REDD Carbon and Biodiversity Project, Greater El Rey Area, Jujuy, Argentina

Monitoring Report

Document Prepared by VisionNetZero, Banco de Bosques & unique land use GmbH

Project Title	REDD Carbon and Biodiversity Project, Greater El Rey Area, Jujuy, Argentina
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Project Location	Argentina, department of San Pedro de Jujuy
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GHG Accounting/ Crediting Period	08 March 2023 – 08 March 2043; 20-year total crediting period
Monitoring Period of this Report	08 March 2023 – 31 December 2023
History of CCB Status	First Application
Gold Level Criteria	Climate gold – adaptation activities: • Protection of forest area protects above and belowground water sources, impacts the micro-climate and offers protection from flash floods on mountain slopes. • Planting activities increase coping capacity of community in the light of increased temperatures and heat waves. Biodiversity gold – exceptional biodiversity benefits: • Protection of the habitat of numerous IUCN red list species. • Protection and enhancement of biological corridor.

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1 SUMMARY OF PROJECT BENEFITS

1.1 Unique Project Benefits

Outcome or Impact	Achievements during the Monitoring Period	Section Reference	Achievements during the Project Lifetime
1) **Expansion of existing Conservation area**: Transferred property rights from private to public-owned forest area (i.e., property allocation within national/provincial protected area)	Purchase of the property and transfer to a dedicated Trust for custody (with Trust statutes permanently protecting forest). Preparation of land donation process to government authorities started through consultations.	2.1	Donation of land title to government authorities to create permanent conservation area (provincial or national park).
2) **Biodiversity Conservation**: Protected high conservation value flora and fauna in the Yungas Forest, contributing to global biodiversity conservation.	24,096 ha of high biodiversity value permanently protected through purchase of property.	5.2	24,096 ha of high biodiversity value permanently protected through purchase of property.
3) **Wildlife Corridor**: Enhanced structural and functional connectivity for wildlife between the altitudinal gradient connecting Yungas and Chaco ecosystems and between existing conservation areas.	Existing wildlife corridors through protection of forest area maintained.	5.2	Existing wildlife corridors through protection of forest area maintained and enhanced.
4) **Ecosystem Services**: Preserved water sources and soil quality, ensuring continued ecosystem services for biodiversity, farmers and communities in lower watershed area.	Ecosystem services through purchase of property and protection of forest protected and preserved.	4.2	Ecosystem services through purchase of property and protection of forest protected and preserved.
5) **Community Benefits**: Implemented environmental awareness programs with local schools, access to a	One excursion to the project area has been organized to introduce community members to the forest area. First employment generated	4.2	Community benefits in the form of environmental awareness programs

protected area for leisure time, employment opportunities and potential indirect benefits through business opportunities.	through monitoring and forest inventory campaigns.		with local schools, access to a protected area for leisure time, employment opportunities and potential indirect benefits through business opportunities created.

1.2 Standardized Benefit Metrics

Category	Metric	Achievements during Monitoring Period	Section Reference	Achievements during the Project Lifetime
GHG emission reductions & removals	Net estimated emission removals in the project area, measured against the without-project scenario	N/A	N/A	Not applicable
	Net estimated emission reductions in the project area, measured against the without-project scenario	66,747 tCO2eq	3.2	1,641,815 tCO_2e[1]
Forest[2] cover	For REDD[3] projects: Number of hectares of reduced forest loss in the project area measured against the without-project scenario	4,208 ha	3.1.4	4,208 ha
	For ARR[4] projects: Number of hectares of forest cover increased in the project area measured against the without-project scenario	N/A	N/A	Not applicable
Improved land management	Number of hectares of existing production forest land in which IFM[5] practices have occurred as a result of the project's activities, measured against the without-project scenario	N/A	N/A	Not applicable
	Number of hectares of non-forest land in which improved land management has occurred as a result of the project's activities, measured against the without-project scenario	N/A	N/A	Not applicable

[1] Ex-ante estimations for the period 2023-2043.
[2] Land with woody vegetation that meets an internationally accepted definition (e.g., UNFCCC, FAO or IPCC) of what constitutes a forest, which includes threshold parameters, such as minimum forest area, tree height and level of crown cover, and may include mature, secondary, degraded and wetland forests (*VCS Program Definitions*)
[3] Reduced emissions from deforestation and forest degradation (REDD) - Activities that reduce GHG emissions by slowing or stopping conversion of forests to non-forest land and/or reduce the degradation of forest land where forest biomass is lost (*VCS Program Definitions*)
[4] Afforestation, reforestation and revegetation (ARR) - Activities that increase carbon stocks in woody biomass (and in some cases soils) by establishing, increasing and/or restoring vegetative cover through the planting, sowing and/or human-assisted natural regeneration of woody vegetation (*VCS Program Definitions*)
[5] Improved forest management (IFM) - Activities that change forest management practices and increase carbon stock on forest lands managed for wood products such as saw timber, pulpwood and fuelwood (*VCS Program Definitions*)

Category	Metric	Achievements during Monitoring Period	Section Reference	Achievements during the Project Lifetime
Training	Total number of community members who have improved skills and/or knowledge resulting from training provided as part of project activities	18	4.2	120
	Number of female community members who have improved skills and/or knowledge resulting from training provided as part of project activities of project activities	1	4.2	60
Employment	Total number of people employed in of project activities,[6] expressed as number of full time employees[7]	4 full time equivalents (total of 18 contractors)	4.2	20
	Number of women employed in project activities, expressed as number of full time employees	- (1 out of 18 part-time contractors)	4.2	10
Livelihoods	Total number of people with improved livelihoods[8] or income generated as a result of project activities	18	4.2	400
	Number of women with improved livelihoods or income generated as a result of project activities	1	4.2	200
Health	Total number of people for whom health services were improved as a result of project activities, measured against the without-project scenario	N/A	N/A	Not applicable
	Number of women for whom health services were improved as a result of	N/A	N/A	Not applicable

[6] Employed in project activities means people directly working on project activities in return for compensation (financial or otherwise), including employees, contracted workers, sub-contracted workers and community members that are paid to carry out project-related work.

[7] Full time equivalency is calculated as the total number of hours worked (by full-time, part-time, temporary and/or seasonal staff) divided by the average number of hours worked in full-time jobs within the country, region or economic territory (adapted from UN System of National Accounts (1993) paragraphs 17.14[15.102];[17.28])

[8] Livelihoods are the capabilities, assets (including material and social resources) and activities required for a means of living (Krantz, Lasse, 2001. *The Sustainable Livelihood Approach to Poverty Reduction*. SIDA). Livelihood benefits may include benefits reported in the Employment metrics of this table.

Category	Metric	Achievements during Monitoring Period	Section Reference	Achievements during the Project Lifetime
	project activities, measured against the without-project scenario			
Education	Total number of people for whom access to, or quality of, education was improved as a result of project activities, measured against the without-project scenario	0	4.2	3000
	Number of women and girls for whom access to, or quality of, education was improved as a result of project activities, measured against the without-project scenario	0	4.2	1500
Water	Total number of people who experienced increased water quality and/or improved access to drinking water as a result of project activities, measured against the without-project scenario	280	4.2	280
	Number of women who experienced increased water quality and/or improved access to drinking water as a result of project activities, measured against the without-project scenario	140	4.2	140
Well-being	Total number of community members whose well-being[9] was improved as a result of project activities	280	4.2	280
	Number of women whose well-being was improved as a result of project activities	140	4.2	140

[9] Well-being is people's experience of the quality of their lives. Well-being benefits may include benefits reported in other metrics of this table (e.g. Training, Employment, Health, Education, Water, etc.), but could also include other benefits such as empowerment of community groups, strengthened legal rights to resources, conservation of access to areas of cultural significance, etc.

Category	Metric	Achievements during Monitoring Period	Section Reference	Achievements during the Project Lifetime
Biodiversity conservation	Change in the number of hectares significantly better managed by the project for biodiversity conservation,[10] measured against the without-project scenario	24,096 ha	5.2	24,096 ha
	Number of globally Critically Endangered or Endangered species[11] benefiting from reduced threats as a result of project activities,[12] measured against the without-project scenario	3 endangered species and numerous vulnerable and endemic species.	5.2, and Appendix 4	3 endangered species and numerous vulnerable and endemic species.

[10] Biodiversity conservation in this context means areas where specific management measures are being implemented as a part of project activities with an objective of enhancing biodiversity conservation.
[11] Per IUCN's Red List of Threatened Species
[12] In the absence of direct population or occupancy measures, measurement of reduced threats may be used as evidence of benefit

2. GENERAL

2.1 Project Description

2.1.1 Implementation Description

The objective of the Las Lauras REDD carbon project is to safeguard and preserve over 24,000 hectares of the Yungas forests in northwestern Argentina, situated along the Santa Barbara Mountain range. The project applies the VM0009 Methodology for Avoided Ecosystem Conversion (version 3.0). During the monitoring period from 8th March 2023 to 31st December 2023 a total of **66,747** tCO2eq GHG emissions were avoided.

The project achieves emission reductions through the following activities:

- Taking the property off the market to prevent agricultural development and conserve its carbon values.
- Maintenance of primary tree cover within the project area.
- Use of satellite imagery to monitor tree cover change.
- Regular patrols and intrusion monitoring to avoid illegal activities such as logging within the forest.

This monitoring report is covering the first monitoring period of the project and is part of the joint validation and verification process under Verra. During the monitoring period the property was purchased by a dedicated trust fund that will allow to implement all project activities throughout the project lifetime. Due to the nature of the REDD project, the protection of the existing forest areas is the main project achievement and the purchase that occurred within this monitoring period was the most important milestone to do so.

Since the project is on protected private property with minimal encroachment, activity-shifting leakage is negligible. The risks of the project were analyzed in detail with the AFOLU Non-Permanence Risk Tool (version 4.2) during the monitoring period and potential mitigation measures are included in the project's adaptive management plan. Various mitigation actions were applied, including the maintenance and protection of tree cover within the project area through the ongoing protection measures by the former owner.

Additionally, consultations have been carried out with direct and indirect stakeholders, including community members, provincial government and ministry representatives and other interested parties. The consultations informed all stakeholders about the project and allowed to include feedback in a participatory way into the project design. Most important project partners during this monitoring period and in order to get the project started were the National Parks Administration and the Provincial Protected Areas authorities under the Ministry of Environment of the province of Jujuy. Moreover, the Banco de Bosques (BdB) – the project implementor and Vision Net Zero (VNZ) – the project proponent, have been driving the process to enlarge the project area even further with funding for additional donors.

During this monitoring period, carbon and biodiversity inventory field surveys have been carried out that allow to report on several indicators. As the project is still in its initial phase, the monitoring – especially for biodiversity and community indicators – will be further expanded during the next monitoring phase. This will include additional baseline data collection on biodiversity indicators. Data collection on community indicators will be starting with the start of project activities in 2024.

All data collection has been and will be carried out using a digital Monitoring Information System (MIS) for data collection and data management.

2.1.2 Project Category and Activity Type

The project seeks a joint certification under the VCS and CCB Standard (CCB v3.0 & VCS v3.3). The project falls under the VCS sectoral scope 14 as AFOLU project category and follows the activity category "Reduced Emissions from avoided planned Deforestation and Degradation (REDD)". The project is a grouped project.

2.1.3 Project Proponent(s)

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2.1.4 Other Entities Involved in the Project

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2.1.5 Project Start Date (G1.9)

The project start date is March 8th, 2023. This is the date when the relevant commercial requirements for the land purchase have been completed. Hence, this point in time marks the moment when the start of one of the most important project activities, the transition of land ownership, has begun for this project.

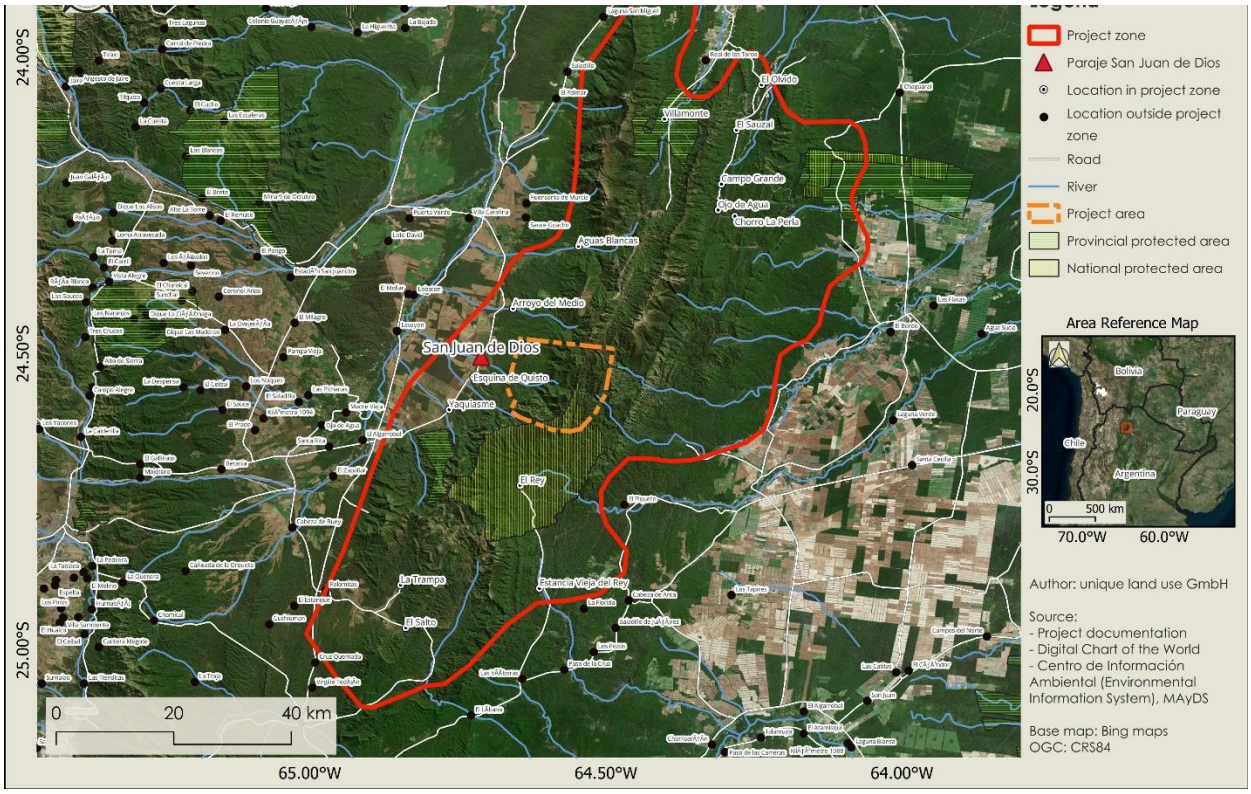
2.1.6 Project Crediting Period (G1.9)

The project crediting period is planned to be between March 8th, 2023, and March 8th, 2043 (i.e., 20 years), while the project longevity extends 75 years until September 30th, 2098. The project area will continue to be permanently protected beyond this date.

2.1.7 Project Location

The project area is located within the Sub-Andean Sierras, bordering to the east with the Chaco Plain and to the west with the Santa Barbara Mountain range. The mountain range runs NNE-SSW, becoming less elevated towards the east and transitioning finally to the Chaco Plain. In this area there is a large regional fault line that raises the Santa Barbara Mountain range to the east and a trench, forming an alluvial plain known as the San Francisco Valley, to the west. This fault runs in a south-north direction and is located on the western edge of the Mountain range.

Figure 1 Project area and project zone



2.1.8 Title and Reference of Methodology

Based on the main project activity, avoided planned deforestation, the project applies the following methodology and tools:

- VM0009 Methodology for Avoided Ecosystem Conversion (version 3.0).
- VT0001 Tool for the demonstration and assessment of additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) project activities (v3.0)
- Tool for testing significance of GHG emissions in A/R CDM project activities
- AFOLU Non-Permanence Risk Tool (version 4.2)

2.1.9 Other Programs (G5.9)

Emission Trading Programs and Other Binging Limits:

Not applicable as the emission reductions from this project are not included in an emissions trading program or any other mechanism that includes GHG allowance trading.

Other Forms of Environmental Credits:

The project has neither sought nor received another form of GHG-related environmental credit, including renewable energy certificates.

Participation under Other GHG Programs:

The project has not been registered under another GHG program and is not seeking to do so either.

2.1.10 Sustainable Development

The project contributes to different Sustainable Development Goals (SDGs). Table 1 below shows an overview of the relevant SDGs and respective targets.

Table 1 Contribution to Sustainable Development Goals

SDG	Target	Relation to project	Results of monitoring phase 2023
	Target 6.6: By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers, and lakes.	Communities will benefit from the conservation of the forest through the protection of the provision of water-related ecosystem services.	The forest continues to benefit from ongoing implementation of conservation measures by the former owner, ensuring the protection of water-related ecosystems. Protection of the water-related ecosystems is of importance to farmers and community members who depend on them.
	Goal 13: Take urgent action to combat climate change and its impacts. Target 13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.	The avoided deforestation and forest degradation will conserve 1,641,815 tCO_2e over the 20 years crediting period and consequently contribute to the mitigation of climate change. Additionally, activities will aim at education and awareness-raising of neighbouring communities for climate change. See PD for further details on all planned project activities.	A total of 66,747 tCO2eq GHG emissions were avoided during this period due to the purchase of the property and maintaining the protection of forest covers. During this specific period, stakeholders were actively involved through consultations and one excursion to the project area. This engagement helped raise awareness on climate change. Educational activities will be carried out and reported in subsequent monitoring periods.
	Target 15.1: By 2020, ensure the conservation, restoration and sustain-able use of terrestrial and inland freshwater ecosystems and their services, in particular	The main project activities aim at the conservation of the pristine ecosystem of the project area. Consequently, it contributes to different targets of SDG 15	Through the purchase of the project area and the ongoing protective measures by the former owner, the conservation of the pristine ecosystem was ensured and illegal

	forests, wetlands, mountains and drylands, in line with obligations under international agreements. Target 15.2: By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally. Target 15.5: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species. Target 15.a: Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems. Target 15.b: Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation	including the conservation of ecosystems (especially forests), halting deforestation and degradation, action against the loss of biodiversity and the mobilization and the increase of finance for such conservation activities.	activities such as burning and logging within the project area prevented. As a result, the project area successfully maintained its primary tree cover in this monitoring period, contributing to the overall conservation efforts. During this monitoring period, a tree inventory has been conducted to assess various indicators. Since the project is still in its early stages, additional monitoring will be conducted in the next phase to report on the biodiversity indicators.

2.2 Project Implementation Status

2.2.1 Implementation Schedule (G1.9)

The key milestones on the pathway to develop and implement the REDD carbon project are highlighted in **Table 2** below.

Table 2 Milestones in the project's development and implementation

Date	Milestone(s) in the project's development and implementation
2021-2023	Develop REDD strategy, concept, legal and financial structure, stakeholder consultation and partnership agreements between relevant parties.
March 2023	Project start date
November 2023	Acquisition of land title and transfer to a dedicated Trust for custody until donation to government authorities
2023 – approx 2033	Implementation of planned conservation, environmental education and community based project activities. Preparation of land donation and structuring of contractual agreements with the government authorities.
2024	1st Verification event
2027	2nd Verification event (to be defined by investor)
2029	Validation and baseline reassessment for the next six years incl. update to latest version of VCS Standard and methodology (VCS 4.5, 3.2.6, paragraph 1).
2030	3rd Verification event
2033	4th Verification event
prior 2033	Donation of land title to government authorities to create permanent conservation area.
2035	Validation and baseline reassessment for the next six years incl. update to latest version of VCS Standard and methodology
after donation	Continuation of project activities through staff of newly established protected area in coordination with project implementer, to ensure long-term permanance and benefits for biodiversity, community, and the forest ecosystem.
2038	5th Verification event
March 2043	6th Verification event (end of crediting period)
2043 onwards	Protection of the forest ecosystem through legal protection status. Monitoring of forest cover using remote-sensing-based approach to detect any losses, post-crediting period until end of the project longevity (as required by VCS 4.5, 3.2.18 paragraph 2).

2.2.2 Methodology Deviations

There are no deviations from the methodology VM0009.

2.2.3 Minor Changes to Project Description (*Rules* 3.5.6)

No changes to project description.

2.2.4 Project Description Deviations (*Rules* 3.5.7 – 3.5.10)

No deviations from the project description.

2.2.5 Grouped Projects

This project is set out to be a grouped project, to enable future projects instances and increase the conservation area around the El Rey National Park in the Santa Barbara Mountain range. All future instances will be checked for applicability and eligibility criteria set out in the VCS Standard and the Methodology VM0009.

The mechanism to add new project will remain the same. Private properties that are under the eminent threat of conversion or degradation by agriculture or cattle ranching will be bought and transferred into the BdB trust fund and ultimately be converted to a conservation area.

Geographically the grouped project zone is limited to the larger Yungas Forests zone of the Santa Barabara Mountain range between the province of Jujuy and Salta. Future instances can be in either of the two provinces (see map in Figure 1)

Stakeholder engagement will be followed as set out in the PD for any future instance.

2.2.6 Risks to the Project (G1.10)

The risks of the project were analyzed in detail with the AFOLU Non-Permanence Risk Tool (version 4.2) and are additionally inserted in the Project Risk Table in Appendix 3.

2.2.7 Benefit Permanence (G1.11)

The property is set to be transferred to either a provincial or national protected area. The robust legal frameworks and stringent law enforcement in Argentina will guarantee the project's permanence once it transitions into governmental ownership. This assurance extends beyond the project's 20-year crediting period, ensuring long-term preservation and management under the auspices of the respective government authorities for a project longevity of 75 years. It is considered the most effective way to ensure long-term permanence, providing a sustainable framework for ongoing conservation efforts. The creation of the protected natural area will be done by law, which will ensure commitment on the part of the state, as well as the allocation of resources for the protection of the area. The statutes of the Trust stipulate that the area will be fully protected during the ownership period of the trust. Furthermore, even in the unlikely event that the land cannot be donated in such a way that it is converted into a state. Protected area, the trust cannot sell the land to anyone unless the buyer gives the same guarantees to protect the land permanently.

2.3 Stakeholder Engagement

2.3.1 Stakeholder Access to Project Documents (G3.1)

Stakeholders can access project documentation through various channels to ensure transparency and inclusivity:

- **Verra registry:** The complete PD will be accessible through the Verra registry, providing a centralized platform for stakeholders to retrieve detailed project information.
- **BdB website**[13]**:** The BdB website serves as another key portal where stakeholders can conveniently access the full PD, offering an additional avenue for information retrieval.
- **Summary in Spanish**: Recognizing the importance of accessibility, a summarized version of the PD will be translated into Spanish. This summary is available on both the BdB website and the Verra registry, catering to a broader audience and facilitating understanding among Spanish-speaking stakeholders. It will also be distributed to local stores and the school in San Juan de Dios.

[13] https://bancodebosques.org/laslauras/

- **Informational event:** Prior to the validation of the project, an informational event has been organized, inviting a diverse range of stakeholders. During this event, the 1-page project brief was made available to attendees.
- **Physical copies**: To further extend accessibility to local communities, physical copies of the PD summary (in Spanish) will be printed and distributed in San Juan de Dios and other neighbouring villages. This ensures that stakeholders who may have limited online access can still engage with and comprehend the key aspects of the project.

By employing these varied methods, the project aims to maximize the reach and understanding of its documentation, fostering active engagement and participation from a diverse range of stakeholders.

2.3.2 Dissemination of Summary Project Documents (G3.1)

The project has used multiple channels to disseminate the summary project documents to ensure broad accessibility (also see section above).

- During stakeholder consultations, printed copies of a 1-page project brief were distributed to participants.
- The BdB website serves as a digital platform where stakeholders can access the Spanish summary document of the PD online, allowing for convenient retrieval and review.
- To extend reach into the local community, the summary document of the PD will be strategically shared at local stores and the school in San Juan de Dios. This approach aims to reach stakeholders who may not have participated in consultations or have online access, ensuring a comprehensive and inclusive dissemination strategy.

2.3.3 Informational Meetings with Stakeholders (G3.1)

An informational event took place on December 14, 2023 previous to the project validation. The event was widely publicized, and participants were present from the local community and other indirect stakeholders, including the directors of the San Juan de Dios school, people from the San Juan de Dios community, members of the new team of the Ministry of the Environment of Jujuy, park rangers of the El Rey National Park and technicians from the administration of National Parks at the regional level, technician of the NGO Proyungas, the owner of a hotel in the town of El Bordo, the park ranger of a private reserve near the project area and the community delegate of San Juan de Dios. The presentations and explanations included: the project and its activities, the process of a carbon project including the international CCB and VCS standards, the announcement of the purchase of the land, the usufruct of the current landowner for a part of the project area, the Grievance Redress Mechanism the next steps (such as the VVB visit) and a guided tour within the project area. The event was followed by several press releases that shared project information publicly.

2.3.4 Community Costs, Risks, and Benefits (G3.2)

The implementation of the project on private land has limited direct impact on communities. However, stakeholder consultations provided an avenue for community members to express any perceived risks associated with the project.

The only potential negative impact raised was for individuals engaging in illegal activities within the project area, such as hunting or logging (see Section 2.5.4 on illegal activities). The current incidence of such activities in the project area is reported to be extremely low.

There will be no costs for community members through project activities.

The consultations outlined clear and promising potential benefits for communities, which are more comprehensively detailed in section 4.1. These benefits are expected to contribute positively to the well-being and development of the communities involved in or impacted by the project.

2.3.5 Information to Stakeholder on Verification Process (G3.3)

BdB ensures that stakeholders will be notified in advance of the VVB visit. This involves direct communication with individuals, during which the procedures of a carbon project audit will be explained thoroughly. This direct engagement aimed to keep stakeholders well-informed and prepared for the upcoming audit process. Also, the informational event was used to explain the process to stakeholders.

2.3.6 Site Visit Information and Opportunities to Communicate with Auditor (G3.3)

As explained in the last section, the informational event has been used to explain the process of a carbon project in general and the VVB visit to stakeholders.

2.3.7 Stakeholder Consultation (G3.4)

The process of stakeholder consultations can be divided into three phases:

1) General Scoping Visits (November 2022 - November 2023):

Due to the rural context, the most effective way to communicate with relevant stakeholders during this phase was through in-person visits. The project team got in touch with key stakeholders, reaching out to them by phone before traveling to the area. This process helped identify the most relevant individuals in San Juan de Dios, enabling the team to organize the following trips effectively (see section on stakeholder identification in the PD).

2) Direct Consultations for Project Design and PDD Development:

After the first phase, the project team traveled again to the project area and carried out a series of stakeholder consultations. The project team provided a comprehensive description of the project and asked a series of questions depending on the type of stakeholders. Also, information on the Grievance Redress Mechanism and the next steps of the project were shared.

Stakeholders met included representatives of the small community of San Juan de Dios (that is directly next to the project area), representatives from the local Secondary and Primary School of San Juan de Dios, National Park Administration Authorities, provincial authorities, private landowners adjacent to the project area, NGOs active in the region, and representatives from the local university. Next to the teachers at the local school, the so-called “encargado comunal” of San Juan de Dios[14] was included in the consultations.

During these consultations, stakeholders from San Juan de Dios expressed their strong desire for the project to consider specific activities. These included environmental education projects with both primary and secondary schools, outdoor education programs (such as trekking, bird watching, and horseback riding), recreational opportunities during weekends and holidays, and the establishment of ecotourism activities that could potentially create job opportunities for community members.

For landowners adjacent to the property, there was a significant emphasis on the project's benefits in terms of enhanced legal protection for water access and watershed protection. The National Park Administration offered assistance for environmental education and outdoor activities, including support for the creation of Specific Collaboration Agreement for this particular project under the existing Framework Agreement on Institutional Cooperation between the Banco de Bosques and the National Parks Administration signed in 2016.

Stakeholders related to the academic sector expressed their support for the project and proposed continued use of the area for scientific research, providing logistical resources for scientists.

3) Continuous Consultations During Project Implementation:

[14] This position means “municipality delegate or representative”. Due to the low population of San Juan de Dios, they do not get to hold elections to choose their authorities, therefore a representative from the Municipality Head, who is based in the city of San Pedro - about one hour distance- is designated by decree.

The project implementer will maintain an ongoing consultation process throughout the project's lifetime (see the next section 2.3.8). Since the project area will be handed over to provincial or national authorities in the medium term, all consultations will be in line with the preparation of this process. Stakeholder input received during consultations will be considered for the development of a participatory Management Plan, which will occur once an official protected area is created upon the land's donation.

Prior to the land donation, the project implementer is open to partnerships with local stakeholders, particularly in setting up Outdoor and Environmental Education Programs for both local schools and the community, always ensuring that these activities do not have any negative impact on the subsequent project phase.

2.3.8 Continued Consultation and Adaptive Management (G3.4)

Throughout the implementation of the project, continuous exchange with stakeholders is fundamental. An overview of consultations is collected in a consultation registry, that also documents which impact the consultations had on the project design or project decisions. This record-keeping ensures a transparent decision-making process and will be included in monitoring reports.

Internally, an annual meeting with the project team reflects on project activities and feedback through consultations.

Before the project will move to the second phase of transferring the land to provincial or national authorities, special consultations will be scheduled to keep stakeholders involved and informed. The handover contract will include that all activities of the project are permitted and will persist under the national or provincial park, regardless of whether managed by the respective park authority or the project team at BdB.

The following table shows an overview of all communication channels and topics per stakeholder.

Table 3 Continued consultation plan

Stakeholder group	Channel	Frequency	Topic(s)	Responsibility
Community San Juan de Dios	Direct communication (phone, what´s app, personal visits) Project+ website	Yearly and upon necessity	Joint project activities Dissemination of monitoring results Project updates (e.g. on activities or the process of the donation to a provincial/national protected area).	BdB
Schools in proximity to the project area	Direct communication (phone, what´s app, personal visits) Project website	Yearly and upon necessity	Joint project activities Dissemination of monitoring results Project updates (e.g. on activities or the process of the donation to a provincial/national protected area).	BdB
Farmers San Juan de Dios	Direct communication (phone, what´s	Yearly and upon necessity	Joint project activities (e.g. tree planting activities)	BdB

	app, personal visits) E-Mail communication Project website		Dissemination of monitoring results Project updates (e.g. on activities or the process of the donation to a provincial/national protected area).	
Administration National Park El Rey	Direct communication (phone, what´s app, personal visits) E-Mail communication Project website	Continuously	Joint project activities (e.g. patrolling, fire management of project area and national park) and the facilitation of the land donation Dissemination of monitoring results Project updates (e.g. on activities or the process of the donation to a provincial/national protected area).	BdB
Provincial governments of Jujuy and Salta	Direct communication (phone, what´s app, personal visits) E-Mail communication Project website	Continuously	Continuous communication for the facilitation of the land donation process Project updates	BdB
Indirect stakeholders such as NGOs, universities	Direct communication (phone, what´s app, personal visits) E-Mail communication Project website	Upon necessity	Synergies and potential cooperations (e.g. research or activities in the project area) Project updates	BdB

2.3.9 Stakeholder Consultation Channels (G3.5)

The communication strategy for stakeholders in the project uses diverse channels tailored to specific stakeholder types. In general, the dissemination of information will be mostly through face-to-face meetings on site, e-Mails and WhatsApp. Invitations to meetings and events will be carried out mostly by WhatsApp messages which is the main channel of communication both on a one-to-one level and in groups. Other information channels include social media and the project website. For the local community direct communication with representatives and printed out information will be used. The preferred communication channel per stakeholder is concretized in Section 2.3.8.

2.3.10 Stakeholder Participation in Decision-Making and Implementation (G3.6)

Ideas for project activities and feedback for already existing project activities were collected during the consultation process. Once more it is important to stress that the community most impacted by the project is San Juan de Dios and it is a very small one. They are the group that needs to be most involved in project design, monitoring and evaluation.

The consultations with community representatives were carried out in a culturally appropriate and gender sensitive manner. In Argentina, such processes, when involving official entities like schools, are subjects to the National Law 27,499/Micaela´s Law and the Agreement 169 under the World Labour Organization -ratified by law-, which define conditions for cultural and gender respective processes and inclusion.

As described above the project implementer will set up appropriate communications channels to regularly consult stakeholders, collect feedback and gather new contributions for the development of the project.

2.3.11 Anti-Discrimination Assurance (G3.7)

As an employer, the project implementer is a legal entity which, as such, is obliged to respect all laws covering labor rights as described above. However, such a range of already established regulations will be exceeded by having specific workshops and skill shares in which the anti-discrimination component of the recruiting policy of Banco de Bosques as a Foundation in charge of the Trust owning the property, will be highlighted. Upon the donation of the land such conditions and commitments are to remain unaltered.

2.3.12 Grievances (G3.8)

All stakeholders on an institutional or personal level may direct their suggestions, comments, complaints, claims to the project implementer in written form or verbally. In the case of the local community of San Juan de Dios, since there is no phone signal or good internet connection, the school will be designated as the place to leave written grievances that must be answered within two weeks' time. Verbal feedback will be actively followed up on by the project staff on the ground to whom the community stakeholder and neighbor properties will have constant access and contact with.

Authorities, universities and NGO might mostly opt for written communication however verbal interaction shall be always available.

Suggestions, consultations and other sorts of inquiries which are not categorized as grievances must be dealt with satisfactorily within two months upon reception of the inquiry. However, those claims and complaints categorized as grievances, shall be dealt with under a three-stage process, as follows:

1) First, the project implementer shall attempt to amicably resolve all grievances and provide a written response to the grievances in a manner that is culturally appropriate.
2) Second, any grievances that are not resolved by amicable negotiations shall be referred to mediation by a neutral third party which is accepted by both parties.
3) Third, any grievances that are not resolved through mediation shall be referred either to a) arbitration, to the extent allowed by the laws of the relevant jurisdiction or b) competent courts in the relevant jurisdiction, without prejudice to a party's ability to submit the grievance to a competent supranational adjudicatory body, if any.

The feedback and grievance redress procedure will be publicized and accessible to communities and other stakeholders. The contact details are available on the project website[15] and provided to stakeholders. Grievances and project responses, including any redress, will be documented and made publicly available.

2.3.13 Worker Training (G3.9)

All project employees undergo comprehensive training covering various aspects, including REDD, the science of global warming, impacts on biodiversity, community monitoring, and measures for mitigation and adaptation, as well as insights into carbon markets. Importantly, these training opportunities are not limited

[15] https://bancodebosques.org/laslauras/

to project staff—they are open and available to all members of the San Juan de Dios community and neighboring villages. We believe in sharing information broadly, beyond just those directly employed by the project.

To enhance the learning experience, we encourage workers to visit other forest conservation projects (e.g. if additional funds are available support for such excursions can be offered). This exposure allows them to learn from different experiences and motivates them through knowledge exchange.

Looking ahead, even after the land is donated to the provincial or national authorities, workers will continue to benefit from training opportunities of the project. However, the then responsible authorities will enhance training for on-site rangers and firefighters. This contributes positively to the overall dynamics of the project, ensuring ongoing protection and management efforts beyond the direct involvement of the project implementer.

2.3.14 Community Employment Opportunities (G3.10)

Activities required for the implementation of the project include monitoring patrols, fire prevention and control, biodiversity assessment and also, as explained above, the development of Outdoor Education and Recreation programs. Local labor is an absolute priority for the project implementer. In fact, local labor has already been employed during the feasibility phase of the project. Staff will be selected taking into account women and developing the proper training and skill share programs regardless of their origin, beliefs or gender.

The call for recruiting labor will be widely publicized by face to face, WhatsApp groups and social networks so as to assure the wide range coverage for most members of the community to be properly notified and with sufficient time to either submit their CVs or express interest in another way (considering informal application processes). Verbal offers will be considered equally to formal written applications.

The San Juan de Dios School authorities and *encargado comunal* will be invited to provide input and be part of the process to identify potential candidates.

Once the project area is transferred to provincial/national authorities' additional jobs for the protection of the area might be created (e.g. brigadistas, park rangers, etc.).

2.3.15 Relevant Laws and Regulations Related to Worker's Rights (G3.11)

The project implementer is subject to all labor regulations listed below. However, the project implementer will go beyond these regulations as far as hiring local labor is concerned since such a requirement is voluntary and not legally binding as all the other requirements and obligations concerning equal rights for women and minority groups, obligation to provide the right clothing, gear, tools and equipment plus insurance.

Labour Regulations
National Constitution of 1949. Article 3 Workers' Rights
National Constituent Convention of 1957. Article 14
Employment Contract Law No. 20,744 and its amendments
Employment Law No. 24,013
Occupational Risk Law No. 24,557
Law No. 24,557 Labor Risks
Law Nº 24.028 Work Accidents

Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW)
ILO Conventions ratified by Argentina

2.3.16 Occupational Safety Assessment (G3.12)

Selected workers must be trained in how best to use their equipment for both efficiency and safety measures. Secondly, workers must be given special training on how to minimize risk in the field and heads of crews must be given the authority to postpone or even cancel activities if circumstances dictate so. Examples: bad weather which might complicate access or heat waves, risk of trees falling, etc. Prevention against tropical diseases is of key importance. Therefore, clothing and proper supervision by the heads of field crews is critical.

A very important aspect the project will implement is running frequent emergency trials dealing with different potential accidents which require evacuation. Hospitals in the area that might be the destination for injured workers will be included in the performance of these emergency trials.

During the second phase of the project, occupational safety will be supervised by the official authorities. This will probably include the purchase of the necessary equipment for treatment on site (DEA) and evacuation (quads and other appropriate vehicles suited for the type of terrain in which the field teams will operate) and a close cooperation with the emergency evacuation teams both terrestrial and aerial in order to provide the highest level of certainty and efficiency in the event of an accident.

Proper training such as WFR (Wilderness First Response) trainings will be given to teams as well.

2.4 Management Capacity

2.4.1 Required Technical Skills (G4.2)

The table below lists the key technical skills required to implement the project and the planned activities. Some of the main skills required revolve around carbon project development, monitoring activities of forest, biodiversity and social aspects as well as project management skills.

Table 4 Required technical skills for project implementation

Areas of expertise	Required technical skill
Project design	Knowledge in AFOLU carbon project development and the certification VCS process In depth understanding of social and biodiversity impact assessment Collaborative and participative project design for conservation projects
Commercial structure and financial planning	Administration, logistics, finance, accounting, human resources, and legal structuring Understanding of carbon market dynamics and commercial aspects of marketing carbon credits Legal expertise on land purchase and donation procedures and conservation opportunities
Conservation activity design and implementation	Knowledge of the guidelines for the creation and management of public and private, national and provincial protected natural areas. Experience and lessons learned implementing conservation activities in other projects.

	Cooperation agreements with governmental and non-governmental entities with expertise in conservation activities.
Social engagement and stakeholder management	Experience in community workshops and consultations in rural areas Experience with the stakeholder engagement processes of a long-term conservation project (e.g. GRM, information dissemination etc.)
Monitoring, Reporting & Verification (MRV)	Forest and soil carbon monitoring Social and biodiversity monitoring Statistical analysis of qualitative and quantitative sample data VCS AFOLU GHG accounting and requirements Remote sensing for deforestation patterns and development

2.4.2 Management Team Experience (G4.2)

Designing, implementing, and leading a carbon project effectively requires a blend of technical expertise and key management skills. These skills are crucial for navigating the complexities of carbon projects, which often involve intricate environmental, regulatory, and financial aspects. The alliance of VisonNetZero GmbH, Banco de Bosques and unique land use GmbH is well-suited due to their complementary expertise and shared commitment for conservation. VisionNetZero's focus on commercial experience aligns perfectly with Banco de Bosques' hands-on experience in environmental conservation, land donation processes and unique land use GmbH's in-depth knowledge in land use and carbon project development. This collaboration brings together diverse yet synergistic skills, ranging from strategic carbon management to practical conservation efforts. The core management team consists of the following person:

Heiko and Cosima Meyer (VisionNetZero GmbH): oversee all commercial aspects of the project, including contract structuring, and leads in overall project management. Heiko Meyer, with thirty years of experience in an international corporation, brings extensive expertise in project and risk management, strategic planning, and business development. His notable accomplishments include the development of sustainability strategies, demonstrating his proficiency in aligning corporate objectives with environmental stewardship. Cosima Meyer, co-founder and a university lecturer in intercultural communication and ethical responsibility, excels in stakeholder management, particularly in international contexts. Her academic and professional background equips her uniquely for navigating the complex landscape of global stakeholder engagement, ensuring ethical and effective communication at every project stage.

Emiliano Ezcurra (Banco de Bosques): Emiliano Ezcurra's career is marked by his current role as the founder and Director of Banco de Bosques and as the former Vice President of the National Park Authorities, underscoring his leadership abilities in orchestrating large-scale conservation projects. Previous work for Greenpeace proved his strategic vision and adeptness in implementing complex initiatives. Emiliano's leadership style blends a passion for environmental conservation with a pragmatic approach to project execution. His ability to navigate conservation work, while effectively rallying teams and stakeholders towards shared goals, has been pivotal in advancing significant environmental initiatives. Emiliano's influence extends beyond operational management; he inspires a culture of sustainability and proactive environmental stewardship, setting a benchmark in conservation leadership.

Dario Rodrigez (Banco de Bosques): Dario Rodriguez has dedicated twelve years to Banco de Bosques as a Campaign Director, where he has effectively led numerous environmental campaigns. His practical approach to project management, focusing on teamwork and clear communication, has significantly contributed to ecosystem preservation efforts. Dario's commitment to environmental and social causes, coupled with his ability to bring together diverse groups for a common purpose, reflects his deep-rooted passion for conservation and community engagement.

Matthias Seebauer (unique land use GmbH): As the Deputy Head of the Climate Division at unique land use GmbH for 15 years, Matthias Seebauer is experienced in carbon project development within the land use sector. His expertise includes designing impactful carbon finance projects across various standards,

including VCS and Gold Standard, for various entities. Matthias has played a key role in the development and implementation of innovative carbon accounting methodologies, significantly contributing to climate smart agriculture and forestry initiatives. His scientific background and practical experience in designing comprehensive MRV systems are evident in their successful management of landscape-scale projects with multifaceted benefits, including climate mitigation and adaptation.

2.4.3 Project Management Partnerships/Team Development (G4.2)

The partnership with the National Parks Administration and the Provincial Protected Areas authorities under the Ministry of Environment of the province of Jujuy is crucial in aligning conservation efforts, as it ensures that the initiatives undertaken by the project are integrated with the ecological and conservation goals specific to the region. This collaboration brings invaluable local expertise and regulatory insights, essential for tailoring projects to regional requirements. By working closely with the authorities, both at a national and provincial levels, the alliance can ensure that their initiatives not only contribute to global sustainability targets but also resonate with and support local conservation priorities, thereby amplifying the project's impact and relevance. In the long term the authorities could even take over some of the relevant project activities.

Additionally, philanthropic partnerships play an important role in the project set-up and might allow to further increase the project´s impacts: Banco de Bosques has a long-standing partnership with the Wyss-Foundation, a US-based philanthropic organization focused on climate and biodiversity projects. With the Wyss-Foundation's new policy requiring co-financing for project support, their interest was particularly drawn to the acquisition of the project area by Banco de Bosques, which guaranteed permanent protection and financial stability. This led to the Wyss-Foundation considering the purchase of an additional 24,000 hectares near El Rey National Park, effectively doubling the conservation area. This partnership allows the inclusion of areas that, while not necessarily high in carbon potential, are vital for conservation efforts. The synergy between the carbon project's objectives and philanthropic activities offers great potential and could serve as an exemplary model for future conservation initiatives around the globe.

2.4.4 Financial Health of Implementing Organization(s) (G4.3)

The financial security of the project is robustly anchored, with several key measures in place. The land title is securely held by a trust fund, accompanied by a restriction clause against selling, underlining the ultimate goal of transforming the project area into a conservation zone. This is bolstered by substantial financial backing from the sole investor, Wintershall Dea, aimed at establishing and maintaining the project's core activities. All required funds for the development and monitoring of the project have already been received by the project developers. Further financial stability is ensured through revenue generated from carbon credits, which will support any future, currently unforeseen activities. While specific financial details are maintained under confidentiality, complete and transparent information regarding these financial arrangements will be readily available for review during the audit process.

2.4.5 Avoidance of Corruption and Other Unethical Behavior (G4.3)

The project proponent and the project implementor confirm that they are not involved in any form of corruption such as bribery, embezzlement, fraud, favoritism, cronyism, nepotism, extortion, and collusion. The Investment Agreement between the Wintershall Dea AG, Banco de Bosques and VisionNetZero GmbH contains detailed regulations and clauses addressing these issues and, therefore, all activities fulfill the very stringent governance requirement of an internationally operating corporation like Wintershall Dea AG. The contractual agreements will be made available during the audit.

2.4.6 Commercially Sensitive Information (*Rules* 3.5.13 – 3.5.14)

The confidential elements of the project not accessible to the public encompass:

- Detailed project implementation and commercial agreements, financial plans including organizational work schedules or budgets for the project duration.

- Exclusive data such as electronic shape files, computer model code, and restricted satellite imagery, covering GIS project boundaries, and land-use data.
- Confidential agreements and contracts among project proponents, entities, and stakeholder groups about project execution.
- Personal information and contact details of stakeholders.

This information can be disclosed to project validators upon request.

2.5 Legal Status and Property Rights

2.5.1 Recognition of Property Rights (G5.1)

The acquisition of the official land title followed all legal requirements and the transition of property rights from the previous landowner to the dedicated Trust was completed successfully. The purchase was endorsed by judicial authorities of the province of Jujuy and a notary with a lot of experience in this type of transactions. The project will have no impact on property rights held by other parties.

2.5.2 Free, Prior and Informed Consent (G5.2)

Under Argentinean law FPIC is only to be applied when indigenous peoples are inside the territory of a proposed project. When a project is to take place on a private property in which no claims have been neither presented in court nor through any other administrative channels and there are no communities inside the property, the authorities are to carry out what is called a free, prior and informed consultation process (notice the difference between “consent” and “consultation”, the latter being non-legally binding).

Accordingly, the project has been transparently shared with stakeholders and through the channels and mechanisms described in the previous sections.

2.5.3 Property Right Protection (G5.3)

As described, the entire project area is owned by the dedicated Trust, therefore, none of the project activities will lead to any involuntary impacts on the property rights of other stakeholders. All project activities carried out with communities or schools are on a voluntary basis and only carried out if wanted by the respective stakeholders.

2.5.4 Identification of Illegal Activity (G5.4)

The project area was privately owned before the dedicated Fund purchased the property for the development of the carbon project. The previous landowner actively conserved most of the forest area and had forest protection measures in place that prevented illegal activities. While illegal activities such as logging or hunting were in general mentioned for the area of the Santa Barbara Mountain range, stakeholder consultations confirmed that the level of illegal activities within the project area is low due to the implemented measures of the previous landowner.

2.5.5 Ongoing Disputes (G5.5)

Stakeholder consultations confirmed that there are no ongoing or unresolved conflicts over the project area. The project area is delimited by the border between the province of Jujuy and Salta (with the project area being located entirely in Jujuy). Different versions of the delineation of the provincial boundary exist. However, the land title is entirely under the jurisdiction of Jujuy and is formally recognized by Salta and there is no dispute by any stakeholder considering the project boundaries.

2.5.6 National and Local Laws (G5.6)

The most important national law applicable for forests is the National Law No. 13,273 on the "Defense of Forest Wealth", already passed in 1948. It regulates restrictions and limitations on the exercise of rights over privately or publicly owned forests and forest lands, their fruits, and products, aiming at the defense,

improvement, and expansion of forests. Since then, several additions to this law have been passed: Laws Nos. 13,273, 14,008, 19,989, 19,995, 20,004, 20,531, 21,111, 21,990, 22,374 and 24,028, Decree Law No. 4905 of April 7, 1958 and 2131 of March 20, 1963 and Decree Law No. 2284 of October 31, 1991, ratified by Law No. 24,307, and supporting description that outline the considerations applicable to the law.

In November 2007, the National Law N◦ 26,331 of "Minimum Standards for the Environmental Protection of Native Forests" was sanctioned in Argentina to protect native forests at the national scale. This law was the first national experience of territorial planning that seeks to regulate land use at a national level. The conservation of forests within the framework of the Law is pursued through two main tools: on the one hand, the environmental zoning of the territory to regulate the intensity and location of economic activities in forested lands and, on the other, economic compensations (i.e., payment for environmental services) to landowners that conserve remnant forests or manage them sustainably (Aguiar et al., 2018). The Law considers three conservation categories (Law N◦ 26,331, Art. 9): Category I (red), representing areas of high conservation value; Category II (yellow), representing areas of medium conservation value; Category III (green), representing areas of low conservation value. Deforestation is not allowed in Category I and II, while in Category III it is allowed after the approval of a Land Use Change plan by the provincial authorities.

Another important national law is the law 25,675 General Environmental Law. The law protects the environment by guaranteeing its care, education, and citizen participation, controlling the impact and environmental damage that may be caused by man.

Below is a compiled list of all applicable provincial laws set out by the province of Jujuy, related to land use management and the use and protection of natural resources.

Provincial laws

- Law Nº 5,063 "General Environmental Law".
- Law Nº 13,273 of Defence of the Forest Wealth and Regulatory Decrees regarding Native Forests, T.O. Decree P.E.N 710/95, to which the province is adhered by means of Provincial Law Nº 114/49.
- Provincial Law Nº 4 542/90 on Tree and Forest Protection, which regulates forestry activities and the Provincial Decrees in force.
- Provincial Law Nº 5,018/97, "Law of Prevention and Fight against Fires in Rural and/or Forest Areas".
- Provincial Fishing Law Nº 3 011/73 and its Regulatory Decree Nº 3011/73.
- Provincial Hunting Law Nº 3 014/73 and its regulatory decree Nº 5096/73.
- Decree Nº 10,835/H/61- Stamp Tax of the Fiscal Code.
- Decree Nº 676/H/72- Low diameter cuts, modified by decree Nº 5113/H/78, prohibits the cutting of Oak, Queñua and Cardón in the province.
- Decree Nº 3,807-H-74. Declares Protective and Permanent Forests overlooking Ciudad, Lozano, Termas de Reyes and Laguna de Yala.
- Decree Nº 5,113/H/78 Cut under diameter, modifies Decree 676-H-72.
- Decree Nº 6,156/H/79.- Tariffs P/ inspection of the use of clearings, repealed by decree 5144/88 (Art. 2,34).
- Resolution Nº 62/81- Fixes 5 ha. P/Farm for year, approved by decree 730/H/81.
- Resolution Nº 567/84. Confiscation of transport without guides.
- Resolution Nº 568/84. Establishes a 20 m wide protective forest and natural forest barrier with windbreaker curtain.
- Resolution Nº 69/87. It prohibits the cutting of forest species in fiscal lands, grass, ferns, bird, moss, cactus.
- Decree Nº 5144/H/88. Tariffs for Dismounting, Exploitation, etc.
- Resolution Nº 53/91. Prohibits the cutting of Churqui and Tola.
- Resolution Nº 654/91.- Approves the Res. 53/91 cutting of Tola and Churqui.

- Resolution N° 076/2002. Establishes the obligation to conduct the EIA for forestry works.
- Resolution N° 109/2002. Exempts from the EIA presentation areas of 5 hectares.
- Resolution N° 057/23. Creates the Registry of Fishmongers.
- Resolution N° 059/2003. Establishes the obligatory registration of establishments consuming forest products.
- Resolution N° 071/2004. Establishes sanctions for forestry works that do not comply with the legislation in force.
- Resolution N° 072/2004, establishes the requirements for the registration of properties for forestry works.

3 CLIMATE

3.1 Monitoring GHG Emission Reductions and Removals

3.1.1 Data and Parameters Available at Validation

Data / Parameter	α
Data unit	Unitless
Description	Combined effects of β and θ at the start of the historic reference period
Source of data	Reference area and historic reference period
Value applied	-1.3631944
Justification of choice of data or description of measurement methods and procedures applied	Based on the interpretation of changes in the state of the sampling points within the reference area over time. Depending on whether it has been converted or not. The interpretation was done for 662 points evaluating the ecosystem state (forest, converted) over a historical reference period encompassing 13 years (2009-2022) which included 10 Landsat images. To obtain this value and evaluate its uncertainty, 5 different equations from the methodology were used (i.e., A.4, A.5, A.6, F.12 and F.13) and a logit model was fitted in the statistical software R. More details can be consulted in section 3.1.4.6.
Purpose of data	Calculation of proportion of conversion in the baseline scenario, useful to calculate baseline emissions from AGOT (equation F.3) and SOC (equation F.6).
Comments	Statistical software R was used to fit the logistic model.

Data / Parameter	β
Data unit	Unitless
Description	Effect of time on the cumulative proportion of conversion over time
Source of data	Reference area and historic reference period
Value applied	0.0003197

Justification of choice of data or description of measurement methods and procedures applied	Based on the interpretation of changes in the state of the sampling points within the reference area over time. Depending on whether it has been converted or not. The interpretation was done for 662 points evaluating the ecosystem state (forest, converted) over a historical reference period encompassing 13 years (2009-2022) which included 10 Landsat images. To obtain this value and evaluate its uncertainty, 5 different equations from the methodology were used (i.e., A.4, A.5, A.6, F.12 and F.13) and a logit model was fitted in the statistical software R. More details can be consulted in section 3.1.4.6.
Purpose of data	Calculation of proportion of conversion in the baseline scenario, useful to calculate baseline emissions from AGOT (equation F.3) and SOC (equation F.6).
Comments	Statistical software R was used to fit the logistic model.

Data / Parameter	γ
Data unit	Days
Description	Time shift from beginning of historic reference period to project Start date
Source of data	Historic reference period
Value applied	19,598
Justification of choice of data or description of measurement methods and procedures applied	The historic reference period was established in 13 years (4,998 days).
Purpose of data	Calculation of baseline emission scenarios from biomass and soil organic carbon.
Comments	Tuning was used to define this value

Data / Parameter	θ
Data unit	Unitless
Description	Effect of covariates on the cumulative proportion of conversion over time
Source of data	Reference area and historic reference period
Value applied	N/A
Justification of choice of data or description of measurement methods and procedures applied	In the creation of the conversion model, no external covariates were used since the sole agent of conversion is the landholder.
Purpose of data	Calculation of proportion of conversion in the baseline scenario, useful to calculate baseline emissions from AGOT (equation F.3) and SOC (equation F.6).
Comments	Parameter not used

Data / Parameter	λ_{SOC}
Data unit	Proportion (unitless)
Description	Exponential soil carbon decay parameter
Source of data	Proxy area SOC data was used to conduct a space-for-time analysis. See section 3.1.4.9 in the PD for details.
Value applied	0.26
Justification of choice of data or description of measurement methods and procedures applied	The empirically determined λ_{SOC} value was applied to calculate emissions from SOC decay. The decay was derived with measured SOC values from forests and proxy areas by applying the RothC soil model which was found appropriate in the region to model SOC decay after deforestation as shown in a peer-reviewed study (Villarino et al., 2017). The study stated 30% of SOC stocks are lost in the first 10 years. The results of the peer reviewed study align with the observation of the conducted time for space analysis of carbon stocks in deforested areas in the project proxy area λ_{SOC} value to SOC stocks yields the same result. The value applied was then derived by matching the RothC model decay rate with the SOC emission model given by the methodology reaching 0.0% difference between the two rates averaged over 20 years.
Purpose of data	Calculation of baseline emissions
Comments	N/A

Data / Parameter	$\hat{\sigma}_{EM}$
Data unit	Standard deviation (unitless)
Description	The estimated standard deviation of the state observations used to fit the logistic function
Source of data	Interpretation of forest state using Landsat images
Value applied	0.13
Justification of choice of data or description of measurement methods and procedures applied	Based on the interpretation of changes in the state of the sampling points within the reference area over time. The interpretation was done for 662 points evaluating the ecosystem state over a historical reference period encompassing 13 years (2009-2022) which included 10 Landsat images. To obtain this value equation F.13 was used, after using equation A.6 to obtain an observation weight for each point. In this case the weight was similar for all points as no clouds were observed in any of the images. A protocol for interpretation was developed and used (see Annex documents), and training was offered to the interpreters (three in total) to complete the interpretation during the months of October and November 2023.
Purpose of data	Determination of minimum sample size to evaluate ecosystem conversion. The interpretation of ecosystem conversion is the basis for baseline emission models.
Comments	The minimum sample size was estimated at 230 points; however, we used 662 points that cover the complete reference area with points separated 300 m between each other.

Data / Parameter	B
Data unit	Set
Description	The set of all selected carbon pools in biomass. Is a subset of C
Source of data	PDD section 3.1.3 Project Boundary
Value applied	N/A
Justification of choice of data or description of measurement methods and procedures applied	AGOT, BGOT and SD are the appropriate biomass carbon pools to be considered in the project, as the baseline scenario (F-P2 – planned non-commercial conversion) does not include the harvest of long-lived wood products. All other biomass carbon pools were conservatively excluded.
Purpose of data	Calculation of baseline emissions Calculation of project emissions
Comments	Selected carbon pools are listed in Table 7 of the PDD.

Data / Parameter	C
Data unit	Set
Description	The set of all selected carbon pools
Source of data	PDD section 3.1.3 Project Boundary
Value applied	N/A
Justification of choice of data or description of measurement methods and procedures applied	The set of carbon pools included are biomass (AGOT, BGOT and SD) and soil (SOC). Any other carbon pools were excluded due to their lack of applicability or conservativeness.
Purpose of data	• Calculation of baseline emissions • Calculation of project emissions
Comments	Selected carbon pools are listed in Table 7 of the PD.

Data / Parameter	I
Data unit	Set
Description	The set of all observations of conversion. When superscripted with a monitoring period, the conversion observations are taken for leakage analysis.
Source of data	Remote sensing image interpretation
Value applied	662

Justification of choice of data or description of measurement methods and procedures applied	An initial value of 839 points was selected by creating a regular grid of points separated by 300 m each. The conversion was evaluated in all points, and points that were already converted in the first image of the historical reference period (i.e., 2009) were excluded from the analysis, as conversion cannot be observed in already converted points. After the exclusion, 662 points was the final observation set. To establish the minimum sample size, equations A.6, F.12 and F.13 were used, yielding a minimum sample size of 230 points. Therefore, the established set of points fulfils this requirement.
Purpose of data	Forest conversion sampling to calibrate baseline emissions models.
Comments	The project does not consider leakage; thus, leakage observations are not included. More details about the decision can be found in section 3.3.2

Data / Parameter	M
Data unit	Set
Description	The set of all monitoring periods
Source of data	Monitoring records
Value applied	1
Justification of choice of data or description of measurement methods and procedures applied	The current monitoring period is the first one. Updated at every monitoring period.
Purpose of data	Calculation of baseline emissions Calculation of project emissions Calculation of leakage
Comments	N/A

Data / Parameter	T
Data unit	Set
Description	The set of all species/categories of livestock
Source of data	Monitoring report
Value applied	N/A
Justification of choice of data or description of measurement methods and procedures applied	N/A
Purpose of data	N/A
Comments	Parameter not used as livestock is not considered in the baseline scenario.

Data / Parameter	A_{PAA}
Data unit	ha
Description	Area of project accounting area
Source of data	GIS analysis prior to sampling
Value applied	4,208
Justification of choice of data or description of measurement methods and procedures applied	The project accounting area was determined within the project area boundaries by: exclusion of non-forest areas, forested areas unsuitable for agricultural and cattle ranching development (slope > 15° and every area smaller than 20 ha) exclusion of conservation areas legally protected from conversion. exclusion of area not compliant with eligibility criteria of the VCS Standard
Purpose of data	Indicate one of the following: Determination of baseline scenario Calculation of baseline emissions
Comments	N/A

Data / Parameter	A_{PX}
Data unit	ha
Description	Area of proxy area
Source of data	GIS analysis, validated during field visit
Value applied	1,260
Justification of choice of data or description of measurement methods and procedures applied	The proxy area was selected based on the final land use in the baseline scenario (e.g., agricultural use for cattle production) in the direct vicinity of the project accounting area, ensuring similar potential vegetation type, soil type and slope classification. The proxy area shares the same location as the reference area.
Purpose of data	Calculation of carbon stocks in the baseline scenarios useful to compute the carbon stock delta.
Comments	For details see section 3.1.4.4 in the PD

Data / Parameter	C_{LP}
Data unit	t CO_2e/ha
Description	Carbon stocks in project leakage area
Source of data	Leakage area sampling
Value applied	N/A

Justification of choice of data or description of measurement methods and procedures applied	See section 3.2.3 in the PD for details and leakage considerations.
Purpose of data	Calculation of leakage
Comments	N/A

Data / Parameter	$f_{LS\,i}$
Data unit	kg CH_4 $head^{-1}$ yr^{-1}
Description	Emission factor for the defined livestock population, i
Source of data	N/A
Value applied	N/A
Justification of choice of data or description of measurement methods and procedures applied	N/A
Purpose of data	N/A
Comments	Parameter not used

Data / Parameter	m
Data unit	t CO_2e/yr
Description	Average carbon in merchantable trees cut each year as a result of legally sanctioned commercial logging
Source of data	N/A
Value applied	N/A
Justification of choice of data or description of measurement methods and procedures applied	N/A
Purpose of data	N/A
Comments	Parameter not used

Data / Parameter	n_d
Data unit	Sample points (unitless)

Description	Number of spatial points in the reference area
Source of data	Remote sensing image interpretation
Value applied	662
Justification of choice of data or description of measurement methods and procedures applied	An initial value of 839 points was selected by creating a regular grid of points separated by 300 m each. The conversion was evaluated in all points, and points that were already converted in the first image of the historical reference period (i.e., 2009) were excluded from the analysis, as conversion cannot be observed in already converted points. After the exclusion, 662 points was the final observation set. To establish the minimum sample size, equations A.6, F.12 and F.13 were used, yielding a minimum sample size of 230 points. Therefore, the established set of points fulfils this requirement.
Purpose of data	Forest conversion sampling to calibrate baseline emissions models.
Comments	N/A

Data / Parameter	o_i
Data unit	Binary
Description	State observation for the i^{th} sample point in the reference area
Source of data	Remote sensing image interpretation
Value applied	0 = Forest; 1 = Converted
Justification of choice of data or description of measurement methods and procedures applied	The fitting of the logit model used to calibrate the total conversion in the baseline emission models requires binary data.
Purpose of data	Forest conversion sampling to calibrate baseline emissions models.
Comments	N/A

Data / Parameter	$P_{L\ ME}$
Data unit	Unitless
Description	Portion of leakage related to market.
Source of data	N/A
Value applied	N/A
Justification of choice of data or description of measurement methods and procedures applied	See section 3.2.3 in the PD for details and leakage considerations.
Purpose of data	Calculation of leakage

Comments	N/A

Data / Parameter	q
Data unit	Days
Description	Lag between start of degradation and conversion
Source of data	Default
Value applied	0
Justification of choice of data or description of measurement methods and procedures applied	There is no degradation prior to conversion considered in the baseline scenario. For additional information see section 3.1.4.7.4 in the PD.
Purpose of data	Indicate one of the following: • Determination of baseline scenario • Calculation of baseline emissions
Comments	N/A

Data / Parameter	$r_{CF\ b}$
Data unit	Unitless
Description	Carbon fraction of biomass for burned wood or herbaceous material b
Source of data	N/A
Value applied	N/A
Justification of choice of data or description of measurement methods and procedures applied	Not considered within the project boundary, see section 3.1.3 of the PD. Conservatively excluded from baseline and project scenario
Purpose of data	N/A
Comments	Parameter not used

Data / Parameter	r_{RS}
Data unit	Unitless
Description	Expansion factor for above-ground biomass to below-ground biomass (root/shoot ratio)
Source of data	Default values for ecosystems applicable to the two strata in the project area, published by the IPCC.
Value applied	Yungas: 0.284 Chaco: 0.336

Justification of choice of data or description of measurement methods and procedures applied	From the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Table 4.4 (Domke et al., 2019)
Purpose of data	Indicate one of the following: Determination of baseline scenario Calculation of baseline emissions
Comments	None

Data / Parameter	r_U
Data unit	Unitless
Description	Onset proportion of conversion immediately adjacent to project area
Source of data	GIS analysis and image interpretation
Value applied	N/A
Justification of choice of data or description of measurement methods and procedures applied	Not considered in the applied baseline type
Purpose of data	N/A
Comments	Parameter not used

Data / Parameter	t
Data unit	Days
Description	Time since project start date
Source of data	Monitoring records
Value applied	Provide the value applied
Justification of choice of data or description of measurement methods and procedures applied	Time parameter to be used during any monitoring period, depending on the number of monitoring periods. The value represents the duration from the project start date to the end of the first monitoring period and will be updated at every monitoring period.
Purpose of data	Calculation of baseline emissions
Comments	Applicable for monitoring report, not applicable for PDD

Data / Parameter	t_i
Data unit	Days

Description	The point in time of the observation made at point i
Source of data	Remote sensing image interpretation
Value applied	01.07.2009 – 26.11.2022
Justification of choice of data or description of measurement methods and procedures applied	The point in time of the observations encompasses the period from the first to the last used Landsat image.
Purpose of data	Calculation of baseline emissions
Comments	N/A

Data / Parameter	t_{PA}
Data unit	Days
Description	Time prior to the project start date when the primary agent began commercial logging in the project accounting area
Source of data	Harvest plans prepared for the project accounting area, or by public record
Value applied	0
Justification of choice of data or description of measurement methods and procedures applied	No commercial logging was considered in the baseline scenario, the baseline type is FP2.
Purpose of data	Determination of baseline scenario Calculation of baseline emissions
Comments	N/A

Data / Parameter	t_m
Data unit	Days
Description	Length of project or logging in baseline scenario
Source of data	N/A
Value applied	N/A
Justification of choice of data or description of measurement methods and procedures applied	No commercial logging was considered in the baseline scenario.
Purpose of data	N/A
Comments	Parameter not used

Data / Parameter	t_{PL}
Data unit	Days
Description	Length of the project crediting period
Source of data	PDD
Value applied	7,306
Justification of choice of data or description of measurement methods and procedures applied	Number of days between March 8th 2023 and March 8th 2043. The project crediting period is 20 years. For additional information see section 3.1.4.7.2 in the PD.
Purpose of data	Determination of baseline scenario Calculation of baseline emissions
Comments	N/A

Data / Parameter	t_{PAI}
Data unit	Days
Description	Number of days after the project start date for the start of a project activity instance in a grouped project
Source of data	PDD
Value applied	0
Justification of choice of data or description of measurement methods and procedures applied	Parameter set to 0 for the initial project instance.
Purpose of data	Calculation of baseline emissions
Comments	The first PAI has the same start date as the project start date. This parameter will be applicable to future PAIs included.

Data / Parameter	t_{SA}
Data unit	Days
Description	Arrival time of secondary agents after start of commercial logging
Source of data	Participatory rural appraisal, or expert knowledge
Value applied	N/A

Justification of choice of data or description of measurement methods and procedures applied	Not considered, as there is only one agent of conversion, the landholder.
Purpose of data	N/A
Comments	Parameter not used

Data / Parameter	w_i
Data unit	Unitless
Description	Weight applied to the i^{th} sample point in the reference area
Source of data	Sampling points set
Value applied	0.00015
Justification of choice of data or description of measurement methods and procedures applied	The value was calculated using equation A.6 to calculate the minimum sample size. In this case the weight is very small because there is the "double-coverage" is 100% throughout all images and points.
Purpose of data	Calculation of baseline emissions
Comments	Since the number of observations is linear in the time and space, the weight is the same for every sample point.

Data / Parameter	x
Data unit	Unitless
Description	Covariate values
Source of data	Remote sensing image interpretation
Value applied	N/A
Justification of choice of data or description of measurement methods and procedures applied	N/A
Purpose of data	N/A
Comments	Covariates were not considered in this project

Data / Parameter	x_i
Data unit	Geographic coordinates

Description	Latitude of the i^{th} sample point
Source of data	Remote sensing image interpretation
Value applied	N/A
Justification of choice of data or description of measurement methods and procedures applied	Geographic position of each sample point randomly launched on the native vegetation classes, within the reference areas.
Purpose of data	-
Comments	-

Data / Parameter	x_O
Data unit	Unitless
Description	Covariate values as of the project start date
Source of data	Participatory Rural Appraisal, analysis of public records, and/or expert interpretation of inventory data or remotely sensed imagery
Value applied	N/A
Justification of choice of data or description of measurement methods and procedures applied	N/A
Purpose of data	*N/A*
Comments	Covariates were not considered in this project.

Data / Parameter	x_{SA}
Data unit	Unitless
Description	Covariate values as of the arrival of the secondary agents
Source of data	Participatory Rural Appraisal, analysis of public records, and/or expert interpretation of inventory data or remotely sensed imagery
Value applied	N/A
Justification of choice of data or description of measurement methods and procedures applied	N/A
Purpose of data	N/A

Comments	Not considered, as there is only one agent of conversion, the landholder.

Data / Parameter	y_i
Data unit	Geographic coordinates
Description	Longitude of the i^{th} sample point
Source of data	Remote sensing image interpretation
Value applied	N/A
Justification of choice of data or description of measurement methods and procedures applied	Geographic position of each sample point randomly launched on the native vegetation classes, within the reference areas.
Purpose of data	-
Comments	-

3.1.2 Data and Parameters Monitored

Data / Parameter	$W^{[m]}$
Data unit	Set
Description	The set of all burned wood or herbaceous material
Source of data	Monitoring records
Description of measurement methods and procedures to be applied	N/A
Frequency of monitoring/recording	Every monitoring period
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	N/A

Calculation method	N/A
Comments	Not considered, conservatively excluded in baseline and project scenario

Data / Parameter	$A_{B\,\Delta\,PAA}^{[m]}$
Data unit	ha
Description	Area of avoided conversion
Source of data	Accounting area and Proxy area
Description of measurement methods and procedures to be applied	Calculated from Biomass Emission Model, Carbon in Accounting area and Carbon in Proxy area.
Frequency of monitoring/recording	Every monitoring period
Value applied	4,208
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	Equation F.52
Comments	Provide any additional comments

Data / Parameter	$A_{P\,1}^{[m=0]}$
Data unit	ha
Description	Area of project accounting area stratum 1 (Bosque Montano)
Source of data	GIS analysis prior to sampling

Description of measurement methods and procedures to be applied	Comprehensive GIS analysis, considering critical forest and terrain parameters such as age, canopy cover, forest type, slope, and aspect. This approach aims to guarantee a precise evaluation of carbon stocks within the forest stratum.
Frequency of monitoring/recording	First monitoring period
Value applied	0
Monitoring equipment	Analysis conducted in QGIS
QA/QC procedures to be applied	Cross-check of GIS analysis with available map material and local experts on Yungas ecology and remote sensing.
Purpose of data	Calculation of baseline emissions
Calculation method	N/A
Comments	N/A

Data / Parameter	$A_{P\,2}^{[m=0]}$
Data unit	ha
Description	Area of project accounting area stratum 2 (Selva Montana)
Source of data	GIS analysis prior to sampling
Description of measurement methods and procedures to be applied	Comprehensive GIS analysis, considering critical forest and terrain parameters such as age, canopy cover, forest type, slope, and aspect. This approach aims to guarantee a precise evaluation of carbon stocks within the forest stratum.
Frequency of monitoring/recording	First monitoring period
Value applied	2,735.3
Monitoring equipment	Analysis conducted in QGIS
QA/QC procedures to be applied	Cross-check of GIS analysis

Purpose of data	Calculation of baseline emissions
Calculation method	N/A
Comments	N/A

Data / Parameter	$A_{P\,3}^{[m=0]}$
Data unit	ha
Description	Area of project accounting area stratum 3 (Selva Pedemontana)
Source of data	GIS analysis prior to sampling
Description of measurement methods and procedures to be applied	Comprehensive GIS analysis, considering critical forest and terrain parameters such as age, canopy cover, forest type, slope, and aspect. This approach aims to guarantee a precise evaluation of carbon stocks within the forest stratum.
Frequency of monitoring/recording	First monitoring period
Value applied	1,472.87
Monitoring equipment	Analysis conducted in QGIS
QA/QC procedures to be applied	Cross-check of GIS analysis
Purpose of data	Calculation of baseline emissions
Calculation method	N/A
Comments	N/A

Data / Parameter	$B_b^{[m]}$
Data unit	Tonnes
Description	Biomass in burned wood or herbaceous material b

Source of data	Measurements of biomass
Description of measurement methods and procedures to be applied	Scale
Frequency of monitoring/recording	Every monitoring period
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions Calculation of project emissions
Calculation method	N/A
Comments	Parameter not used, burning of biomass is conservatively excluded from baseline and project scenario.

Data / Parameter	$C_B^{[m]}$
Data unit	tCO_2e/ha
Description	Baseline carbon stocks
Source of data	Set of all carbon pools in the proxy area
Description of measurement methods and procedures to be applied	Average carbon stocks in each carbon pool of the proxy area.
Frequency of monitoring/recording	Every time measured.
Value applied	AGOT: 0 BGOT: 0 SD: 0 SOC: 190.9

Monitoring equipment	The relevant carbon pools in the project area will be monitored throughout the project crediting period as set out in section 3.3.3 in the PD.
QA/QC procedures to be applied	Best practice procedure in data collection, data management and analysis are maintained. For more details see section 3.3.3 in the PD.
Purpose of data	Calculation of baseline emissions
Calculation method	AGOT is calculated using allometric equations, BGOT using appropriate r-s-ratios based on IPCC guidance, SD is calculated using a combination of allometric equations and dead wood discount factors as well as volumetric functions for stums. SOC is based on extensive soil sampling and respective analysis and quantification methods.
Comments	

Data / Parameter	$C_{B\,BGB}^{[m]}$
Data unit	tCO_2e
Description	Carbon not decayed in BGB at the end of the current monitoring period
Source of data	Proxy area sampling
Description of measurement methods and procedures to be applied	Calculated from equation F.32[16], it is assumed that emissions from standing deadwood will decay over a period of 10 years.
Frequency of monitoring/recording	Every monitoring period
Value applied	Value assessed and reported in monitoring report.
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records.

[16] VM0009 Section 8.1.4

Purpose of data	Calculation of baseline emissions.
Calculation method	Calculated from equation F.32
Comments	N/A

Data / Parameter	$C_{B\,DW}^{[m]}$
Data unit	tCO_2e
Description	Carbon not decayed in DW at the end of the current monitoring period
Source of data	Proxy area sampling
Description of measurement methods and procedures to be applied	Calculated from equation F.36[17]
Frequency of monitoring/recording	Every monitoring period
Value applied	Value assessed and reported in monitoring report
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	Calculated from equation F.36
Comments	N/A

Data / Parameter	$C_{B\,SOC}^{[m]}$

[17] VM0009 Section 8.1.3

Data unit	tCO_2e
Description	Carbon not decayed in SOC at the end of the current monitoring period
Source of data	Proxy area sampling
Description of measurement methods and procedures to be applied	Calculated from DEM_{SOC}
Frequency of monitoring/recording	Every monitoring period
Value applied	Value assessed and reported in monitoring report
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	Calculated from Equation F.33
Comments	N/A

Data / Parameter	$C_{B\,WP}^{[m]}$
Data unit	tCO_2e
Description	Carbon not decayed in WP at the end of the current monitoring period
Source of data	Proxy area sampling
Description of measurement methods and procedures to be applied	N/A
Frequency of monitoring/recording	Every monitoring period

Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	N/A
Purpose of data	N/A
Calculation method	N/A
Comments	Parameter not used as WP are not considered in the baseline scenario

Data / Parameter	$C_{B\ AGMT}^{[m]}$
Data unit	tCO_2e/ha
Description	Baseline carbon stocks in above-ground merchantable trees at the end of the current monitoring period
Source of data	Proxy area sampling
Description of measurement methods and procedures to be applied	N/A
Frequency of monitoring/recording	Every monitoring period
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	N/A
Purpose of data	N/A
Calculation method	N/A

Comments	Parameter not used as commercial logging is not considered in the baseline scenario

Data / Parameter	$C_{B\,BGMT}^{[m]}$
Data unit	tCO_2e/ha
Description	Baseline carbon stocks in below-ground merchantable trees at the end of the current monitoring period
Source of data	Proxy area sampling
Description of measurement methods and procedures to be applied	N/A
Frequency of monitoring/recording	Every monitoring period
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	N/A
Purpose of data	N/A
Calculation method	N/A
Comments	Parameter not used as commercial logging is not considered in the baseline scenario

Data / Parameter	$C_{P\,AGMT}^{[m=0]}$
Data unit	tCO_2e
Description	Project carbon stocks in above-ground merchantable trees at project start
Source of data	Project accounting area sampling

Description of measurement methods and procedures to be applied	N/A
Frequency of monitoring/recording	First monitoring period
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	N/A
Purpose of data	N/A
Calculation method	N/A
Comments	Parameter not used as commercial logging is not considered in the baseline scenario

Data / Parameter	$C_{P\,BGMT}^{[m=0]}$
Data unit	tCO_2e
Description	Project carbon stocks in below-ground merchantable trees at project start
Source of data	Project accounting area sampling
Description of measurement methods and procedures to be applied	N/A
Frequency of monitoring/recording	First monitoring period
Value applied	N/A
Monitoring equipment	N/A

QA/QC procedures to be applied	N/A
Purpose of data	N/A
Calculation method	N/A
Comments	Parameter not used as commercial logging is not considered in the baseline scenario

Data / Parameter	$C_{B\,b}^{[m]}$
Data unit	tCO_2e/ha
Description	Baseline scenario average carbon stock in selected carbon pools strata and area type.
Source of data	Project area and proxy area sampling
Description of measurement methods and procedures to be applied	**Biomass stocks in AGOT** were determined by using Brown's (1997) allometric equation, which has been used for the Chaco and Yungas ecosystem's by Manrique et al. (2011). Allometric function for Selva Pedemontana and proxy area: - $AGB = e^{(-1.993+2.32*LN(DBH))}$ Allometric function used for Selva Montana and Bosque Montano: - $AGB = 34.4703 - 8.0671(DBH) + 0.6589DBH^2$ **For BGOT Biomass** IPCC Guidelines, table 4.4 (updated 2019) r-s-ratios based on climatic conditions have been applied to the respective strata. - For Selva Pedemontana and proxy area: 0.336 *(IPPC value for sub-tropical dry forest in South America (<125 t biomass per hectare))* - For Selva Montana and Bosque Montano: 0.284 *(IPPC value for sub-tropical humid forest in South America (>125 t biomass per hectare))* **SD Biomass** stocks, including trunks, were estimated in accordance with the 'A/R Methodological tool: Estimation of Carbon Stocks and Change in Carbon Stocks in Deadwood and Litter in A/R CDM Project Activities.' Stumps from standing dead trees, identified by a stem height difference of ≤ 1 meter, were factored for biomass reduction according to decay classes. Deadwood factors: - Tree class I: 0.975

	- Tree class II: 0.8 - Stump: $\frac{\pi}{4} * (Diameter\ mid)^2 * stem\ height * wood\ density * decay\ class$ - Stump diameter mid: - $Diameter\ mid = 0.57 * \frac{DBH}{10} * \frac{height_{stump}}{height_{stump} - (\frac{height_{DBH}}{10})^{0.8}}$ Stem decay classes and decay factors: - Sound: 1 - Intermediate: 0.8 - Rotton: 0.45 **SOC assessment** is based on the guidelines set out in the methodology. More details can be found in chapter 3.3.3. in the PD. The carbon inventory aligns with the Argentinian National Forest Inventory (NFI) and supports the development of Argentina's national forest reference emission level (FREL). Trained staff conducted the inventory, ensuring data accuracy and quality.
Frequency of monitoring/recording	Every monitoring period
Value applied	Accounting area: AGOT: 208.0 tCO_2e BGOT: 61.9 tCO_2e SD: 5.8 tCO_2e SOC: 336.1 tCO_2e
Monitoring equipment	See section 3.1.3
QA/QC procedures to be applied	Review of monitoring records, data quality checks
Purpose of data	Calculation of baseline emissions
Calculation method	Calculated from Equation F.18
Comments	Description of measurement methods and procedures applicable for all carbon pools and strata.

Data / Parameter	$C_{B\,BM}^{[m]}$
Data unit	tCO_2e/ha

Description	Baseline carbon stocks in biomass at the end of the current monitoring period
Source of data	Proxy area sampling
Description of measurement methods and procedures to be applied	See description in parameter above
Frequency of monitoring/recording	Every monitoring period
Value applied	
Monitoring equipment	See section 3.1.3 in the PD.
QA/QC procedures to be applied	Review of monitoring records, data quality checks.
Purpose of data	Calculation of baseline emissions.
Calculation method	N/A
Comments	-

Data / Parameter	$C_{B\,SOC}^{[m]}$
Data unit	tCO_2e/ha
Description	Baseline carbon stocks in SOC at the end of the current monitoring period
Source of data	Proxy area sampling
Description of measurement methods and procedures to be applied	See description in parameter above
Frequency of monitoring/recording	Every monitoring period
Value applied	

Monitoring equipment	See section 3.1.3 in the PD.
QA/QC procedures to be applied	Review of monitoring records, data quality checks
Purpose of data	Calculation of baseline emissions
Calculation method	N/A
Comments	N/A

Data / Parameter	$C_P^{[m]}$
Data unit	tCO_2e/ha
Description	Project carbon stocks at the end of the current monitoring period
Source of data	Project accounting area sampling
Description of measurement methods and procedures to be applied	See description in parameter above.
Frequency of monitoring/recording	Every monitoring period
Value applied	Assessed every monitoring period
Monitoring equipment	See section 3.1.3 in the PD.
QA/QC procedures to be applied	Review of monitoring records, data quality checks.
Purpose of data	Calculation of baseline emissions
Calculation method	
Comments	Since the current monitoring period is the first monitoring, the value is the same as prior to the first verification event $C_P^{[m=0]}$, as approved by methodology VM0009.

Data / Parameter	$C_P^{[m-1]}$
Data unit	tCO_2e/ha
Description	Project carbon stocks at the beginning of the current monitoring period
Source of data	Project accounting area sampling
Description of measurement methods and procedures to be applied	See description in parameter above
Frequency of monitoring/recording	Every monitoring period
Value applied	Assessed every monitoring period
Monitoring equipment	See section 3.1.3 in the PD.
QA/QC procedures to be applied	Project carbon stocks at the beginning of the current monitoring period
Purpose of data	Project accounting area sampling
Calculation method	See description in parameter above
Comments	Since the current monitoring period is the first monitoring, the value is the same as prior to the first verification event $C_P^{[m=0]}$, as approved by methodology VM0009.

Data / Parameter	$C_P^{[m=0]}$
Data unit	tCO_2e/ha
Description	Project carbon stocks prior to first verification event
Source of data	Project accounting area sampling

Description of measurement methods and procedures to be applied	See description in parameter above
Frequency of monitoring/recording	Every monitoring period
Value applied	Assessed every monitoring period
Monitoring equipment	See section 3.1.3 in the PD.
QA/QC procedures to be applied	Review of monitoring records, data quality checks
Purpose of data	Calculation of baseline emissions
Calculation method	Weighted average of carbon stocks in the two ecosystems of the accounting area
Comments	Provide any additional comments

Data / Parameter	$C_{P1\,BM}^{[m=0]}$
Data unit	tCO_2e/ha
Description	See description in parameter above
Source of data	Every monitoring period
Description of measurement methods and procedures to be applied	Assessed every monitoring period
Frequency of monitoring/recording	First monitoring period
Value applied	Provide an estimated value for the data/parameter
Monitoring equipment	See section 3.1.3 in the PD.

QA/QC procedures to be applied	Review of monitoring records, data quality checks
Purpose of data	Calculation of baseline emissions
Calculation method	N/A
Comments	Provide any additional comments

Data / Parameter	$C_{P\,2\,BM}^{[m=0]}$
Data unit	tCO_2e/ha
Description	Project carbon stocks in biomass in stratum 2 (Selva Montano) prior to first verification event.
Source of data	Project accounting area sampling.
Description of measurement methods and procedures to be applied	See description in parameter above
Frequency of monitoring/recording	Every monitoring period
Value applied	Assessed every monitoring period
Monitoring equipment	See section 3.1.3 in the PD.
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	Average carbon stocks per pool in the project accounting area.
Comments	

Data / Parameter	$C_{P\,3\,BM}^{[m=0]}$
Data unit	tCO_2e/ha
Description	Project carbon stocks in biomass in stratum 3 (Selva Pedemontana) prior to first verification event
Source of data	Project accounting area sampling
Description of measurement methods and procedures to be applied	See description in parameter above
Frequency of monitoring/recording	Every monitoring period
Value applied	Assessed every monitoring period
Monitoring equipment	See section 3.1.3 in the PD.
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	Average carbon stocks per pool in the project accounting area.
Comments	Provide any additional comments

Data / Parameter	$C_{P\,AGMT}^{[m=0]}$
Data unit	tCO_2e/ha
Description	Project carbon stocks in above-ground merchantable trees prior to first verification event
Source of data	Project accounting area sampling
Description of measurement methods and procedures to be applied	N/A

Frequency of monitoring/recording	First monitoring period.
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	N/A
Calculation method	N/A
Comments	Parameter not used as commercial logging is not considered in the baseline scenario.

Data / Parameter	$C_{PBM}^{[m=0]}$
Data unit	tCO_2e
Description	Project carbon stocks in biomass prior to first verification event.
Source of data	Project accounting area sampling.
Description of measurement methods and procedures to be applied	See description in parameter above.
Frequency of monitoring/recording	Every monitoring period
Value applied	Assessed every monitoring period
Monitoring equipment	See section 3.1.3 in the PD.
QA/QC procedures to be applied	Review of monitoring records, data quality checks

Purpose of data	• Calculation of baseline emissions
Calculation method	Weighted average of carbon stocks in the two ecosystems of the accounting area
Comments	N/A

Data / Parameter	$C_{P\,b}^{[m=0]}$
Data unit	tCO_2e/ha
Description	Average carbon in biomass in the project accounting area
Source of data	See description in parameter above
Description of measurement methods and procedures to be applied	Every monitoring period
Frequency of monitoring/recording	Assessed every monitoring period
Value applied	See description in parameter above
Monitoring equipment	See section 3.1.3 in the PD.
QA/QC procedures to be applied	Review of monitoring records, data quality checks
Purpose of data	Calculation of baseline emissions
Calculation method	Weighted average of carbon stocks in the two ecosystems of the accounting area
Comments	N/A

Data / Parameter	$C_{P\,SOC}^{[m=0]}$
Data unit	tCO_2e/ha

Description	Project soil carbon stocks prior to first verification event
Source of data	See description in parameter above
Description of measurement methods and procedures to be applied	Every monitoring period
Frequency of monitoring/recording	Assessed every monitoring period
Value applied	See description in parameter above
Monitoring equipment	See section 3.1.3 in the PD.
QA/QC procedures to be applied	Review of monitoring records, data quality checks
Purpose of data	Calculation of baseline emissions
Calculation method	SOC stocks were calculated based on equation 4.3.3 of the GPG-LULUCF, section 4.3.3.5.4[18]
Comments	N/A

Data / Parameter	$C_{P\Delta WP}^{[m]}$
Data unit	tCO_2e
Description	Project carbon stocks in wood products at the end of the current monitoring period
Source of data	Project accounting area sampling
Description of measurement methods and procedures to be applied	N/A
Frequency of monitoring/recording	Every monitoring period

[18] GPG LULUCF (IPCC, 2006), section 4.3.3.5.4

Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	N/A
Calculation method	N/A
Comments	Parameter not used as WP are not considered in the baseline scenario.

Data / Parameter	$E_{\Delta GER}^{[m]}$
Data unit	tCO_2e
Description	GERs for the current monitoring period
Source of data	Proxy area measurements
Description of measurement methods and procedures to be applied	See description in parameter above
Frequency of monitoring/recording	Every monitoring period
Value applied	Assessed every monitoring period
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of GER calculations
Purpose of data	Indicate one of the following: • Calculation of baseline emissions • Calculation of project emissions • Calculation of leakage
Calculation method	Calculated from Equation F.53

Comments	To be determined at verification. Will be assessed for each monitoring period.

Data / Parameter	$E_{\Delta GER}^{[i]}$
Data unit	tCO_2e
Description	GERs for monitoring period i
Source of data	Area measurements
Description of measurement methods and procedures to be applied	This parameter is the difference between project scenario emissions and baseline emissions. It is calculated by applying activity data generated by historic reference period analysis in the proxy area to emission factors derived from proxy and accounting area carbon inventories. Furthermore, changes in project emissions, leakage emissions and cumulative confidence deductions for the current monitoring period are subtracted. Emissions and emission reductions are determined for the duration of each monitoring period. For details see section 8 of Methodology VM0009.
Frequency of monitoring/recording	Prior monitoring period
Value applied	Asessed for every monitoring period
Monitoring equipment	-
QA/QC procedures to be applied	Review of GER calculations
Purpose of data	Indicate one of the following: • Calculation of baseline emissions • Calculation of project emissions • Calculation of leakage
Calculation method	
Comments	To be determined at verification. It will be assessed for each monitoring period.

Data / Parameter	$E_{\Delta NER}^{[i]}$
Data unit	tCO_2e

Description	NERs for monitoring period i
Source of data	Area measurements
Description of measurement methods and procedures to be applied	NERs result from subtracting project emissions from the GERs. Considering emissions for the set of selected carbon pools, according to the project boundary described in section 3.1.3 in PD. For more details, see Section 8 of Methodology VM0009.
Frequency of monitoring/recording	Prior monitoring period
Value applied	Asessed every for every monitoring period
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of NER calculations
Purpose of data	Indicate one of the following: • Calculation of baseline emissions • Calculation of project emissions • Calculation of leakage
Calculation method	Calculated from Equation F.55
Comments	To be determined at verification. It will be assessed for each monitoring period.

Data / Parameter	$E_B^{[m]}$
Data unit	tCO_2e
Description	Cumulative baseline emissions at the end of the current monitoring period
Source of data	Proxy area measurements
Description of measurement methods and procedures to be applied	This parameter is the sum of emissions calculated by applying activity data, generated by historic reference period analysis in the proxy area to emission factors derived from proxy and accounting area carbon inventories. Additionally, it includes emissions from SD and SOC decay throughout the current monitoring period. It covers emissions for the set of selected carbon pools, according to the project boundary described in section 3.1.3 in PD. For more details, see Section 8 of Methodology VM0009.

Frequency of monitoring/recording	Every monitoring period
Value applied	Asessed for every monitoring period
Monitoring equipment	See section 3.1.3 in PD.
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	Calculated from Equation F.16
Comments	To be determined at verification. Will be assessed for each monitoring period.

Data / Parameter	$E_B^{[m-1]}$
Data unit	tCO_2e
Description	Cumulative baseline emissions at the beginning of the current monitoring period
Source of data	Proxy area measurements
Description of measurement methods and procedures to be applied	This parameter is the sum of emissions calculated by applying activity data, generated by historic reference period analysis in the proxy area to emission factors derived from proxy and accounting area carbon inventories. Additionally, it includes emissions from SD and SOC decay at the beginning of the current monitoring period. It covers emissions for the set of selected carbon pools, according to the project boundary described in section 3.1.3 in PD. For more details, see Section 8 of Methodology VM0009.
Frequency of monitoring/recording	Prior monitoring period
Value applied	Asessed for every monitoring period
Monitoring equipment	See section 3.1.3 in PD.
QA/QC procedures to be applied	Review of monitoring records

Purpose of data	• Calculation of baseline emissions
Calculation method	N/A
Comments	To be determined at verification. It will be assessed for each monitoring period.

Data / Parameter	$E_{B\,\Delta}^{[m]}$
Data unit	tCO_2e
Description	Change in baseline emissions
Source of data	Proxy area measurements
Description of measurement methods and procedures to be applied	This parameter is the change of baseline emissions calculated by subtracting project emissions from baseline emissions. It is calculated by applying activity data generated by historic reference period analysis in the proxy area to emission factors derived from proxy and accounting area carbon inventories. It covers emissions for the set of all selected carbon pools (AGOT, BGOT, SD and SOC), according to the project boundary described in section 3.1.3 in PD. This description is applicable to $E_{B\,\Delta\,BGB}^{[i]}$, $E_{B\,\Delta\,DW}^{[i]}$, $E_{B\,\Delta\,SOC}^{[m]}$and $E_{B\,\Delta\,SOC}^{[i]}$. For more details, see Section 8 of Methodology VM0009.
Frequency of monitoring/recording	Every monitoring period
Value applied	Assessed at every monitoring period
Monitoring equipment	See section 3.1.3 in PD.
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	Calculated from Equation F.15
Comments	The value is determined by summing the parameters of each stratum, both in the current monitoring period and at the start of the project. It was calculated as the difference between baseline

	emissions in the current monitoring period and the parameters values at the beginning of the project.

Data / Parameter	$E_{B\,\Delta\,BGB}^{[i]}$
Data unit	tCO_2e
Description	Change in baseline emissions from below-ground biomass during monitoring period i
Source of data	Monitoring the proxy area
Description of measurement methods and procedures to be applied	The same procedure as described for the parameter $E_{B\,\Delta}^{[m]}$ above, only applies to the respective carbon pool. For additional information see section 8 of Methodology VM0009
Frequency of monitoring/recording	Every monitoring period
Value applied	Assessed at every monitoring period
Monitoring equipment	See section 3.1.3 in PD.
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	From Equation F.32
Comments	To be determined at verification. It will be assessed for each monitoring period.

Data / Parameter	$E_{B\,\Delta\,DW}^{[i]}$
Data unit	tCO_2e
Description	Baseline emissions from dead wood in monitoring period i
Source of data	Measurements in the proxy area

Description of measurement methods and procedures to be applied	The same procedure as described for the parameter $E_{B\,\Delta}^{[m]}$ above, only applies to the respective carbon pool. For additional information see section 8 of Methodology VM0009
Frequency of monitoring/recording	Every monitoring period
Value applied	Assessed at every monitoring period
Monitoring equipment	See section 3.1.3 in PD.
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	N/A
Comments	To be determined at verification. It will be assessed for each monitoring period.

Data / Parameter	$E_{B\,\Delta\,SOC}^{[m]}$
Data unit	tCO_2e
Description	Baseline change in emissions from soil carbon
Source of data	Measurements in the proxy area
Description of measurement methods and procedures to be applied	The same procedure as described for the parameter $E_{B\,\Delta}^{[m]}$ above, only applies to the respective carbon pool. For additional information see section 8 of Methodology VM0009
Frequency of monitoring/recording	Every monitoring period
Value applied	Assessed at every monitoring period
Monitoring equipment	See section 3.3.3 in PD.

QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	Calculated from equation F.26
Comments	The value is determined by summing the parameters of each stratum, both in the current monitoring period and at the start of the project. It was calculated as the difference between baseline emissions in the current monitoring period and the parameters values at the beginning of the project.

Data / Parameter	$E_{B\,\Delta\,SOC}^{[i]}$
Data unit	tCO_2e
Description	Baseline emissions from soil carbon in monitoring period i
Source of data	Measurements in the proxy area
Description of measurement methods and procedures to be applied	The same procedure as described for the parameter $E_{B\,\Delta}^{[m]}$ above, only applies to the respective carbon pool. For additional information see section 8 of Methodology VM0009
Frequency of monitoring/recording	Every monitoring period
Value applied	Assessed at every monitoring period
Monitoring equipment	See section 3.1.3 in PD.
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	• Calculation of baseline emissions
Calculation method	N/A
Comments	To be determined at verification. It will be assessed for each monitoring period.

Data / Parameter	$E_{B\ AGMT}^{[m]}$
Data unit	tCO_2e
Description	Cumulative baseline emissions from above-ground commercial trees at the end of the current monitoring period
Source of data	Measurements in the proxy area
Description of measurement methods and procedures to be applied	N/A
Frequency of monitoring/recording	Every monitoring period
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	N/A
Calculation method	N/A
Comments	Parameter not used as commercial logging is not considered in the baseline scenario

Data / Parameter	$E_{B\ BGB}^{[m]}$
Data unit	tCO_2e
Description	Cumulative baseline emissions from below-ground biomass at the end of the current monitoring period
Source of data	Measurements in the proxy area

Description of measurement methods and procedures to be applied	Sum of emissions from the decay of below-ground biomass during the current monitoring period. Calculated as a component of the decay emissions model predicting a linear decay over 10 years. For additional information see section 8 of Methodology VM0009.
Frequency of monitoring/recording	Every monitoring period
Value applied	Assessed at every monitoring period
Monitoring equipment	See section 3.1.3 in PD.
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	• Calculation of baseline emissions
Calculation method	Calculated from Equation F.30
Comments	The value is determined by summing up the parameters of each stratum, both in the current monitoring period and at the start of the project. It was calculated as the difference between baseline emissions in the current monitoring period and the parameters values at the beginning of the project.

Data / Parameter	$E_{B\,BGB}^{[m-1]}$
Data unit	tCO_2e
Description	Cumulative baseline emissions from below-ground biomass at the beginning of the current monitoring period
Source of data	Measurements in the proxy area
Description of measurement methods and procedures to be applied	Sum of emissions from the decay of below-ground biomass at the beginning of the current monitoring period. Calculated as a component of the decay emissions model predicting a linear decay over 10 years. For additional information see section 8 of Methodology VM0009.
Frequency of monitoring/recording	Every monitoring period
Value applied	0 for the first monitoring period

Monitoring equipment	See section 3.3.3 in PD.
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	• Calculation of baseline emissions
Calculation method	Where relevant, provide the calculation method, including any equations, used to establish the data/parameter.
Comments	The value is the result from sum of parameter of each stratum, in the beginning of project.

Data / Parameter	$E_{B\,BM}^{[m]}$
Data unit	tCO_2e
Description	Cumulative baseline emissions from biomass at the end of the current monitoring period
Source of data	Measurements in the proxy area
Description of measurement methods and procedures to be applied	The emissions total from biomass during the current monitoring period is calculated by applying the activity data, generated by historic reference period analysis in the proxy area to the biomass emission factors derived from the proxy and accounting area carbon inventories. The total also includes emissions from SD and BGB decay during the current monitoring period. It covers emissions for the set of selected carbon pools within the project boundary described in section 3.1.3 in PD. For further information, see Section 8 of Methodology VM0009.
Frequency of monitoring/recording	Every monitoring period
Value applied	Assessed at every monitoring period
Monitoring equipment	See section 3.1.3 in PD.
QA/QC procedures to be applied	Review of monitoring records

Purpose of data	• Calculation of baseline emissions
Calculation method	-
Comments	-

Data / Parameter	$E_{B\,DW}^{[m]}$
Data unit	tCO_2e
Description	Cumulative baseline emissions from dead wood at the end of the current monitoring period
Source of data	Measurements in the proxy area
Description of measurement methods and procedures to be applied	Parameter not used as DW was not considered within the project boundary. See section 3.1.3 in PD.
Frequency of monitoring/recording	Every monitoring period
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	• Calculation of baseline emissions
Calculation method	N/A
Comments	Parameter not used

Data / Parameter	$E_{B\,DW}^{[m-1]}$
Data unit	tCO_2e

Description	Cumulative baseline emissions from dead wood at the beginning of the current monitoring period
Source of data	Measurements in the proxy area
Description of measurement methods and procedures to be applied	The parameter not used as DW was not considered within the project boundary. See section 3.1.3 in PD.
Frequency of monitoring/recording	Every monitoring period
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	• Calculation of baseline emissions
Calculation method	N/A
Comments	Parameter not used

Data / Parameter	$E_{B\ SOC}^{[m]}$
Data unit	tCO_2e
Description	Cumulative baseline emissions from soil carbon at the end of the current monitoring period
Source of data	Measurements in the proxy area
Description of measurement methods and procedures to be applied	The emissions total from SOC during the current monitoring period is calculated by applying the activity data, generated by historic reference period analysis in the proxy area to the SOC emission factors derived from the proxy and accounting area SOC inventories. The total includes cumulative emissions from SOC decay, calculated from the soil emissions model for the current monitoring period. For further information, see Section 8 of Methodology VM0009.

Frequency of monitoring/recording	Every monitoring period
Value applied	Assessed at every monitoring period
Monitoring equipment	See section 3.1.3 in PD.
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	• Calculation of baseline emissions
Calculation method	Calculated from equation F.25
Comments	The value is the result of the sum of parameters of each vegetation class, in the current monitoring period.

Data / Parameter	$E_{B\,SOC}^{[m-1]}$
Data unit	tCO_2e
Description	Cumulative baseline emissions from soil carbon at the beginning of the current monitoring period
Source of data	Measurements in the proxy area
Description of measurement methods and procedures to be applied	The emissions total from SOC during the previous monitoring period is calculated by applying the activity data, generated by historic reference period analysis in the proxy area to the SOC emission factors derived from the proxy and accounting area SOC inventories. The total includes cumulative emissions from SOC decay, calculated from the soil emissions model for the previous monitoring period. For further information, see Section 8 of Methodology VM0009.
Frequency of monitoring/recording	Every monitoring period
Value applied	0 for the first monitoring period
Monitoring equipment	See section 3.1.3 in PD.
QA/QC procedures to be applied	Review of monitoring records

Purpose of data	• Calculation of baseline emissions
Calculation method	Where relevant, provide the calculation method, including any equations, used to establish the data/parameter.
Comments	The value is the result of the sum of parameters of each stratumin the previous monitoring period.

Data / Parameter	$E_{BA}^{[m]}$
Data unit	tCO_2e
Description	Cumulative emissions allocated to the buffer account at the end of the current monitoring period.
Source of data	AFOLU Non-Permanence Risk Tool
Description of measurement methods and procedures to be applied	Calculated following guidance from section 8 of Methodology VM0009, applying the VCS 'AFOLU Non-Permanence Risk Tool' v4.2[19]
Frequency of monitoring/recording	Every monitoring period
Value applied	12%
Monitoring equipment	N/A
QA/QC procedures to be applied	see non-performance risk report
Purpose of data	Calculation of baseline emissions and net GHG emissions from the project.
Calculation method	Direct calculation from 12% of GERs applying VCS-AFOLU Non-Permanence Risk Tool[19]
Comments	N/A

[19] VCS AFOLU Non-Permanence Risk Tool

Data / Parameter	$E_L^{[m]}$
Data unit	tCO_2e
Description	Cumulative emissions from leakage at the end of the current monitoring period
Source of data	Measurements in the leakage area(s)
Description of measurement methods and procedures to be applied	See section 3.2.3 in PD.for details and leakage considerations.
Frequency of monitoring/recording	Every monitoring period
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of leakage
Calculation method	N/A
Comments	N/A

Data / Parameter	$E_L^{[m-1]}$
Data unit	tCO_2e
Description	Cumulative emissions from leakage at the beginning of the current monitoring period
Source of data	Measurements in the leakage area(s)
Description of measurement methods and procedures to be applied	See section 3.2.3 in PD for details and leakage considerations.

Frequency of monitoring/recording	Every monitoring period
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of leakage
Calculation method	N/A
Comments	N/A

Data / Parameter	$E_{L\,\Delta}^{[m]}$
Data unit	tCO_2e
Description	Change in emissions due to leakage
Source of data	N/A
Description of measurement methods and procedures to be applied	See section 3.2.3 in PD for details and leakage considerations.
Frequency of monitoring/recording	Every monitoring period
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of leakage

Calculation method	N/A
Comments	N/A

Data / Parameter	$E_{L\,ASF}^{[m]}$
Data unit	tCO_2e
Description	Cumulative emissions from activity-shifting leakage in forested strata at the end of the current monitoring period
Source of data	Measurements in the activity-shifting leakage area
Description of measurement methods and procedures to be applied	See section 3.2.3 in PD for details and leakage considerations.
Frequency of monitoring/recording	Every monitoring period
Value applied	0
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of leakage
Calculation method	N/A
Comments	N/A

Data / Parameter	$E_{L\,ASG}^{[m]}$
Data unit	tCO_2e
Description	Cumulative emissions from activity-shifting leakage in native grassland at the end of the current monitoring period
Source of data	Measurements in the activity-shifting leakage area

Description of measurement methods and procedures to be applied	See section 3.2.3 in PD for details and leakage considerations.
Frequency of monitoring/recording	Every monitoring period
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of leakage
Calculation method	N/A
Comments	Parameter not used

Data / Parameter	$E_{LME}^{[m]}$
Data unit	tCO_2e
Description	Cumulative emissions from market effects leakage at the end of the current monitoring period.
Source of data	Measurements in the market leakage area
Description of measurement methods and procedures to be applied	See section 3.2.3 in PD for details and leakage considerations.
Frequency of monitoring/recording	Every monitoring period
Value applied	0
Monitoring equipment	N/A

QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of leakage
Calculation method	N/A
Comments	N/A

Data / Parameter	$E_{P\Delta}^{[m]}$
Data unit	tCO_2e
Description	Change in project emissions
Source of data	Monitoring records for Forest Fire, Burning, logging, wood products, and natural disturbance events.
Description of measurement methods and procedures to be applied	Section 8 of Methodology VM0009.
Frequency of monitoring/recording	Every monitoring period
Value applied	Assessed at every monitoring period
Monitoring equipment	
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of project emissions
Calculation method	Calculated using equation F.41
Comments	

Data / Parameter	$E_{P\,\Delta BRN}^{[m]}$
Data unit	tCO_2e
Description	Cumulative project emissions due to burning at the end of the current monitoring period
Source of data	Monitoring plots in the project
Description of measurement methods and procedures to be applied	Section 8 of Methodology VM0009.
Frequency of monitoring/recording	Every monitoring period
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of project emissions
Calculation method	Calculated using equation F.42
Comments	Parameter not used. Biomass burning is not considered as a project activity.

Data / Parameter	$E_{P\,\Delta LS}^{[m]}$
Data unit	tCO_2e
Description	Cumulative project emissions due to livestock grazing within the project area.
Source of data	Monitoring plots in the project area
Description of measurement methods and procedures to be applied	Section 8 of Methodology VM0009.

Frequency of monitoring/recording	Every monitoring period
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	N/A
Purpose of data	Calculation of project emissions
Calculation method	N/A
Comments	Parameter not used. Livestock grazing is not considered as a project activity.

Data / Parameter	$E_{P\Delta SF}^{[m]}$
Data unit	tCO_2e
Description	Cumulative project emissions due to the use of synthetic fertilizers within the project area.
Source of data	Monitoring in the project area
Description of measurement methods and procedures to be applied	N/A
Frequency of monitoring/recording	Every monitoring period
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records

Purpose of data	Calculation of project emissions
Calculation method	N/A
Comments	Parameter not used. Livestock grazing is not considered as a project activity.

Data / Parameter	$E_U^{[m]}$
Data unit	tCO_2e
Description	Cumulative confidence deduction at the end of the current monitoring period
Source of data	N/A
Description of measurement methods and procedures to be applied	Linear combination of weighted standard errors of estimates from baseline emission models and carbon stock measurements. For additional information see section 8 of Methodology VM0009. The uncertainty deductions determined based on the first inventory conducted and following the procedure in the methodology can be determined *de minims*.
Frequency of monitoring/recording	Every monitoring period
Value applied	0
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	Calculated using equation F.57
Comments	Provide any additional comments

Data / Parameter	$n_{LS\,i}$

Data unit	Count
Description	The number of head of livestock species / category i in the project area
Source of data	Monitoring in the project area
Description of measurement methods and procedures to be applied	N/A
Frequency of monitoring/recording	Every monitoring period
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	N/A
Calculation method	N/A
Comments	Parameter not used. In the project scenario, there is no livestock grazing in the project area.

Data / Parameter	$P_{L\,DEG}^{[m]}$
Data unit	Proportion (unitless)
Description	Portion of leakage due to degradation in forest at the end of the current monitoring period
Source of data	Monitoring in the leakage area
Description of measurement methods and procedures to be applied	See section 3.2.3 in PD for details and leakage considerations.

Frequency of monitoring/recording	Every monitoring period
Value applied	0
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of leakage
Calculation method	N/A
Comments	N/A

Data / Parameter	$P_{L\,DEG}^{[m=0]}$
Data unit	Proportion (unitless)
Description	Portion of leakage due to degradation in forest prior to first verification event
Source of data	Monitoring in the leakage area
Description of measurement methods and procedures to be applied	See section 3.2.3 in PD for details and leakage considerations.
Frequency of monitoring/recording	Every monitoring period
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records

Purpose of data	Calculation of leakage
Calculation method	N/A
Comments	N/A

Data / Parameter	$P_{L\ CON\ G}^{[m=0]}$
Data unit	Proportion (unitless)
Description	Portion of leakage due to native grasslands prior to the first verification event
Source of data	Monitoring in the leakage area
Description of measurement methods and procedures to be applied	See section 3.2.3 in PD for details and leakage considerations.
Frequency of monitoring/recording	Every monitoring period
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of leakage
Calculation method	N/A
Comments	Parameter not used

Data / Parameter	$P_{L\ CON\ G}^{[m]}$
Data unit	Proportion (unitless)

Description	Portion of leakage due to native grasslands at the beginning of the current monitoring period
Source of data	Monitoring in the leakage area
Description of measurement methods and procedures to be applied	See section 3.2.3 in PD for details and leakage considerations.
Frequency of monitoring/recording	Every monitoring period
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of leakage
Calculation method	N/A
Comments	Parameter not used

Data / Parameter	$P_{L\ CON\ G}^{[m-1]}$
Data unit	Proportion (unitless)
Description	Portion of leakage due to native grasslands at the end of the current monitoring period
Source of data	Monitoring in the leakage area
Description of measurement methods and procedures to be applied	See section 3.2.3 in PD for details and leakage considerations.
Frequency of monitoring/recording	Every monitoring period
Value applied	N/A

Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of leakage
Calculation method	N/A
Comments	Parameter not used

Data / Parameter	$P_{SL}^{[m]}$
Data unit	Proportion (unitless)
Description	Proportion of AGMT that is not merchantable and goes into slash estimated from inventory.
Source of data	Estimated from inventory.
Description of measurement methods and procedures to be applied	N/A
Frequency of monitoring/recording	Every monitoring period
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	N/A
Calculation method	N/A

Comments	Parameter not used, as commercial timber harvest is not considered in the baseline scenario.

Data / Parameter	$t^{[i-1]}$
Data unit	Days
Description	Time from project start to beginning of monitoring period i
Source of data	Monitoring records
Description of measurement methods and procedures to be applied	N/A
Frequency of monitoring/recording	Every monitoring period
Value applied	0 in first monitoring period
Monitoring equipment	N/A
QA/QC procedures to be applied	N/A
Purpose of data	Calculation of baseline emissions
Calculation method	Direct count of time
Comments	N/A

Data / Parameter	$t^{[m]}$
Data unit	Days
Description	Time from project start date to end of current monitoring period
Source of data	Monitoring records

Description of measurement methods and procedures to be applied	N/A
Frequency of monitoring/recording	Every monitoring period
Value applied	-
Monitoring equipment	N/A
QA/QC procedures to be applied	N/A
Purpose of data	Calculation of baseline emissions
Calculation method	Direct count of time
Comments	Provide any additional comments

Data / Parameter	$t^{[m-1]}$
Data unit	Days
Description	Time from project start date to beginning of current monitoring period
Source of data	Monitoring records
Description of measurement methods and procedures to be applied	N/A
Frequency of monitoring/recording	Every monitoring period
Value applied	0
Monitoring equipment	N/A.

QA/QC procedures to be applied	N/A
Purpose of data	Calculation of baseline emissions
Calculation method	Direct count of time
Comments	First monitoring period, therefore the time is start of the project.

Data / Parameter	$U_B^{[m]}$
Data unit	tCO_2e
Description	Total uncertainty in proxy area carbon stock estimate.
Source of data	Monitoring records.
Description of measurement methods and procedures to be applied	Combination of weighted standard errors of carbon stock estimates of all carbon pools considered in the proxy carbon inventory. For additional information see section 8 of Methodology VM0009
Frequency of monitoring/recording	Every monitoring period
Value applied	0
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	B.34
Comments	The value is the sum of the absolute uncertainty for each carbon pool considered in the proxy area carbon inventory.

Data / Parameter	$U_{EM}^{[m]}$
Data unit	tCO_2e
Description	Total uncertainty in Baseline Emission Models
Source of data	Monitoring records
Description of measurement methods and procedures to be applied	Equation F.55 was used to calculate the uncertainty. Confidence deduction is based on uncertainty in emissions models, carbon stock estimates in the project accounting area and carbon stock estimates in the proxy area
Frequency of monitoring/recording	Every monitoring period
Value applied	67,227
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	F.55
Comments	The value is the result of the sum of parameters of each stratum, in the current monitoring period

Data / Parameter	$U_{P}^{[m]}$
Data unit	tCO_2e
Description	Total uncertainty in project accounting area carbon stock estimate
Source of data	Monitoring records
Description of measurement methods and procedures to be applied	N/A

Frequency of monitoring/recording	Every monitoring period
Value applied	169,304
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	B.14 and B.34
Comments	The value is the sum of the parameter for each stratum in the current monitoring period. It was calculated from the uncertainty of biomass and soil (all included carbon pools).

Data / Parameter	$WC_{Pi}^{[m=0]}$
Data unit	tCO_2e
Description	Weighted average carbon stocks for biomass or SOC in the project for the set of selected strata.
Source of data	Inventory
Description of measurement methods and procedures to be applied	Inventory, GIS
Frequency of monitoring/recording	Every monitoring period
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records

Purpose of data	Indicate one of the following: • Calculation of baseline emissions • Calculation of project emissions • Calculation of leakage
Calculation method	N/A
Comments	Parameter not used as it is not applicable to the selected baseline type.

Data / Parameter	$X^{[m]}$
Data unit	Varies
Description	Covariate values
Source of data	Participatory Rural Appraisal, analysis of public records, and/or expert interpretation of inventory data or remotely sensed imagery
Description of measurement methods and procedures to be applied	N/A
Frequency of monitoring/recording	Every monitoring period
Value applied	N/A
Monitoring equipment	N/A
QA/QC procedures to be applied	Review of monitoring records
Purpose of data	Calculation of baseline emissions
Calculation method	N/A
Comments	Parameter not used; covariates were not considered in the baseline scenario

3.1.3 Monitoring Plan

The project encompasses over 24,000 hectares of forest, situated at altitudes ranging from 800 to over 2,000 meters above sea level. This altitude variation gives rise to three distinct Yungas sub-forest types. The lower, predominantly flat areas feature Selva Pedemontana forests, which then transition into Selva Montana and Bosque Montano types at higher elevations. To enable precise biomass estimation in the project, accounting, and proxy areas, the land is divided into four strata, each representing a different Yungas Forest type. This section describes only the monitoring methods of forest and carbon parameters, monitoring of community and biodiversity parameters can be found in the respective chapters.

A random systematic cluster sampling approach was employed. Under this method, the necessary number of plots for each stratum was randomly chosen from a 500x500-meter triangular grid. The required number of sample plots was determined based on the expected variance and carbon stocks in the respective strata derived in pre-monitoring survey.

This sampling technique aligns both with National Forest Inventory (NFI) procedures and the IPCC's sampling guidelines. The inventory plots comprise three concentric circles. In addition to recording tree parameters such as diameter at breast height (DBH) and height, pooled soil samples were collected as well. Given the challenging terrain, a preliminary exercise was conducted to exclude any plots with slopes steeper than 35° or located more than 2 kilometers from the nearest road. The selected plots are designated as permanent sample plots and will be reassessed during each verification event.

The initial carbon monitoring was carried out by a professional forest inventory company, closely supervised, and instructed by unique land use to guarantee the collection of high-quality data. Data quality control and assurance procedures were followed on several levels. Data analysis was carried out by Unique. Details on the sampling design and inventory procedures are set out in the designated carbon inventory Standard Operating Procedures (SOP). The SOP will be made available during the project Validation.

In the following the most relevant aspects of the carbon inventory are summarized.

- Sampling approach, method of measuring, data collection procedure, parameters collected
- Structure of monitoring team and responsibilities
- QA/AC procedures and internal auditing procedures
- Digital solution for data collection and data management

The inventory activities are carried out both in forest of project area as well as on the matched proxy areas to determine the carbon stocks in the following carbon pools:

- Above-ground Other Trees (AGOT)
- Below-ground Other Trees (BGOT)
- Standing Dead wood (SD)
- Soil Organic Carbon (SOC)

Sampling approach, method of measuring, data collection procedure, parameters collected

The monitoring activities in forest carbon stocks are scheduled to be repeated for every verification event. The measurements of soil parameters will be repeated every 5 years.

The forest in the project area was stratified based on a sampled based interpretation spatial information and satellite image interpretation of crown cover expansion and crown cover density. This classification attributes were then considered in the steps of spatial segmentation and vector classification to produce a forest stratum specific to the project. The final outputs have been reviewed by Yungas Forest experts and biologists for their suitability.

The sample design is a random systematic cluster sampling approach, where sufficient permanent sample plots are established throughout the project area in every stratum. The procedure to establish the required amount of sample plots was as follows:

1. Stratification of project area and proxy area
2. Establishment of triangular grid with spacing of 500x500 for cluster location

3. Every cluster populated with seven plots in 100 m distance to each other (see Figure **2**)
4. Pre-accessibility and suitability check to exclude inaccessible, hazardous, or outside plots.
5. Random selection of required sampling plots per stratum
6. Re-calculation of uncertainty based on incoming monitoring data to enable opportunity to increase number of plots (during monitoring campaigns)

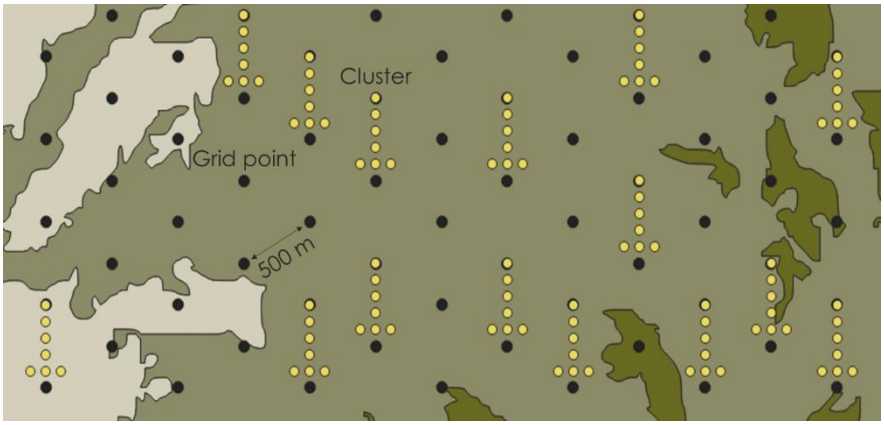


Figure 2: Illustration of carbon inventory cluster grid and respective plot formation

The plots are designed as three concentric circles, where different parameters are measured. Concentric circles in forest inventory are used for efficient, scalable sampling that enables accurate estimation of tree density and carbon stocks. The plot itself is adjusted to match the design of the National Forest Inventory (NFI) of Argentina. The largest circle has a radius of 17.8 m, which equals an area of 1,000 m² (0.1 ha) where trees greater 20 cm DBH are measured. The medium size circle has a radius of 9 m where trees of 10-20 cm are measured. In the smallest circle established regeneration is assessed (see **Figure 3** below)

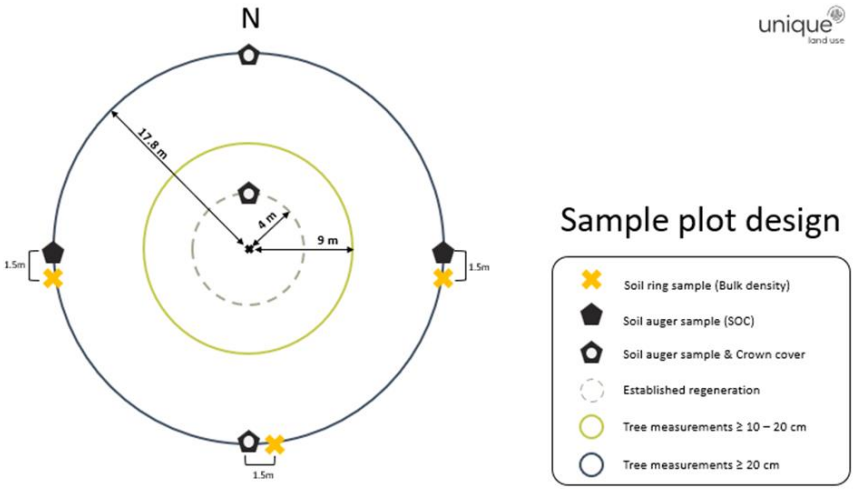


Figure 3: Concentric circle plot design

On the plots themselves plot attributes, tree measurements and soil samples are taken and digitally recorded. The following plot attributes in the forest have been recorded:

- Averaged GPS coordinates with high precision Bluetooth GNSS antenna
- Terrain type based on pre-defined categories
- Altitude (m) based on GNSS antenna
- Slope (degree) based on two readings up and down slope with Vertex

- Aspect (compass direction)
- Established regeneration (#) count of seedlings in 4 m radius (> 2 m hight and < 10 cm DBH)
- Crown cover (%) based on five readings with densiometer

In the forest the trees are marked, and the plot center is physically marked with a metal stake to improve plot-identification and remeasurement.

Once the plot is recorded the field team proceeds with the tree measurements and collects the following parameters:

- Species name (common name, scientific name)
- Status (alive, sound, intermediate, rotten) as indication for decay status
- Azimuth from plot center (degree) with compass
- Horizontal distance from center (m) with Vertex
- DBH (cm) with measurement tape considering best practice rules for measurement in sloped terrain, tree deformities, buttresses, or multiple stems (detailed outlined sampling SOP)
- Height of DBH measurement (cm) default value 130 cm
- Stem height (m) with Vertex
- Total height (m) with Vertex

While trees are being measured, other inventory team members start to collect soil samples at every plot.

- Five (pooled samples) soil auger samples until a depth of 30cm for the analysis of the parameters organic content (&) and clay content analysis (%)
- Three bulk density samples at 15 cm depth with cylindrical metal core and normed volume for the analysis of bulk density (g/cm^3), coarse fragments (%) and other soil parameters.

Soil samples are collected in separate plastic bags, labeled, and shipped to the soil lab as soon as possible. Every team member has gone through best practices training on soil sample extraction, storage, and quality control procedures. Labels bags are documented by taking photos of the sealed and labeled bags at every plot.

Figure 4 Inventory equipment of one team

Structure of monitoring team and responsibilities

The infographic below shows the key roles and responsibilities that are distributed among the relevant partners in conducting inventory campaigns.

unique land use	• Sample design • Conceptual inventory campaign planning • Defining SOPs and conduct on site training • Data quality control post sampling • Data analysis
Inventory campaign manager	• Preperation and planning of inventory campaign implementation • Day-day coodination and supervison of field temas
Inventory teams	• Consistent of 1-2 trained foresters and 2-3 local staff • Navigation to smaple plots • Data collection on sample plots • Data quality controll of collected data after every day of field w ork
Soil lab	• Processing of soil samples analysis for required parameters • QA/AC prodedurs in soil sample analysi • Provide analysis reports

QA/AC procedures and internal auditing procedures

Quality Assurance (QA) and Quality Control (QC) procedures are essential in forest inventory and soil sampling campaigns, serving as the backbone for ensuring the accuracy, reliability, and consistency of collected data. These procedures encompass a comprehensive range of activities. They begin with the training of reliable staff and extend to the careful selection of tools and methods. The establishment of Standard Operating Procedures (SOPs) covers the entirety of data collection and processing, including both digital and manual routines. Supervision of inventory teams is crucial, as is the meticulous management of data storage. Rigorous data validity checks are performed, alongside periodic remeasurements of plots, to maintain data integrity, and finally in the creation of traceable and transparent documentation, which meticulously details the procedures for data cleaning, editing, and outlier removal. This thorough approach ensures that every aspect of the data collection process adheres to the highest standards of quality.

Digital solution for data collection and data management

The backbone of the inventory campaign is the Monitoring Information System (MIS) that combines external data sources, and app-based reporting system in a centralized data database that can be accessed via a web-dashboard (**Figure 5**).

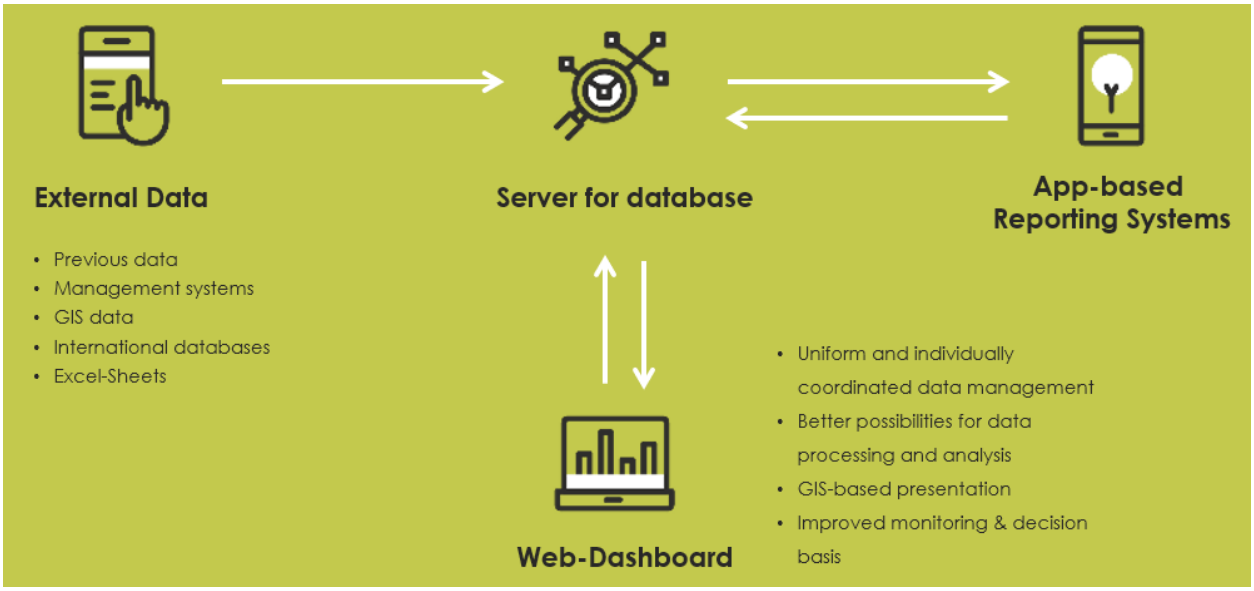


Figure 5 Infographic of project MIS system

The data collection app can be downloaded from the google App store and is pre-loaded with all necessary information to start the offline inventory campaign of the carbon project. Data communication between the smartphone application and the data server is bi-directional, allowing for better data management and quality control mechanisms. Some of the key features of the smartphone application include among others:

- user management and hierarchical access control
- customizable data collection modules and questionnaire
- GPS mapping, navigation, and GPS location authentication
- complete offline functionality while using MBtile basemaps files and shapefiles
- automated data validation, verification, and analysis features
- bi-directional data communication between server and smartphone

Figure 6 below shows the user interface of the data collection app.

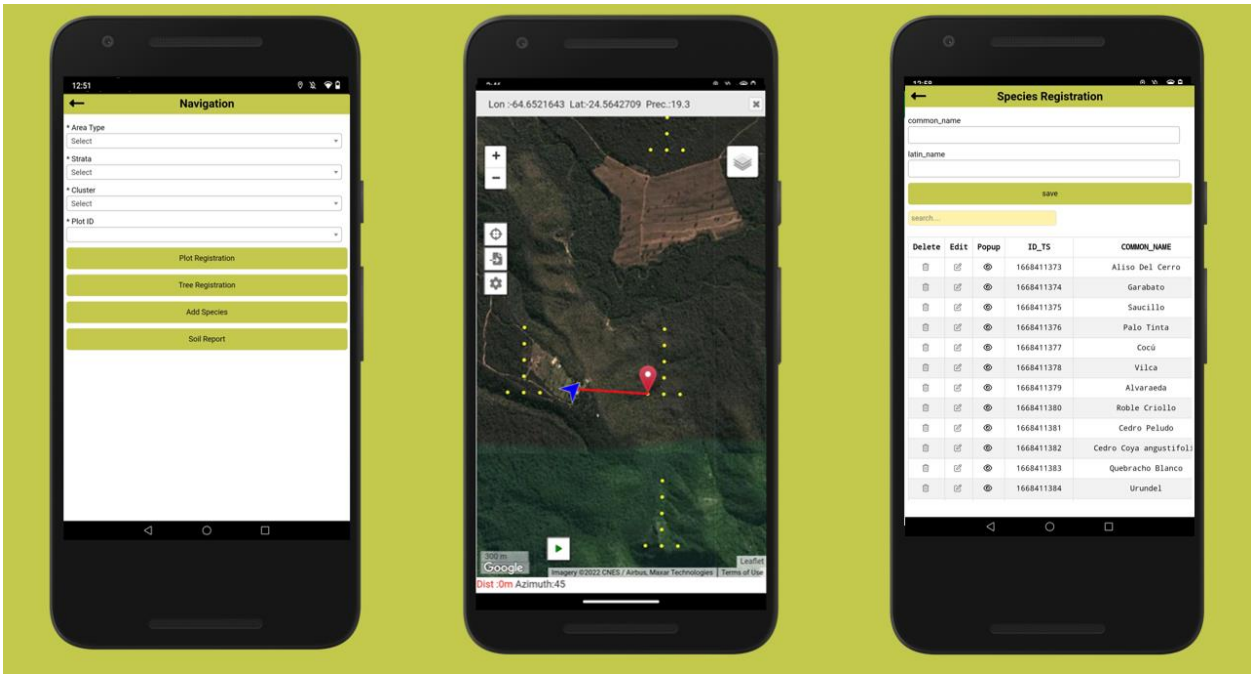


Figure 6 Data collection app

In the first inventory campaigned the field teams measured 113 plots in the project area over the three forest strata and 232 plots in pastures and agricultural fields (see **Table 5** below).

Table 5 Number of plots measured by area type and stratum

Area	Stratum	number measured of plots (#)
Project area	Selva pedemontana	21
	Selva montana	72
	Bosque montano	23
Proxy area	Proxy area	184

The quantification, carbon calculations and used equations are for the relevant pools are described in chapter 3.2 of this report.

3.1.4 Dissemination of Monitoring Plan and Results (CL4.2)

The project will use multiple channels to disseminate the monitoring plan and the results of monitoring carried out in accordance with the monitoring plan to ensure broad accessibility.

The BdB website serves as a digital platform where stakeholders can access the monitoring plan and monitoring results online. Additionally monitoring results will be available at the Verra registry. To further extend stakeholder outreach, physical copies of summaries of the monitoring results will be available at the school in San Juan de Dios. The aim is to reach additional stakeholders who may not have access to the internet, thus ensuring an inclusive dissemination strategy.

3.2 Quantification of GHG Emission Reductions and Removals

3.2.1 Baseline Emissions

The Biomass Emissions Model (BEM) and Soil Emissions Model (SEM) of the VM0009 Methodology were used to estimate cumulative baseline emissions. These calculations were made based on the assumptions outlined in the VM0009 methodology, including the equations, parameters, default values, and selected pools. Detailed information about the equations used in baseline calculations for each baseline type can be found in section 6 of the methodology, while the quantification of greenhouse gas (GHG) emissions reductions is explained in section 8. The carbon pools considered are set out in chapter 3.2.1 of this report.

Published allometric biomass equations applicable to the project area, species specific volume equations, and a biomass decay model were applied to inventory data collected in the project, accounting, and proxy area to determine average biomass and carbon stocks in the selected pools of the identified strata (see table below). Default values that were assumed in this project refer to root to shoot ratios to determine Below Ground Biomass (BGB), and deadwood biomass reduction factors. Root to shoot ratios were sourced from table 4.4 of the '2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories', carbon fraction factors from the 'A/R Methodological tool: Estimation of Carbon Stocks and Change in Carbon Stocks in Deadwood and Litter in A/R CDM Project Activities' are determined based on the description in section 3.1.4.9 of the PD. Detailed information on the equations, default values and calculation methods are available in the PD in section 3.1.1 in this report.

SOC decay – update to Version 1 of the PD (to be updated in the next version of the PD during validation)

As the SOC pool represents and important pool in this project, the decay of SOC following deforestation to determine the SOC emissions in the baseline was done in the following way:

1. Determination of SOC stocks in the project area under forest (*SOC_p*) and after deforestation (*SOC_b*)

Values derived from soil samples in the project areas and proxy areas:

SOC_p

Forest stratum	SOC stocks (30 cm) tC/ha (# samples)	Std Deviation SOC stocks (30 cm) tC/ha	Stratum weight	Average SOC stocks (30 cm) tCO_2e/ha	Uncertainty U %
Selva_montana	95.83 (43)	40.5	0.77	336.1	9.1%
Selva_pedemontana	77.12 (18)	26.4	0.23		
Other relevant soil parameters					
Average clay content (%)	15.4				
Average bulk density (gr/cm³)	1.20				
Average coarse fragments (%)	15.6				

SOC_b – soil samples represent proxy areas 19-24 years after deforestation

Proxy areas	SOC stocks (30 cm) tC/ha (# samples)	Std Deviation SOC stocks (30 cm) tC/ha	Stratum weight	Average SOC stocks (30 cm) tCO_2e/ha	Uncertainty U %
Proxy 1	45.2 (2)	9.8	0.03	190.9	7.3%
Proxy 2	43.8 (8)	6.1	0.46		
Proxy 3	59.8 (16)	15.6	0.51		
Other relevant soil parameters					
Average clay content (%)	12.3				
Average bulk density (gr/cm³)	1.5				
Average coarse fragments (%)	2.1				

2. Modelling annual SOC decay with scientific soil model

In order to estimate the SOC decay for the 20 years baseline after deforestation, the RothC soil carbon turnover model (Version 26.3) was parameterized with regional climate data, and the measured clay content values. The model first was run inverse to model SOC_p at equilibrium. This run resulted in the following RothC soil carbon compartments for SOC_p:

Name	Description	Value	Units
DPMCMInit	Initial carbon mass of decomposable plant material (DPM)	0.24	t C / ha
RPMCMInit	Initial carbon mass resistant plant material (RPM)	25.61	t C / ha
BIOFCMInit	Initial carbon mass of fast decomposing biomass (BIO-F)	1.56	t C / ha
BIOSCMInit	Initial carbon mass of slow decomposing biomass (BIO-S)	0.19	t C / ha
HUMCMInit	Initial carbon mass of humified organic matter (HUM)	63.97	t C / ha
	Initial carbon mass of soil	91.57*	t C / ha

* representing SOC_p = 336.1

The model was subsequently run with this calibration to model SOC_b in equilibrium after 24 years (since most of the measurements represent 24 years after deforestation).

3. By adjusting the *lambdaSOC* value as per the Methodology the SOC emission model equation from VM009 was fitted against the RothC modelled SOC decay curve. With a lambdaSOC value of 0.26 the two decay curves on average reach 0% difference over 20 years.

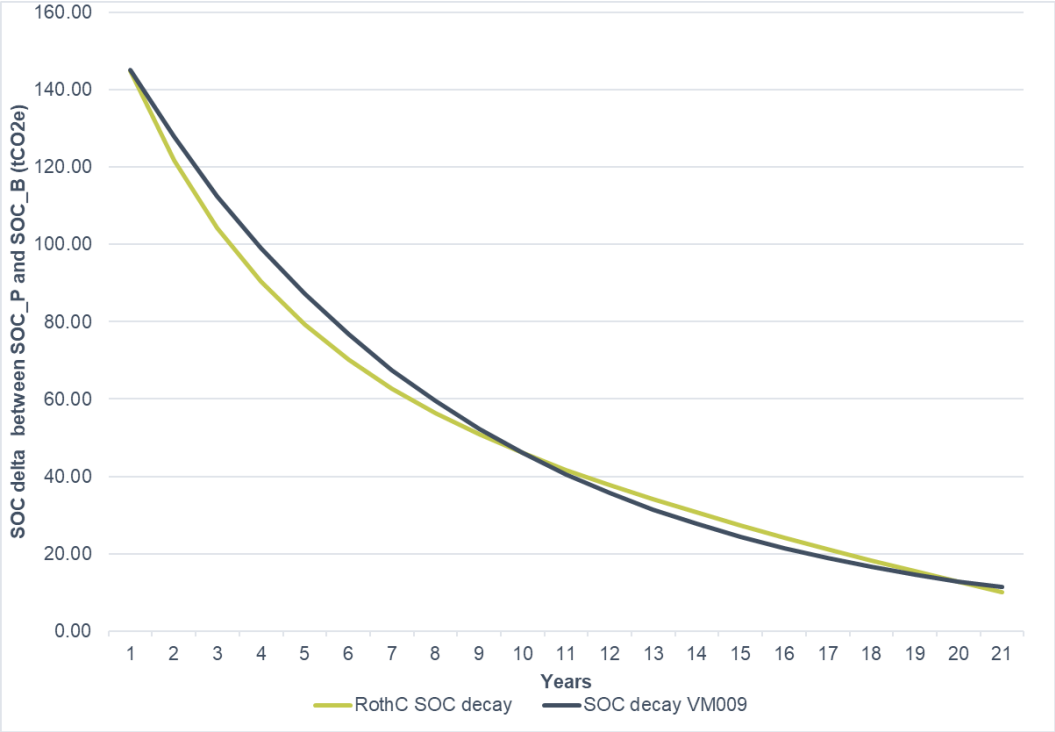


Figure 7 Comparison of RothC and VM009 SOC decay model

Justification of the approach:

Appropriateness of the RothC model in the region and for post deforestation SOC decay: Villarino et al. 2018 derived stock change factors using RothC model in the Argentinean Semiarid Chaco (Villarino et al., 2018).

Table 6 Carbon pools by stratum in the project area in tCO_2e/ha

	Bosque montano*	Selva Montana	Selva Pedemontana	weighted avg. in accounting area	Proxy area
AGOT	-	238.4	153.7	208.0	0
BGOT	-	67.7	51.6	61.9	0
SD	-	9.6	8.8	5.8	0
SOC	-	336.1		336.1	190.9

(* Bosque montano is not part of the accounting area)

Table 7 below summarizes the annual emissions from the project start data until the first verification. **Table 8** is displaying the estimated emission reductions by carbon pool and year over the project crediting period.

Table 7: Annual emissions in verification period

Monitoring period	Baseline emissions in accounting area (tCO_2e)
08th March 2023 – 31st December 2023	66,747

Table 8: Annual estimated emission reduction by pool

Year	annual deforestation	AGOT emission reductions	BGOT emission reductions	SD emission reductions	SOC emission reductions	Total GHG emission reduction
	ha/a	*tCO_2e*	*tCO_2e*	*tCO_2e*	*tCO_2e*	*tCO_2e*
2023	279	57,931	3,635	341	4,840	66,747
2024	309	64,224	5,547	520	9,627	79,918
2025	309	64,233	7,458	699	13,840	86,230
2026	309	64,236	9,375	878	17,550	92,039
2027	310	64,410	11,287	1,058	20,830	97,584
2028	309	64,229	13,198	1,237	23,702	102,366
2029	309	64,222	15,109	1,416	26,230	106,976
2030	309	64,212	17,025	1,595	28,454	111,286
2031	310	64,377	18,935	1,774	30,426	115,512
2032	309	64,188	19,121	1,792	32,146	117,247
2033	309	64,176	19,119	1,791	33,659	118,745
2034	308	64,162	19,122	1,792	34,990	120,065
2035	309	64,325	18,590	1,742	36,175	120,831
2036	223	46,381	16,673	1,562	35,719	100,336
2037	-	-	14,762	1,383	31,442	47,587
2038	-	-	12,851	1,204	27,677	41,732
2039	-	-	10,940	1,025	24,363	36,328
2040	-	-	9,024	846	21,446	31,316
2041	-	-	7,114	667	18,878	26,659
2042	-	-	5,204	488	16,618	22,310

3.2.2 Project Emissions

The VM0009 Methodology determines emissions associated with the project, originating from biomass due to activities like fire, burning, logging, or similar disturbances. These emissions are quantified using the equation [F.41] outlined in the methodology.

Project activities are not expected to result in any emissions from fire, logging, or synthetic fertilizer use. The primary objective of these activities is to conserve the forest and its carbon stock; hence no project-related emissions are anticipated (see **Table 9** below). Nonetheless, these activities will be under close monitoring, and any emissions that might occur will be duly considered and addressed in future monitoring reports.

Table 9 Expected project emissions

	Project Emissions (tCO_2e)			
Monitoring period	Selva Pedemontana	Selva Montana	Bosque montano	Total
1st Monitoring Period	0	0	0	**0**
2nd Monitoring Period	0	0	0	**0**
3rd Monitoring Period	0	0	0	**0**
4th Monitoring Period	0	0	0	**0**
5th Monitoring Period	0	0	0	**0**

3.2.3 Leakage

The VM0009 methodology establishes that the project proponent should define carbon emission-monitoring zones outside of the project area for two different types of leakage occurring because of the project activities. The first type, activity-shifting leakage, results from the activities of conversion due to the project activities and must be monitored when it is expected that the primary agent of conversion in the baseline translates their conversion activities to another similar forest area of its own. The second type of leakage, the market leakage, applies to projects that cause a reduction in the supply of commodities (either legally sanctioned, illegal or both) in the baseline scenario. After analysis of evidence, including stakeholder consultation and field visit, the project proponent considers that neither type of leakage applies to this project, thus, leakage should be estimated as zero. The argumentation for this consideration is described below for each of the leakage types.

3.2.4 Activity shifting leakage.

In the baseline scenario national agricultural developer or businesses that would become landowner are the primary agents of conversion for the project accounting area. In the project scenario the main project activity is the conservation of the forest and the transition of the legal land status from private to provincial or national conservation area. The group of agents that would buy the land in the baseline is geographically mobile and therefore only attributable to market leakage effects. A spatially explicit activity shifting area cannot be determined since due to the mobility of the primary agent.

3.2.5 Market leakage

Following the decision tree to determine if market leakage should be evaluated due to project activities it was found that market leakage is de minimis. The project activities use a planned baseline type (F-P2) in which the baseline manager operator is constant (identified in section 3.1.4.1), moreover, the project does not change the supply of market commodities, which in the project baseline refers mainly to cattle production. According to an interview with the current asset manager of the project area, it was stated that in a very productive land use scenario, the project area may allocate 15,000 cattle heads by year. This scenario implies that not only the accounting area but also the surplus of forest parcels in the project area needs to be converted or degraded, which may encompass a period of 3 to 5 years. According to statistics from the Institute for the Promotion of Argentine Beef (IPCVA in Spanish), the livestock operation in Argentina amounts to 13,497,303 cattle head during the year 2022. Therefore, the project proponent estimates that by avoiding 0.1% of the total livestock operation, the project activities can be considered de minimis, thus the supply of market commodities is not affected because of the project and market leakage should not be evaluated in this project.

3.2.6 Net GHG Emission Reductions and Removals

Gross emission reductions are calculated for the project accounting year at each monitoring period. **Table 10 Net GHG emission reductions and removals** for the project crediting period. The gross emissions are calculated using the formula [F.53] of the methodology.

$$E_{\Delta GER}^{(m)} = E_{B\Delta}^{(m)} - E_{P\Delta}^{(m)} - E_{L\Delta}^{(m)} - E_{U\Delta}^{(m)}$$

The section above describes how baseline, project and baseline emissions have been quantified. Uncertainty deductions are calculated with the equations [F.57] for every monitoring period using the equation:

$$E_{U}^{(m)} = E_{B\Delta}^{(m)}[\frac{1.64}{E_{B\Delta}^{(m)} + E_{PAA}^{(m)} c_{B}^{(m)} + A_{PXC_B^{(m)}}} * \sqrt{(U_{EM}^{(m)})^2 + (U_{P}^{(m)})^2 + (U_{B}^{(m)})^2 - 0.15}]$$

Net Emission reductions are calculated using the formula [F.55]

$$E_{\Delta NER}^{(m)} = E_{\Delta GER}^{(m)} - E_{BA}^{(m)}$$

Table 10 Net GHG emission reductions and removals

Year	Estimated baseline emissions or removals	Estimated project emissions or removals	Estimated leakage emissions	Estimated net GHG emission reductions or removals
	tCO_2e	*tCO_2e*	*tCO_2e*	*tCO_2e*
2023	66,747	0	0	66,747
2024	79,918	0	0	79,918
2025	86,230	0	0	86,230
2026	92,039	0	0	92,039
2027	97,584	0	0	97,584
2028	102,366	0	0	102,366
2029	106,976	0	0	106,976
2030	111,286	0	0	111,286

2031	115,512	0	0	115,512
2032	117,247	0	0	117,247
2033	118,745	0	0	118,745
2034	120,065	0	0	120,065
2035	120,831	0	0	120,831
2036	100,336	0	0	100,336
2037	47,587	0	0	47,587
2038	41,732	0	0	41,732
2039	36,328	0	0	36,328
2040	31,316	0	0	31,316
2041	26,659	0	0	26,659
2042	22,310	0	0	22,310

Over the project crediting period (20 years), the project's net ex-ante anthropogenic GHG removals and sinks are estimated to be **1,641,815 tCO_2e**. The non-permanence risk rating is 12%. This is assessed and documented in the non-permanence risk report (provided as a separate document). Applying this risk rating to the net carbon stock change, the total number of buffer credits is calculated as 12% * 1,641,815 tCO_2e = 197,018 tCO_2e. Therefore, the total ex-ante estimated VCUs are **1,444,797 tCO_2e.** For this monitoring period M1 from 08th March 2023 – 31st December 2023 the project's net ex-ante anthropogenic GHG removals and sinks are estimated to be 66,747 tCO2e. Applying this risk rating to the net carbon stock change for M1, the total number of buffer credits is calculated as 12% * 66,747 tCO2e = 8,010 tCO2e. Therefore, the total ex-post estimated VCUs are 58,737 tCO2e.

3.3 Optional Criterion: Climate Change Adaptation Benefits

3.3.1 Activities and/or processes implemented for Adaptation (GL1.3)

With climate change increasing the risk of drought, heatwaves, and hazards such as flooding in the project zone (see previous section above), measures are needed to help communities and biodiversity adapt to these risks. Through maintenance of forest cover in the project area, the project will protect several ecosystem functions for the nearby community and biodiversity and support their adaptation to impacts of the changing climate (Figure 8).

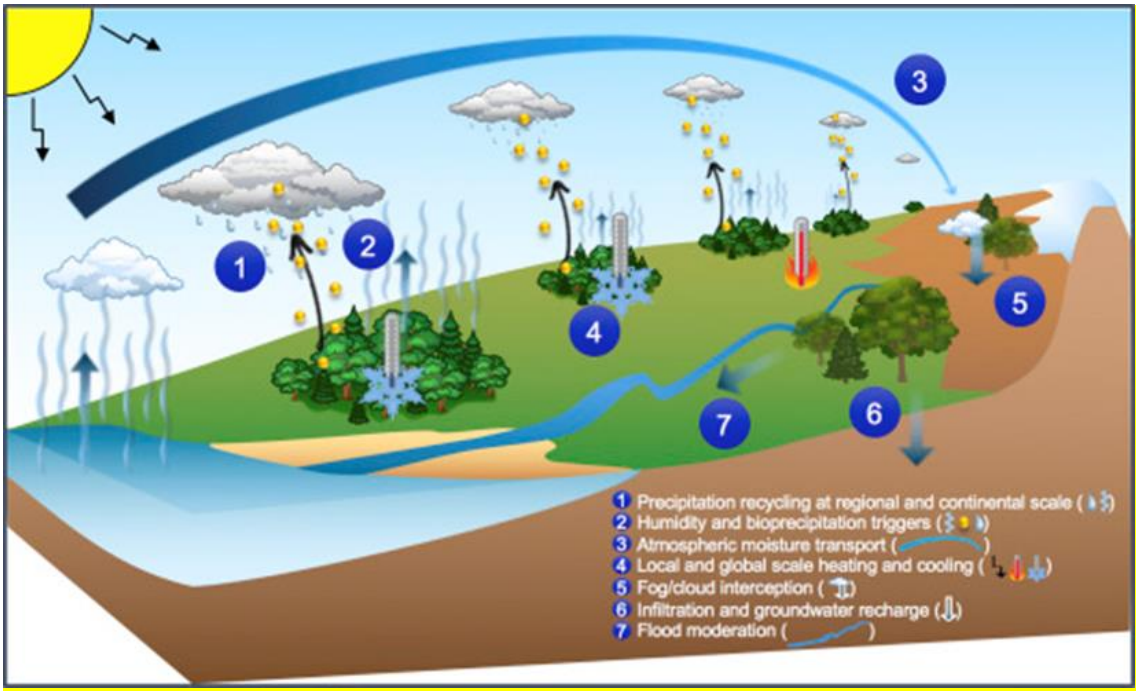


Figure 8: Effects of forests on water and climate at local, regional, and continental scales through change in water and energy cycles. Source: (Ellison et al., 2017)

Enhancing local water availability

Protecting the forests in Las Lauras is essential for local water availability through the processes of groundwater infiltration and fog capture by the mountain forests (see processes 5 and 6 in **Figure 8**)

First, maintenance of tree cover, rather than conversion to alternative land uses such as croplands or cattle prevents soil degradation, leading to protected soil organic carbon stocks and soil structure, which in turn result in enhanced soil infiltration and water retention capacity.

Second, high altitude forests have a special ability to intercept fog and cloud droplets. Atmospheric moisture captured by condensing on the vegetation may fall onto the forest floor, increasing the moisture available for tree growth, infiltration, and groundwater recharge (Bruijnzeel, 2004; Bruijnzeel & Bruijnzeel, 2001; Ghazoul & Sheil, 2010; Pepin et al., 2010).

Part of the captured moisture is also returned as evapotranspiration to become available for increased rainfall or snowpack elsewhere (Pepin et al., 2010). Therefore, the amount of water that infiltrates into the soil, and gets further available as baseflow during least rainfall periods depends on transpiration losses from cloud forests. In essence whether the increase in groundwater recharge from improved soil infiltrability and fog water interception outweighs the losses caused by higher evapotranspiration from more vegetation (Ellison et al., 2017).

Notably, the presence of fog covering cloud forests indirectly intercepts part of the solar radiation, thus reducing direct radiation into the forest, which in turn reduces temperature and increases air humidity (Tobón, 2021). These combinations of specific environmental conditions during the fog events reduce plant transpiration and water evaporation from the trees crown (Jarvis & Mulligan, 2011), allowing most of the captured water to be locally available and stored.

Seasonally, as much as 80% of the fog precipitation effect by cloud forests can occur during dry seasons which could be important for local livelihoods and water supply. Estimates of the local contribution of mist capture and fog precipitation effects vary greatly over diverse landscapes, with amounts accounting for 5 - 75% of total catchment runoff (Ellison et al., 2017). Loss of high-altitude forests may thus have disproportionate, negative implications for water availability. Where such forests have been removed, the

atmospheric moisture present in clouds may move on to other locations which could represent an important loss to local, downstream water supply.

Several water sources servicing the San Juan de Dios village are supplied by drainage from the Santa Barbara Mountain slopes (See **Figure 9**). Therefore, infiltration and runoff effects upstream influence groundwater recharge feeding the village well, as well as discharge of the seasonally dry San Juan de Dios River. Finally, several springs are also located in the mountain range of the project area. By protecting the forests, the project therefore leads to maintaining these important hydrological ecosystem services and supporting local populations in dry periods and heatwaves.

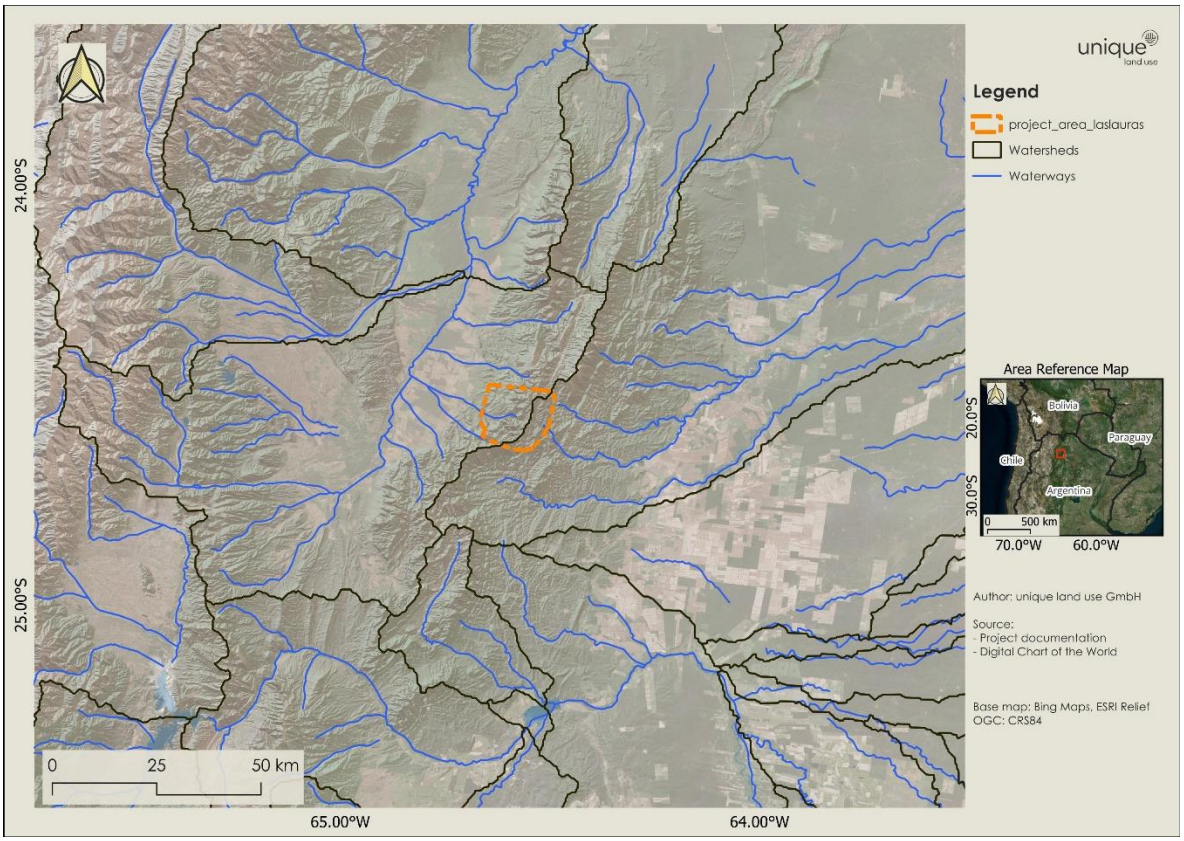


Figure 9: Map showing the hydrography around the project area.

Cooling / Microclimate effects

The presence of forests can create a cooling effect for the local climate (See '4' in **Figure 8**). Forests remain much cooler during daytime due to shade and the role of evaporation and transpiration in reducing sensible heat (Hesslerová et al., 2013; Maes et al., 2011; Pokorny et al., 2010). Using the sun's energy, individual trees can transpire hundreds of liters of water per day. This represents a cooling power equivalent to 70 kWh for every 100 L of water transpired (enough to power two average household central air-conditioning units per day). With deeper roots, trees can maintain their cooling function even during long-lasting heatwaves (Teuling et al., 2010; Zaitchik et al., 2006). Warmer temperatures appear to result in greater temperature differentials between forested and open-field environments, with stronger cooling impacts observed from broad-leaved species than conifers (Renaud & Rebetez, 2009; Zaitchik et al., 2006). In their study of Yungas forests in Salta province, (Manrique et al., 2018) observed microclimatic differences between forest fragments and continuous forests. The continuous forests had less solar radiation (due to more shade), higher humidity and lower relative temperatures.

Similarly, urban areas with greater trees and vegetation cover and fewer impervious surfaces have been shown to exhibit lower temperatures than those blanketed by solid surfaces (Bounoua et al., 2015).

As part of the project activities, the existing forest will be protected and additional planting of native species on degraded or deforested areas within the project area and around the San Juan de Dios village is planned. This is expected to enhance shade and provide cooling effects in the long term for the community.

Flood moderation

Maintenance of natural forest and vegetation cover on mountain slopes in the project area would also serve as a natural buffer against flooding for those communities down the hill (See '7' in **Figure 8**). Severe storms occurring between October and April have been reported to increase the flow of mountain rivers and increase flood risks in Northwest Argentina (Argentina, 2018). Especially at risk are the communities located on the slopes and valleys of mountain ranges. Forests are thought to reduce flooding by capturing water during heavy rainfall, and releasing it back slowly into streams, thereby lessening the severity of floods and maintaining stream flows during dry periods (Laurance, 2007). In a global study, (Bradshaw et al., 2007) also demonstrated the connection between forest protection and reforestation to reduced frequency and severity of floods - at least floods which are not driven by extreme events such as cyclones and typhoons, which the authors acknowledge can cause flooding "independently of landscape characteristics".

Allowing species movement

Increasing pressures due to climate change could force species to explore new habitats in search of more suitable ecological niches ("Shifting Habitats", 2020). Maintaining landscape connectivity is therefore important for adaptability (Rudnick et al., 2012) by allowing animals to migrate to more favorable areas as well as enabling the flow of adaptive genes between different populations. In the face of climate-induced changes to animal behavior and distribution, conservation education and awareness also becomes important for more people, as humans now increasingly encounter wildlife (Abrahms et al., 2023). This project, through the protection of biological corridors, will maintain and enhance the connectivity of conservation areas, increasing the safe mobility of wildlife which contributes to their climate change adaptation strategy. Additionally, education campaigns will be undertaken by the project targeting human wildlife conflict, which is expected to increase under future climatic conditions.

4 COMMUNITY

4.1 Net Positive Community Impacts

4.1.1 Community Impacts (CM2.1)

Since the project is still at the beginning of the implementation phase, many of the activities leading to community benefits such as employment, awareness/educational campaigns or indirect business opportunities have not yet been implemented during this monitoring period. The project implementer will start with community related activities in 2024. Also, some benefits will only start during the second phase of the project when the project area is converted to an official protected area (see section 2.1.11. in the PD).
Therefore, the information below shows the impacts of the current project activities on the community groups as well as the expected impacts on the community groups from planned / future activities.

Community Group	San Juan de Dios inhabitants – village close by to project area
Impact(s)	**Actual impacts** • Protection of ground water bodies of village. • Adaptation benefits as described in section 3.3 (e.g. cooling/microclimate, flood moderation)

	Other impacts which are described in the PD but have not yet been implemented during this monitoring period include: • Increased environmental awareness through educational programs. • Additional leisure time options in nature through public access to designated zones in protected area starting with the second phase of project (e.g. excursions to rivers, hiking routes, BBQ places). • Creation of alternative employment options (e.g., for carbon/biodiversity monitoring, national/provincial park employees, spotters, guides etc.). • Creation of business opportunities through potentially increased inflow of tourists. • Presence of rangers and fire prevention activities under the project will increase fire vigilance to protect crops and to protect inhabitants from threats such as fires, illegal activities, or human-wildlife conflicts. • Increased visibility of village leading to private and public infrastructure investments.
Type of Benefit/Cost/Risk	The actual impact is an indirect benefit. No costs are created for the inhabitants of San Juan de Dios. Potential risks are described in section 2.2.6.
Change in Well-being	Maintained water and air quality and adaptation benefits through protection of forest.

Community Group	**Schools in proximity to the project area** – including primary and secondary school in San Juan de Dios
Impact(s)	**Actual impacts** None - No activities during this period **Other impacts** which are described in the PD but have not yet been implemented during this monitoring period include: • Facilitation of environmental education through excursions to project area and school visits by project staff. • Improvement of school facilities and educational equipment through donations. • Development of educational materials (e.g. books about local biodiversity).
Type of Benefit/Cost/Risk	No costs are created for schools surrounding the project area. Potential risks are described in section 2.2.6.
Change in Well-being	-

Community Group	**Farmers San Juan de Dios** – landowners directly adjacent to project area
Impact(s)	The following impacts are created for farmers during the last monitoring period: **Actual** • Protection of above and below-ground water sources for farming activities. • Illegal hunting and logging and fire incidences were prevented due to the continued protection of the area through the previous landowner. **Other impacts** which are described in the PD but have not yet been implemented during this monitoring period include: • Public access to project area might lead to more traffic on roads close to agricultural land.
Type of Benefit/Cost/Risk	These are direct and indirect benefits respectively. No costs are created for the farmers surrounding the project area. Potential risks are further described in section 2.2.6. **This monitoring period:** **Indirect benefit** • The protection of water sources is creating the indirect benefit of secured water availability in comparison to the loss of forest in the without-project scenario. Forests store water during the wet season and release it slowly to streams, wetlands, and reservoirs when water is scarce in the dry season. **Direct benefit** • Presence of previous landowner and fire prevention activities reduces risks of forest fires threatening agricultural fields.
Change in Well-being	Maintained water availability allows stable agricultural yields and protects the income sources of farmers.

Community Group	**Administration National Park 'El Rey'** – national park directly adjacent to project area
Impact(s)	The following impacts are created during the last monitoring period: • Purchase of the project area leads to secured protection of the buffer zones of the National Park. • Through purchase and continued protection the improved biological corridor initiative of the national park and provincial authorities is supported.

	Other impacts which are described in the PD but have not yet been implemented during this monitoring period include: **Actual** • Potential recipient of donation of project area to extend the national park 'El Rey' – enlargement of protected area by more than 50%. • Increased opportunities for environmental education. • Increased visibility of national park due to larger area and easier access from roads that are closer to bigger cities (see section 4.1.3 for a map and detailed description of the access options) • Chance of increased tourism due to second entrance and easier access.
Type of Benefit/Cost/Risk	The type of benefit (direct/indirect) varies between the above-described impact. Potential risks are described in section 2.2.6. **This monitoring period:** • Extension of the protected area is enlarging the biological corridor and the North-South connectivity of the Yungas Forest of which the national park 'El Rey' forms part. **Projected benefits in the future:** **Direct benefits** • A direct benefit would be created if the project area is transferred to the government and the national park authorities would officially extend the area of the current national park 'El Rey'. • Also, if the project area is transferred to a provincial park instead of a national park the enlargement of the protected area is an actual and direct impact as the project will be connected to the existing national park 'El Rey'. **Indirect benefits** • Increased visibility of the national park is predicted since it is expected that a second national park entrance on the western part of the mountain range and in proximity to larger cities will increase visitor numbers. **Direct costs** • An increased national park area will require a higher budget for extra employment, maintenance of the expanded park and acquisition of additional equipment.
Change in Well-being	Continues protection of the forest area leads to: • Enlarged protected area resulting in additional habitat of flora and fauna under protection status.

	• Increased functionality and protection of biological corridor of Yungas Forest. • Increased visitor numbers and opportunities to carry out national park activities such as educational programs.

Community Group	**Ministry of Environment of Jujuy** – close cooperation for the development of the protected area
Impact(s)	The following impacts are created during the last monitoring period: • The ministry is a main partner of the project and exchanges have started that are evaluating options for the transfer of the land title to the authorities. **Other impacts** which are described in the PD but have not yet been implemented during this monitoring period include: • Potential authority managing the project area if provincial park is established (instead of national park) • Supporting improved biological corridor initiative of provincial authorities. • Increased opportunities for environmental education in the province. • Potentially adding a new protected area under the management of the province of Jujuy.
Type of Benefit/Cost/Risk	The type of benefit (direct/indirect) varies between the above-described impact. Potential risks are described in section 4.2.2. **This monitoring period:** • Extension of the protected area is enlarging the biological corridor and the North-South connectivity of the Yungas forest. • Additional protected area in the jurisdiction of Jujuy. **Projected benefits in the future:** **Direct benefits** • A direct benefit would be created if the project area is transferred to the provincial authorities of Jujuy and the provincial park managed by the Ministry of Environment of Jujuy. **Indirect benefits** • Also, if the project area is transferred to a national park instead of a provincial park the enlargement of the protected area leads to a bi-provincial national park between Jujuy and Salta. **Direct costs**

	• An additional protected area in the province will require a higher budget for extra employment, maintenance of the area and acquisition of additional equipment.
Change in Well-being	• Additional protected area available in the province of Jujuy (provincial/national park) • Enlarged protected area resulting in additional habitat of flora and fauna under protection status in the province of Jujuy. • Increased functionality and protection of biological corridor of Yungas Forest. • Increased visitor numbers and opportunities to carry out activities in a provincial park such as educational programs.

4.1.2 Negative Community Impact Mitigation (CM2.2)

Before the project start, the project area was privately owned which is why the conversion into a protected area will have no negative impacts on the surrounding communities. During stakeholder consultations the only points that came up are potential impacts if tourists are creating trash and that the small number of people carrying out illegal activities in the project area might be stopped by park rangers.
During the current monitoring period, the protected area has just been handed over to the dedicated trust that purchased the property and not yet open to tourists, so this risk was not relevant at this stage. The identified ecosystem service of water protection through the forest cover on the mountain sloped, will be protected through the project activities described in section 3.3.

The previous landowner is maintaining a housing estate and roads, inside of the project area with a team of around 15-20 people. Most of the personnel are from villages near the project area and some individuals are living on the property. Information on the project has been shared with the staff transparently and from the beginning of the inception phase. The previous landowner has been granted a 'usufruct right' and will remain living on the property which is why the employment of the personnel will be maintained until the landowner might choose to relocate. It is planned to transform the estate of the previous landowner into a research center after his potential relocation. Since the team of staff knows the project area extremely well, the project will prioritize the staff for potential maintenance activities of the project area or tasks that might be created through the future research center. It is expected that such a research center will require at least the same amount of staff positions as today. The project team will always communicate all activities transparently with all stakeholders.
The GRM and the stakeholder communication channels will ensure that any negative impacts during project implementation can be mitigated immediately.

4.1.3 Net Positive Community Well-Being (CM2.3, GL1.4)

During this monitoring period and, as explained in section 4.1.1 the project is expected to positively contribute to the well-being of the identified community groups through the maintained protection of ecosystem services like groundwater availability. As part of the Climate Gold Level benefits (see section 3.3), the project creates positive adaptation benefits for inhabitants of San Juan de Dios and other neighboring villages. With increasing temperatures, the forest plays a decisive role in storing and capturing

water in the higher parts of the mountains. In the without project scenario this effect would be lost, and the impacts of climate change exacerbated. Also, on degraded or deforested areas within the project area and around the village of San Juan de Dios, native tree species will be planted enhancing tree cover and providing shade contributing to the resilience to climate change of the community.

In the second phase of the project, project activities will lead to increased environmental awareness, excursion opportunities for schools, employment creation, capacity building, and infrastructural development as compared to the without-project scenario and outlined in the Theory of Change in section 2.1.11 in the PD and Appendix 2.
The national park 'El Rey' is directly adjacent to the project area. However, the national park is only accessible from the South-Eastern side of the mountain range which makes it a 5-hour drive for inhabitants of San Juan de Dios and too far away from the typical tourist routes in the provinces of Jujuy and Salta.
Starting with the second phase of the project, the access of the project area will be managed by either provincial or national authorities. The access will be allowed to designated areas and after passing the official entrance gate of either the provincial or national conservation area. The public gate of the newly created protected area (provincial/national park) will be directly next to the village of San Juan de Dios. This means that village inhabitants will benefit most directly from the newly created public access to the project area. This will increase the leisure time options significantly since there is no alternative area accessible from the village where inhabitants can enjoy hiking paths, forest experiences and time in nature.
An indirect impact for the inhabitants of San Juan de Dios might also be the benefits due to visitors from other regions visiting the protected area. Since everybody needs to cross the village, business opportunities might be created in response to the increased demand for shops, restaurants etc.
This impact is expected due to the location of the project area close to a highly frequented tourist route between the city of Salta and the tourist hot spot of the valley of 'Quebrada of Humahuaca' and 'Hill of the seven colors' close to the town Purmamarca (see **Figure 10** for an impression). When tourists are traveling from Salta to Purmamarca, the stop at the project area requires only 1.5 hours of additional driving compared to additional 3.5 hours to the current entrance of the 'El Rey' national park.

Figure 10 Valley of the 'Quebrada of Humahuaca.

4.1.4 Protection of High Conservation Values (CM2.4)

As described in section 4.1.3 in the PD, there are no culturally important sites in the project area. However, the importance of ecosystem services – in this case the protection of water bodies - classifies the project area as an HCV area of category 5 "Community Needs" according to the HCV network classification. The

protection of forest covers and hence all connected ecosystem services are the main objective of the REDD approach of the project. All forest protection activities and the change in the legal land title status from private land to a protected area will ensure the maintenance of the ecosystem services for communities.

4.2 Other Stakeholder Impacts

4.2.1 Mitigation of Negative Impacts on Other Stakeholders (CM3.2)

No negative impacts on other stakeholders have been identified. Consequently, no mitigation measures are designed. The GRM and the stakeholder communication channels will ensure that any negative impacts during project implementation can be mitigated immediately. Additionally, the adaptative management approach of the project helps the project developer to react and adjust activities accordingly.

4.2.2 Net Impacts on Other Stakeholders (CM3.3)

As described in section 2.1.8 in the PD, other stakeholders of the project include:

1. Governmental stakeholders;
2. NGOs and academic institutions;
3. Tourism businesses in the area;
4. Other towns and villages in proximity of the protected area.

Stakeholder consultations confirmed that all impacts on "other stakeholders" for the past monitoring period are considered positive.

4.3 Community Impact Monitoring

4.3.1 Community Monitoring Plan (CM4.1, CM4.2, GL1.4, GL2.2, GL2.3, GL2.5)

The monitoring plan for the community benefits of the project consists of the indicators presented in the table below. All the data will be collected by the BdB project team with support and compiled in yearly summary questionnaires that are then directly inserted into the digital Management Information System (MIS) of the project making use of a phone application and a browser-based dashboard. The MIS system ensures consistent data collection and the availability of supporting documentation to prove project activities.

As described previously, the main community-related activities will start in 2024. In 2023, one excursion for community representatives was organized to the project area. The excursion included a visit to different points in the project area and the introduction to the project's objectives and the functioning of a carbon project.

During the second phase of the project, additional indicators such as numbers of visitors to the protected area can be added to the monitoring overview in order to describe the impact that the establishment of the protected area has for the province of Jujuy.

Table 11: Overview of the Community monitoring plan

Project Activities	Indicator	Data collection method	Frequency	2023

Environmental awareness raising – educational excursions and classes.	Number of educational awareness events organized	Overviews inserted in data collection questionnaire (BdB)	Annual information collection; reporting each verification	1
	Number of participants at educational awareness events (male/female/other)	Participant lists; information inserted in data collection questionnaire (BdB)	Annual information collection; reporting each verification	Total: 22 Male: 15 Female: 7
	Number of schools involved in educational activities	Overviews inserted in data collection questionnaire (BdB)	Annual information collection; reporting each verification	-
	Number of educational publications/social media content created	Publications/social media content available online; overviews inserted in data collection questionnaire (BdB)	Annual information collection; reporting each verification	-
Employment creation through project activities and jobs required in the protected area.	Number of local jobs created (male/female/other)	Number of signed contracts inserted in data collection questionnaire (BdB)	Annual information collection; reporting each verification	Total: 18 Male: 17 Female: 1 (total of 504 contract days)
	Quality of created jobs: • Skills transferred through provided trainings • Employment with official provincial daily rates and benefits	Number of carried out trainings and salary information inserted in data collection questionnaire (BdB)	Annual information collection; reporting each verification	Number of people received training: 18 Type of trainings: • Introduction carbon projects, • Forest inventory (sampling campaigns), • Tree monitoring, • Soil monitoring.
Cooperations with NGOs and	Number of scientific studies/cooperation	Data collection questionnaire (BdB)	Annual information collection;	-

academic institutions.	products carried out on project area		reporting each verification	
Tree planting within and outside of project area – creating adaptation benefits for local communities.	Number of trees planted	Data collection questionnaire (BdB)	Annual information collection; reporting each verification	-
	Number of tree species of which seeds were collected	Data collection questionnaire (BdB)	Annual information collection; reporting each verification	-

4.3.2 Monitoring Plan Dissemination (CM4.3)

The project will use multiple channels to disseminate the monitoring plan to ensure broad accessibility. The BdB website serves as a digital platform where stakeholders can access the monitoring plan and monitoring results online. Additionally monitoring results will be available at the Verra registry. For future monitoring periods, and to further extend stakeholder outreach, physical copies of summaries of the monitoring results will be available at the school in San Juan de Dios. The aim is to reach additional stakeholders who may not have access to the internet, thus ensuring an inclusive dissemination strategy.

4.4 Optional Criterion: Exceptional Community Benefits

n/a

4.4.1 Short-term and Long-term Community Benefits (GL2.2)

n/a

4.4.2 Marginalized and/or Vulnerable Community Groups (GL2.4)

n/a

4.4.3 Net Impacts on Women (GL2.5)

n/a

4.4.4 Benefit Sharing Mechanisms (GL2.6)

n/a

4.4.5 Governance and Implementation Structures (GL2.8)

n/a

4.4.6 Smallholders/Community Members Capacity Development (GL2.9)

n/a

5 BIODIVERSITY

5.1 Net Positive Biodiversity Impacts

5.1.1 Biodiversity Changes (B2.1)

Change in Biodiversity	Natural habitat and tree cover
Monitored Change	**Predicted** 1. Tree cover of primary forest maintained (thereby securing availability of habitat for wildlife). 2. Degradation of forests prevented (thereby maintaining / improving habitat quality) **Actual** Tree cover was maintained at 100%
Justification of Change	Through regular patrols and monitoring and the use of camera traps, the project zone has been protected from major degradation threats which would have occurred without the project. These include encroachment in the form of illegal logging, grazing of wild cows, and fires. The changes in tree cover have been estimated via satellite imagery as outlined in the Monitoring plan (Section 5.3.1)

Change in Biodiversity	Species richness, abundance, and diversity of woody biomass
Monitored Change	**Predicted** 1. Vegetation diversity maintained or increased. 2. Steady population of HCV species maintained or increased. 3. Native species composition maintained **Actual** The predicted indices are monitored with the following parameter: 1. Shannon Index 2. Simpson Index 3. Basal area of snags of 9 % on average for the three strata.

	Shannon index	Simpson index
Bosque Montano	1.70	0.25
Selva Montana	1.89	0.20

	<table><tr><td>Selva Pedemontana</td><td>1.74</td><td>0.25</td></tr></table> As this verification event is combined with the validation, the monitoring results so far present the baseline values. The development of the aforementioned indices will be monitored and updated for the next verification event.
Justification of Change	Protection of forests from degradation and deforestation is expected to allow the regrowth and dispersal of tree species in natural distributions. Changes in woody species diversity have been monitored via field surveys as described in section 5.3.1

Change in Biodiversity	Species abundance of fauna
Monitored Change	**Predicted** 1. Species diversity maintained or increased. 2. Populations of HCV species maintained or increased. **Actual** Please refer to section 5.3.1. for the results of the monitoring of fauna species abundance for the specific species that are monitored.
Justification of Change	The main threat facing at-risk species in the area is habitat loss through degradation and land use change. To a lesser extent, hunting & poaching are threats which also come with encroachment. By protecting the area, the project thereby secures habitat and allows wildlife populations to thrive. The project also monitors and secures the area from incidences of poaching / illegal hunting while simultaneously educating communities on topics such as wildlife-conflict mitigation. The trends in species diversity of fauna is monitored via methods outlined in section 5.3.1 in the PD.

Change in Biodiversity	Habitat connectivity (via biological corridors adjacent to the project zone and connecting El Rey to other conservation areas)
Monitored Change	**Predicted** 1. Natural vegetation cover in the identified biological corridors maintained or increased.

	2. Gene flow between populations of "El Rey" and other wildlife populations assured. **Actual** Through the purchase of the project area, the habitat connectivity with connecting protected areas is secured. During the monitoring period the property was purchased which secures the protection of habitat connectivity. Additionally, the project proponent and project implementer are driving the process of purchasing further project areas to increase the protected area in the future.
Justification of Change	In collaboration with the National Parks Administration, the Jujuy Provincial Protected Areas authority and neighboring landowners, the project plans to maintain important biological corridors adjacent to "Las Lauras", reducing the threats to biodiversity and facilitating the movement of wildlife between conservation nuclei in the landscape. Of special focus are the corridors connecting El Rey National Park to Calilegua and Las Lancitas; national and provincial conservation areas respectively. The project will constantly try to even further expand the project zone to cover the identified adjacent corridors and include them in monitoring and conservation activities. The extent of vegetation cover within the corridors will be monitored via satellite imagery as outlined in section 5.3.1.

5.1.2 Mitigation Actions (B2.3)

During this monitoring period, the 'Las Lauras' project area has been protected from degradation and deforestation through the ongoing protection measures of the previous owner. This is not expected to have any negative impact on biodiversity or the identified HCVs in the project zone. They have instead been protected from threats which would have occurred in the absence of the project.

No planting activities have been carried out during this monitoring period. However, In the future, planting may be undertaken to restore any identified degraded areas in "Las Lauras" or if the project area expands. At that time, only native, non-invasive species will be used to prevent disturbance of the ecosystem.

The project has an adaptive management plan. Therefore, any additional risks encountered during project implementation will be mitigated and recorded. Such information will be presented in the Monitoring report for the corresponding period.

5.1.3 Net Positive Biodiversity Impacts (B2.2, GL1.4)

The biodiversity impacts achieved due to the project activities are listed in section 5.1.1 and section 5.3.1.

When compared to the baseline and without project scenarios described in the PD, where the project area is vulnerable to deforestation and degradation leading to habitat loss effects, the impacts of the project are positive in terms of maintained tree cover, availability of wildlife habitat and connectivity between habitats to enable gene flow. Maintained diversity of flora and fauna in the project zone and protected ecosystem services, particularly the water resources, are also expected.

During this period, only impacts related to improved tree cover and biodiversity of woody biomass species could be monitored. Monitoring activities covering the full list of indicators will be carried out and reported in subsequent monitoring periods.

No negative impacts of the project have been identified.

5.1.4 High Conservation Values Protected (B2.4)

By protecting the "Las Lauras" area, the project conserves all the HCV areas (i.e the category I forest areas and montane forests) and species contained within the forests are protected (see Appendix 4 for a list of all HCV species – flora and fauna). This includes protecting HCV tree species from illegal harvesting as well as maintaining a natural habitat for the HCV birds and mammals in Las Lauras which are threatened by habitat loss.

The field survey in 2021 identified the HCV animal species listed in section 5.4 and Appendix 4 for the monitoring period. No negative impacts on HCVs due to the project activities were identified. It is therefore expected that the project's net impact on all HCVs is positive.

5.1.5 Invasive Species (B2.5)

No planting was carried out during this monitoring period and therefore no risk of introducing invasive species exists.
Carbon inventory field surveys leading to a species list at subsequent monitoring periods will allow the identification of any non-native or invasive species in the project zone.

5.1.6 Impacts of Non-native Species (B2.6)

Not applicable. See 5.1.5

5.1.7 GMO Exclusion (B2.7)

Not applicable as no planting activities or introduction of species has been carried out in this period.

5.1.8 Inputs Justification (B2.8)

Not applicable. No inputs are used by the project.

5.2 Offsite Biodiversity Impacts

5.2.1 Negative Offsite Biodiversity Impacts (B3.1) and Mitigation Actions (B3.2)

No negative offsite impacts were observed.

5.2.2 Net Offsite Biodiversity Benefits (B3.3)

Based on the project's theory of change, the expectation is that positive impacts of the project extend beyond the immediate project area. Although these impacts could not be monitored or observed during this monitoring period, they are described again briefly below.

The project actively preserves springs and water sources which not only ensures a sustainable water supply for the animals and forests within the project area but also has a cascading positive effect downstream.

The previously described impact for maintaining biological corridors is also crucial. By doing so, the project contributes significantly to habitat connectivity in the broader Yungas landscape. This interconnected habitat network positively influences other conservation areas and the populations residing there, creating a ripple effect of environmental benefits.

Subsequent monitoring reports will contain actual information and assessments of these impacts. Conservatively, the net impact of the project activities on offsite biodiversity during this period is evaluated as neutral.

5.3 Biodiversity Impact Monitoring

5.3.1 Biodiversity Monitoring Plan (B4.1, B4.2, GL1.4, GL3.4)

Four main data collection methods have been applied and are described in the following:

1. **Satellite imagery**
   Satellite data has been used to analyze tree cover trends in the project zone, including in biological corridors.

2. **Field surveys**
   Additionally, a field inventory also serving the carbon accounting was conducted and provided information on the forest structure and diversity of the woody species present in the project area. Based on this data the biodiversity indices were able to be calculated (e.g. Shannon and Simpsons-Index).

3. **Project team reports**
   For future reporting periods, a report from the project team will collected each year and serves as information on the actual protection measures and threat prevention events which have occurred during the period. During the current monitoring period, the protection measures were still carried out by the previous owner.

4. **Camera traps and field observations**
   Field observations undertaken by an expert biologist are planned to provide information on the diversity of animal species present in Las Lauras. This is complemented by the use of camera traps which have been active since 2006 to the present. However, these data collection activities have been last carried out in 2021 and therefore will be reported starting from subsequent monitoring periods.

Calculation of biodiversity indices
Based on the tree species data collected during the field inventory, the Shannon and Simpsons index was calculated as follows:

- **Shannon index:** The Shannon Diversity Index was calculated by summing the negative product of the proportional abundance of each species (relative to the total abundance within a sample plot) and its natural logarithm. The resulting value between 1 and 4 represents the diversity of a community. Higher values indicate greater diversity. A detailed mathematical

explanation can be found in the original source (Shannon, 1948). Field inventory data has been aggregated first at plot level and then at stratum level.

- **Simpson index:** The Simpson Diversity Index was calculated by summing the squared proportional abundances of each tree species within a sampling plot. The resulting index, which ranges from 0 to 1, represents the probability that two individuals randomly selected from the community (in this case a sampling plot) belong to the same species. Thus, a lower value represents higher tree species diversity. A detailed mathematical explanation can be found in the original source (Simpson, 1949). Field inventory data was aggregated first at plot level and then at stratum level.

Calculation of forest structure diversity indices

The assessment of forest structural diversity was carried out by analyzing data collected during the field inventory of the project area. The metrics reported here are based on the categorization of trees into diameter classes, which serve as a proxy for assessing age structure and hence habitat diversity within the forest. Using the diameter data as input, both the Shannon Diversity Index and the Simpson Diversity Index were calculated according to standard forestry practice (Lexerød & Eid, 2006). See the paragraphs above for a description of their calculation and their interpretation.

Calculation of deadwood proportion

The assessment of deadwood abundance was derived from the inventory dataset mentioned above, with the calculation taking into account the relative proportion of deadwood based on the basal area of the trees within the sampled plots. The monitoring results are presented below for the current monitoring period between 8th of March 2023 and 31st of December 2023. Data has been collected throughout the year of 2023 depending on the different data collection methods, including a baseline value serving as a reference point for the observed changes.

Table 12: Monitoring results including baseline values & results for the current monitoring period

Biodiversity element	Indicator	Unit	Data collection method	Frequency	2023
Protection of existing habitat and natural tree cover	Tree cover	Hectares of tree cover	Satellite data	Per verification	100%
	Structure of forest	DBH, tree species, dead wood	Field survey based on carbon monitoring	3-5 years (at every verification)	Shannon Index DBH-classes: 1.36 Simpson Index DBH-classes: 0.32 DW-proportion of basal area: 9%

	Forest protection measures such as fire prevention, illegal logging, removal of wild cows, and poaching	Registry of activities and connected results	Yearly report of project team	Yearly collected, reported per verification	Protection activities (e.g. cow removal, clearing of fire breaks and access roads) have been carried out by previous landowner in 2023 and previous years.
Flora – Species abundance, richness and diversity	Abundance of HCV tree species	Number of HCV tree species in project area	Field survey based on carbon monitoring	Per verification	14 HCV species
	Tree species richness of project area	Number of recorded trees and respective species	Field survey based on carbon monitoring	Per verification	3650 individual trees, 83 species
	Shannon-Index for tree diversity (woody biomass)	Index from 0 to 4 higher = higher diversity	Field survey based on carbon monitoring	Per verification	1.78
	Simpson-Index for tree diversity (woody biomass)	Index from 0 to 1, lower = higher diversity	Field survey based on carbon monitoring	Per verification	0.23
Fauna – Species abundance, richness,	Andean Condor	Number of animals observed in project area	Observation of presence	2 times per season data collection	N/A

and diversity	White-browed Tapaculo & Yellow-striped Brushfinch	Number of animals observed in project area	Observations during field trip	1 time per wet season data collection	N/A
	White-Lipped Peccary	Number of animals observed in project area	Camera traps	2 times per season data collection	N/A
	South American Tapir	Number of animals observed in project area	Camera traps	2 times per season data collection	N/A
	True bugs	Number of animals observed in project area	Pitfall	1 time per wet season data collection	N/A
Connectivity of habitats – biological corridors	Continuity of tree cover in corridor	Hectares of tree cover	Satellite data	Per verification	100%
Protection of ecological functions (e.g. water resources)	Water quality	PH, temperature and electrical conductivity	Potentiometry or digital multiparameter analyzer Portable Water Quality Meter 850081,	Per verification	N/A
	Water quality	Cations	Complexometric and flame photometry	Per verification	N/A
	Water quality	Anions	Volumetric	Per verification	N/A
	Water quality	Oxygen	Winkler method	Per verification	N/A
	Environmental flow of rivers and streams	m3 /s	Habitat modelling method	Per verification	N/A

			PHABSIM (Physical Habitat Simulation) or Building Block Methodology, BBM; King and Louw, 1998; King et al., 2000, 2008 (tbd)		

5.3.2 Biodiversity Monitoring Plan Dissemination (B4.3)

The results of the biodiversity monitoring will be made available on the website of BdB.

5.4 Optional Criterion: Exceptional Biodiversity Benefits

5.4.1 Trigger Species Population Trends (GL3.3)

Trigger Species	Andean Condor (*Vultur gryphus*)
With-project Scenario	The habitat and nest sites of the Andean Condor within Las Lauras have been protected from deforestation and the presence of condors in the project area have been confirmed.

Trigger Species	White-browed Tapaculo (*Scytalopus.santabarbarae*) & Yellow-striped Brushfinch (*Atlapetes citrinellus*)
With-project Scenario	The habitat and nest sites of these species within Las Lauras have been protected from deforestation. The baseline species count needs to be carried out

Trigger Species	White-lipped Peccary (*Tayassu pecari*)
With-project Scenario	The population of White-lipped Peccary within the project zone have been protected from deforestation and hunting pressure

Trigger Species	South American Tapir (*Tapirus terrestris*)
With-project Scenario	Populations of South American Tapir in the project zone have been protected from deforestation, hunting and livestock encroachment. Corridors provide safe ecological connectivity, protecting them from exposure to roads and human structures.

Trigger Species	Predator groups of True Bugs (Reduviidae, Asopinae and Anthocoridae)
With-project Scenario	The project intends to monitor predator groups to know the conservation status of the ecosystem, where arthropods play a vital role, as they constitute the largest zoological group on earth. "Las Lauras" is the best area to monitor, mitigate the reduction of their populations and improve their preservation. However, these activities will be implemented during the next monitoring period.

6 ADDITIONAL PROJECT IMPLEMENTATION INFORMATION

Document any additional information that explains how the project has been implemented in accordance with the validated project description for all indicators that require implementation of an activity or process. Criteria and indicators shall be referenced for each statement made in this section.

n/a

7 ADDITONAL PROJECT IMPACT INFORMATION

Document any additional information that provides the results of monitoring and shows how the project meets all indicators that require demonstration of impacts. Criteria and indicators of the Climate, Community & Biodiversity Standards or requirements of the VCS Standard shall be referenced for each statement made in this section.

Additional impact information on the biodiversity status of the project area is available in a biodiversity study that was conducted in 2021. It reflects the flora and fauna composition of "Las Lauras" and the information was collected through surveys, systematic, "ad libitium"walks" and the use of camera traps between December 2012 and 2021 in 15 different sites. The survey can be shared upon request.

8 APPENDICES

The following appendices may be used if appropriate. Delete the instruction and heading if not used.

8.1 Appendix 1: Stakeholder Identification Table

Stakeholder *Direct and indirect stakeholders*	Rights, Interest and Overall Relevance to the Project	Engagement level (inform, consult, participate)
Direct		
San Juan de Dios inhabitants	Only community directly next to the project area. Interested in leisure time options making use of public access to project area in the second phase of the project (see section 4.1 in the PD for a detailed description of the community). Ecosystem services like ground water bodies are connected to the protection of the forest in the project area. Inhabitants are potential employees for project activities.	Information Consultation Participation
Schools in proximity to the project area	Interested in cooperation for educational awareness programs and access for excursions to the project area.	Information Consultation Participation
Farmers San Juan de Dios	Direct reliability on water sources coming from mountain ranges in project area for agricultural production.	Information Consultation Participation
Administration National Park El Rey	Important project partner: potential recipient of donation of project area. National Park area is directly adjacent to the project area.	Information Consultation Participation
Ministry of the Environment of Jujuy	Important project partner: potential recipient of donation of project area. Cooperation for land title donation process to transform the project area into an official (provincial/national) protected area. Access to project area for monitoring and data collection for provincial assessments on protected area´s effective management and their biodiversity.	Information Consultation Participation
Indirect		

Ministry of Tourism Jujuy	Interest in potential tourism and development opportunities that results from the creation of a new protected area in the province of Jujuy.	Information Consultation
Government of Jujuy	Cooperation for land title donation process to transform the project area into an official (provincial/national) protected area.	Information Consultation Participation
Government of Salta	Collaboration for future potential enlargement of protected areas in both provinces.	Information Consultation Participation
NGOs working on deforestation and watershed protection	In the first case (deforestation) direct interest in biodiversity protection and fighting climate change. In the second case (watershed protection) assuring river sound ecosystem which ensures employment. Other NGOs active in the region will be interested in cooperation opportunities, joint activities, and synergies in conservation efforts.	Information Consultation Participation
Academic institutions	Direct cooperation with local universities (access to project area for research, sharing of monitoring data etc.).	Information Participation
Tourism businesses close to project zone (e.g. hotels close to the park)	Tourism businesses might be interested in the creation of a protected area due to potentially increased business opportunities due to a higher visibility and attractiveness of region.	Information
Towns and villages that are within 1.5h of driving	Towns and villages that are within 1.5h of driving might benefit from tourists that are attracted by protected area and have access to the protected area as an additional leisure time option.	Information

8.2 Appendix 2: Project Activities and Theory of Change Table

Project phase	Activity description	Expected climate, community, and/or biodiversity			Relevance to project's objectives
		Outputs (short term)	Outcomes (medium term)	Impacts (long term)	
I	Facilitating legal land status change				
	Evaluation of Legal Status Options: Assessing different options for the legal status of the protected area, such as National Park, Provincial Park, or Wild natural Reserve.	The best viable option identified for land title change to permanent conservation area.	Legal land status change from private land to conservation area.	Climate change mitigation through long-term protection of carbon stock and biodiversity protection.	Climate & biodiversity
	Engaging with Stakeholders: Involving provincial and national stakeholders in guiding and leading the process of changing the land's legal status.				
	Developing a legal and contractual framework for the land donation, including defining roles and responsibilities, and establishing legally binding conditions for access, excursions, carbon ownership, and land use restrictions.	Donation contract completed defining conditions to secure carbon project implementation and other key aspects.			
I & II	Forest protection activities				
	Maintenance of road network: Collaboration with previous landowner on road maintenance.	Improved control and protection over project area.	Reduced risk of activities such as illegal logging, hunting or poaching and establishing monitoring control over project area.	Climate change mitigation through long-term protection of carbon stock and biodiversity protection.	Climate & Biodiversity & Community
	Collaborative Patrolling: Working with National Park "El Rey" for area patrolling (ranger involvement) and installing road barriers.				
	Intrusion Detection: Use camera traps to detect illegal entries.				

Project phase	Activity description	Expected climate, community, and/or biodiversity			Relevance to project's objectives
		Outputs (short term)	Outcomes (medium term)	Impacts (long term)	
	Fire Management: Coordinate fire control with neighbors, conduct workshops, secure water access.	Trained project staff and other stakeholders in fire management	Reduced fire risk and improved management capacity.		
	Wild Cow Removal: Joint removal of cows with communities and park rangers.	Reoccurring wild cow removal activities.	Improved habitat conditions for native wildlife, reduction of degradation effects and provision of meat to local community.		
	Biodiversity Mapping: Mapping HCV tree species for improved protection.	HCV tree species identified and mapped.	Securing long-term presence and support for HCV species.	Protection and further enhancement of HCV species and biodiversity in project area.	
	Donation Seed Material: Identify HCV trees for seed collection and donation to university.	Seed material donated to university			
	Tree planting: Plant trees in degraded areas and in local community in collaboration with local nursery.	Native tree species planted.	Tree cover and GHG emission removal increased.	Climate change mitigation and adaptation through shade provision.	
	Human-Wildlife Conflict Mitigation: identify existing challenges and implement programs to prevent increased human-wildlife conflicts. This includes raising awareness among communities and the province of Jujuy, as well as collaborating with neighbors on conflict mitigation strategies.	Options identified to reduce human-wildlife conflict surrounding the project area	Improved co-existence between wildlife and local population	Improved acceptance of conservation efforts	Climate & Biodiversity & Community
I & II	Educational activities				
	Outdoor Education Programs: Implement excursions in the project area for local schools. Topics include monitoring, species identification, and tracking, led by BdB staff.	Local kids participated in excursions in project area.	Enhanced awareness of environmental topics for local citizens in Jujuy.	Enhanced capacity and awareness for forest and	Community

Project phase	Activity description	Expected climate, community, and/or biodiversity			Relevance to project's objectives
		Outputs	Outcomes	Impacts	
		(short term)	(medium term)	(long term)	
	Environmental Education Classes: Provide classes on climate change, nature conservation, and biodiversity for local schools, potentially led by biodiversity experts. Organize excursions to other protected areas in the region.	Implemented environmental classes.		biodiversity protection.	
	School Engagement: Actively involve local school as a "protected area ambassador school" to raise awareness among the younger generation and foster identification with the protected area.	Established relationship between project area and local school.	Local kids identify themselves with the project area and environmental protection topics.		
	Social Media Education: Utilize BdB's social media channels for disseminating educational content on biodiversity topics.	Published social media content available on a regular basis.	Enhanced awareness of environmental topics for local citizens in Jujuy.		
	Trash Collection and Trash separation Campaigns: Launch campaigns to collect trash, improving environmental awareness and preventing litter from tourism.	Local trash collection and selection campaign implemented	Enhanced awareness of environmental topics for local citizens in Jujuy.		
I & II	Communication and leveraging project scope				
	Project Website: Develop a website for the project to disseminate information.	Published information on project activities, updates and monitoring results on website.	Transparency of project provided to all relevant stakeholders.	Visibility and transparency of project	Climate & Community & Biodiversity
	Fundraising: Continuous fundraising to expand and enhance specific project activities.	Additional funds acquired to finance additional project activities.	Increased project impact and effectiveness.	Increased climate change mitigation through long-term protection of carbon stock and biodiversity protection and implementation	
	Project Expansion: Continuously work to expand the project area, including cooperation with other foundations like "Wyss Foundation amongst others."	Additional properties acquired for expansion of protected area	Maintain a large biological corridor connecting "El Rey," "Pizarro,", "Las Lancitas" and "Calilegua" National		

Project phase	Activity description	Expected climate, community, and/or biodiversity			Relevance to project's objectives
		Outputs (short term)	Outcomes (medium term)	Impacts (long term)	
			Park within the Santa Barbara mountain range.	of community activities.	
I & II	Strengthening local and regional nature conservation and research alliances				
	Biological Corridor Establishment: Collaborate with neighboring protected areas and landowners on monitoring and conservation activities.	Established collaboration with key partners on conservation efforts.	Enhanced functionality of conservation efforts across Jujuy and the biological corridors functionality.	Climate change mitigation through long-term protection of carbon stock and biodiversity protection.	Biodiversity
	Networking with Local NGOs: Network with local non-governmental organizations (NGOs) specializing in birds, fly fishing, bat protection and related areas to identify opportunities for synergistic and joint conservation activities.				Climate & Biodiversity
	University Cooperation: Partner with regional universities for conservation and biodiversity research projects, facilitating access to the project area and existing monitoring data through Memorandums of Understanding (MoUs).	Established collaboration on climate and biodiversity studies.	Contribution to improved understanding of biodiversity and climate change impacts on flora and fauna in Jujuy.		
	Provincial Government Engagement: Cooperate with the provincial government to designate certain vulnerable species in the project area as "monumento natural."	Government supported in elevating protection status of key species.	Improved protection of key species.		
	National Park Authorities: Collaborate with the conservation regional office of National Park authorities for activities such as monitoring and access management.	Established collaboration with National Park authorities.	Increased protection and monitoring effectiveness of protected areas.		
	Collaboration with Local (Eco-) Tourism businesses: Foster tourism opportunities with local ecotourism ventures.	Increased visibility for tourism businesses and clients in Jujuy.	Local business and employment opportunities through	Alternative livelihood opportunities	Community

Project phase	Activity description	Expected climate, community, and/or biodiversity			Relevance to project's objectives
		Outputs (short term)	Outcomes (medium term)	Impacts (long term)	
			increased visibility of project area as tourist destination.	for local community	
I & II	Monitoring activities				
	Carbon Monitoring: Conduct ongoing monitoring of carbon stocks.	Required data for monitoring report collected.	Information on carbon stock development provided.	Climate change mitigation through long-term protection of carbon stock and biodiversity protection.	Climate
	Biodiversity Monitoring: Assess the current status and the maintained protection of key species.	Data on key flora and fauna in project area collected and information on population trends on trigger species available.	Information on biodiversity status in project area assessed and information on maintenance of protection available.		Biodiversity
	Participatory Community Monitoring: Involve local communities in monitoring efforts, including hiring for carbon monitoring and collaborating with other stakeholders.	Communities involved in monitoring cycles.	Increased ownership and involvement of local community in conservation project		Community
	Results Dissemination: Share monitoring results with stakeholders through stakeholder communication channels.	Published information on project activities, updates and monitoring results through adequate communication channels.	Transparency of project provided to all relevant stakeholders		Community
	Weather stations: installation of weather stations along the forest transition to monitor climate change.	Weather stations established to enable collection for scientific studies.	Contribution to improved understanding of biodiversity and climate change impacts on flora and fauna.		Climate & Biodiversity
II	Potential activities after donation and transfer of legal status to protected area				

Project phase	Activity description	Expected climate, community, and/or biodiversity			Relevance to project's objectives
		Outputs (short term)	Outcomes (medium term)	Impacts (long term)	
	Management of regulated public access in designated areas of the forest: public protection area will be accessible by the public.	Community members and other visitors have access to forests and rivers of protected area.	Availability of additional leisure time options.	Enhanced quality of life for local community	Community
	Ranger Employment: Employ approximately 12 forest rangers (2-3 per ranger team) and brigadistas through the protected area authorities.	Jobs created supporting the conservation and educational activities	Additional job creation and improved operational capacity	Alternative livelihood opportunities for local community	
	Area Control and Surveillance: Entrust control and surveillance of the area to protected area authorities.	Successful transfer of area control and related activities to protected area authorities	Secured long-term management and protection of project area	Climate change mitigation through long-term protection of carbon stock and biodiversity protection.	Climate & Biodiversity
	Capacity building: Promote skill-sharing for jobs connected to project activities (e.g. WFR courses trail design and construction, support for local business ideas).	Identified and supported demand for capacity building opportunities.	Knowledge transfer for relevant skills related to project impact.	Enhanced capacity for stakeholders and additional income opportunities.	Community
	(Eco-)Tourism in project area: Implement tourism activities, including trail and other infrastructure development.	Enhanced tourism infrastructure.	Local business and employment opportunities through increased visibility of project area as tourist destination.	Alternative livelihood opportunities for local community.	
I & II	Infrastructure improvements in local community				
	Miscellaneous support for the local community (e.g. donations for school, investments in phone signal, etc.)	n/a	n/a	Enhanced infrastructure for local community.	Community

8.3 Appendix 3: Project Risks Table

Identify Risk	Potential impact of risk on climate, community and/or biodiversity benefits	Actions needed and designed to mitigate the risk
Illegal hunting	Illegal hunting activities in the project area could threaten biodiversity and endangered or vulnerable species.	The level of current illegal activities in the project area is estimated to be low due to the effective protection of the previous landowner. Under the project, the previous landowner will maintain the current protection measures carried out by his staff. In the second phase of the project, the official authorities will take over forest protection measures with the hiring of park rangers. If small scale illegal activities by nearby communities are identified, a sensitive approach will be applied, and park rangers trained so that the prohibition on the services provided by the forest does not result in a rejection of the community towards the protected area.
Illegal logging	Illegal logging activities in the project area could threaten the forest cover, HCV tree species and the rich biodiversity.	
Fire	Fires are a major cause for deforestation in Jujuy and Salta (see section 3.1.4 in the PD).	
Roaming cows	In the area wild cows are present. If the number increases, the forest is threatened through their presence.	The number of wild cows will be monitored and removal activities implemented when required (this is an ongoing activity in cooperation with previous landowner).
Increased human wildlife conflict	Due to the protection of the project area the population of wild animals such as pumas might increase. This can lead to increased puma attacks on cattle farms nearby the project area.	The project area has been well conserved previous to the project start, consequently it is not clear yet if there will be increased human wildlife conflict. The project will monitor developments and cooperate with neighboring farmers. BdB has a framework agreement with the National Parks Administration. This opens the possibility of generating an additional

		cooperation agreement with the El Rey National Park for the cooperation of the park rangers (who have extensive experience in this issue). Cooperation options also exist with NGOs that specialize, for example in puma control.
Increased people disturbing wildlife in the project area	Increased tourism might lead to an increased number of people entering the project area and disturbing the wildlife.	The project area will be legally converted to a protected area either under provincial or national laws. In both scenarios detailed laws and regulations will determine the inflow of visitors to the project area. Trail systems will be designed in a way to protect the resting areas of wildlife and to leave sufficient undisturbed areas.
Financial risk	Loss of funding sources can threaten project implementation.	The financial set-up of the project assures continuous availability of funds (see section 2.1.20 in the PD).
Legal risk	Challenges during the legal process of changing the land title status of the project area.	The long-term experience of BdB with similar projects and the close cooperation with political stakeholders from the beginning of the project will facilitate a smooth cooperation with authorities for the transition of the land title to an official protected area.
Political risk	Frequent changing political environment with opposing political programs could challenge the transfer of the land to a provincial or national protected area.	
Pest and disease	Pest and disease could threaten the survival of the trees in the project area.	Continuous monitoring helps to identify and anticipate the outbreak of any diseases early on.
External threats to water ecosystem service of communities	The water availability of the community below the forest area might be impacted by factors out of control of the project (e.g. more intense agricultural production, droughts etc.)	Continuous communication with the community and landowners will allow to identify additional water stress and discuss mitigation options.

Extended droughts	Droughts can threaten the protected forests and challenge water availability for communities in the project zone.	Monitoring will allow to identify if drought periods are impacting tree health and which options exist to support the forest. The main project activity of maintaining forest cover especially in the cloud forest areas that collect humidity from clouds and rainwater is a major preventive measure.
Fauna run over	The increase in tourism will mean a greater number of vehicles circulating on the internal and external roads of the project area. This could lead to an increase in road kills of native animals.	BdB has experience and successful campaigns on this particular point. It will be necessary to work with local authorities to place signs on wildlife care, maximum speeds and speed bumps on internal and external routes. In busy national parks, the placement of bumps, warning signage and speed radars is common.

8.4 Appendix 4: List of HCV species in Las Lauras

The table below summarizes identified species of High Conservation Value found in the project zone including vulnerable, endangered, near-threatened and/or endemic species

Scientific name	Common name	Description	IUCN Red List Category	Other HCV Attribute
Spizaetus isidori	Black-and-chestnut Eagle	Bird	EN	-
Sapajus cay	Azra's Capuchin	Mammal	VU	-
Tapirus terrestris	South American Tapir	Mammal	VU	-
Tayassu pecari	White-lipped Peccary	Mammal	VU	-
Vultur gryphus	Andean Condor	Bird	VU	-
Amazona tucumana	Tucuman Parrot	Bird	VU	-
Atlapetes citrinellus	Yellow-striped Brushfinch	Bird	LC	Endemic to Argentina
Blepharocalyx gigantea	Palo Barroso	Tree	VU	
Scytalopus superciliaris santabarbarae	White browed Tapaculo	Bird	N/A	Endemic to NW Argentina
Penelope bridgesi	Yungas Mountain Guan	Bird	N/A	Endemic to NW Argentina
Myrcianthes pungens	Mato	Decidous tree	EN	-
Cochlospermum tetraporum	Árbol de papel	Tree	EN	-
Cedrela angustifolia	Coya Cedar	Tree	VU	-
Cedrela balansae	Cedro Rosado	Tree	EN	
Cedrela fisilis	Cedro Orán	Tree	VU	
Gonopterodendron sarmientoi	Palo Santo	Tree	EN	
Jacaranda mimosifolia	Tarco	Tree	VU	-
Polylepis hieronymi	Queñoa	Tree	VU	-
Libidibia paraguariensis	Guayacaú Negro	Decidous tree	VU	-
Loxopterygium grisebachii	Quebracho Floj	Tree	VU	
Kageneckia lanceolata	Loque	Shrub / tree	VU	-
Myrcianthes pungens	Pseudo mato	Tree	EN	
Podocarpus parlatorei	Pino del Cerro	Evergreen shrub / tree	NT	-
Schinopsis haenkeana	Horco-Quebracho	Tree	VU	

Nectandra angusta	Hairy Laurel	Tree	LC	Endemic to Jujuy and Salta provinces (Argentina); and Bolivia
Jatropha macrocarpa	Sacha Higuera	Tree	N/A	Endemic to NW. Argentina, Brazil (Bahia) and SE. Bolivia.
Polylepis australis	Queñoa	Tree	N/A	Endemic to Northeast and Northwest Argentina
Xylopodia laurensis	N/A	Shrub / tree	N/A	Endemic to Jujuy, Argentina and parts of Bolivia
Pachygenium laurense	N/A	Orchid	N/A	Endemic to Northwest Argentina

8.5 Appendix 5: References

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