, has provided the audit team with sufficient evidence to validate compliance with the established criteria.

9 Validation statement

Versa Expertos en Certificación S.A.S. been commissioned by FUNDACIÓN CATARUBEN to validate the PARAMUNO Project 1 GHG emissions reduction project. The declared PARAMUNO Project 1 project involves the activities developed in the Andina Region of Colombian territory, among which are montane forests, cloud forests, high Andean forests, and paramos, among others, in the departments of Boyacá, Caldas, Casanare, Cauca, Cundinamarca, Norte de Santander, Quindío, Santander, Tolima and Valle del Cauca. The PARAMUNO Project 1 project has been developed in accordance with the guidelines of international standards ISO 14064-2:2019, ISO 14064-3:2019 and the specific requirements of the GEI Biocarbon Registry program.

Versa Expertos en Certificación S.A.S. conducted a review of all the supporting documentation used by FUNDACIÓN CATARUBEN for the elaboration of the PARAMUNO Project 1 project and made a field visit together with FUNDACIÓN CATARUBEN, where through interviews and review of primary information sources, it confirmed the organizational and reporting limits, activity data, emission factors and global warming potentials used; as well as the methodological assumptions and exclusions made.

Versa Expertos en Certificación S.A.S. established the objectives, scope and validation criteria in the commercial proposal and legal agreement VERSA-P-0121 and in the approved audit plan for the validation of the PARAMUNO Project 1. The objectives, scope and validation criteria are described below:

Objective

The Validation process consists of the evaluation by Versa Expertos en Certificación S.A.S of the project design document and/or monitoring reports in accordance with the guidelines of the ISO 14064-2:2019 standard, the guidelines of the selected GHG program, the methodologies used and the legislation of the country where the project is developed.

Scope

Validate and verify the project activities, its PDD, its monitoring plan, its GHG sources, sinks and/or deposits, its GHG emissions reduction quantification period, its baseline scenario, its requirements management processes legal and information, guidelines and methodological documents Biocarbon Registry. Sectoral scope: Forestation and reforestation.

Criteria:

1. *ISO 14064-2:2019*
2. *ISO 14064-3:2019*
3. *AFOLU BCR0002 Quantification of GHG emission reductions. Version 3.1 REDD+ Projects Methodology*
4. *AFOLU BCR0003 Quantification of GHG Emissions Reduction Version 3.0 High Mountain Ecosystems Methodology*
5. *BioCarbon Registry requirements*

Versa Expertos en Certificación S.A.S. ensures that the data and information supporting the GHG statement are projected in nature. Validation activities have been configured in such a way that they offer a high, but not absolute, level of assurance.

Versa Expertos en Certificación S.A.S. identified that, according to the review of the evidence provided by FUNDACIÓN CATARUBEN and during the field visit, from the beginning of the initiative the PARAMUNO Project 1 project has generated contributions to the Sustainable Development Goals (SDGs 6, 13 and 15 defined by the project) applicable for both components (High Mountain and REDD+), according to the relevant criteria and indicators.

Versa Expertos en Certificación S.A.S. validated that the project presents the procedures related to the monitoring of co-benefits for the special categories Orchid, described in the" BioCarbon_joint Validation and verification Report template". These co-benefits are listed below:

- *Biodiversity conservation*
- *Benefits on communities*
- *Gender equality*
- *Adaptation to climate change*

Versa Expertos en Certificación S.A.S. based on the results of the activities developed, it declares that the PARAMUNO Project 1 project of FUNDACIÓN CATARUBEN in 2023 complies with the principles established by ISO 14064-2:2019, ISO 14064-3:2019 and the GHG Biocarbon Registry program are within the level of material assurance and importance and is free from material errors. This statement is addressed to BioCarbon Registry and other interested parties and is issued.

Report No.: *GEI-P-018*

Level of assurance: *95%*

Legal Agreement No.: *VERSA-P-0121*

Material discrepancy: *5%*

10 Verification statement

Versa Expertos en Certificación S.A.S. been commissioned by FUNDACIÓN CATARUBEN to verify the PARAMUNO Project 1 GHG emissions reduction project. The declared PARAMUNO Project 1 project involves the activities developed in the Andean Region of Colombian territory, among which are montane forests, cloud forests, high Andean forests, and paramos, among others, in the departments of Boyacá, Caldas, Casanare, Cauca, Cundinamarca, Norte de Santander, Quindío, Santander, Tolima and Valle del Cauca. The PARAMUNO Project 1 project has been developed in accordance with the guidelines of international standards ISO 14064-2:2019, ISO 14064-3:2019 and the specific requirements of the GEI Biocarbon Registry program.

Versa Expertos en Certificación S.A.S. conducted a review of all the supporting documentation used by FUNDACIÓN CATARUBEN for the elaboration of the PARAMUNO Project 1 project and made a field visit together with FUNDACIÓN CATARUBEN, where through interviews and review of primary information sources, it confirmed the organizational and reporting limits, activity data, emission factors and global warming potentials used; as well as the methodological assumptions and exclusions made.

Versa Expertos en Certificación S.A.S. established the objectives, scope and verification criteria in the commercial proposal and legal agreement VERSA-P-0121 and in the approved audit plan for the verification of the PARAMUNO Project 1. The objectives, scope and verification criteria are described below:

Objective

The Verification process consists of the evaluation by Versa Expertos en Certificación S.A.S of the project design document and/or monitoring reports in accordance with the guidelines of the ISO 14064-2:2019 standard, the guidelines of the selected GHG program, the methodologies used and the legislation of the country where the project is developed.

Scope

Validate and verify the project activities, PDD, monitoring plan, GHG sources, sinks and/or deposits, GHG emissions reduction quantification period, baseline scenario, requirements, management processes legal and information, guidelines and methodological documents for Biocarbon Registry. Sectoral scope: Forestation and reforestation.

Criteria

- *ISO 14064-2:2019*
- *ISO 14064-3:2019*
- *AFOLU BCR0003 Quantification of GHG Emissions Reduction Version 3.0 High Mountain Ecosystems Methodology*
- *AFOLU BCR0002 Quantification of GHG emission reductions. Version 3.1 REDD+ Projects Methodology*
- *BioCarbon Registry requirements*

Versa Expertos en Certificación S.A.S. ensures that the data and information supporting the GHG statement are historical in nature. Verification activities have been configured in such a way that they offer a high, but not absolute, level of assurance.

Versa Expertos en Certificación S.A.S. identified that, according to the review of the evidence provided by FUNDACIÓN CATARUBEN and during the field visit, from the beginning of the initiative the PARAMUNO Project 1 project has generated contributions to the Sustainable Development Goals (SDGs 6, 13 and 15 defined by the project) applicable for both components (High Mountain and REDD+), according to the relevant criteria and indicators.

Versa Expertos en Certificación S.A.S. verified that the project presents the procedures related to the monitoring of co-benefits for the special categories Orchid, described in the" BioCarbon_joint Validation and verification Report template". These co-benefits are listed below:

- *Biodiversity conservation*
- *Benefits on communities*
- *Gender equality*
- *Adaptation to climate change*

Versa Expertos en Certificación S.A.S. based on the results of the activities developed, it declares that the PARAMUNO Project 1 project of FUNDACIÓN CATARUBEN in 2023, complies with the principles established by ISO 14064-2:2019, ISO 14064-3:2019 and the GHG Biocarbon Registry program, are within the level of material assurance and importance and is free from material errors. This statement is issued and addressed to BioCarbon Registry and other interested parties.

Report No.: *GEI-P-018*

Level of assurance: *95%*

Legal Agreement No.: *VERSA-P-0121*

Material discrepancy: *5%*

11 Annexes

Annex 1. Competence of team members and technical reviewers

In the following Table 1, the audit team selected by VERSA for the validation process of the PARAMUNO Project 1 is listed:

Full Name(s)	*Role*
Diana Rauchwerger	*Lead Auditor*
Fabián Patiño	*Technical Expert*
Cesar Marín	*Technical Reviewer*
Camilo Montaña	*Issuer of the V/V opinion*

Diana Rauchwerger:
Is an Agricultural Engineer specialized in environmental and local development, with studies in Biodiversity Conservation and Use. She has over 7 years of experience in the formulation, evaluation, and oversight of environmental projects. She has been part of teams responsible for designing and implementing sustainable strategies in sectors such as OIL&GAS, mining, electricity, and infrastructure.
Currently, she works as a contractor at the Ministry of Environment and Local Development, specifically in the Climate Change Mitigation group. Additionally, she serves as a lead auditor and technical expert for various entities involved in the carbon credit market, climate change, validation and verification of greenhouse gas (GHG) projects, and accreditation processes for validator/verifier bodies (VVB) in GHG offset initiatives.

Fabian Andres Patiño:
Forestry Engineer, Francisco José de Caldas District University, with expertise and knowledge in forest plantations, formulation and management of environmental projects, development of management plans, watershed management, establishment of forest nurseries, impact studies and environmental licenses, floristic composition studies, forest exploitation, environmental education, forest inventories, and management of prohibited species.
He has experience in urban tree management, pruning plans, completion of technical forms for the SDA, interpretation of vegetation coverages, design and execution of forest inventories, ecological restoration, maintenance of prohibited species, environmental impact assessment, among others, for infrastructure, research, and the oil & gas sector.

Experienced and proficient in the use of geographic information systems, office tools, and statistical programs such as R and SPSS. Knowledgeable in REDD+ projects and as a Validation and Verification Body (OVV)

Cesar Marín:
Biologist – botanist, National University of Colombia, with 25 years of professional experience in fieldwork, characterization of vegetation cover in Amazonian, Andean, and páramo ecosystems. Twelve years of experience in designing methodologies for biodiversity characterization and project coordination. Demonstrates good coordination skills and effective interaction in interdisciplinary and interinstitutional teams. Expertise in vegetation characterization, ethnobotany, economic botany, ecological restoration, landscape management tools, ecological analyses, and biodiversity monitoring. Most recent experience includes the development of methodologies for carbon estimation in páramo ecosystems and high-mountain wetlands

Camilo Andres Montaña Salamanca:
Mechanical engineer and project manager with over 12 years of experience in conformity assessment and monitoring of technical regulations. Former head of the technical regulations group at the Superintendence of Industry and Commerce. He has completed the courses for lead formulators for the validation and verification of greenhouse gas (GEI) mitigation projects provided by Asocarbono-Asocec. Currently serving as the General Director of Versa Expertos en Certificación SAS.

Annex 2. Clarification requests, corrective action requests and forward action requests

Nº Hallazgo:	*1*	*Tipo de hallazgo:*	*CAR*		*CL*	*X*	*FAR*	
Descripción:		*En el DdP no es claro cómo el Titular del proyecto identifica el uso y el usuario previsto, de acuerdo con los requisitos del numeral 6.13 Informe del proyecto de GEI de la norma ISO 14064-2:2019.*						
Evidencia Objetiva		1. *En el DdP se menciona que el Titular va a registrar el proyecto en el estándar en los mercados de carbono voluntario y regulado. Sin embargo, dentro del DdP no es claro que porcentaje de certificados se van a destinar para cada tipo mercado de carbono.* 2. *Tampoco es clara la proporción de las áreas elegibles de bosque y de alta montaña que el Titular del Proyecto va a destinar en cada mercado (voluntario y regulado).*						

Plan de acción:

1. *La iniciativa Paramuno en el documento de Proyecto versión 2.0, dentro el capítulo 1 de generalidades, en la sección 3.1.4 se hace referencia el impacto de registro del proyecto sobre el beneficio financiero obtenido por la venta de CCV. Se puede observar la distribución del inventario de créditos de carbono en el mercado como se proyecta en modelo financiero, el cual el 100% de los certificados obtenidos se dispondrá para el mercado voluntario, con el objetivo de un equilibrio financiero.*

2. *En modelo financiero estimado y en el documento de proyecto en la sección 3.14 se proyecta un inventario de las remociones y reducciones de GEI para cada metodología y la proporción del mercado que va destinado como se evidencia en la siguiente:*

Metodologías	*Mercado*	*Reducciones de GEI (tCO2e) Proy*	*%*
EAM	*Mercado Voluntario*	*37.760*	*1.95*
	Mercado Regulado	*7.696*	*0.40*
REDD+	*Mercado Voluntario*	*1.515.150*	*78.22*
	Mercado Regulado	*376.345*	*19.43*
Total		***1.936.951***	*100%*

Proyección de remociones y reducciones para el mercado voluntario año a año (No incluye riesgo de reversión del 20%).

Evaluación OVV:

RONDA 1

1. No se encontró evidencia relacionada con la descripción de los criterios definidos para el desarrollo de la iniciativa de GEI y del usuario previsto en el DdP (Project Document Template) y en RM (Reporte de Monitoreo)

2. En el DdP se debe incluir un análisis de la relación que hay entre los alcances del PROYECTO PARAMUNO y los ALCANCES DEL ESTÁNDAR.

Tabla 1. Alcance del estándar.

El alcance del Estándar BCR se limita a:	
Los siguientes gases efecto invernadero, incluidos en el Protocolo de Kioto: Dióxido de carbono (CO2), Metano (CH4) y Óxido Nitroso (N2O).	X
Los proyectos de GEI que usen una metodología elaborada o aprobada por BioCarbon Registry, aplicables a actividades de remoción de GEI y actividades REDD+ (Sector AFOLU).	X
Las reducciones de emisiones y/o remociones de GEI cuantificables, generadas por la implementación de actividades de remoción de GEI y/o actividades REDD+ (Sector AFOLU).	X
Los proyectos de GEI que usen una metodología elaborada o aprobada por BioCarbon Registry, aplicables a actividades en los sectores energía, transporte y residuos.	-
Las reducciones de emisiones de GEI cuantificables, generadas por la implementación de actividades en los sectores energía, transporte y residuos.	-

Fuente: BioCarbon Registry,2023.

3. *No es clara la relación que debe existir entre los objetivos del proyecto PARAMUNO con los objetivos del usuario previsto.*

RONDA 2

1. El titular del proyecto incluyó los criterios definidos para el proceso de auditoría de validación y verificación en el DdP y en el RM. No se requiere acciones adicionales al respecto.

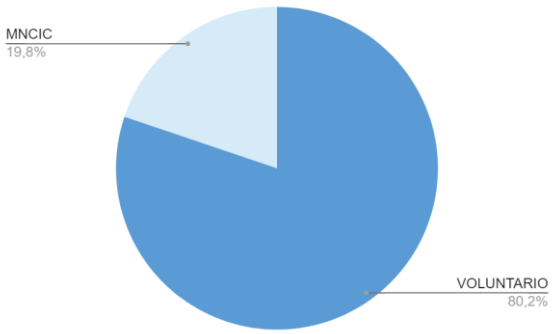
2. El responsable del proyecto realizó los ajustes solicitados por equipo auditor de VERSA en el DdP que incluyen el análisis de la relación que se da entre los alcances del PROYECTO PARAMUNO y los ALCANCES DEL ESTÁNDAR BCR versión 3.0.

3. La iniciativa de GEI Paramuno P1 describió como los objetivos del proyecto se relacionan y están alineados con los objetivos del usuario previsto.

Plan de acción:

1. *Dentro de la sección 1.1 del documento de proyecto se presenta los criterios definidos y la proyección de usuarios en el mercado durante la ejecución del proyecto, los cuales se dividirán en dos mercados distintos: el mercado regulado, que constituirá el 19,85% del total de certificados, y el mercado voluntario, que engloban el 80,2% restante.*

   En el reporte de monitoreo en la sección 2.4 que detalla las emisiones del proyecto por las áreas del ecosistema de alta montaña durante el período 2017-2021, se documenta una reducción de 12.522 tCO2e por transformación evitada de coberturas naturales. Basado en el modelo financiero para las emisiones correspondientes a estos años, se proyectó que el 67,37% se destinará al mercado regulado y el restante 32,63% al mercado voluntario.

	Adicionalmente en la sección 3.5 reporte de las emisiones del proyecto en ecosistemas REDD+ en el periodo de análisis 2017-2021 se registró una reducción de emisiones de 622.034 tCO2e por deforestación y degradación evitada. En cuanto al destino de mercado para estas reducciones de emisiones REDD+ abarcará un 66,34% del mercado regulado y para el mercado voluntario comprenderá un 33,66%. 2. *Se realizó el análisis de los alcances del estándar y los alcances del proyecto. cómo se puede visualizar en la sección 1.1 del documento de proyecto.* 4. *La Iniciativa Paramuno, en su primer proyecto, tiene como objetivo central la reducción de las emisiones de gases de efecto invernadero. Esta meta se logrará mediante la implementación de medidas de conservación y la generación de ingresos para los gestores del ecosistema a través de la comercialización de certificados de carbono. Estos certificados se distribuirán en dos mercados distintos: el mercado regulado, que abarca un 19,85% de la distribución total de certificados, y el mercado voluntario, que constituirá el 80,2% restante.* *Este enfoque se detalla tanto en el modelo financiero como en la sección 2.2 del documento del proyecto. La Iniciativa Paramuno busca, de esta manera, no solo contribuir significativamente a la reducción de las emisiones dañinas para el medio ambiente, sino también proporcionar una fuente de ingresos sostenible para los gestores del ecosistema. Este enfoque de doble beneficio se alinea con la visión del proyecto de promover la sostenibilidad y la mitigación del cambio climático de manera efectiva.* 				
Conclusión:	*Cerrar hallazgo*		*x*	*Mantener hallazgo*	

Nº Hallazgo:	*2*	*Tipo de hallazgo:*	*CAR*	*x*	*CL*		*FAR*		
Descripción:	*El DdP en el numeral 3.1 Metodología de cuantificación no se encuentra alineado con los requisitos de los numerales: 2. Versión y vigencia 3. Alcance, de las metodologías BCR0002 y BCR0003 en sus versiones más recientes.*								

Evidencia Objetiva	*Durante la revisión documental el equipo auditor encontró que el Titular del Proyecto utilizó los documentos metodológicos BCR0002 Versión 3.0 del 16 de febrero de 2022 y el BCR0003 Versión 2.0 de mayo de 2022, en algunos capítulos del documento. Y no las versiones más recientes publicadas por el estándar, BCR0002 versión 3.1 del 15 de septiembre de 2022 y BCR0003 versión 3.0 del 31 de agosto de 2022.* *En las versiones empleadas por el Titular del proyecto el estándar menciona:* *1. En el numeral 2. Metodología BCR0003 versión 2.0, se menciona que las versiones de los documentos pueden ser modificadas periódicamente y que por esta razón los usuarios previstos deben asegurarse de emplear la versión más reciente del documento.* *2. En la metodología BCR0002 Versión 3.0, el Estándar aclara que los Titulares del Proyecto de GEI contarán con un periodo de transición de tres meses, para el uso de la versión actualizada a partir de su publicación.*
Plan de acción:	*1. La Iniciativa Paramuno proyecto 1 actualizó su documento de proyecto versión 2.0. para el EAM bajo los lineamientos del DOCUMENTO METODOLÓGICO SECTOR AFOLU para la cuantificación de Reducciones de Emisiones de GEI, actividades que evitan el cambio de uso de la tierra y mejoran las prácticas de manejo de turberas y otros humedales en ecosistemas de alta montaña en su versión 3.0.* *2. La Iniciativa Paramuno para proyectos REDD+ en su documento de proyecto versión 2.0 se estructuró bajo los lineamientos del DOCUMENTO METODOLÓGICO SECTOR AFOLU para la Cuantificación de Reducciones de Emisiones de GEI de Proyectos REDD+ en su versión 3.1*
Evaluación OVV:	***RONDA 1*** *El titular de la iniciativa debe usar las últimas versiones de los documentos del Estándar, en este caso se debe trabajar con la versión 2.0 de la plantilla de BCR.* ***RONDA 2*** *El titular de proyecto utilizó la versión 2.0 de la plantilla de BRC. No se requieren más acciones adicionales.*
Plan de acción:	*1. El documento de proyecto y el reporte de monitoreo, se encuentran alineados con la versión 3.1 del estándar y se ajustó mayormente a la plantilla de 2.0 el documento en su versión 2.1. Debido a que es un proyecto multimetodología, se consideró algunos ajustes para ser mejor comprendido.*

Conclusión:	*Cerrar hallazgo*	*x*	*Mantener hallazgo*		

Nº Hallazgo:	*3*	*Tipo de hallazgo:*	*CAR*	*x*	*CL*		*FAR*		
Descripción:	*El Titular del Proyecto no selecciona, establece criterios y procedimientos para la identificación y evaluación de las fuentes, los sumideros y los reservorios (FSR) de GEI controlados, relacionados o afectados por el proyecto:* *- 6.3 Identificación de FSR de GEI pertinentes del proyecto* *- A 3.2 Identificación de FSR pertinentes del proyecto de la norma ISO 14064-2:2019.* *Tampoco se encuentra alineado con el numeral 7. Reservorios de carbono y fuentes de GEI del Documento Metodológico Sector AFOLU BCR0002, versión 3.1.*								

Evidencia Objetiva	1. *Durante la revisión documental el equipo auditor no encontró como el Titular del Proyecto describe en el DdP los criterios y procedimientos de selección que estableció para identificar FSR de GEI del proyecto como:* ● *Controlados por el Titular del Proyecto.* ● *Relacionados con el proyecto de GEI; o* ● *Afectados por el proyecto de GEI.* 2. *El numeral 3.2.2 La selección de los reservorios de carbono que se encuentran en la tabla 8 no incluye en su análisis: Biomasa aérea /Vegetación no arbórea y Madera muerta y hojarasca; en caso de no tener en cuenta uno o más reservorios de carbono, es importante incluir en el DdP una explicación[1] y justificación[2] de la decisión tomada.* 3. *Los reservorios de carbono y fuentes de GEI, no están identificados de acuerdo con las actividades a las cuales estos aplican, por ejemplo, se encontró que la biomasa aérea únicamente se tendrá en cuenta para la degradación forestal. Sin embargo, esto debe quedar claramente definido y justificado en la sección 3.2.2 reservorios de carbono y fuentes de GEI.*
Plan de acción:	1. *Los FSR para la iniciativa Paramuno fueron identificados teniendo en cuenta los reservorios y fuentes de GEI propuestos por el IPCC, los cuales han sido adoptados por las metodologías BCR0002 y BCR0003.* *Por lo que, para su selección se tuvo en cuenta aquellos FSR controlados por el titular y/o afectados por el proyecto, según su nivel de significancia en cuanto a contenidos de carbono y su cambio entre el escenario de línea base y el proyecto, además de la relación que tienen según las actividades propuestas por la iniciativa.* *La justificación de la selección o exclusión de FSR se describe en el DdP en las Secciones 26.1.2 y 26.1.3 para el componente de Ecosistemas de Alta Montaña (EAM); y Secciones 33.1.2 y 33.1.3 para el componente REDD+.* 2. *Se actualiza el análisis depósitos y fuentes de GEI para el componente de EAM (Secciones 26.1.2 y 26.1.3) y REDD+ (Secciones 33.1.2 y 33.1.3), incluyendo el análisis para los depósitos de biomasa aérea-vegetación no arbórea, madera muerta y hojarasca para el componente REDD+.* 3. *La iniciativa Paramuno se estructura bajo los lineamientos de los documentos metodológicos BCR002 y BCR003.*

[1] *La explicación incluye por lo general: a) cómo se usaron los enfoques o cómo se tomaron las decisiones; b) por qué se escogieron estos enfoques o se tomaron las decisiones.*

[2] *La justificación tiene otros dos criterios: c) explicar por qué no se escogieron enfoques alternativos; d) proporcionar datos o análisis de soporte.*

	De este modo para los componentes REDD+ / Deforestación y Ecosistemas de alta montaña (EAM), se establece que para definir las emisiones generadas se tienen en cuenta los cambios de contenidos de carbono en los reservorios seleccionados; en el caso de la iniciativa Paramuno se incluye la biomasa total (BT) y carbono en el suelo (COS). *Para el caso de la degradación forestal del componente REDD+, de acuerdo a la metodología BCR0002, la estimación de factores de emisión se establece a partir de la media de la biomasa total para cada clase de fragmentación y las diferencias de la media con respecto a las transiciones entre las clases.* *Por su parte, la selección de Fuentes de GEI se estableció a partir de las fuentes propuestas en las metodologías BCR0002 y BCR0003 en relación a las actividades del proyecto. De este modo, dado que no se incluyen áreas de humedales y turberas en el componente EAM, las fuentes de Alteración del régimen hídrico y Drenaje de turberas se excluyen ya que no representan una fuente neta de emisiones durante el periodo del proyecto; incluyendo la Combustión de biomasa leñosa como Fuente de GEI para los dos componentes (REDD+ y EAM), en caso de identificarse incendios durante el periodo de monitoreo.*
Evaluación OVV:	***RONDA 1*** *1. Los numerales mencionados en la respuesta no corresponden a los encontrados en el DdP, para ecosistemas de alta montaña los numerales se encuentran desarrollados en la sección 27.1.2 y 27.1.3 y para las actividades REDD+ 34.1.2 y 34.1.3.* *33.1.3 Realizar monitoreo de puntos de calor terrestres.* *26.1.2 Gestionar la planeación predial y promover la implementación de prácticas productivas sostenibles* *26.1.3 Realizar ciclo de capacitaciones para fortalecer conocimientos en conservación de ecosistema de alta montaña y estructuras de gobernanza* *33.1.2 Realizar ciclo de capacitaciones para fortalecer conocimientos en conservación de ecosistemas estratégicos.* *2. La identificación de los FRS pertinentes del proyecto Paramuno es suficiente y apropiada. Por lo tanto, no se requieren acciones adicionales.* ***RONDA 2*** *1. El titular del proyecto realizó los ajustes pertinentes al documento. No se tienen comentarios adicionales.*
Plan de acción:	*1. Los numerales mencionados se actualizaron los cuales corresponden a los encontrados en el Ddp, para ecosistemas de alta montaña los numerales se encuentran desarrollados en la sección 27.1.2 y 27.1.3 y para las actividades REDD+ 34.1.2 y 34.1.3.*
Conclusión:	*Cerrar hallazgo* | *x* | *Mantener hallazgo* |

Nº Hallazgo:	*4*	*Tipo de hallazgo:*	*CAR*	*x*	*CL*		*FAR*	
Descripción:		*El DdP no se encuentra alineado con el numeral 4. Condiciones de aplicabilidad de la Metodología BCR0003 versión 3.0 para el área de bosque y del numeral 4. Condiciones de*						

<table>
<tr><td></td><td>aplicabilidad del Documento Metodológico Sector AFOLU BCR0002 V3.1 para el área de alta montaña.</td></tr>
<tr><td>Evidencia Objetiva</td><td>Durante la revisión documental se encontró que el DdP en la tabla 6. Condiciones de aplicabilidad de la metodología BCR0003 REDD+ no corresponden a la versión más reciente publicada por el estándar, ya que estas corresponden a las condiciones de aplicabilidad mencionadas en el numeral 4 de la metodología BCR0002, versión 3.1.</td></tr>
<tr><td>Plan de acción:</td><td>De acuerdo a las últimas versiones de las metodologías BCR0003 versión 3.0 y BCR0002 V3.1 se actualizó la las tablas de aplicabilidad en el documento de proyecto DdP versión 2.0.

Condiciones de aplicabilidad de la metodología BCR 0002 REDD+ versión 3.1
<table>
<tr><th>CONDICIÓN DE APLICABILIDAD</th><th>CUMPLIMIENTO</th></tr>
<tr><td>Las áreas en los límites geográficos del proyecto corresponden a la categoría de bosque (de acuerdo con las definiciones nacionales de bosque para el Mecanismo de Desarrollo Limpio) al inicio de las actividades del proyecto y diez años antes de la fecha de inicio del proyecto.</td><td>Se demuestra que las áreas corresponden a la categoría de bosque a través de observaciones en campo y a la utilización de modelos para la generación de las capas de bosque periodos 2005, 2016 y 2021. Para la validación del modelo se utiliza información de observaciones en campo en zonas de bosque de acuerdo con el MDL y el soporte del mapa nacional de bosque no bosque generado por el sistema de monitoreo de bosque y carbono en las fechas anteriormente mencionadas.</td></tr>
<tr><td>Las causas de la deforestación identificadas pueden incluir, entre otras: ampliación de la frontera agropecuaria, minería, extracción de madera y expansión de infraestructura.</td><td>Respecto a las causas de la deforestación identificadas para el proyecto, y consignadas en el apartado de línea base y adicionalidad, corresponden principalmente a la expansión de la frontera agrícola, la ganadería y la minería, a la vez se realiza un análisis detallado en el apartado correspondiente a las causas y agentes de la deforestación y degradación.</td></tr>
<tr><td>Las causas de la degradación forestal identificadas pueden incluir, entre otras: tala selectiva, extracción de leña, incendios forestales, pastoreo en bosque y expansión de la frontera agropecuaria y cultivos de uso ilícito.</td><td>Las causas de la degradación forestal identificadas en la línea base de la iniciativa, corresponden principalmente a tala selectiva, pastoreo en zonas de bosque, reconversión de potreros y la expansión de cultivos agrícolas entre otros.</td></tr>
<tr><td>No se espera que ocurra la reducción de la deforestación o de la degradación en ausencia del</td><td>No se espera que ocurra la reducción de la deforestación o de la degradación en ausencia del proyecto; De acuerdo al análisis de Línea Base y Adicionalidad, la ejecución de las actividades</td></tr>
</table></td></tr>
</table>

	proyecto.	*REDD+ y el monitoreo de reducciones de GEI para el periodo 2017-2036.*
	Es posible que, en las áreas en los límites del proyecto, las reservas de carbono en la materia orgánica del suelo, la hojarasca y la madera muerta disminuyan, o permanezcan estables.	*La posibilidad de que esta condición se dé es muy probable, teniendo en cuenta las presiones externas que se dan en el área de proyecto tal cual como se evidencia en el capítulo de línea base y causas y agentes de la deforestación y degradación, por lo tanto, si el escenario permanece tal cual, es posible las reservas de carbono disminuyen o permanecen estables, ya que se continúan ejecutando actividades agrícolas, pecuarias, mineras entre otras.*
	La cuantificación de GEI diferente al CO2 debe ser incluidos en la cuantificación de emisiones causadas por incendios forestales (si aplica) durante el periodo de monitoreo.	*Se tendrán en cuenta las emisiones de GEI diferente a CO2 si se presentan incendios en áreas elegibles con cobertura vegetal leñosa, durante el periodo de monitoreo.*

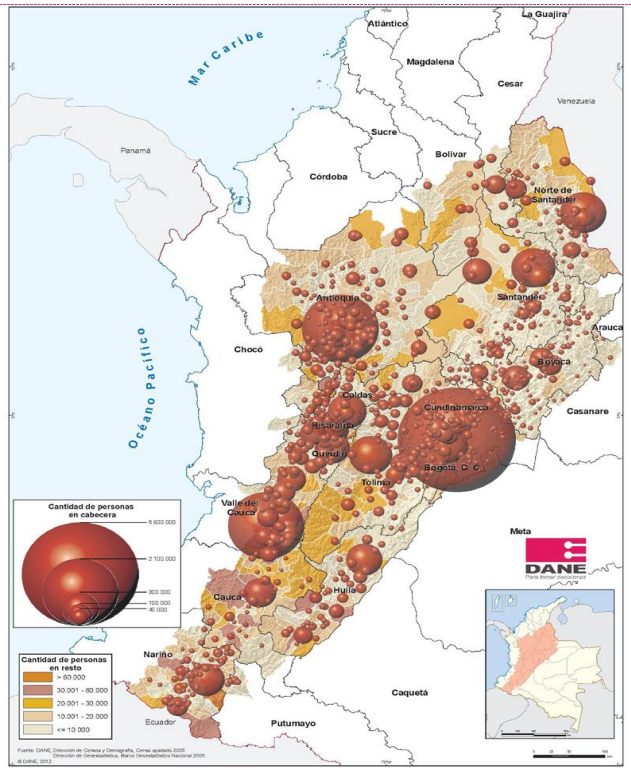
Evaluación OVV:	***RONDA 1*** *1. Es necesario que se relacionen las condiciones de aplicabilidad de la metodología con los numerales en donde se evidencia que se desarrollan en DdP dichas actividades que reflejan el cumplimiento de los requisitos de ambas metodologías BCR002 V3.1 y la BCR0003 V3.0.* ***RONDA 2*** *El titular del proyecto realizó la actualización del DdP en donde demostró como da cumplimiento a las dos metodologías implementadas en el proyecto la BCR0003 V3.0. en la sección 27.1.1. Y BCR002 V3.1 en la sección 34.1.1. No se tienen comentarios adicionales.*			
Plan de acción:	***RONDA 1*** *Se realizó la actualización y se relacionaron los numerales que se desarrollan en el Ddp en las condiciones de aplicabilidad de las dos metodologías implementadas en el proyecto la BCR0003 V3.0. en la sección 27.1.1. Y BCR002 V3.1 en la sección 34.1.1.*			
Conclusión:	*Cerrar hallazgo*	*X*	*Mantener hallazgo*	

Nº Hallazgo:	*5*	*Tipo de hallazgo:*	*CAR*	*x*	*CL*		*FAR*		
Descripción:	*Los límites espaciales del DdP no están alineados con el numeral 7 Límites del proyecto de la Metodología BCR0003 versión 3.0*								
Evidencia Objetiva	*Durante la revisión documental el equipo auditor encontró que:* *1. Los límites espaciales del DdP no son los mismos que se encuentran descritos en la versión 3.0 de la metodología: área de proyecto, área de referencia para estimación de la línea base y área de fugas.*								

	2. *En la identificación de las áreas elegibles el Titular del proyecto realizó una interpretación visual de las coberturas de la tierra "Corine Land Cover", posteriormente realizó su reconocimiento en campo. Sin embargo, dentro de este análisis no es claro como el Titular del Proyecto estimó los cambios en el uso del suelo (conflictos de uso del suelo), y los cambios en las existencias de carbono, en ausencia del proyecto como resultado de la delimitación del área de referencia para estimación de la línea base.* 3. *No hay una descripción de la clasificación de las tierras por su capacidad de uso (clases agrológicas de suelos) a lo largo del proyecto que permita relacionarla con los posibles impulsores de los cambios en uso de la tierra (conflicto de uso del suelo).* 4. *No se encontró en el DdP como se evaluó el uso de la tierra y sus cambios durante el periodo de referencia histórico en al menos en tres momentos en el tiempo, para proyectar una aproximación creíble de los patrones futuros de los cambios de uso de la tierra en el área del proyecto.*
Plan de acción:	1. *Se realiza una actualización de las áreas del proyecto, los límites espaciales del proyecto, área de referencia, línea base, así como las fugas se encuentran en el ecosistema de alta montaña con la definición utilizada por el país.* *La Metodología BCR0003 versión 3.0, indica que el titular del proyecto debe demostrar que las áreas en los límites geográficos del proyecto se encuentran en alta montaña acorde con la definición incluida en este documento o la definición del país de existir formalmente. El documento brinda una definición de alta montaña, así como dos criterios para su identificación siendo i. El límite superior del bosque y ii. el límite de descenso glaciares.* *En este sentido, Sarmiento et al 2013, en su documento aparatos a la conservación estratégica de los páramos en Colombia, contribución realizada con el apoyo del Ministerio de Ambiente y Desarrollo Sostenible, IGAC, IDEAM, DANE, CAR y HUMBOLDT. Definen que la alta montaña para Colombia es definida como un espacio geográfico corresponde a las culminaciones altitudinales de las cordilleras andinas a partir de los 2700+/-100m.* *Adicional a lo anterior, León et al (2015), en el capítulo 1, Marco Conceptual para la identificación de la zona de transición entre el bosque altoandino y páramo. En Sarmiento, C., y León,O.(eds).2015. Transición bosque-páramo. Bases conceptuales y métodos para su identificación en los Andes colombianos. Relaciona las variaciones en la distribución altitudinal respecto a la variación térmica para definir la composición de la vegetación en diversos puntos de la cordillera colombiana, determinando que para la cordillera central y oriental se mantiene el piso altitudinal sobre los 2700 msnm +/-100m.* *En este sentido, se delimitó el ecosistema de alta montaña para el proyecto Paramuno de acuerdo con Sarmiento et al (2013) utilizando el piso altitudinal de los 2700 msnm influenciado por la temperatura media anual de 12 grados centígrados. Los insumos se utilizaron el modelo digital de Colombia, las curvas de nivel de IGAC y el mapa de temperatura media anual para Colombia facilitado por IDEAM.* 2. *El titular del proyecto delimita un área de referencia donde se estiman los cambios de uso y coberturas de la tierra, se realiza a partir de un análisis multitemporal donde se obtienen las tasas de transformación de las coberturas vegetales naturales en el periodo de análisis.* *Para estimar las emisiones de GEI debido al cambio en el uso del suelo, se establecieron factores de emisión para el carbono total contenido en las coberturas naturales incluidas en el proyecto (Bosque Andino y Páramo).*

	Sin embargo, bajo los lineamientos del documento metodológico BCR0002 y BCR0003, la inclusión de factores de emisión para el escenario post-deforestación no es solicitado. Por lo cual, ante un evento de transformación de coberturas naturales, se asume que todo el carbono contenido en la biomasa aérea y subterránea se emite en el mismo año; mientras que para el carbono almacenado en el suelo se asume que es emitido en proporciones iguales durante los posteriores 20 años. *En el documento Cálculo de emisiones EAM Paramuno V2, pestaña "Gráfico" se relaciona el contenido de carbono en el área con ausencia del proyecto vs contenido de carbono escenario con proyecto.* 3. *La metodología BCR0003 indica que las coberturas de la tierra deben identificarse de acuerdo con las clasificaciones de uso y/o coberturas de la tierra. Es decir, no se restringe exactamente a utilizar las clases agrológicas. En este sentido, se utiliza la clasificación de las coberturas CORINE Land Cover, donde se describen las unidades de coberturas de la tierra a nivel individual y a través de indicadores que facilitan la lectura e interpretación de las coberturas, uno de estos es el indicador detallado que permite agrupar categorías de acuerdo con su estructura vegetal y antrópicas. Esta información está relacionada en el Capítulo 2, ítem 24.6 Cadena de eventos de cambios de uso de la tierra.* 4. *En el DdP, Capítulo 2 EAM, se incluye el numeral 22.1. Periodo histórico de cambios en el uso de la tierra donde se realiza un análisis multitemporal para tres fechas de referencia, fecha de inicio, diez y quince años antes de la fecha de inicio (2002 - 2018) y (2009 -2018).*
Evaluación OVV:	*El titular de la iniciativa logró demostrar que la identificación de las áreas del proyecto es consistente con los requisitos establecidos en las metodologías: BCR0002 Versión 3.1. y la BCR0003 Versión 3.0.*
Conclusión:	*Cerrar hallazgo* | *X* | *Mantener hallazgo* |

Nº Hallazgo:	*6*	*Tipo de hallazgo:*	*CAR*	*X*	*CL*		*FAR*	
Descripción:	*El DdP no cumple con los requisitos del numeral 8. Límites espaciales y temporales del Documento Metodológico Sector AFOLU BCR0002 V3.1.*							
Evidencia Objetiva	*No es clara la relación existente del numeral 30.3 (Región de referencia para estimación de la línea base) con cómo con los agentes y determinantes de la deforestación y la degradación (identificados) pueden acceder al área del proyecto y como el área del proyecto es de interés para estos mismos.*							
Plan de acción:	*El criterio b, las condiciones de tenencia de la tierra son similares en la región de referencia como en las áreas de proyecto, esto brinda la facilidad para que los agentes de la deforestación/degradación puedan realizar acciones en el bosque. Además, las condiciones de suelo, clima, coberturas de la tierra son similares en toda la región. Sujeto a lo anterior, la alta densidad poblacional (DANE,2005) y la facilidad de acceder al territorio facilitan la expansión de la frontera agrícola, además de ser densamente poblada lo que la hace atractiva para la explotación de recursos naturales. ítem 22.* *Imagen: Poblacional por municipio en la región andina.*							

	 *Fuente: Dane, 2005*
Evaluación OVV:	*El Titular del proyecto logró demostrar la relación que hay entre los agentes determinantes de la deforestación y la degradación identificados y cómo pueden acceder al área del proyecto y como el área del proyecto es de interés para estos mismos.*
Conclusión:	*Cerrar hallazgo* | *X* | *Mantener hallazgo* |

Nº Hallazgo:	*7*	*Tipo de hallazgo:*	*CAR*	*CL*	*x*		*FAR*	
Descripción:		*El numeral 25.2 no está alineado con los requisitos del numeral 9.3 Actores clave intereses y motivaciones del documento Metodológico BCR0003 V3.0 y con el numeral 10.3 del Documento metodológico BCR0002 V3.1.*						
Evidencia Objetiva		1. *En el numeral 25.2 no es claro como el Titular del proyecto incluye en el análisis las causas de cambio de uso de la tierra identificados en el área de estudio, señalando su importancia dentro del grupo de factores que motivan a los agentes a modificar la cobertura natural.* 2. *Tampoco se encontró una expresión geográfica (mapa) de la caracterización y la relación del fenómeno de cambio de cobertura natural a antrópica, fenómeno de deforestación y/o degradación que ejercen los actores clave identificados.*						
Plan de acción:		1. *En la sección 25.2 se justifican los factores que motivan a los agentes modificar la cobertura natural.*						

	2. *Para el EAM se amplía información sobre la relación entre el fenómeno de cambio de cobertura natural a antrópica y sus drivers, Ítem 25.2 - Actores Claves, intereses y motivaciones. De igual forma, para REDD se modifica el Ítem 32.3 Actores Clave.*				
Evaluación OVV:	1. *El análisis de causas de cambio de uso de la tierra es amplio y suficiente, no se requieren análisis adicionales.* 2. *La caracterización y el fenómeno de cambio de la cobertura natural a antrópica realizada por los diferentes actores claves identificados por el proyecto es amplia y suficiente. No se requieren acciones adicionales.*				
Conclusión:	*Cerrar hallazgo*	*X*	*Mantener hallazgo*		

Nº Hallazgo:	*8*	*Tipo de hallazgo:*	*CAR*		*CL*	*x*	
Descripción:	*El DdP no está alienado con el numeral 9.4 del Documento metodológico BCR0003 y el numeral 10.4 del Documento metodológico BCR0002*						
Evidencia Objetiva	*No es claro como el Titular del proyecto discrimina en términos de patrones espaciales todas las actividades por su importancia económica y sociocultural que causan de forma directa deforestación y/o degradación.*						
Plan de acción:	*En el DdP se incluye un análisis de patrones espaciales asociados a las actividades económicas en cada región de referencia, este puede revisado capítulo 2 EAM, ítem 25.3 "Actividades económicas y su importancia". De igual manera, el capítulo 3 REDD+, 32.4 con el mismo nombre. Describe como la actividad económica moldea el territorio y se estiman las transformación y deforestaciones asociadas a cada actividad.*						
Evaluación OVV:	***RONDA 1*** *La minería al ser una de las actividades identificadas económicas que han generado históricamente procesos de degradación y deforestación en las áreas de estudio, no es claro ¿por qué el proyecto no las incluye dentro de sus actividades de monitoreo.* ***RONDA 2*** *El responsable del proyecto realizó los ajustes pertinentes. No se tienen comentarios adiciones.*						
Plan de acción:	*El monitoreo de la actividad minera está incluida en el ítem 29 "Plan de Monitoreo de Alta Montaña"e item 29.2.1.1. Monitorear de manera satelital el cambio del uso de la tierra del DdP V 2.1, en este se describe:* 1. *El monitoreo satelital de las áreas del proyecto (Áreas elegibles - fugas) como actividad de seguimiento ambiental para identificar posible degradación sobre el bosque y/o el EAM ocasionado por actividades asociada a la minería; cabe resaltar que no se identificó un impacto representativo por esta actividad por lo cual no se desarrolla una actividad de proyecto directa sobre esta.* 2. *Finalmente, y actuando bajo el principio de Precaución, la Agencia Nacional de Minería - ANM será informada sobre los polígonos que hacen parte del proyecto para evitar incorporaciones de nuevos territorios (Títulos Mineros) que generen presión sobre los recursos naturales y puedan suponer riesgos de reversión. Actuando del mismo modo, las Corporaciones Autónomas Regionales serán informadas siguiendo igual trámite que la ANM.*						

	Adicionalmente se realiza seguimiento de la actividad minera en las zonas del proyecto (Monitoreo satelital como actividad de seguimiento ambiental en actividades mineras) donde se concluye que para el periodo 20017 - 2021 no existe tanto en las áreas del proyecto como en las áreas de fugas, riesgos de actividad minera que puedan materializarse y generar riesgo para el proyecto.			
Conclusión:	Cerrar hallazgo	X	Mantener hallazgo	

Nº Hallazgo:	9	Tipo de hallazgo:	CAR	X	CL		FAR		
Descripción:	El DdP no está alineado con el numeral 11.2.1 Estimación de los cambios en el uso de la tierra del documento metodológico BCR0003 Versión 3.0.								
Evidencia Objetiva	El titular del proyecto presenta en el DdP en el numeral 27.2.1 la metodología que utilizó para la delimitación de las coberturas naturales y los cambios a otros usos de la tierra. Sin embargo, dentro del texto no incluyó los resultados de su análisis, no se sabe con certeza si el evento ocurrió en el periodo de tiempo analizado (2005-2018). En este punto es clave mencionar que manejo se le dio áreas con falta de información y/o nubes, en caso de que llegaran a presentarse.								
Plan de acción:	El ítem 27.2.1. es actualizado al 27.4.1. Estimación de los cambios en el uso de la tierra. El análisis de cambios de uso de la tierra en el área de referencia es realizado para la fecha de inicio del proyecto (2018), y quince años antes de la fecha de inicio (2002). Se utilizan los insumos confiables del Corine Land cover para Colombia, año 2018. De igual forma se utiliza el 2002 como insumo nacional disponible. Los resultados son relacionados en la Tabla Estimación de cambios históricos para la región de referencia en EAM, sección 27.4.2. Cambios históricos en el área de referencia. El análisis es realizado a las áreas que en el 2002 se encontraban en coberturas vegetales naturales de páramo y su transformación al año 2018. Los insumos utilizados se encuentran la Geodatabase EAM V2. Feature Dataset denominado "Área Referencia", Feature Class "Estrato 2009", "Estrato 2018". La información utilizada no presenta zonas donde existieran nubes o fuera necesario la utilización de un insumo adicional.								
Evaluación OVV:	La descripción que se encuentra en el Ddp de la estimación de los cambios de uso de la tierra es amplia suficiente. No se requieren más acciones adicionales al respecto.								
Conclusión:	Cerrar hallazgo	X	Mantener hallazgo						

Nº Hallazgo:	10	Tipo de hallazgo:	CAR	x	CL		FAR		
Descripción:	El DdP no está alineado con las directrices de los numerales 13.1.1 Monitoreo de los límites del proyecto y el 13.1.4.1.2 Cambios anuales de uso de la tierra en el área de fugas.								
Evidencia Objetiva	Durante la revisión documental se encontró que para el monitoreo de las actividades EAM del proyecto, en los numerales 29.2.1.1. Monitorear de manera satelital el cambio del uso de la tierra y el 29.4. El monitoreo de las emisiones del proyecto no incluye dentro de su seguimiento la reducción de emisiones por cambios en el uso de la tierra de todas las áreas geográficas del proyecto, incluyendo el área de referencia y el área de fugas. Tampoco se encontró la metodología que el Titular del Proyecto tiene proyectada para hacer las estimaciones de los cambios en el uso de la tierra en el área del cinturón de fugas.								
Plan de acción:	El monitoreo en el cambio del uso de la tierra en las áreas del proyecto (áreas elegibles y fugas) se realizará a partir de la interpretación de imágenes de alta resolución, acompañamiento al beneficiario del proyecto y visitas a territorio para constatar el uso del suelo, en este sentido se evaluará la calidad de la cobertura vegetal a través de la herramienta								

	metodología MESMIS que determinara la sostenibilidad de los sistemas de manejo de recursos naturales en pequeños agricultores y su contexto local. *Respecto a las emisiones, se actualiza el ítem 29.3 Monitoreo de las emisiones del proyecto. Este análisis inicia al identificar cambios en las áreas elegibles del proyecto y de acuerdo con los lineamientos metodológicos de BCR003 se asume que al existir una transformación de las áreas elegibles el carbono almacenado en la biomasa aérea y subterránea se emite el mismo año. En el anexo Cálculo de emisiones EAM PARAMUNO V2.xlsx se pueden detallar los cálculos para la estimación de reducción de emisiones del componente EAM.*			
Evaluación OVV:	*Hallazgo satisfactoriamente resuelto, no se requieren acciones adicionales.*			
Conclusión:	*Cerrar hallazgo*	*X*	*Mantener hallazgo*	

Nº Hallazgo:	*11*	*Tipo de hallazgo:*	*CAR*	*X*	*CL*		*FAR*		
Descripción:	*El DdP no está alineado con la Resolución 1447 de 2018, sección 2, Art 45, Capítulo 2, Art. 14 y Capítulo 3, Art. 54.*								
Evidencia Objetiva	1. *En la revisión documental no se encontró evidencia sobre cómo el proyecto va dar cumplimiento a los lineamientos relacionados con estado de la iniciativa, actualización y reporte de la información ante el RENARE.* 2. *Adicional a lo anterior, tampoco se encontró como el responsable del proyecto va a reportar ante el RENARE la información referente al cumplimiento de salvaguardas ambientales y sociales, en especial lo referente a participantes del proyecto, condiciones de titularidad y tenencia de la tierra en el área de intervención, consentimiento de los propietarios, poseedores u ocupantes de los predios en los que se encuentra la iniciativa, compatibilidad con instrumentos de ordenamiento y planificación territorial.*								
Plan de acción:	1. *La iniciativa Paramuno actualmente se encuentra registrada en el Registro Nacional de Reducción de Emisiones de Gases de Efecto Invernadero (RENARE). Según el Ministerio de Ambiente, la plataforma RENARE integra cuatro fases de registro (factibilidad, formulación, implementación y cierre). En cada una de ellas se hace el debido seguimiento a los diferentes tipos de iniciativas de reducción y remoción de emisiones de GEI inscritas. Cabe destacar que el RENARE permite generar una certificación con el reporte del estado de iniciativa y generar un reporte contable que evidencie la trazabilidad y transparencia en las transacciones de la iniciativa. El proyecto Paramuno se encuentra registrado bajo iniciativa Proyecto REDD+. Actualmente se está reportando la fase inicial de factibilidad. (Ver evidencia).* 2. *Desde el pasado 09 de agosto de 2022 y hasta la fecha de hoy, la plataforma se encuentra cerrada temporalmente por mantenimiento, como se evidencia en Soporte mantenimiento plataforma RENARE y, esto ha generado que la Organización no pueda continuar con los reportes periódicos; la Organización se encuentra en espera de que el Ministerio de Ambiente culmine el mantenimiento del aplicativo para proceder con el reporte de la información pertinente del proyecto, la cual se encuentra organizada para su debido reporte y poder surtir las debidas actualizaciones según lo disponga la normatividad nacional.* *Esta información se relaciona en el DdP versión 2.0 en el numeral 6.1 Registro Nacional De Reducciones De Emisiones De Gases De Efecto Invernadero (RENARE).*								

Evaluación OVV:	***RONDA 1*** *El responsable del proyecto también debe incluir qué acciones desarrolló o intentó desarrollar ante el RENARE en el Reporte de Monitoreo (RM).* ***RONDA 2*** *En el reporte de monitoreo se incluyeron las acciones que el proyecto tiene contempladas para dar cumplimiento a la resolución 1447 de 2018 referentes al registro de la iniciativa en el RENARE. No hay comentarios dicionales.*			
Plan de acción:	*Las acciones y soportes implementadas por el titular del proyecto para dar reporte ante el RENARE se encuentran en la sección 3.4.2 del reporte de monitoreo.*			
Conclusión:	*Cerrar hallazgo*	*x*	*Mantener hallazgo*	

Nº Hallazgo:	*12*	*Tipo de hallazgo:*	*CAR*	*x*	*CL*		*FAR*		
Descripción:	*El Plan de Monitoreo no está alineado con la salvaguarda de C6 Consentimiento libre, previo e informado (CLPI)*								
Evidencia Objetiva	*Durante la fase de revisión documental no se encontró evidencia relacionada con la gestión de la solicitud ante el ministerio de Interior sobre la procedencia de consulta previa o consentimiento libre, previo e informado.*								
Plan de acción:	*La iniciativa de mitigación de cambio climático PARAMUNO, está alineada con las siete salvaguardas que se establecen en la herramienta BCR (BioCarbon Registry), tal como se relaciona en el plan de monitoreo de Salvaguardas dispuesto en el DdP. Cabe destacar que, aunque en el plan de monitoreo no está señalado puntualmente el apartado de CLPI (Consentimiento Libre, Previo e Informado), este si se menciona en la Salvaguarda 3 "El respeto de los conocimientos y los derechos de los pueblos indígenas y los miembros de las comunidades locales", más específicamente en el apartado "Identificación de participantes de Paramuno". Dentro de este apartado se informa sobre la No procedencia de la consulta previa de la iniciativa, y en tal sentido, se relacionan los anexos respectivos. Así mismo, respecto a la ev* *idencia relacionada con la gestión de solicitud de procedencia de consulta previa ante la autoridad nacional competente (Ministerio del Interior) se aclara que el día 17 de febrero de 2023 se hizo la solicitud formal a este ente mediante correo electrónico y el desarrollador del proyecto quedó a la espera del número de radicado. En respuesta a dicha solicitud, el día 24 de febrero de 2023, se obtuvo respuesta por parte del Ministerio del Interior, quien envió un correo de confirmación con el número de radicado de la solicitud. Cabe destacar que cuando se tenga el certificado pertinente, este se cargará a la carpeta correspondiente. Entre tanto, se da respuesta al hallazgo en mención y se relaciona la evidencia que lo soporta.*								
Evaluación OVV:	***RONDA 1*** 1. *El titular del proyecto debe realizar un análisis de cómo el proyecto cumple con la Interpretación Nacional de las Salvaguardas Ambientales y Sociales de acuerdo con el numeral 18 de la metodología BCR0003 V3.0.* 2. *Adicional a lo anterior, debe garantizar que hace un seguimiento de la Interpretación Nacional de las Salvaguardas Sociales y Ambientales para Colombia.*								

	RONDA 2. ***1 y 2*** *El titular del proyecto logró demostrar como las actividades del proyecto se encuentran alineadas con los requisitos de la Interpretación Nacional de las Salvaguardas Ambientales y Sociales.*
Plan de acción:	1. *En el documento DdP se agregó un apartado que articula la interpretación nacional de las Salvaguardas de Cancún, con la lectura hecha por la Herramienta de cumplimiento BCR. Resaltando cómo se corresponden y complementan, y claramente nunca se contradicen.* 2. *En el cumplimiento de las salvaguardas de Cancún descrito en el Reporte de Monitoreo, se integran los 15 elementos resaltados por la interpretación nacional en las evidencias dispuestas por la Herramienta de cumplimiento BCR, lo que articula las dos interpretaciones, ya que no se contradicen.*
Conclusión:	*Cerrar hallazgo* | *X* | *Mantener hallazgo* |

Nº Hallazgo:	*13*	*Tipo de hallazgo:*	*CAR*	*X*	*CL*		*FAR*		
Descripción:		*Se evidencia que la geodatabase (GDB) del proyecto no cumple con el principio de transparencia, definido en los lineamientos de la norma ISO 14064-2 numeral 4.6.*							
Evidencia Objetiva		1. *En la GDB no se encuentran los datos base con los que se utilizaron los análisis, se muestra que se utilizó información del SMByC, en algunos casos, pero se encuentra información adicional de la cual no hay claridad de su origen. Tampoco se identifica cuál fue el tratamiento que se realizó a las áreas sin información* 2. *Al revisar la GDB REDD+, se encontraron diversos polígonos como área de proyecto y el área de referencia únicamente sobre la cordillera oriental, por tanto, no es claro cómo la región de referencia garantiza que en esta se encuentren los agentes que pueden acceder al área del proyecto, teniendo en cuenta que se tienen dos cordilleras con dinámicas de deforestación y degradación forestal diferentes.* 3. *Si bien el proponente muestra que se logró una precisión del orden de 99,47%, 92,6% y 94,68%, no es claro cómo se estimó este error, cuál fue la metodología que se utilizó para identificar este error, con base en qué supuestos, a qué información temática corresponde y cuáles son las implicaciones de estos errores a nivel de contabilidad de carbono.* 4. *Frente a las pendientes del terreno el proponente muestra que se tienen 10 clases; para el caso de la elevación del terreno se presentan 8, sin embargo, no se justifica y explica por qué se están tomando estos enfoques y porque no se utilizan otros que pueden ser aplicables a nivel local como es el caso de la clasificación de pendientes del IGAC.* 5. *La mayoría de la información que se presenta en los mapas no es clara frente a la información que se utilizó como base y frente a atributos temáticos, como lo son la elevación, drenajes, vías, límites políticos, entre otros; si esta información fue levantada por la Fundación Cataruben, debe presentar los estudios de base de cómo se realizaron estos levantamientos, por otra parte, si esta información proviene de fuentes secundarias se debe citar de manera adecuada cada uno de los insumos utilizados para la producción de estos mapas.*							

	6. *Se muestra que se utilizó el complemento denominado Landscape Fragmetation Tool, sin embargo, no se muestra cuál fue la versión que se utilizó para hacer los geoprocesamientos, ni tampoco cuáles fueron los parámetros incluidos en el análisis.* 7. *A lo largo del DdP se presentan tablas con acrónimos, abreviaturas y unidades de medida que no se encuentran claramente definidas o acordes a un sistema de medidas, por lo cual se deberá complementar esta información para dar más claridad a la información que estos diagramas presentan.*			
Plan de acción:	1. *La geodatabase es actualizada a la versión 2, denominada REDD+ V2. se genera una geodatabase por cordillera de influencia. Es decir, GDB para oriental y GDB para central, en ambas se encuentran los archivos cartográficos homólogos. Se adiciona un Feature Dataset "Información SMByC" que contiene la información de los shapefile de bosque no bosque para las áreas de proyecto 2005, 2016 y 2021. Esta información es la que alimenta el modelo en los casos donde no fue posible mapear debido a las condiciones de alta nubosidad.* 2. *Información actualizada en la geodatabase versión 2. Se generan dos regiones de referencia una por cada cordillera, se adicionan a las gdb´s un Feature Dataset denominado "RReferencia " para ambas cordilleras, en ella se encuentra la información referente para cada Región de referencia, datos de actividad, áreas elegibles, fugas, monitor, fragmentación y degradación.* 3. *La precisión es la forma de medir la incertidumbre en la información cartográfica, esta es determinada a partir de validar la información obtenida por el sistema de información geográfico en este caso los modelos de bosque para las temporalidades 2005, 2016 y 2021 con la representación del territorio. El manejo de la incertidumbre está determinado por la precisión de los mapas y debe ser mayor al 90%.* *La evaluación de la precisión en el complemento de qgis denominado AcATaMa por el cual se evalúan las interpretaciones de coberturas para el EAM con imágenes de alta resolución o mejor que las utilizadas y visita de campo donde se verifica que exactamente lo que se interpretó coincide con la realidad del terreno. Para REDD + el algoritmo de validación de Google Earth Engine determina que los puntos modelos coinciden con el bosque encontrado en el territorio. Se adjunta Instructivo de verificación GOC-26 Instructivo AcATaMa. Los resultados del proceso, así como la información de soporte y visitas de campo se encuentran en la carpeta denominada "AcATaMa"* 4. *Se realiza el ajuste solicitado para cada región de referencia en el proyecto, tanto REDD + (ítem 31.3.) como para EAM (22). Se utilizan las categorías de pendientes utilizadas por IGAC.* 5. *Se realiza el ajuste solicitado, es necesario mencionar que la información utilizada para la generación de la cartografía temática proviene de fuentes secundarias.* 6. *La utilización del complemento Landscape Fragmentation Tool - FTL versión 2.0, en el software ArcGIS 10.5. Se realiza para determinar la fragmentación en las áreas de proyecto y en la región de referencia a partir de los resultados se determina transformación primaria o secundaria. Se adjunta el complemento utilizado en la carpeta denominada Landscape Fragmentation Analysis y el procedimiento utilizado. El procedimiento es fiel al validado por Ramírez-Delgado J.P et al 2018. Estimación de la degradación de bosques de Colombia a través de un análisis de fragmentación. Documento ONU REDD + Colombia.* 7. *Se realiza el ajuste solicitado*			
Evaluación OVV:	*Hallazgo satisfactoriamente resuelto, no se requieren acciones adicionales.*			
Conclusión:	*Cerrar hallazgo*	*X*	*Mantener hallazgo*	

Nº Hallazgo:	*14*	*Tipo de hallazgo:*	*CAR*		*x*	*CL*			
Descripción:		*Al revisar el DdP no se tiene claridad en la correspondencia en varias de las citas bibliográficas.*							
Evidencia Objetiva		*No es claro el formato de citación del proyecto, en algunos casos no se tiene claridad respecto a la fuente que se utiliza, o el estudio del cual proviene, por tal motivo, es necesario que el proponente especifique cuál formato utilizará y se acoja a sus criterios. Esto va en contra de lo estipulado por el numeral A3.6 gestión de calidad de los datos de la ISO 14064-2:2019*							
Plan de acción:		*Se realizó el ajuste del documento del proyecto siguiendo las normas APA como formato de citación.*							
Evaluación OVV:		*Hallazgo satisfactoriamente resuelto, no se requieren acciones adicionales.*							
Conclusión:		*Cerrar hallazgo*		*x*	*Mantener hallazgo*				

Nº Hallazgo:	*15*	*Tipo de hallazgo:*	*CAR*	*x*	*CL*		*FAR*		
Descripción:		*El DdP no es consistente con los numerales:* *9. Paso 2. Análisis de Barreras de la metodología BCR 0002 V3.1* *8. Paso 2. Análisis de Barreras de la metodología BCR 0003 V3.0*							
Evidencia Objetiva		*Dentro del análisis de barreras (numeral 3.1.3.1.1.1. a) sub-paso 2. Identificación de las tierras) no es claro porque dentro de este análisis no se incluyó: el Incentivo a la Capitalización Rural (ICR) y el Certificado de Incentivo Forestal (CIF) que desde el ministerio de agricultura se viene manejando para beneficiar económicamente a personas naturales o jurídicas que, en forma individual o colectiva, ejecuten proyectos de inversión nueva como plantaciones forestales de carácter protector-productor en terrenos de aptitud forestal. Las dos iniciativas tienen el objetivo de mejorar la competitividad y la sostenibilidad de la producción agropecuaria y forestal al reducir sus riesgos de manera duradera, previo el cumplimiento de los requisitos establecidos en el presente título y sujeto a la disponibilidad de recursos presupuestales y de tesorería del programa.*							
Plan de acción:		*Se realizó un análisis del Incentivo a la Capitalización Rural (ICR) y el Certificado de Incentivo Forestal (CIF) como se evidencia en la sección 3.1.3.1.1. Barreras de inversión, páginas 62 y 63 del Ddp.*							
Evaluación OVV:		*El titular del proyecto incluyó dentro del análisis el ICR y el CIF. No se requieren acciones adicionales al respecto.*							
Conclusión:		*Cerrar hallazgo*		*X*	*Mantener hallazgo*				

Nº Hallazgo:	*16*	*Tipo de hallazgo:*	*CAR*	*x*	*CL*		*FAR*		
Descripción:		*El proyecto no está alineado con los requisitos de los numerales: 10.7 y 21*							
Evidencia Objetiva		*En el reporte de monitoreo no se encontró como el proyecto hace seguimiento a las circunstancias nacionales y el contexto del proyecto de GEI.*							
Plan de acción:		*En la sección 6. Cumplimiento de la legislación aplicable en Ddp, se menciona el procedimiento de Gestión de Requisitos Legales, el cual tiene como objetivo establecer el procedimiento necesario para la identificación, acceso, registro, actualización, monitoreo, evaluación, comunicación y verificación de los requisitos legales, normativos y directrices aplicables al objeto social de la Fundación Cataruben, de acuerdo a sus actividades y servicios prestados, con el fin de establecer los controles aplicables, para la mejora continua mediante la matriz de requisitos legales. en el reporte de monitoreo se encuentra en la sección 3.4.1 basado en el cumplimiento de la salvaguarda 1 en el marco del proyecto.*							

Evaluación OVV:	En el reporte de monitoreo el titular del proyecto incluyó el seguimiento que hace el proyecto a las circunstancias nacionales y al contexto del proyecto de GEI. No se requieren acciones adicionales			
Conclusión:	Cerrar hallazgo	x	Mantener hallazgo	

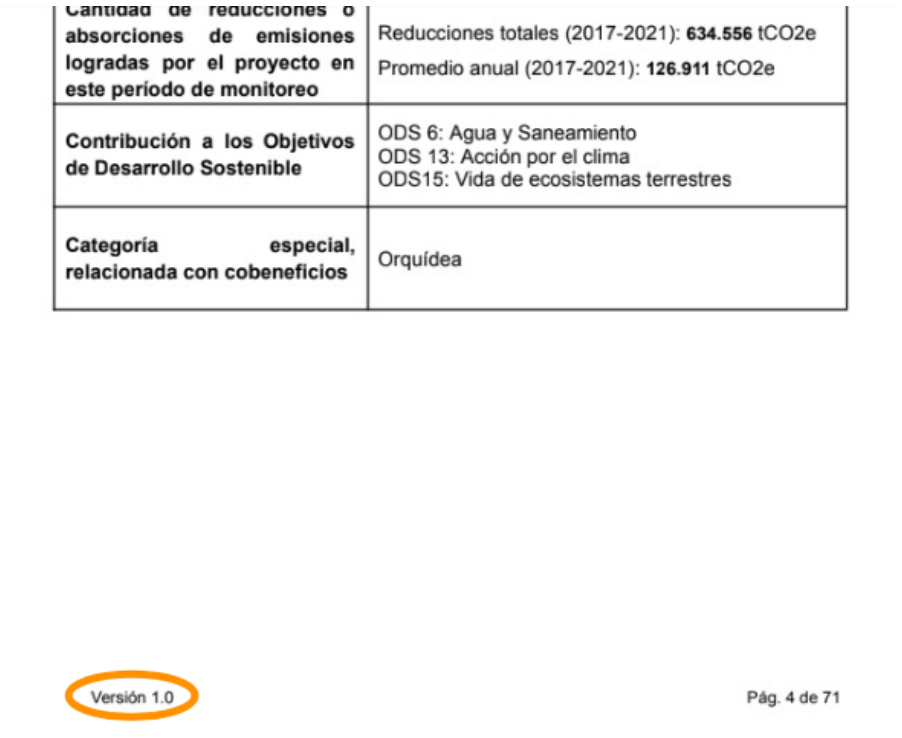
REVISIÓN TÉCNICA

Nº Hallazgo:	18	Tipo de hallazgo:	CAR	x	CL		FAR	
Descripción:	La estimación de línea base							
Evidencia Objetiva	Para el cálculo de emisiones EAM, se utiliza el valor de contenido de carbono total en biomasa (kg/m2) que se encuentra en Torres et al., 2012. Los valores reportados deben ser utilizados de forma conservadora y proporcional a las áreas de cada tipo de cobertura identificadas en las áreas elegibles. De esta forma, los valores de referencia (figura 4 del artículo) para arbustales de cordillera central en páramo no intervenido deben ser de 0,46 kg C/m2 y para pastizales (o herbazales según la nomenclatura Corine Land Cover), debe ser de 1,66 kg C/m2. Para arbustales de cordillera oriental, el valor de referencia es de 0,85 kg C/m2 y para pastizal (herbazal) es de 1,39 kg C/m2. No es correcto sumar los dos tipos de coberturas porque éstas no ocurren simultáneamente y por lo tanto el valor de 2,15 kg C/m2 no puede ser extrapolado a toda el área del proyecto ya que se incurriría en una sobreestimación de la línea base. Es necesario hacer una aproximación a contenidos de carbono diferenciados por tipo de coberturas (arbustal y herbazal de páramo). En los análisis presentados en el DdP – Áreas elegibles, se puede evidenciar que hay disponibilidad de la información para la clasificación de las coberturas vegetales en las áreas elegibles, en categorías de bosques, arbustales, herbazales y otras coberturas que eviten la sobreestimación de línea base antes mencionada.							
Plan de acción:	Torres et. al. (2012) realizan la estimación del almacenamiento de carbono en la biomasa vegetal en ecosistemas de páramo. Si bien en la Figura 4 se reportan por separado los valores de contenidos de biomasa para arbustos y pastizales en páramos, el muestreo fue realizado dentro del mismo tipo de vegetación. Ahora bien, teniendo en cuenta que en las áreas elegibles para el componente EAM cobertura vegetal de páramo corresponde a 2.817,0 ha, donde predomina la vegetación herbácea con una representación del 97,0% sobre los arbustales que son 3,0% restantes y con el fin de evitar la sobreestimación en los cálculos de reducción de emisiones de GEI en el escenario de línea base y el periodo de monitoreo, los factores de emisión para la biomasa total se ajustaron de acuerdo a los contenidos de biomasa reportados por Torres et. al (2012) para pastizales en ecosistemas de páramo. De esta manera, para la cordillera oriental se aplicó un valor de 1,39 kgC/m2 y 1,66 kgC/m2 para la cordillera oriental. Asimismo, dado que el estándar BCR sugiere un factor de 0.47 para la fracción de carbono de la materia seca y en el estudio se emplea un valor de 0.5, en los cálculos finales se realiza el respectivo ajuste al contenido de carbono en la biomasa total (Ver Tabla 62 del DdP-Paramuno). Los cálculos actualizados pueden observarse en el anexo Cálculo de emisiones EAM PARAMUNO V4.							
Evaluación OVV:	Hallazgo satisfactoriamente cerrado, no se requieren acciones adicionales.							
Conclusión:	Cerrar hallazgo	X	Mantener hallazgo					

Nº Hallazgo:	*19*	*Tipo de hallazgo:*	*CAR*	*x*	*CL*		*FAR*	
Descripción:		*No son claros los soportes de los cálculos finales de reducción de emisiones*						
Evidencia Objetiva		*1. En el documento "FC-GPP-23 Procedimiento diseño de inventario para el monitoreo de crecimiento de biomasa", no se consideran coberturas diferentes a las arbóreas (arbustivas, herbáceas), las cuales son de mayor ocurrencia en la alta montaña. Es necesario ajustar esta metodología para que el monitoreo pueda reflejar la realidad de los ecosistemas a monitorear.* *2. En el documento "FC-GOG-03 Guía para la delimitación del área de fugas", se asumen criterios de distancia (500 m, ver pág 6 y 7 del documento), los cuales aunque son válidos para zonas bajas de la Orinoquía, no reflejan la realidad de las distancias en la alta montaña y de la menor presencia de áreas de bosque como objeto de análisis de las fugas. Es necesario considerar las áreas de arbustales y herbazales nativos que son los más transformados en estas zonas y por lo tanto ajustar esta herramienta para que sea coherente con la información presentada en el DdP.* *3. La ley 1930 de 2018 estableció una serie de prohibiciones de actividades en la alta montaña, entre ellas: la minería, las talas y la degradación de la cobertura vegetal nativa. Es necesario que se incluya un análisis que argumente cómo las reducciones de deforestación y degradación en zonas de alta montaña pueden considerarse un efecto del proyecto a diferencia de los efectos por la entrada en vigencia de dicha ley.*						
Plan de acción:		*1) Se reemplaza a una versión actualizada del "FC-GPP-23 Procedimiento diseño de inventario para el monitoreo de crecimiento de biomasa". Sin embargo, dado que en este caso se emplearon valores de referencia para la definición de contenidos de biomasa, solo es aplicable la Sección 7.1 al proyecto, relacionada con la Selección de Depósitos de Carbono.* *2) En la carpeta 3.3 GIS REDD+ y 2.3. GIS EAM se encuentra el procedimiento actualizado para determinar el área de fugas de acuerdo con las consideraciones metodológicas del sector AFOLU solicitadas por el estándar Biocarbon Registry. En este documento se establecen las consideraciones fundamentales para la identificación y delimitación del área de fugas a partir de relaciones entre los drivers y el cambio de las coberturas vegetales naturales pertenecientes al páramo, junto con las zonas críticas de la deforestación. El análisis se llevó a cabo con un enfoque de proximidad espacial, mediante el cual se determina la distancia promedio desde los límites geográficos de las áreas del proyecto hasta las perturbaciones observadas identificadas en los límites temporales definidos en el marco del proyecto.* *3) La Ley 1930 de 2018 se erige como un marco normativo fundamental para la conservación y gestión integral de los páramos en Colombia, destacándose como ecosistemas de alta montaña con un papel crucial en la ecología y la regulación del agua. El Artículo 5 de esta ley establece restricciones específicas para 13 actividades que podrían poner en peligro la integridad de estos entornos.* *Al profundizar en el Capítulo III de esta legislación, en particular el Artículo 16, se subraya la importancia de los gestores de páramos en la implementación de acciones integrales destinadas a la preservación de estos ecosistemas únicos. Este artículo enfatiza la necesidad de llevar a cabo actividades que promuevan la gestión sostenible de los páramos, reafirmando el compromiso con su protección y restauración.*						

	Adicionalmente, el Artículo 17 de la misma ley resalta una perspectiva de colaboración comunitaria al permitir que las comunidades se asocien para participar en programas y proyectos destinados a la protección, restauración y reconversión de actividades no permitidas en estas áreas. Esto, a su vez, promueve la generación de negocios verdes y otras iniciativas afines. *En el contexto legal y considerando la dinámica poblacional y productiva, a través de análisis históricos de cambios en el uso del suelo, hemos identificado que en el área del proyecto se produce una transformación anual del entorno. En la cordillera central, esta transformación anual se sitúa en el 0,9%, lo que podría implicar una pérdida aproximada de 20,45 hectáreas anuales en las áreas del proyecto. Mientras tanto, en la cordillera oriental, esta tasa de transformación alcanza el 1,3%, que probablemente ascendería a una pérdida anual de 8,38 hectáreas en el ecosistema de alta montaña específicamente la cobertura de páramo.* *Estas transformaciones se derivan de dinámicas económicas predominantes en cada cordillera, donde en la Cordillera Oriental, la actividad agrícola constituye el principal impulsor del cambio de paisaje, contribuyendo con un 61,16%, seguida de la ganadería con un 34,49%. Por otro lado, en la Cordillera Central, se observa una transformación del páramo a agricultura a una tasa de cambio moderada del 45,53%, evidenciando el impacto significativo de la actividad agrícola en la estructura del paisaje natural.* *Estos hallazgos resaltan la urgente necesidad de abordar acciones de conservación a largo plazo que reduzcan la presión sobre estos ecosistemas debido a las actividades humanas mencionadas. En este sentido, el proyecto PARAMUNO, en marcha desde 2017, impulsa prácticas de gestión predial sostenible, fortalece la gobernanza, utiliza monitoreo satelital de cambios en la cobertura, y supervisa ecosistemas en riesgo, buscando no solo reducir emisiones, sino también generar un impacto positivo en la biodiversidad y el agua en el área del proyecto. Esto se traduce en una notable disminución de los cambios en el uso del suelo en los páramos durante los primeros años de implementación del proyecto, con una reducción de alrededor del 95% de la tasa de transformación registrada en la línea base.*
Evaluación OVV:	*Se evidencian los ajustes a los formatos indicados en los numerales 1 y 2. Sin embargo, la argumentación relativa al numeral 3, referido a la Ley 1930 de 2018 debe incluirse en el DdP con igual o mayor nivel de detalle a lo presentado en el plan de acción.*
Plan de acción:	*Se ha incluido un análisis que sustenta los efectos observados en las reducciones de deforestación y degradación en las áreas de alta montaña asociadas al proyecto, tomando como referencia la Ley 1930 de 2018. Este análisis se encuentra detallado en la sección 3.2.1.1.6, que aborda el contexto sociocultural y económico de los impulsores de cambio en la tierra en la página 113 del Documento de Proyecto (DdP). En el mismo contexto, hemos incorporado el análisis de la citada Ley, en el reporte de monitoreo numeral 4, abarcando las páginas 35 a 39.*
Evaluación OVV:	*Hallazgo satisfactoriamente cerrado, no se requieren acciones adicionales.*
Conclusión:	*Cerrar hallazgo* | *X* | *Mantener hallazgo* |

Nº Hallazgo:	*20*	*Tipo de hallazgo:*	*CAR*	*x*	*CL*		*FAR*	
Descripción:		*El titular del proyecto debe entregar la información de forma coherente y consistente.*						
Evidencia Objetiva		*Es necesario revisar los pie de página de los documentos finales, así como las tablas de historia de los documentos, ya que aparecen diferencias de versiones entre el pie de página, la tabla de historia y la información en las tablas iniciales del formato. Igualmente, es necesario revisar la numeración interna de los documentos pues se encuentran*						

	inconsistencias en la secuencia del contenido y paginación. Es importante aclarar que se revisaron los documentos en su versión PDF y no las versiones de los mismos en versión Word.
Plan de acción:	*Se revisan y ajustan los aspectos de numeración, paginación, secuencia de contenido interno de los insumos auditables.*
Evaluación OVV:	*Persisten inconsistencias entre los documentos en Word y PDF (se revisaron ambas versiones), con el mismo número de versión, así como de secuencias de contenido de los documentos, se presentan capturas de pantalla como evidencia objetiva.*  *Versión PDF reporte de monitoreo*

Cantidad de reducciones o absorciones de emisiones logradas por el proyecto en este período de monitoreo	Reducciones totales (2017-2021): **634.556** tCO2e Promedio anual (2017-2021): **126.911** tCO2e
Contribución a los Objetivos de Desarrollo Sostenible	ODS 6: Agua y Saneamiento ODS 13: Acción por el clima ODS15: Vida de ecosistemas terrestres
Categoría especial, relacionada con cobeneficios	Orquídea

Versión 1.0

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absorciones de emisiones logradas por el proyecto en este período de monitoreo	Reducciones totales (2017-2021): **632.185** tCO2e Promedio anual (2017-2021): **126.437** tCO2e
Contribución a los Objetivos de Desarrollo Sostenible	ODS 6: Agua y Saneamiento ODS 13: Acción por el clima ODS15: Vida de ecosistemas terrestres
Categoría especial, relacionada con cobeneficios	Orquídea

Versión 2.2 Pág. 4 de 71

Versión Word Reporte de monitoreo

Versión Word Reporte de monitoreo

Plan de acción:	*Se revisan y ajustan los aspectos de numeración, paginación, secuencia de contenido interno en el DdP y RM para formato word y pdf.*			
Evaluación OVV:	*Hallazgo satisfactoriamente cerrado, no se requieren acciones adicionales.*			
Conclusión:	*Cerrar hallazgo*	*X*	*Mantener hallazgo*	

Annex 3. Documentation review

N°	Document	Organization
Proyect Documents		
1	BCR-DdP-PARAMUNO-V 2.3	Cataruben Foundation
2	REPORTE DE MONITOREO – PARAMUNO V 2.3	Cataruben Foundation
3	RUT CATARUBEN	DIAN
4	Certificado de cámara de Comercio	CÁMARA DE COMERCIO DEL CASANARE
5	Contratos de vinculación de 154 predios	Cataruben Foundation
6	Cartas de intención de 154 predios	Cataruben Foundation
7	Documentos legales que certifican la propiedad, posesión o tenencia de tierra, de 154 predios asociados al proyecto.	Cataruben Foundation
8	Resolución Procedencia de Consulta Previa ST-1501 de 2023	Dirección de la Autoridad Nacional de Consulta Previa
9	Modelo Financiero PARAMUNO PROYECTO 1, actualización julio de 2023	Cataruben Foundation
10	GPP-23 Procedimiento diseño de inventarios para el monitoreo de crecimiento de biomasa, V03.docx.pdf	Cataruben Foundation
11	Cálculo de emisiones EAM PARAMUNO v4.xlsx	Cataruben Foundation
12	Anexo 3.1. Causas y agentes de Deforestación.xlsx	Cataruben Foundation
13	formalizacion_propiedad_estimacion_informalidad.lyr formalizacion_propiedad_estimacion_informalidad.kmz	Cataruben Foundation
14	ORIENTAL_REDD.gdb	Cataruben Foundation
15	CENTRAL_REDD.gdb	Cataruben Foundation
16	REGION DE REFERENCIA REDD.mpk	Cataruben Foundation
17	Insumos_REFRENCIA_REDD_Paramuno.mpkx	Cataruben Foundation
18	Geodatabase_REDD+v4\gdb_cordillera\areas_fugas.	Cataruben Foundation
19	Registros de asistencia a la socialización del proyecto	Cataruben Foundation
20	154 soportes de implementación de actividades de proyecto	Cataruben Foundation
21	Acta de constitución del proyecto	Cataruben Foundation
22	Mapas REDD+	Cataruben Foundation
23	Landscape Fragmentation Analysis	Cataruben Foundation
24	Procedimiento para Determinar la Degradación y fragmentación en Proyectos REDD+ V0.1, 2021	Cataruben Foundation
25	Procedimiento para la delimitación del área de fugas para el estándar BCR V0.1, 2021	Cataruben Foundation
26	Instructivo Modelo de Bosque en el Motor Google Eart Engine V01, 2022	Cataruben Foundation
27	Delimitación de la región de referencia Proyecto Paramuno	Cataruben Foundation
28		
29	Monitoring Plan and Sustainable Development Goals Reporting	Cataruben Foundation

30	Anexo 1.3.1. Matriz de Aspectos e Impactos Ambientales Fundación Cataruben: 1.3.2 Matriz de Evaluación Ambiental Paramuno.xlsx y 1.3.1 Matriz de aspectos e impactos Ambientales Fundación Cararuben-xlsx	Cataruben Foundation
31	Matriz de evaluación de aspectos socioeconómico.xlsx	Cataruben Foundation
32	Matriz de Evaluación Ambiental Paramuno.xlsx	Cataruben Foundation
33	Socialization letters to the governors of: Boyacá, Caldas, Casanare, Cauca, Cundinamarca, Norte de Santander, Quindío, Santander, Tolima, Huila, and Valle del Cauca.	Cataruben Foundation
34	Socialization letters of the project to corporations: CVC, CRQ, CORTOLIMA, CORPORINIQUIA, CORPONOR, CORPOGUAVIO, CORPOCHIVOR, CORPOCALDAS, CORPOBOYACÁ, CAS, CAR, and CAC.	Cataruben Foundation
35	Socialization letters of the project to municipalities: Tuluá, Sevilla, Pradera, Palmira, Ginebra, Florida, El Cerrito, Buga, Santa Isabel, San Antonio, Salento, Rovira, Roncesvalles, Rioblanco, Planadas, Murillo, Mariquita, Ibagué, Falan, Chaparral, Cajamarca, Anzoátegui, Suaita, San Miguel, San José de Miranda, San Joaquín, San Benito, San Andrés, Puente Nacional, Páramo, Onzaga, Oiba, Ocamonte, Molagavita, Mogotes, Málaga, Macaravita, Jesús María, Güepsa, Guaca, Gámbita, Florián, Enciso, Encino, Comorro, Confines, Concepción, Charalá, Cerrito, Carcasí, Capitanejo, Barbosa, Albania, Santuario, Santa Rosa de Cabal, Pijao, Génova, Calarcá, Buenavista, Toledo, Silos, Pamplonita, Pamplona, Labateca, Herrán, Chitagá, Chinácota, Cácota, Tesalia, Campoalegre, Zipaquirá, Villapinzón, Ubaté, Ubalá, Tocancipá, Tiribita, Tausa, Tabio, Sutatausa, Susa, Suesca, Subachoque, Sopó, Simijaca, San Cayetano, Pacho, Nemocón, Manta, Machetá, Lenguazaque, Guatavita, Guasca, Guachetá, Gachetá, Gachancipá, Gachalá, Fúquene, Cucunubá, Cogua, Carmen de Carupa, Cajicá, Briceño, Totoró, Sotará, Rosas, Puracé, Miranda, La Sierra, Inza, Corinto, Yopal, Tauramena, Támara, Sácama, Sabanalarga, Recetor, Pore, Paz de Ariporo, Nuchía, Monterrey, La Salina, Hato Corozal, Chámeza, Aguazul, Villamaria, Victoria, Salamina, Pacora, Marulanda, Manizales, Zetaquirá, Viracacha, Villa de Leyva, Ventaquemada, Umbita, Tutaza, Tuta, turmequé, Tununga, Tunj, Tota, Topaga, Togui, Toca, Tinjacá, Tibasosa, Tibana, Tenza, tasco, Sutatensa, Sutamarchán, Susacón, Sotaquirá, Soracá, Sora, Somondoco, Sogamoso, Socota, Socha, Soata, Siachoque, Sativasur, Sativanorte, Santana, Santamaría, Santa Sofía, Santa Rosa de Viterbo, San Miguel de Sema, san Mateo, San Luis de Gaceno, San José de Pare, San Eduardo, Samacá, Sachica, Saboyá, Rondón, Ráquira, Ramiriquí, Pisba, Pesca, Paz del Río, Paya, Pauna, Panqueba, Pajarito, Paipa, Páez, Pachavita, Ocaita, Nuevo Colón, Nobsa, Motavita, Moniquirá, Monguí, Mongua, Miraflores, Maripí, Macanal, Labranzagrande, La Ubita, La Capilla, Jericó, Jenesano, Iza,	Cataruben Foundation

	gucan, Guayata, Guateque, Guacamayas, Garagoa, Gámeza, Gachantivá, Floresta, Firavitoba, El Espino, El Cocuy, Duitama, Cuitiva, Cuacaita, Cubará, Covarachia, Corrales, Coper, Cómbita, Ciénaga, Chivor, Chivatá, Chitaraque, Chita, Chiscas, Chiquinza, Chiquinquirá, Chinavita, Cerinza, Campohermoso, Caldas, Busbansa, Boyacá, Boabita, Beteiba, Berbeo, Arcabuco, Aquitania, Alameida, Tame y Entrerríos.	
36	*Anexo 1.4.1 Respuesta a interesados: Respuesta de Fundación Cataruben a los Interesados, respuesta a la Consulta a los Ineresados.*	*Cataruben Foundation*
37	*Procedure for Monitoring Project Boundaries. V1.0*	*Cataruben Foundation*
38	*Revisión de Estándares-Paramuno*	*Cataruben Foundation*
39	*Plan de Monitoreo de Cobeneficios - PARAMUNO P1*	*Cataruben Foundation*
40	*Plan de Monitoreo de ODS - Paramuno P1*	*Cataruben Foundation*
41	*ODS 6: 154 planes de uso eficiente y ahorro del agua y diagnóstico general del uso y manejo del recurso hídrico en el Hogar*	*Cataruben Foundation*
42	*ODS 15: Cobertura por lugar de importancia, mapa AIDB, GDB AIDB, Pamuno AIDB y Plan de Señalización, Superficie Forestal como Proporción de la superficie total_PARAMUNO_PDF, Superficie Forestal como Proporción de la superficie total_PARAMUNO. xlsx y Pamuno AIDB y Plan de Señalización, Superficie Forestal como Proporción de la superficie total_PARAMUNO*	*Cataruben Foundation*
43	*BCR TOOL PARAMUNO para el Ecosistema de Bosque Alto Andino*	*Cataruben Foundation*
44	*BCR TOOL PARAMUNO para el Ecosistema de Páramo.*	*Cataruben Foundation*
45	*Information Security Manual. V 1.0*	*Cataruben Foundation*
46	*Data Protection Policy. V 1.0*	*Cataruben Foundation*
47	*Comprehensive Management Policy*	*Cataruben Foundation*
48	*Document Management Procedure.*	*Cataruben Foundation*
49	*Plan de Monitoreo de Salvaguardas REDD+ - PARAMUNO P1.*	*Cataruben Foundation*

50	PQRS Report. V1.0	Cataruben Foundation
51	Certificates of No Environmental Violations. V 1.0	Cataruben Foundation
52	Vulnerable Species list. V1.0	Cataruben Foundation
53	PARAMUNO Project 1 Call Jingle	Cataruben Foundation
54	Folder for Workshops and/or Training Sessions that demonstrate how information is socialized. V1.0	Cataruben Foundation
55	Email Folder	Cataruben Foundation
56	RENARE Registry.	Cataruben Foundation
57	Hotspot Alerts.	Cataruben Foundation
58	Reversion Risk Analysis.	Cataruben Foundation
59	Páramos: Programa para el manejo sostenible y restauración de ecosistemas de alta montaña colombiana.	MINISTERIO DEL MEDIO AMBIENTE. 2002.
60	Salidas gráficas para Ecosistema Bosque Alto Andino	Cataruben Foundation
61	Salidas graficas para Ecosistema Páramo	Cataruben Foundation
Normativa legal aplicable		
63	Guía divulgativa de criterios para la delimitación de páramos de Colombia.	Humbolt Institute, Ospina, D. R., & Rodríguez
64	Ley 1819 de 2016. Por medio de la cual se adopta una reforma tributaria estructural, se fortalecen los mecanismos para la lucha contra la evasión y la elusión fiscal, y se dictan otras disposiciones.	Ministerio de Hacienda y Crédito Público.
65	Decreto 926 de 2017	Ministerio de Hacienda y Crédito Público.
66	Ley 2169 de 2021	Congreso de la República de Colombia
67	POLÍTICA NACIONAL DE CAMBIO CLIMÁTICO 2017	Ministerio de Ambiente y Desarrollo sostenible.
68	Resolución 1447 de 2018. Por la cual se reglamenta el sistema de monitoreo, reporte y verificación de las acciones de mitigación a nivel nacional de que trata el artículo 175 de la Ley 1753 de 2015, y se dictan otras disposiciones.	Ministerio de Ambiente y Desarrollo sostenible.
69	Resolución 831 de 2020	Ministerio de Ambiente y Desarrollo sostenible.
70	Ley 2169 de 2021	Congreso de la República de Colombia
71	Ley 2294 de 2023. Por el cual se expide el Plan nacional de Desarrollo 2022-2026 "Colombia Potencia Mundial de la Vida¨	Congreso de la República de Colombia
72	Aprobación de la Convención RAMSAR (Ley 357), año 1999	Congreso de la República de Colombia
73	Plan Nacional de Desarrollo Forestal, año 2000	Ministerio de Medio Ambiente

74	Plan Nacional de Lucha contra la desertificación, año 2005	MINISTERIO DE AMBIENTE, VIVENDA Y DESARROLLO TERRITORIAL VICEMINISTERIO DE AMBIENTE. Dirección de Ecosistemas.
75	Política Nacional de Gestión de la Biodiversidad y los Servicios Ecosistémicos, año 2012	Ministerio de Ambiente y Desarrollo Sostenible
76	Estrategia de desarrollo bajo en carbono, año 2012	DEAM - Instituto de Hidrología, Meteorología y Estudios Ambientales
77	Estrategia "Bosques Territorios de Vida", año 2017	MINAMBIENTE
78	Actualización NDC, año 2020	Ministerio de Ambiente y Desarrollo Sostenible
79	Estrategia largo plazo climático – E2050, año 2020	Ministerio de Ambiente y Desarrollo Sostenible, el DNP y la Cancillería
80	Política para la consolidación del Sistema Nacional de Áreas Protegidas, año 2021	DNP
81	Carácter vinculante de las salvaguardas sociales y ambientales | Ley 2294 de 2023	Congreso de la República de Colombia
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82	Coberturas de la Tierra escala 1:100.000 (2002 – 2018). Leyenda Nacional de Metodología CORINE Land Cover Adaptada para Colombia. Instituto de Hidrología y Meteorología y Estudios Ambientales	IDEAM
83	Ramirez Delgado J,P., Galindo, Yepes A.P., Cabrera E., Estimación de la degradación de Bosques de Colombia a través de un análisis de fragmentación, 2018	IDEAM, MINITERIO DE AMBIENTE Y DESARROLLO SOSTENIBLE Y ONU-REDD

Annex 4. Abbreviations

Abbreviations	Full texts
BCR	Biocarbon Registry
CMNUCC	United Nations Framework Convention on Climate Change
AFOLU	Agriculture, Forestry and Other Land use
PdD	Design document
RM	Monitoring Report
GHG	Greenhouse Gas"