

NIDEPORT SELVA PARANAENSE VIDA NATIVA GS1 PROJECT



NIDEPORT

Document Prepared By EcoSecurities and ProSustentia

Project Title	Selva Paranaense Vida Nativa - GS1
Version	1
Date of Issue	29/07/2022 this version of the document issued
Project Location	Argentina, Misiones province, San Pedro municipality
Project Proponent(s)	NIDEPORT S.A., Presidente Ricardo Morales Bosch, ricardo.moralesbosch@nideport.com, +598 98 747 167
Prepared By	EcoSecurities do Brasil LTDA and ProSustentia
Validation Body	-
Project Lifetime	01/12/2021 - 01/12/2121; 100 years
GHG Accounting Period	01/12/2021 - 01/12/2121; 100 years
History of CCB Status	-
Gold Level Criteria	Climate: The project identifies climate change risks and develops adaptation projects both for biodiversity and community Biodiversity: The project seeks to protect and enhance biodiversity in a proposed KBA area by reducing the Atlantic Forest threats and promoting its preservation and sustainable management. Community: located in low developed areas, the project seeks and implements development programs designed by the communities based on main needs.
Expected Verification Schedule	-

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1 SUMMARY OF PROJECT BENEFITS

1.1 Unique Project Benefits

Outcome or Impact Estimated by the End of Project Lifetime	Section Reference
1) Recovery of biodiversity affected by anthropic activities by enrichment and regeneration of areas with native species.	3; 5
2) Biodiversity threats reduction with state-of-the-art monitoring technology implementation and biodiversity monitoring plan	2; 5
3) Enhance community development by identifying and implementing productive projects	2; 4

1.2 Standardized Benefit Metrics

Category	Metric	Estimated by the End of Project Lifetime	Section Reference
GHG emission reductions or removals	Net estimated emission removals in the project area, measured against the without-project scenario	3,106,582 tCO ₂ e	2.1.17
	Net estimated emission reductions in the project area, measured against the without-project scenario	Not applicable	
Forest ¹ cover	For REDD ² projects: Estimated number of hectares of reduced forest loss in the project area measured against the without-project scenario	Not applicable	
	For ARR ³ projects: Estimated number of hectares of forest cover increased in the project area measured against the without-project scenario	Not applicable	
Improved land management	Number of hectares of existing production forest land in which IFM ⁴ practices are expected to occur as a	22,298.8 ha	3.1.3

¹ 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*)

² 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*)

³ 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*)

⁴ 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	Estimated by the End of Project Lifetime	Section Reference
	result of project activities, measured against the without-project scenario		
	Number of hectares of non-forest land in which improved land management practices are expected to occur as a result of project activities, measured against the without-project scenario	579.7	3.1.3
Training	Total number of community members who are expected to have improved skills and/or knowledge resulting from training provided as part of project activities	50	2.3.14; 2.3.15
	Number of female community members who are expected to have improved skills and/or knowledge resulting from training as part of project activities	25	2.3.14; 4.2.1
Employment	Total number of people expected to be employed in project activities, ⁵ expressed as number of full-time employees ⁶	50	2.3.15
	Number of women expected to be employed as a result of project activities, expressed as number of full-time employees	25	2.3.15; 4.2.1
Livelihoods	Total number of people expected to have improved livelihoods ⁷ or income generated as a result of project activities	50	2.3.15
	Number of women expected to have improved livelihoods or income generated as a result of project activities	25	2.3.15; 4.2.1
Health	Total number of people for whom health services are expected to improve as a result of project activities, measured against the without-project scenario	1.500	4.2.1

⁵ 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.

⁶ 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 the UN System of National Accounts (1993) paragraphs 17.14[15.102];[17.28])

⁷ 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	Estimated by the End of Project Lifetime	Section Reference
	Number of women for whom health services are expected to improve as a result of project activities, measured against the without-project scenario	700	4.2.1
Education	Total number of people for whom access to, or quality of, education is expected to improve as result of project activities, measured against the without-project scenario	500	4.2.1
	Number of women and girls for whom access to, or quality of, education is expected to improve as result of project activities, measured against the without-project scenario	300	4.2.1
Water	Total number of people who are expected to experience increased water quality and/or improved access to drinking water as a result of project activities, measured against the without-project scenario	250	4.2.1
	Number of women who are expected to experience increased water quality and/or improved access to drinking water as a result of project activities, measured against the without-project scenario	150	4.2.1
Well-being	Total number of community members whose well-being ⁸ is expected to improve as a result of project activities	1500	4.1.3; 4.2.1
	Number of women whose well-being is expected to improve as a result of project activities	700	4.1.3; 4.2.1
Biodiversity conservation	Expected change in the number of hectares managed significantly better by the project for biodiversity conservation, ⁹ measured against the without-project scenario	Total project area: 22,878.5 ha	5.2.1
	Expected number of globally Critically Endangered or Endangered species ¹⁰ benefiting from reduced	As many IUCN species as possible. During baseline at	5.2.1

⁸ 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, Livelihoods, Health, Education and Water), and may also include other benefits such as strengthened legal rights to resources, increased food security, conservation of access to areas of cultural significance, etc.

⁹ Managed for 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, e.g. enhancing the status of endangered species

¹⁰ Per IUCN's Red List of Threatened Species

Category	Metric	Estimated by the End of Project Lifetime	Section Reference
	threats as a result of project activities, ¹¹ measured against the without-project scenario.	least 7 bird species were identified	

2 GENERAL

2.1 Project Goals, Design and Long-Term Viability

2.1.1 Summary Description of the Project (G1.2)

The project area is located in the extreme east of the province of Misiones, in the department of San Pedro, bordering Brazil. The field of native forest where the project is located has 22,878.5 hectares and immersed in the Green Corridor there is a sawmill operating. In this area, controlled logging has been carried out since the 1960s and will decrease as the NIDEPOR project progresses, with harvesting expected to be completed by the end of 2021. The project activity is improved forest management with areas that will be enriched and regenerated by planting more than 250,000 native species individuals annually and others managed to increase forest productivity (bambuacea's control, and others). The Forest Regeneration Plan states the seedlings distribution which has been defined on the particular situation of the stratum and the area of the field to be treated, based on an in-depth study of different variables using various tools and in collaboration with a professional team.

Although there is not any community, individual or group of people living in the project area, GS1 has been subjected to situations of intrusions and illegal occupations, with burning for planting or deforestation for rudimentary construction, there are numerous cases where the land has been colonized or exploited for agriculture or livestock, where the land is left with high levels of degradation and contamination. For these reasons project activities include enrichment and restoration. The area of the woody strata affected by enrichment activities (7,860 ha) will be actively intervened by the planting of an average density of 696 seedlings per hectare (391ha), while in the remaining area the restoration will be through passive natural regeneration. On the other hand, in the most affected strata, the intervention will be in the total area through reforestation actions.

By conserving and sustainably managing almost 23,000ha of Atlantic Forest, the project proponent will create a cryptocurrency based on the natural capital of the forest with a primary focus on biodiversity and a secondary focus on carbon. Each m2 of forest will be monitored, verified, and will have associated a

¹¹ In the absence of direct population or occupancy measures, measurement of reduced threats may be used as evidence of benefit

cryptocurrency backed by blockchain and GIS systems. By installing monitoring towers with state-of-the-art cameras and the use of drones with photogrammetric cameras, the entire area will be monitored, controlling fires and illegal logging. This technology will help quantify the carbon removals and biodiversity increases, information that will support cryptocurrencies.

The project zone, encompassed in an area with population under poverty line, expects to work together with the community identifying risks, HCV areas and needs, in order to implement mitigation actions together. In this line, first meetings with communities have already helped to identify both biodiversity and community's HCVs, and possible projects regarding housing improvement, health care, among other needs to be identified during the project lifetime.

The «climate benefits» of the project are defined as the reductions or removals of GHG emissions resulting from forest regeneration, these are expected to reach 3,106,582 tCO₂e during the crediting period, averaging 103,553 tCO₂e per year. The "community benefits" of the project are defined as improvements in the well-being of communities resulting from the project activities in place. The "biodiversity benefits" of the project are defined as the enhancement of the biodiversity elements resulting in increments of endangered populations. All project benefits take into account positive and negative impacts and are relative to conditions under the no-project land use scenario described in this document.

2.1.2 Project Scale

Project Scale	
Project	X
Large project	

2.1.3 Project Proponent (G1.1)

Organization name	NIDEPORT S.A.
Contact person	Ricardo Morales Bosch
Title	President and CEO
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Email	ricardo.moralesbosch@nideport.com

2.1.4 Other Entities Involved in the Project

Organization name	None
Contact person	-
Title	-

Address	-
Telephone	-
Email	-

2.1.5 Physical Parameters (G1.3)

The area is located in the extreme east of the province of Misiones in Argentina, immersed in Paraje Cruce Caballero, in the department of San Pedro, bordering Brazil. The entire area is located between the ecoregions of the Atlantic Rainforest of the Upper Parana and the Araucaria Rainforest. The property is located between the Piñalito Provincial Park to the north, and the Yabotí Biosphere Reserve to the south; it is also located a few kilometers from the Cruce Caballero Provincial Park and Arauco Private Reserve, which protects the Arroyo Alegría Valley, belonging to the same company.

The site is included in the AICA MI014 Piñalito and surroundings, which totals some 30,000 hectares, currently proposed as a Key Biodiversity Area (KBA).

The relief of this region varies from undulating to typically broken terrain and is crossed by the courses of the Toro (Manduví at its headwaters), Cisnandez (or Dos Hermanos), Macaca and Persiguero, tributaries of the Pepirí Guazú (Eastern boundary of GS1), which run in a northwest-southeast direction. In their paths they present numerous waterfalls varying from 5 to 12 m in height.

The region stands out for its high pluviometry records, as a result of the humid winds coming from the northeast, southeast and east, and from the Atlantic Ocean. The subtropical climate develops without a dry season, which makes Misiones one of the most humid provinces in Argentina. The average relative humidity varies from 75% to 90% with significant nocturnal dew and rainfall ranges from 1,600 millimeters near the border with the province of Corrientes to 2,000 millimeters in the northeast, distributed throughout the year. Temperatures average 16 degrees Celsius during the winter season (July to September) and 25 degrees Celsius during the summer months (December to March), reaching temperatures of 40 degrees Celsius during the day.

Promedio mensual de lluvia en San Pedro

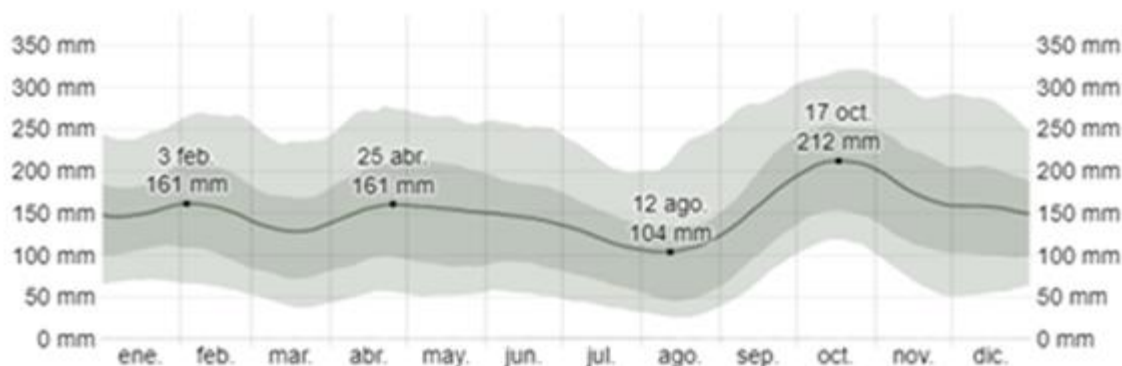


Figure 1: Monthly precipitation average for San Pedro. Source: Weatherspark.com

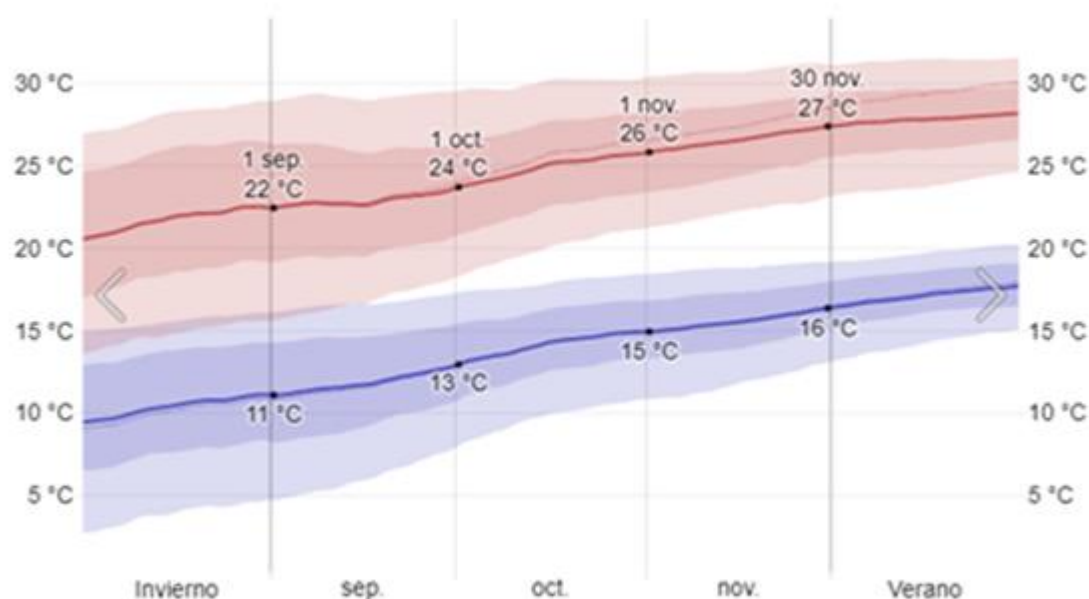


Figure 2: Minimum and Maximum average temperature in project zone. Monthly detail for spring time. Source: Weatherspark.com.

The Pepirí Guazú River (in Portuguese Pepirí-Guaçu) is a South American watercourse that forms the border between the province of Misiones, Argentina and the state of Santa Catarina, Brazil along its entire course. It rises in the Sierra de Misiones above the towns of Bernardo de Irigoyen and Dionísio Cerqueira and flows south until it empties into the Uruguay River a few kilometers before the Moconá Falls, presenting a large number of meanders along its entire course. A peculiarity of this river is that it separates two totally different landscapes: on the Argentinean side you can still appreciate the ecosystem of the Paranaense

rainforest protected by the Yabotí Biosphere Reserve, while on the Brazilian side it has been cut down and the landscape is totally anthropized with the presence of fields dedicated to agriculture.

Its main tributaries are the Los Hermanos and Toro streams on the Argentine side and the Flores River on the Brazilian side. Along its course are the waterfalls of the Gran Salto Macora, the Salto de la Marca, the Salto Leicao, the Salto Valiente and the Macacos Blancos waterfalls.

Estimates from satellite images show that there are more than 160 kilometers of streams of varying flow within the property. Some of these streams originate in the property or in the vicinity and others originate in the higher areas of the province and enter with great flow to continue supplying themselves with small tributaries that the forest feeds. The project area also contains the headwaters of the Yabotí Miní Stream, the Liso Miní, Liso and Invernada streams.

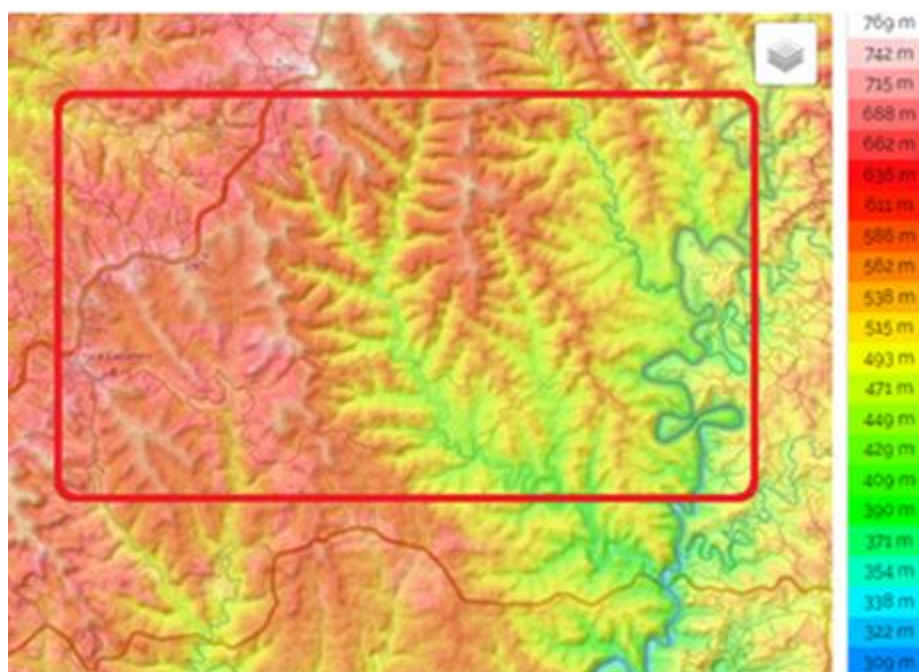


Figure 3: Altitude in meters over sea level for project zone.

The red soils, characteristic of the province, are the result of transformation processes of basaltic material under warm and humid climatic conditions. In the plateau area they are deep, clayey and rich in iron and aluminum oxides. In the steep relief areas, they are shallow where basalt outcrops abound. The soils in these areas are made up of soils of quality 6 A, 6 B and 9. These are described below:

Soils 6.- Young soils, little evolved or evolved, derived from altered and fractured melaphyre to discrete depth (1 to 2 mts.), permeable, slightly acidic and fertile. The following phases can be distinguished:

6 A: Flat or slightly sloping relief (slope < to 20 %). Low risk of erosion, deeper profile (> 1 m). Suitable for reforestation.

6 B: Steeply sloping relief (slope > 20 %). Strong danger of erosion, shallow profile (0.5 to 1 m). Not suitable for reforestation (restriction by Law N° 3426 of Protective Forests).

Soils 9.- Very evolved deep red soils, leached, permeable, acidic or slightly acidic, moderately fertile, derived from melaphid. Includes the eroded phases. May be found associated with small areas of units 3 and 6. Suitable for reforestation.

The baseline analysis conducted indicates that the type of vegetation within the premises is as indicated in the figure below, with main participation (more than 90%) of explored native forest, with different degrees of degradation:

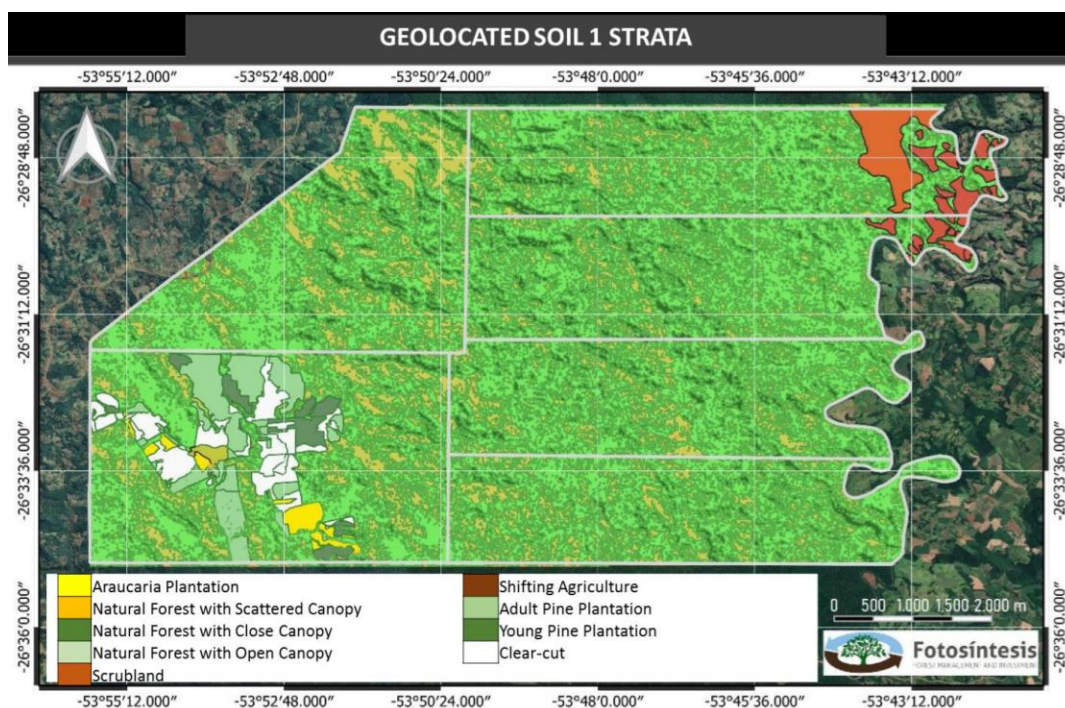


Figure 4: GS1 property area land use, with the exception of the adult and young plantations

Figure 4 portrays the whole area of the Reserva GS1 property, which has a size of approximately 24,800 ha. The project area encompasses almost the entire reserve, 22,878.5 ha. The project area and its project boundaries are displayed in section 3.1.3.

The native forest is in a highly intervened state and in most of the surface it can be interpreted as highly degraded, however, it maintains a dynamic of a high potential for natural recovery in different scenarios of vegetation succession societies. This includes three different strata, which are: closed woody (relatively intact forests) open woody (heavily disturbed forests) and then dispersed woody (degraded forests). The

main woody species identified (in terms of number of individuals) are Laran Geira, Laurel Negro, Catigua, Lianas and Rabo Itiá¹².

Among the characteristic mammals are marsupials, carnivores with the presence of the greater ferret (irará); otters such as the river otter and the chokecherry wolf (lobo gargantilla), felids, including jaguars, pumas, onza cats, tiger cats and chiví cats; bush foxes and pitoco foxes; and rodents, with several species exclusive to this jungle, such as the paca, the acutí bayo, the coendú misionero (also known as the hedgehog) and the grey squirrel (serelepe).

Some 550 bird species inhabit the province, which represents more than 50% of Argentina's avifauna. The presence of jungle eagles such as the harpy eagle and the widow eagle is outstanding. Also commonly found are the wild guans, parrots and toucans. Among the birds there is an important variety of tropical and subtropical families. There are also various types of amphibians, reptiles and invertebrates, particularly insects, many of which are unique to this eco-region. Most of them are in danger of extinction..

2.1.6 Social Parameters (G1.3)

GS1 project is in a property belonging to Forestal Belga S.A., located in the municipality of San Pedro, Misiones. There is not any community, individual or group of people living within the project area. Outside the limits of the area, and in the project zone, there are rural agglomerates: Cruce Caballero, Tobuna, Alegría, Piñeiro, and further: Gentil and Tekoa Alecrín.

Cruce Caballero and Tobuna are the main rural agglomerates of which it is possible to find official census information. The rest of the sites are considered scattered rural groupings, and therefore not censured.

According to the 2010 census, Cruce Caballero had a population of 408 and Tobuna had a population of 350. Taking as a reference the intercensal variation rate of the Department of San Pedro, the estimated population in both places nowadays reach 530 and 397 inhabitants, respectively.

Another procedure for establishing population estimates is the housing listing. There are 48 houses in Paraje Piñeiro. Based on the census of a maximum variation sample that determined that the average number of people per household is 4 people, we can calculate that the number of inhabitants is approximately 192. Tekoa Alecrín, meanwhile, has 238 inhabitants according to the last territorial survey carried out by the same community in 2020. Taking into consideration these values, the estimated total population in the project zone is 1,500.

Land use and economic activities:

¹² 2022 Forest inventory by Fotosíntesis consultancy

The residents of these places are predominantly smallholders, self-employed farmers who work in their family productive land, known as "chacra". Their income derives mainly from the commercialization of perennial crops such as yerba mate, tobacco and tea. These products are grown in small plots of subdivided land where livestock is also practiced, usually to meet the needs of agriculture or for self-consumption. In addition to this, most of them are engaged in family horticulture, from which they get the food they consume daily.

Employment, under conditions of high informality, occurs between the workers and forest services providers who work -with greater or lesser continuity- in the extraction of pine wood and native trees, thinning and cleaning activities in the current logging extractions of the forestry projects on site and the project zone. There are also temporary or stationary work activities (known as "changuero") in different forest services with low qualifications requirements and low labor protection. Also trading, fishing and gathering, takes place to be able to satisfy the basic family goods basket.

Although associationism and cooperatives are important forms of community economic organization, they exist marginally in the project zone and do not represent a significant magnitude in the composition of family income. It is an activity carried out predominantly by women in the collection, processing and marketing of vinegars and native fruit liqueurs.

These conditions of low economic resources have generated the need to go in search of more than one job to be able to satisfy the basic family basket. Analysis based on national and provincial values have shown the population of the project's area of influence is below the provincial and national poverty lines. To alleviate this condition of poverty that is observed in the communities of the project zone, people depend on self-consumption farms and orchards.

Dependence on the resources of the forest:

The jungle forest, mainly in the hectares of familiar and own land, secondly the common forest spaces and to a lesser extent the forest mount of the project site, are the most important places for the collection of woody vegetation and other wild products. However, except for fuelwood, which has a high impact on family savings, the collection of medicinal plants, fishing and hunting are marginal activities within household livelihoods.

Education and human capital:

The population has a high percentage of literacy, and this situation is very similar in both men and women. The sites have educational institutions at the primary, secondary and adult school levels. The education offered includes satellite classrooms, of primary level; a Technical School of secondary level in Cruce Caballero and an agrarian school in the capital city, San Pedro.

The level of education predominantly achieved is complete primary. Although the new generations attend secondary schools with a high rate of completion of studies, there are some cases of school dropout. The reasons for this are teenage pregnancy and the need for family-driven employment. However, women are the ones who go the furthest in the educational path, reaching the end of their university studies in some cases.

The School of the Agricultural Family (E.F.A) of San Pedro is the one with greater school attendance levels as its agrarian orientation provides them a training compatible with the productive activities that the families of the area do and over which they base their subsistence. In addition, this provides them with a lunch and a student ticket to travel by public transport for free.

Community of indigenous people:

The surrounding rural areas outside the project area (Cruce Caballero, Tobuna, Alegría and Piñeiro), share language and culture, religious beliefs, way of life, type of occupation and scale of income, patterns of reproduction, access to public education and health systems. On the other hand, Tekoa Alecrín village is in a radius of approximately 25 km of GS1 and forms one of the 5 indigenous villages that live in the department of San Pedro, Misiones. They belong to the original Mbya Guaraní people, which has a large presence in this portion of the Misiones forest.

In the past, the Mbyá-guaraní were characterized by having developed a way of life linked to the forest, both in material, social and cosmological terms. Today, their traditional living conditions have been highly modified by colonial and private advances on their ancestral territories, which have not only created a series of impediments to the development of their traditional life, but also the increasing loss of the resources of the forest, which used to be their only source of livelihood. Inter-contact has increased with the dominant society because of unmet basic needs that forces communities to change their patterns of political organization and intermediation with external agents. Sedentarism has increased, leaving more and more relegated to the traditional pattern of territorial mobility.

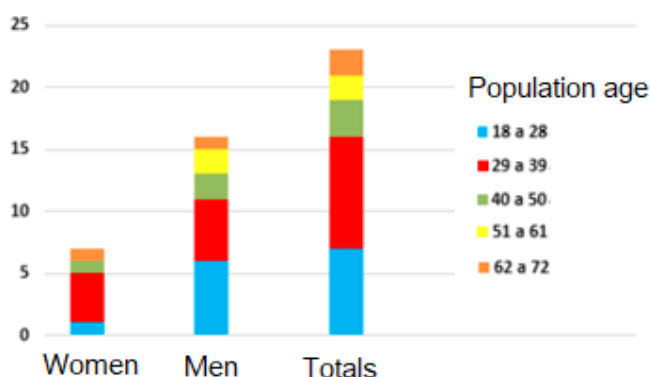


Figure 5: Tekoa Alecrin Census by age and sex (2021).

Tekoa Alecrín village consists of a primary school, a health unit and two community gardens in an initial phase, and approximately 40 houses in overcrowded conditions -given more than one nuclear family lives in them-. They have been granted a right of use and occupation over the lands they inhabit, but they do not hold official title. The houses are highly deteriorated with water leaks, moisture problems, ventilation problems, lack of electricity and lack of a drinking water network within them.

Currently, the population consists of 71% of children/youth between 0 and 25 years. The level of illiteracy is low. The inhabitants carry out traditional subsistence activities such as horticulture through the slash and burn system alongside hunting, fishing and harvesting of wood, animals and medicinal plants. Although most families have farms, they have few crops (corn, watermelon, beans, sweet potatoes, melon, squash), given the shortage of seeds. The only animals they breed are chickens. The food they consume is mainly industrialized products and animal products, most of which need to be obtained from shops and warehouses.

The monetary income received by each family does not exceed \$100 USD per month, on average. Except for those working in the school or the health unit, the only sources of wage labor are the sale of handicrafts, the "changas", which give them a rather precarious contribution. The rest of the income comes from social plans, mainly from the Universal Child Allowance (UCA).

2.1.7 Project Zone Map (G1.4-7, G1.13, CM1.2, B1.2)

The area of influence of the project covers the area of the project (which corresponds to the majority of the land inside Reserva GS1) and the communities Gentile, Piñeiro, Alegría, Cruce Caballero, Tobuna and Tekoa Alecrín

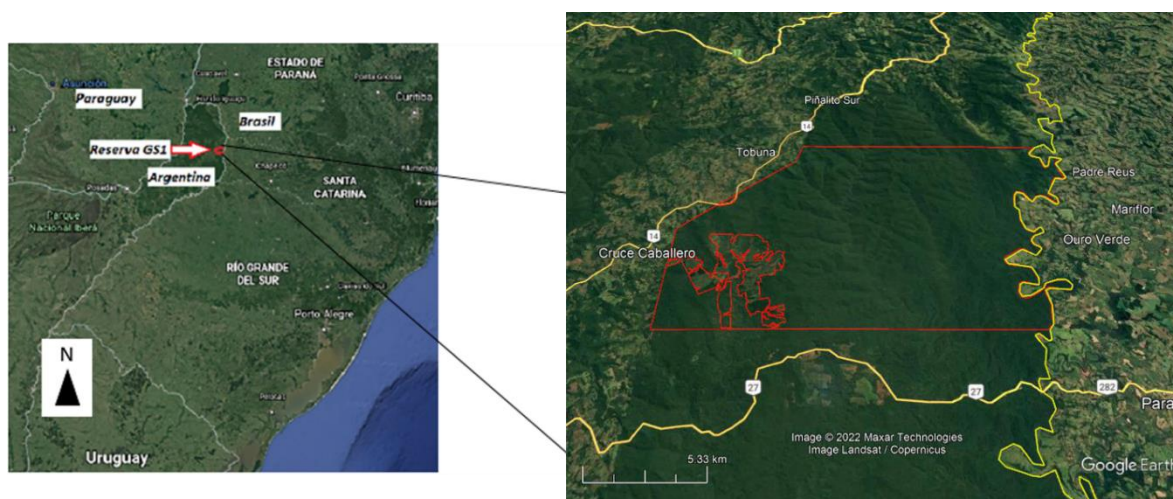


Figure 6: Project area and political boundaries. Boundaries of the project area(s), which is defined as the area(s) where project activities aim to generate net climate benefits.

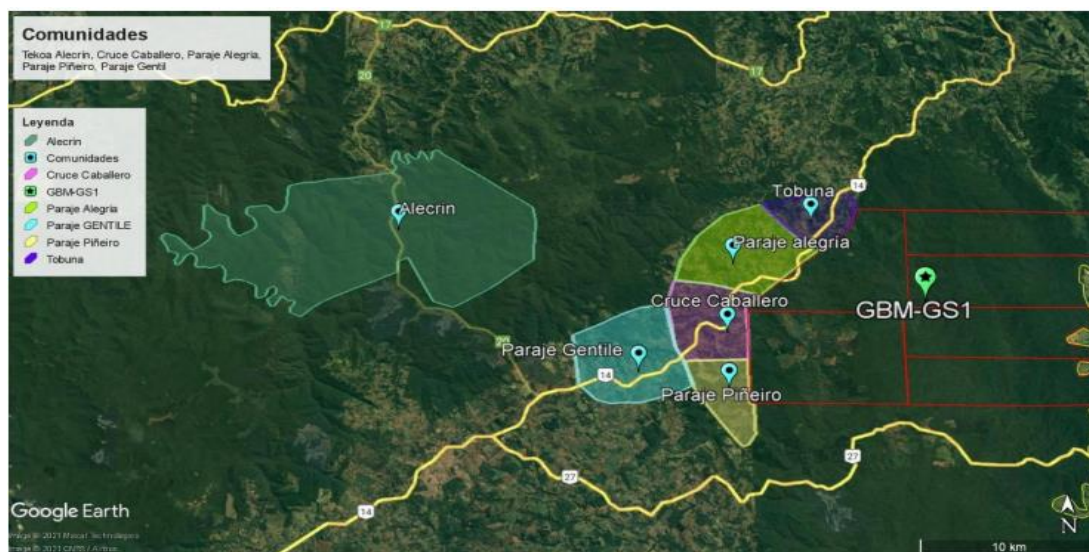


Figure 7: Project zone and location of communities identified.



Figure 8: Community high conservation values (HCVs) identified with communities of Cruce Caballeros.



Figure 9: Detail for Mbyá Guaraní ALECRIN Community land uses and community's HCVs identified. Source: adapted from Programa Nacional de Relevamiento Territorial de Comunidades Indígenas - Ley 26.160 and information from NIDEPORT

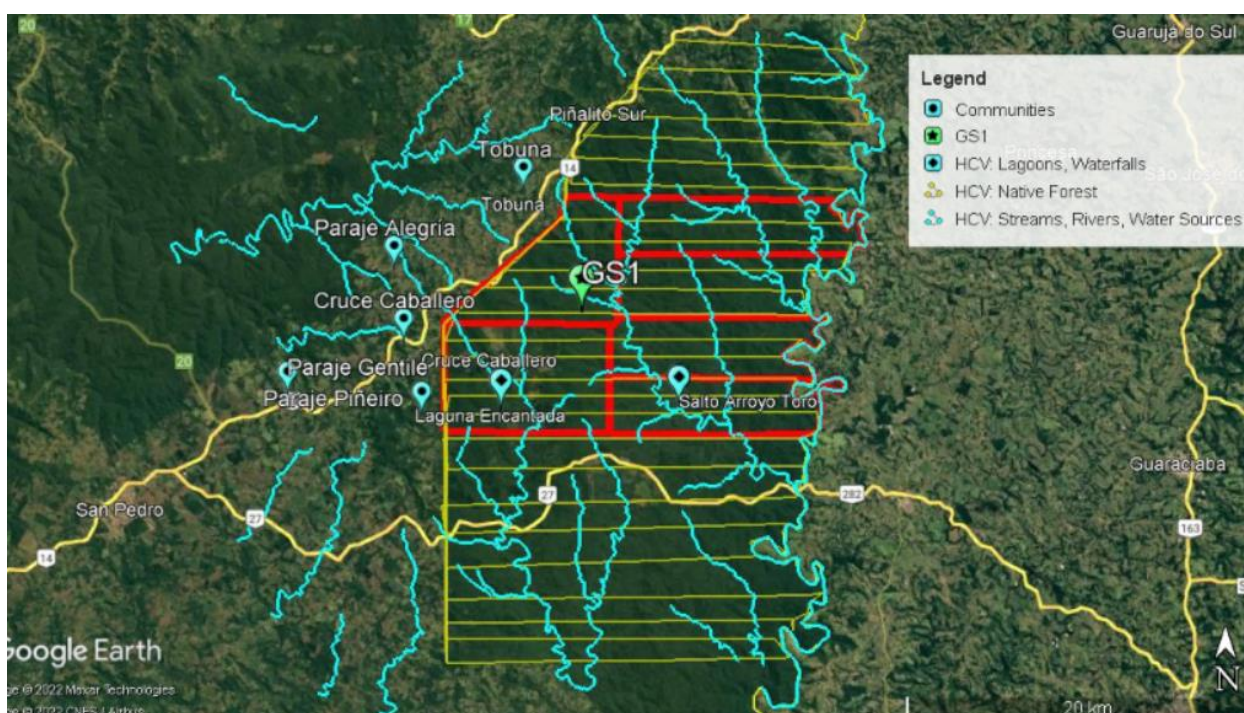


Figure 10: Biodiversity high conservation value (HCV) areas identified with communities.

2.1.8 Stakeholder Identification (G1.5)

The stakeholder identification and analysis process consisted, first, of a brainstorming with the collaboration of key informants, who were able to provide a local and situated view on the relevant stakeholders that may

have an influence and/or be affected by the project. This allowed for a preliminary classification of sectors distinguished by gender, ethnic group, level of wealth or well-being, livelihoods, but also community-based organizations, local government influencers, public organizations and others.

After this preliminary identification, secondly, field research continued with a mixed - or triangulated - multistage design. In general terms, this strategy brought together interviews of maximum variation; under the logics of "key actor", "snowball" and "focus group" with censuses of rural households in villages, towns and native communities; with a random sample selection by clusters for villages and community villages, and with a directed sample selection and by clusters for community groups.

The mixed strategy included:

- Meetings with stakeholders based on a convenience sample.
- Ethnographic approach: participant observation, descriptive and detailed recording of social daily life, open anthropological interview, intercultural dialogue.
- Semi-structured interviews on focal themes (human capital, degree of dependence on the forest, economy, social capital, climate change) through chain or "snowball" sampling.
- Thematic focal interview or focus group for agriculture and indigenous habitat issues and perception of local problems in Cruce Caballero.
- Participatory rural assessment: SWOT matrix for self-diagnosis of community organization.
- Survey of rural households. Three household censuses were conducted. The first was a pilot or ex ante test, in the rural areas surrounding the property, based on a non-probabilistic sample of maximum variation with criteria of gender, income difference and place of residence. The second household census with a sample of 60% of the households of Tekoa Alecrín (24 households), under a cluster sampling. The type of sampling used in this case is the culturally appropriate methodology achieved through intercultural dialogue with the council of authorities of the community group. The third household census will be carried out at the end of October, in Cruce Caballero, Paraje Piñeiro, Colonia Alegría and Tobuna, following a probabilistic sampling procedure, in this case random by clusters.
- Georeferencing and cartographic updating of houses, community infrastructure places, stores, community spaces, access points, roads, routes, services, sites of cultural interest and other points of interest for the local population. The methodology combined geolocation, interviews with community members and the use of geographic processing software.

This mixed strategy methodology made it possible to identify as a community the resident population of the surrounding rural areas that are outside the site boundaries, insofar as they share language and culture, religious beliefs, way of life, type of occupation and income scale, reproduction patterns, access to public education and health systems, etc.

As community groups, women, indigenous peoples, and people with greater economic and social vulnerability were identified, as their income, livelihoods and/or cultural values differ widely from those of other groups.

At the same time, it was possible to establish a classification of people according to their degree of influence, so that they were classified as follows:

1. People who work on the farm. People whose salaries and livelihood depend directly on it.
2. People who are outside the farm but depend on it. People whose income and livelihoods do not come from the farm, but who live in neighboring areas.
3. People who do not depend on the property. Population that does not depend on the property, although they live in the area of influence of the project

Socio-forestry segmentation of the area of influence:

Proceeding to take as an independent variable the obtaining of monetary income and other livelihoods by the local population residing in neighboring sites, but outside the site boundaries, two possible categories were found.

Using the GS1 as a reference site, the first segment of the project's area of influence includes the population that obtains its income and other livelihoods (forestry and non-forestry resources) and cultural values from the previous forest management in GS1, mainly laborers and forest service providers who live in the areas surrounding the site (between 10 and 15 families).

The second segment is the population residing in the areas surrounding the site who do not derive their income or livelihood directly from forestry activities at the site, but who do depend on the environmental benefits of the critical ecosystems (firewood, water resources, etc.) and who could be included in project scenarios (100 families minimum).

Other stakeholders that may affect or be affected are diverse and include reserves and national parks, poachers and usurpers on the Brazilian side, foundations, public agencies, universities, experts, etc.

2.1.9 Stakeholder Descriptions (G1.6, G1.13)

The rural areas and the original Alecrín community will be analyzed as a community, meaning the resident population of the surrounding rural areas outside the boundaries of the GS1 site, as far as they share language and culture, religious beliefs, way of life, type of occupation and scale of income, patterns of reproduction, access to public education and health systems, etc.

Strictly speaking, territorial proximity, empirical regularities in terms of income and economy, homogeneity in the conditions of access to public services, mainly primary schooling, the deep-rooted existence of evangelical Christian religions and to a lesser extent Catholic (including an Aboriginal Pastoral) as well as the existence of common linguistic patterns - predominantly Spanish in a sociolinguistic diversity that includes the official Portuguese, the portuñol and the ancestral Mbya Guaraní language – provide evidence to believe the entire population of the project zone corresponds to a single community.

But this reduction to one community becomes abstract if we do not consider the existing cultural and social diversity, recognizing the existence of community groups which, by virtue of their social-historical condition can be grouped into three:

1. Women
2. Native people
3. People with greater economic and social vulnerability, meaning their income and livelihoods, schooling and food sovereignty are in a critical state.

See table of community groups in section Stakeholders consultation, CM 2.3.7

2.1.10 Sectoral Scope and Project Type

Sectoral scope: 14 (AFOLU)

Project category: Conversion of low-productive forests to high-productive forests (LtHP). The project will develop enrichment and regeneration of native forest activities.

Activity type: enrichment and regeneration of native forest

The project is not a grouped project

2.1.11 Project Activities and Theory of Change (G1.8)

The overall objective of the project is the restoration of the biosphere, regenerating the native forest structure, reinserting native species and restoring the biodiversity of the different ecosystems. And in this way recover the natural capital of the GS1.

The project starts with the restoration of forest mass, over 5 years, in the 22,878.5 hectares. It will consider the density and distribution of the species that will promote the interaction between them for the sustainable recovery of the forest mass and will also promote the reinsertion of fauna specimens, naturally or artificially.

Since illegal hunting and logging activities are the main threats to the area, the project includes the installation of a state-of-the-art monitoring system, training and provision of equipment for the different protected area protection groups (rangers, firemen, local police, etc.).

It is also proposed to develop programs to support and make the project viable. On the one hand, the planting of yerba mate in low densities for sustainable use and manual extraction of the leaf for commercialization. At the same time, certification as an organic product and designation of origin is guaranteed. On the other hand, the breeding of yatei bees for the extraction of honey and its commercialization, generating local employment and training.

In addition, there are multiple projects to be designed and implemented together with the surrounding communities, according to the main needs identified by them (housing, access to water, food production, among others).

Finally, the identification of the community's HCV areas allows the definition of a management and monitoring plan for their conservation.

See more detail of activities and outputs in appendix 2

The project is not located within a jurisdiction covered by a jurisdictional REDD+ program.

2.1.12 Sustainable Development

NIDEPORT is committed to align its projects and actions with the SDGs, defined according to the 2030 Agenda, especially the goals and targets of the United Nations Strategic Plan for Forests 2030, which provides a global framework for sustainable action and management of all types of forests and trees (even those outside forests) to halt deforestation and forest degradation.

Global forestry goals and targets are voluntary and universal. They support the objectives of the international agreement and are intended to contribute to the progress of sustainability, according to the Aichi Goals for Biological Diversity, the Paris Agreement adopted under the United Nations Framework Convention on Climate Change and other instruments, processes, commitments and goals.

Regarding national sustainable development priorities, the project contributes to goals:



1. No poverty by reducing poverty (in all its forms) and hunger, by generating development project opportunities to those more vulnerable (housing improvement, vegetable gardens inputs, water access, and training, among others);

5. Gender equality by working specifically addressing women and girls needs and developing projects with gender perspective;

8. Decent work and economic growth by generating jobs, training communities and generating economic activities in the area by implementing different activities within the project zone such as organic yerba mate production, as well as honey and conservation activities;

13. Climate action by conserving and enriching natural forests, increasing carbon sequestration;

15. Life on land by promoting the sustainable use of the land, reduce and reverse forest degradation and biodiversity loss and control invasion

2.1.13 Implementation Schedule (G1.9)

Date	Milestone(s) in the project's development and implementation
2020	Project development
June 2020	Land acquisition
2021	Community assessment and census
Dec.2021	Forest inventory
August 2021	Baseline fauna biodiversity inventory
Nov. 2021	CPLI with Tekoa Alecrín community
Nov.2021	Public consultation with communities in project zone
May 2022	First enrichment and regeneration practices
2022	CCB and VCS standard validation and verification
2027	End of enrichment period activities
Dec. 2121	End of crediting period

2.1.14 Project Start Date

01/12/2021 is the project start date as it is the date when the first baseline analysis and forest inventory activities were conducted in the project area

2.1.15 Benefits Assessment and Crediting Period (G1.9)

Crediting period start date: 01/12/2021

Crediting period end date: 01/12/2121

Crediting period total duration: 100 years

2.1.16 Differences in Assessment/Project Crediting Periods (G1.9)

There are no difference in crediting periods.

2.1.17 Estimated GHG Emission Reductions or Removals

Year	Estimated GHG emission reductions or removals (tCO ₂ e)
2021	28.937
2022	49.254
2023	64.023
2024	76.352
2025	93.584
2026	90.870
2027	98.841
2028	105.676
2029	111.549
2030	133.263
2031	108.128
2032	110.607
2033	112.458
2034	113.753
2035	135.178
2036	114.925
2037	114.909
2038	114.554
2039	113.899
2040	134.464
2041	111.837
2042	110.492
2043	108.974
2044	107.308

2045	126.199
2046	103.614
2047	101.624
2048	99.561
2049	97.438
2050	114.310
Total estimated ERs	3,106,582
Total number of crediting years	30
Average annual ERs	103,553

2.1.18 Risks to the Project (G1.10)

The identification of the probable natural and human risks to the expected benefits for the climate, the community and biodiversity during the life of the project, include the probability of fires, torrential rains that could cause flooding and winds that could bring down trees or affect the biodiversity of the site have been considered as natural risks. The mitigation actions in place include early warnings, 24/7 monitoring and action plans to respond to these risks. In some cases, being the natural cycle of native forests, the only measures may include regeneration/replacement of fallen individuals. Regarding impacts on communities, the nearest communities are 15 km away and are therefore not affected by activities or events that may occur on the site.

Regarding human-induced risks, the main one identified is illegal entering affecting fauna and flora, so one of the main project's activity is the installation of monitoring technology, including monitoring towers with state-of-the-art cameras and the use of drones with photogrammetric cameras, for the entire area to be monitored, controlling fires and illegal logging. These devices will be monitored 24/7 all year round from the Ecological Monitoring Center (EMC) located in one of the points of access to the natural reserve on National Route No. 14.

The planning of security actions is based on three fundamental pillars: early warning, management of institutions and crime map. In the context of situational prevention, the integral nature of the approach considers different conflict scenarios, which, with due diligence and multi-agency collaboration, may lead to a positive result.

Early Warning

According to the Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis, carried out on the ground (remote pre-diagnosis), the necessary technological and human means (cameras, sensors, drones, operators, etc.) will be available to detect, in due time and manner, any activities evidencing the following problems:

- Forest fires (intentional or not);
- Deforestation;
- Poaching;
- Illegal trafficking (in any of its variants);

A Contingency Plan has been developed to address each of the problems outlined above. In order to efficiently develop and subsequently apply contingency plans, the following institutions will provide support: Border Patrol, monitoring personnel, park rangers, and regional (provincial) firefighters. The contracting modality will be that of "additional cost for services to private persons" for public institutions and "employer-employee relationship" for monitoring tasks. In both cases, the participation in social area will be of the essence to comply with the tenets of integration of indigenous peoples and local citizens.

More information on risks and mitigation actions detailed in Appendix 3

2.1.19 Benefit Permanence (G1.11)

Regarding community benefits and risks, the project included communities from the beginning of the project design for them to identify risks and needs and get to know and understand the project. The community social and economic development projects are designed to be continued by the community throughout the project lifetime. For example, the housing project for the Tekoa Alecrín community will include training and materials, but the community oversees design and construction of the houses.

There is a commitment to the investors and community to continue the projected activities

2.1.20 Financial Sustainability (G1.12)

The NIDEPOR ecosystem proposes a disruptive scheme by which it establishes its launch and first product based on Blockchain. It will be the first product that can be accessed by different profiles of people, by virtue of its qualities as an intangible good and ecological virtual currency, very attractive according to the three types of market:

Corporations

Corporations must, in an increasingly complex and regulated process, compensate for their pollution. The different economic activities have an environmental impact that can be established in detail, which is called carbon footprint.

The voluntary carbon market, as we define it elsewhere in this White Paper, is the place where corporations and environmental activities converge to exchange economic resources for carbon sequestration certificates.

Environmentalists

Preservation and restoration will have unprecedented transparency and online monitoring accessibility. Environmentalists will be able to tangibly, in the palm of their hand, visualize these actions. NIDEPOR also has agreements with environmental non-profit organizations, which will be able to receive donations for the materialization of concrete scientific actions in the "GS1" field establishments, where they will be able to use the developed infrastructure.

Whether by means of photogrammetry, camera systems or field survey (in partnership with scientific organizations), users will have access to pre-publication reports and will have the possibility of volunteering in the field, contributing to the development of the different tasks of preservation, forestation, conservation and preservation tasks.

2.1.21 Grouped Projects

Not applicable as it is not a grouped project

2.2 Without-project Land Use Scenario and Additionality

2.2.1 Land Use Scenarios without the Project (G2.1)

See section 3.1.4

2.2.2 Most-Likely Scenario Justification (G2.1)

See section 3.1.4

2.2.3 Community and Biodiversity Additionality (G2.2)

The Misiones rainforest is one of the country's most biologically diverse habitats, and at the same time one of the ecosystems most affected by deforestation. Thousands of species live in it, to the point that, in the entire Atlantic Forest, 7% of the plant species and 5% of the world's vertebrates are found. These areas are endangered by the advance of man, causing great environmental damage to these ecosystems. The reduction of the natural forest has several causes such as the advance of agriculture and livestock, logging, among others that cause environmental problems such as soil degradation due to overexploitation of it, loss of natural habitat for hundreds of species, reforestation with non-native species that are very harmful, the danger of extinction of flora and the affectation of ecosystem services.

The project is located on private property, categorized as green and yellow under the provincial forest territorial planning (low and medium conservation level, according to 2017 category update). This means for the yellow category, a site of medium conservation value with potential for sustainable use, for the case of green category meaning forests of low conservation level that can be totally or partially transformed.

The GS1 has 24,800 hectares from which 22,878.5 ha correspond to the project area with remaining native forest and shrublands after years of wood exploration. Currently, 7,850ha are suitable for forestry exploitation, meaning could be authorized to be harvested for land use change to agriculture activities

(exotic forest plantation, yerba mate production, other crops or cattle breeding). The rest, although cannot become forestation plantation (because of yellow category), can be exploited as suppliers of native wood through rational extraction and/or participate in tourism, conservation, real estate, etc. projects. In this sense, any owner has the right to reconvert his forest respecting the laws, according to the Land registration law, Law II Nr. 6.

Specifically, within the property of Forestal Belga, a few years ago there was a project to divide part of it into plots for housing and/or forestry, agriculture and farming. In the project lots of 1 and 2 hectares were delimited, with the possibility of building large farms, for a total of 50 hectares in its first stage.



Figure 11: Real estate project map, showing plots for housing and agriculture activities.

Regarding community economic conditions without a project scenario, the initial situation has already been described in section 2.1.6 and 4.1.1, with population below poverty line, informal conditions of work, mostly for self-sustain and no saving opportunities. The project seeks to promote training and productive projects to increase work in the area, as well as other projects related to development needs like housing, safe water access, among others, which would not occur in the absence of the project.

2.2.4 Benefits to be used as Offsets (G2.2)

The project contemplates the five main assets of the "Sustainable Livelihoods Framework" for the assessment of the impact on the general welfare conditions of the community and community groups in the project area: financial, social, human, physical and natural capital.

In terms of financial capital, direct carbon payments to individuals and communities, job opportunities, market opportunities and a containment network for highly socially and economically vulnerable households are promoted.

Regarding social capital, the aim is to strengthen weak social cohesion and increase capacities for community participation and governance in the design, implementation, monitoring and evaluation of community projects with a focus on health, education, HCV maintenance and community infrastructure.

Under human capital, project activities include training in conservation and reforestation skills, labor rights, and climate action goals. Access to health and education is part of the project's agenda, through access to medicinal plants, housing improvements, psychophysical well-being of the jungle as a cultural ecological service, and investment in primary health care, including education for health.

In terms of physical capital, the project will bring about positive changes in community infrastructure, as well as in infrastructure for the improvement of water resources access, and others.

Finally, regarding natural capital, the GS1 is not only a reserve that prevents degradation and ensures the natural capital of the forest, but promotes it by paying for environmental services, the care of the native tree landscape and the ecosystem resources in the small rural producers who are in the area of influence of the project.

2.3 Stakeholder Engagement

2.3.1 Stakeholder Access to Project Documents (G3.1)

Free and informed prior consultation with social impact assessment is a fundamental axis of the project. During this instance, surrounding communities were invited to the introduction of the project's main objectives, risks and benefits, with open instances to comment on it.

Regarding indigenous peoples, all interested parties have access to the proceedings and documents of the CPLI in Spanish and Guaraní Mbya, both in digital and physical versions, as well as the survey and project documents, statutes, CCB and VCS regulations, etc.

Moreover, project documentation will be available at CCB and VCS webpage once validated and in NIDEPORT webpage with project details.

In this sense, access to information throughout the life of the project will be through a strategy that includes: News web portal¹³ and NIDEPORT social networks, local radios and newspapers, face-to-face briefings with stakeholders during verification instances. Moreover, the installation of a local Community Relations Office (RRCC) in Cruce Caballero, is projected in the short term. It will work with open hours in order to allow communities to reach out.

Besides, the mail for inquiries and claims are operational as well as a public WhatsApp contact number¹⁴.

¹³ News web portal available at ... under development

¹⁴ Email contact and WhatsApp contact published: ... under development; +5493755682228

2.3.2 Dissemination of Summary Project Documents (G3.1)

Taking up the previous point, it remains to say that during the monitoring process, basic documents will be made, reporting results in a simple and inclusive language and with measures of evaluation of processes and results, they will be available on the website, social networks, publications in local newspapers, information meetings with stakeholders during monitoring instances. Moreover, the project's documentation (as well as local language summary) will be available on VCS and CCB webpage, and a public consultation period will take place for stakeholders to comment on each project's design.

2.3.3 Informational Meetings with Stakeholders (G3.1)

In order to guarantee the full and effective participation of the parties the project has developed its own Consultation Plan¹⁵.

Different stakeholder consultations were conducted taking into consideration special procedures needed in order to include the indigenous community Tekoa Alecrín. In this line, in order to coordinate the meeting, between December 2020 and February 2021 prior investigation was carried out in meetings with the Council of Authorities of the Tekoa Alecrín community, as well as with other members of the community that wanted and could be part of them. Then, two meetings were held. In the first one, the corresponding presentations were made between the members of the company **NIDEPOR** and the Council of Authorities. The second meeting allowed the team to tour the village and meet with community members. With the Council of Authorities and various members of the Tekoa Alecrín community (2 adult women, 3 adult men, 5 young men, 1 girl and 3 or 4 children) it was agreed to carry out a process of CPLI to be able to define a project/s that focus on problems that the Tekoa Alecrín considers to be of first order.

In the case of rural communities prior to the stakeholder consultation different communication meetings took place ¹⁶:

- 1- Cruce Caballero Sports, Cultural and Recreational Commission: Two face-to-face meetings. Date: both meetings in November 2021. Meeting place: Cruce Caballero Community Room
- 2- Local Evangelical Church: One face-to-face meeting. Date: November 2021. Meeting place: Pastor's home.
- 3- E.P.E.T N°31 of Cruce Caballero: Two face-to-face meetings. Date: May 2021 and November 2021. Meeting place: one in High School Principal's House and the other one in the educational establishment.
- 4- EP N° 482 of Cruce Caballero: Two face-to-face meetings. Date: May 2021 and November 2021. Meeting place: educational establishment.

¹⁵ Infographic is available in the following link, Spanish and English version:
<https://f572b2c2ffd95aaf92b832a.gpscoin.io/consulta>

¹⁶ Newspaper public communication of stakeholder consultation available for VVB during validation

5- La Nueva Esperanza Cooperative: Five face-to-face meetings. Dates: one in August 2021, one in September 2021, two in October 2021, and the last one in November 2021. Meeting place: All meetings were held in the cooperative.

6- Cooperativa Nuevo Arco Iris LTDA: Six face-to-face meetings. Dates: one in February 2021, one in April 2021, two in June 2021, one in October 2021, and the last one in November 2021. All meetings were held in the cooperative.

7- Residents of Cruce Caballero, Paraje Piñeiro, Paraje Gentile, Paraje Alegría and Tobuna: no face-to-face meetings, only communication through WhatsApp, radio, pamphlets and radio announcements from local radio stations (from October to November 2021).

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

A free and informed consultation was held on November 26th of 2021 in the Community Hall. In this opportunity the public was provided with relevant information on the environmental and community benefits of the project, with special emphasis on costs and risks as well as opportunities. It summarized the main guidelines of the projects, their scale, costs and risks. The participants were able to ask questions about the financial health of the project, employment opportunities, external threats and risks, and the continuity of information meetings and monitoring and evaluation of the projects, including verification and monitoring bodies.

In addition, following the consultation, a participatory mapping of HCV identification and risk and threat estimates was carried out, as well as a focused focus group of women to assess the differentiated impact on their role in society, considering gender safeguards in the areas of division of labor, access to resources and substantive participation.

In the case of Tekoa Alecrín, a CPLI took place, where a SWOT analysis, HCV identification and project formulation workshops took place. This included a workshop on gender perspectives regarding the benefits of the project.

2.3.5 Information to Stakeholders on Validation and Verification Process (G3.3)

The information on the validation and verification process of CCB and VCS was carried out at the public consultation meetings and the CPLI in Alecrín. This has been recorded in the minutes of the meetings to be disseminated as from the first quarter of 2023 in the Web Portal. In addition, the various monitoring and verification milestones during the life of the project will be reported in advance through newsletters, printed documents and briefings.

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

Information on the auditor's visits will be made 15 days in advance through the Web site, Newsletters, posters and face-to-face communication through written notification and oral communication. The auditor

shall be provided with all relevant contact lists necessary for his or her development and shall ensure adequate space for meetings.

2.3.7 Stakeholder Consultations (G3.4)

Different stakeholder consultations were conducted taking into consideration special procedures needed in order to include the indigenous community Tekoa Alecrín. In this line, the Tekoa Alecrín has been consulted and has influenced the design of the projects through a CLPI (Free and Prior Informed Consultation, for its Spanish acronym).

Between December 2020 and February 2021 prior investigation was carried out in meetings with the Council of Authorities of the Tekoa Alecrín community, as well as with other members of the community that wanted and could be part of them. On January 26th it is agreed a CLPI will take place in order to identify the main community's problems. On February 22nd a meeting takes place in order to inform the CLPI methodology, at which point the First Chief states that for reasons of internal organization and tradition the CPLI will not be carried out with all the members of the community, but that the Council of authorities is empowered to speak on behalf of the whole Tekoa Alecrin community. On May 19th agreement is reached with the Council of Authorities on a project for the improvement and construction of housing, since this problem is the most urgent and urgently needed by the community, followed by seed access for vegetable-gardens.

On November 24th of 2021, members of the Tekoa Alecrin community were shown paperboards with the agreed projects (housing training and materials, and "Oga" and "Huerta Comunitaria" projects). Moreover, a workshop was held to determine the HCV for Tekoa Alecrin community, and a gender workshop was held with 8 participants of different ages, using a "focus group" methodology. This focused on the needs of women from a series of trigger questions that considered:

1. Opinion on the proposed projects.
2. Your interest in training in housing construction.
3. Your interest in training to improve your knowledge of crops.
4. Needs which they indicate to be specific to women.

The stakeholder consultation with the communities of Cruce Caballero, Tobuna, Paraje Alegría and Paraje Piñero took place on November 26th of 2021, at the Community Hall with more than 50 participants¹⁷. In this opportunity the public was provided with relevant information on the environmental and community benefits of the project, with special emphasis on costs and risks as well as opportunities. It summarized the main guidelines of the projects, their scale, costs and risks. The participants were able to ask questions about the financial health of the project, employment opportunities, external threats and risks, and the

¹⁷ Evidence of the meeting available for VVB during validation

continuity of information meetings and monitoring and evaluation of the projects, including verification and monitoring bodies.

In addition, following the consultation, a participatory mapping of HCV identification and risk and threat estimates was carried out, as well as a focused focus group of women to assess the differentiated impact on their role in society, considering gender safeguards in the areas of division of labor, access to resources and substantive participation.

Table 1: List by community groups of participants to the stakeholder consultation and CLPI

Stakeholder Categories	Citizen Consultation:	Prior, free and informed consultation (CPLI):
Women	Cooperativa la Nueva Esperanza	Tekoa Alecrin
Indigenous population		
Vulnerable population	Vecinos de Cruce Caballero, Paraje Piñeiro, Paraje Gentile, Paraje Alegría y Tobuna.	
Civil institutions / community groups	- Iglesia Evangélica de la Localidad - Comisión Deportiva, Cultural y Recreativa de Cruce Caballero. - E.P.E.T N°31 de Cruce Caballero - E.P. N° 482 de Cruce Caballero - Cooperativa Nuevo Arco Iris LTDA - Cooperativa la Nueva Esperanza	Equipo Nacional de Pastoral Aborígen

2.3.8 Continued Consultation and Adaptive Management (G3.4)

Access to information throughout the life of the project will be through a strategy that includes: Web portal and Project social networks, local radios and newspapers, face-to-face briefings with stakeholders during verification instances and assemblies. Moreover, the installation of a local Community Relations Office (RRCC) in Cruce Caballero, is projected in the short term. It will work with open hours in order to allow communities to reach out, comment or ask about the different aspects of the project.

In the case of Tekoa Alecrín projects will continue to be worked using the CLPI methodology (with face-to-face meetings) throughout the project's lifetime, in line with development projects deadlines and requirements.

2.3.9 Stakeholder Consultation Channels (G3.5)

In order to guarantee extended communication of stakeholder consultation, radio spots and advertisements were broadcast in provincial newspapers according to the deadlines stipulated in the Consultation Plan and a communication campaign was carried out, with posters in shops, churches, community infrastructure, educational establishments and service stations and through oral communication in more than 150 households in the project's area of influence during census (10/2021).

In the case of the Tekoa Alecrin community, direct communications took place with the Council of Authorities who represented the community and committed to inform the community of meetings and discussions and include them in the community's conclusions.

Moreover, the mail of queries and claims are operational as well as a public WhatsApp contact number.

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

To ensure effective participation of the entire community, including community groups, the following measures have been implemented:

1) Access to information: in all cases an open process of communication and dissemination of all the actions to be carried out has been carried out, along with the possible costs, risks and benefits for communities. In some cases, printed materials has been used. In addition to this, simple language has been implemented, avoiding excessively technical terminology.

2) Stakeholder consultation process: consultation of stakeholders has been ensured through a CPLI process in the Tekoa Alecrín, conducted based on interviews with community authorities, participatory rural diagnostic techniques and targeted discussion groups. In the case of Cruce Caballero, Tobuna, Paraje Alegría and Paraje Piñero a public consultation and interviews of maximum variation took place. Thus, the parties involved have participated in the design of the programs and their implementation (except in the programs that have not yet been implemented), respect for the rules on their rights, local culture, values, representatives and institutions and maintaining HCV. This strategy focuses on ensuring that all relevant groups are represented and have the freedom to express their ideas and opinions. At the same time, it recognizes the diversity of the parties, including the most vulnerable groups. These consultations have been documented and can be reviewed in a next section.

3) Intercultural approach: ethnic differences have been considered, the vision of these communities and their language respected. In the case of the community of Alecrín, from the beginning, dialogue was initiated with the indigenous authorities, thus respecting the structure of representation. The translation of dialogues with indigenous authorities at meetings with the community has been promoted and the official CPLI document translated into the Mbya language to ensure access to information for the entire community. Information has been shared with communities in advance of consultations and in appropriate formats to facilitate understanding.

4) Gender approach: gender balance has been considered in terms of the number of participants in the meetings convened with stakeholders. The opinions, experiences and priorities of men and women have been considered equally in the design, decision-making and implementation of the project.

Other necessary measures under way are:

- Communicate to communities and stakeholders about the auditor's visit to the site prior to event and to facilitate direct and independent communication between the VVB and the community or its representatives.
- Capacity building through training, workshops, courses or other collaborative instances that allow not only technical training but also a greater capacity for resource management and improvement of the understanding of strategies and projects that benefit the community.

2.3.11 Anti-Discrimination Assurance (G3.7)

To ensure that project proponents and stakeholders are not involved in or complicit in any form of discrimination or sexual harassment with respect to the programs, the following measures have been implemented¹⁸:

- For each program, a memorandum of understanding was established defining inclusive participation guidelines and protocols for action in the event of observed cases of discrimination. To this end, project beneficiaries were provided with means of contact with human resources area to communicate any act of discrimination and to activate the corresponding protocols.
- The company has a Code of Conduct which establishes in its Article 1 the rule of "Non-discrimination" rule, both within the company and towards clients, suppliers, job applicants or other parties, whether based on ethnicity, color, religious belief, gender, national origin, national origin, age, disability, sexual orientation, language or any other characteristic protected by law. Article 2 also establishes the norm of "No harassment" such as verbal or written harassment, sexual harassment, comments referring to sexual harassment, comments referring to physical appearance, sexual innuendo, jokes, statements or threats that refer to ethnic status, gender, sexual orientation, religious belief, nationality religious belief, nationality, age, etc.
- A question was also implemented in the self-reported household survey on cases of discrimination experienced by the respondent in order to detect possible points to work on in this subject.

Moreover, during stakeholder consultation, both in the CPLI and in the public consultation, moderators for the meetings were included to provide an opportunity for those who wanted to express their opinion and ideas. Also acting as mediators in situations of discussion between participants.

¹⁸ More information available for VVB specifying the anti-discrimination methods used in each project.

2.3.12 Feedback and Grievance Redress Procedure (G3.8)

The reception of grievances and comments are done both through face-to-face (during communication meetings) and digital communication channels, such as email and project's Whatsapp publicly available to stakeholders.

Within the project description it is established that complaints and comments are dealt with within 72 hours. This time period includes the first contact with stakeholders involved in the complaint received and, if possible, a first resolution attempt. If not resolved a mediation is determined, taking into consideration the type of complaint/action and stakeholder involved, meaning community, investor, other stakeholders, etc. This may include the need for the arbitration of security agents in the case of illegal activity.

2.3.13 Accessibility of the Feedback and Grievance Redress Procedure (G3.8)

Grievances and comments that arise during public consultation and communication events are published at the project web. All grievances received are registered in order to monitor successful resolution.

2.3.14 Worker Training (G3.9)

The measures needed and taken to provide orientation and training to project workers are:

Induction

Every person who joins the project receives an Induction instance where general characteristics of the organization, its mission, values and the Code of Conduct (7.5.1-POE-01-Reg-01 Code of Conduct) are shared. The Employee must read it and then complete the Code of Conduct Certification (7.5.1-POE-01-Reg-02 Code of Conduct Certification). Then, the person in charge of the sector notifies him/her about the correct use of the facilities, as well as the internal rules and regimes.

On-the-job training and coaching

Upon joining, transfer or promotion, the sector manager draws up the On-the-Job Training Plan for the person starting to work in the sector. The plan is recorded on Form 7.5.2-POE-01-Reg-03 "On-the-job training and coaching". This form contains the training plan for the position, the estimated duration and the result of the evaluation at each point of the training.

In this way, the organization ensures that the person who begins to provide services / is transferred / is promoted, receives training in all organizational issues that must be mastered, according to the position in which the person is going to collaborate.

The period for this training stage is a maximum of 3 months from the date of commencement of service. Once this period has expired, it is the responsibility of the immediate superior of the person who was transferred or promoted to submit (to the human resources area) the training record, to be filed in the employee's folder.

Request for Technical Training

In addition to the above, the sector manager may request any technical training courses/programs he/she requires for his/her employees by completing a request form¹⁹ to be sent to the human resources area 15 days in advance. This form should detail the person applying for the course, the training activity requested (fees, location of classes, consultant, etc.), the reasons why the employee should attend the activity, and what changes are expected in his/her work activity once the course has been completed.

The human resources area receives the "Request for Technical Training" form. If the form has the required levels of authorization and the budget for the activity is available, it proceeds with the recruitment/enrolment process. And, if the budget is not available, it submits it for approval by the General Management.

Training Activity Measurement Tools

The following measurement tools are implemented in order to evaluate the activities. Namely:

- Attendance Form where the record of each of those who participated in the training is recorded (Form 5.2-POE-01-Reg-02).
- Knowledge assessment. If the participants cannot read/write, the incorporation of content can be assessed by means of oral questions and a show of hands for the answer.

Records of training activities

All internal training activities are recorded on a form prepared for this purpose (7.5.2-POE-01-Reg-02- "Training Activity"). It details the topics covered, date of the activity, duration of the activity, name and signature of the Instructor/Trainer, etc. This form is filed in the training folder. Training can also be documented by means of a photographic/film record while the training is taking place.

In addition, for the operation of its processes, all project collaborators have access to the Teams tool²⁰, where all the current and validated policies and procedures of each of the sectors of the organization are published. This provides the possibility for each collaborator to browse through the procedures of all the sectors, access manuals, registers, etc²¹.

¹⁹ The form is the "Technical Training Request" form (7.5.2-POE-01-Reg 04), available to VVB during validation

²⁰ Teams: NIDEPOR_Totat Team. Revised Procedures Folder available for VVB during validation

²¹ Access to all revised and current company procedures available for VVB during validation

2.3.15 Community Employment Opportunities (G3.10)

The project includes the generation of new 50 direct job opportunities for communities, of which 50% are expected to be women. The position includes training on the different tasks included based on the processes detailed in the previous section. The following explains the steps showing how workers are selected for the positions in order to demonstrate that they have a fair chance of filling the positions:

The head of the requesting sector completes the form "Request for Personnel Recruitment", with the required level of signatures. In the case of staff requirements for new posts that do not exist in the structure, the requesting sector must, in addition, complete the "Job Profile" form.

The "Personnel Recruitment Request" form is sent to the human resources area to start the search.

Internal Search

Human Resources, in order to start an internal search, must prepare a "Job Posting" (Job Offer) where the characteristics of the position and the established requirements are stated, and publish it through the general WhatsApp group. As stated in the organization's Code of Conduct, qualifications based on race, color, religion, sex, national origin, age, disability, marital status or sexual orientation, political opinion or any other characteristic protected by law are not permitted.

Persons interested in applying for the search must complete the "Internal Application Form" (7.3-POE-02-Reg-01) and submit it to Human Resources.

Human Resources receives the form from the various applicants for the position and select the possible candidate(s) from among the personnel who have applied, according to the required job profile. Then the area interviews them, evaluating the characteristics of the applicants, their performance history, and their adjustment to the requested profile.

If no applicants are obtained through the internal search mechanism or, if the search modality chosen was directly the external search, the following point is followed.

External Search

Human Resources, may use one or more of the following options as a source of recruitment, taking the one it considers most convenient according to the search profile or market situation:

- People referred by organization personnel (7.3-POE-02-Reg-08 Referral Program Form).
- Spontaneous introductions received
- Notices on job sites
- Notices at technical colleges/universities/job boards

- Community infrastructure points
- Temporary staffing agencies
- External consultants
- Social networks/professional networks
- Other

The gender quota of 50% women is to be met in recruitment.

Human resources make an initial selection from among the CVs received. It generates the selection interviews. These must be carried out by evaluating the applicant's personality characteristics, their adjustment to the profile requested, to the work group and to the organization's culture. Without discriminating based on race, color, religion, sex, nationality, age, disability, marital status or sexual orientation, political opinion or any other characteristic protected by law.

Once the selection interviews have been carried out, the human resources area presents the pre-selected candidates to the applicant sector.

The requesting sector interviews the shortlist of applicants and carries out the technical evaluations it deems appropriate.

- Evaluation of technical knowledge.
- Skills test.

The admission of the applicant is subject to the results of the interviews and evaluations carried out.

Once the interviews have been carried out, the applicant sector must decide according to the following situations:

- If it considers that one of the applicants meets the requirements for the position, it forwards to human resources the results of the tests that have been applied (if this has occurred).
- If he/she does not find one that satisfies him/her, he/she informs human resources of this.

If the pre-selection carried out was not satisfactory for the applicant sector, human resources must restart the search, and once new candidates have been obtained, it must carry out the same procedure as indicated in the previous points.

If the vacancy to be filled is a fixed-term contract or permanent position, once the suitable candidate has been identified, the following examinations must be carried out by external professionals:

- Medical examination (pre-occupational examination): The external Medical Centre contracted by the Company must carry out the necessary medical examinations, and then issue a health examination report in which it gives its opinion on the applicant's physical aptitude.
- Psycho-technical examination: Based on this examination, the Center contracted for this purpose must draw up a report on the applicant's physical aptitude.

If the vacancy to be filled is under the outsourcing modality (outsourcing), the medical and psycho-technical examinations will not be carried out.

Human Resources, together with the Applicant sector, are responsible for making the decision on the choice of the candidate to join based on:

- Background
- Interview evaluations
- Technical evaluations
- Psycho-technical evaluations
- Adjustment to the required profile

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

The list of all laws and regulations that cover workers' rights in the country and provided assurances that the project meets or exceeds each of them are:

International Normative Framework:

Universal Declaration of Human Rights, Art. 23: Freedom of work, protection against unemployment and dismissal, Equal pay, just and favorable remuneration, freedom of association or trade union; Art. 24: right to rest, enjoyment of leisure time, reasonable limitation of working hours, periodic holidays with pay.

International Covenant on Civil and Political Rights, Art. 8: Prohibition of slavery, servitude, forced or compulsory labour. Art. 22: Freedom of association and protection of the right to organize.

International Covenant on Economic, Social and Cultural Rights: Art. 6: Freedom of work, promotion in employment and vocational training. Art. 7: Just and favorable conditions of work; fair and equal remuneration for equal work; decent living conditions; health and safety at work; rest, reasonable limitation of working hours, periodic holidays with pay, remuneration for public holidays. Art. 8: Freedom of association, protection of the right to organize and the right to strike. Art. 9: Social security. Art. 10: Protection of mothers before and after childbirth. Paid leave. Art. 11: Protection of children and adolescents. Art. 12: Right to occupational and environmental health and safety.

Charter of the Organization of American States. Art. 34: Fair wages, employment opportunities and acceptable working conditions. Art. 45: Right to work, fair wages. Right to associate freely for the defense and promotion of their interests, right to collective bargaining and right to strike, recognition of the legal status of associations and protection of their freedom and independence. Art. 50: Strengthening of adult education and job training systems.

American Declaration of the Rights and Duties of Man. Art. 14: Right to work and to just remuneration. Art. 37: Duty to work.

American Convention on Human Rights: Art. 6: Prohibition of slavery and servitude. Art. 16. Freedom of Association.

Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights (Protocol of San Salvador). Art. 6: Right to Work. Art. 7: Just, Fair, Equitable and Satisfactory Conditions of Work. Art. 8: Trade Union Rights. Art. 9: Right to Social Security.

Conventions of the International Labour Organization ratified by Argentina (ILO): Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87) Right to Organise and Collective Bargaining Convention, 1949 (No. 98) Forced Labour Convention, 1930 (No. 29) (and its Protocol of 2014) Abolition of Forced Labour Convention, 1957 (No. 105) Minimum Age Convention, 1957 (No. 105) Minimum Age Convention, 1957 (No. 105) 105) Minimum Age Convention, 1973 (No. 138) Worst Forms of Child Labour Convention, 1999 (No. 182) Equal Remuneration Convention, 1951 (No. 100) Discrimination (Employment and Occupation) Convention, 1958 (No. 111) International Labour Organization Indigenous and Tribal Peoples Convention, (No. 169).

National normative framework:

National Constitution. Art. 14.- Right to work. Art. 14 bis.- Right to decent and equitable working conditions, limited working day; paid rest and holidays; fair remuneration; minimum living wage; equal pay for equal work; participation in the profits of enterprises, with control of production and collaboration in management; protection against arbitrary dismissal; stability of public employees; free and democratic trade union organization, recognized by simple registration in a special register. Trade unions are guaranteed: the right to conclude collective labor agreements; recourse to conciliation and arbitration; the right to strike. Trade union representatives shall enjoy the guarantees necessary for the performance of their trade union duties and those related to the stability of their employment. Social security benefits. Art. 19: Provide for human development for employment generation, vocational training of workers.

National laws:

Law 20.744 on Employment Contracts and its amendments;

Law 24.013 on Employment;

Law 24.557 on Labor Risks.

Law 26.390 on Prohibition of Child Labour and Protection of Adolescent Labour.

Law 19.587 on Hygiene and Safety at Work.

Law 11.544 on Working Hours

Law 26.727 on the agricultural labor regime.

Law 23.551 on trade union associations

Law 24.365 on compulsory conciliation

Provincial regulatory framework:

Provincial Constitution of Misiones. Art. 30 to 36 inclusive: Right to work, without distinction of sexes: dignified and equitable working conditions; limited working hours, rest and paid holidays; fair remuneration: minimum living wage; equal remuneration for equal work; participation in the profits of companies, with control of production and collaboration in management; protection against arbitrary dismissal; the right to strike and all labor legislation. Free choice of occupation; regulation and control of night and unhealthy work; women's and minors' work; safety at work and the right to hygienic and decent housing. Free and democratic organization of trade unions.

The right to comprehensive and inalienable social security rights. Free procedures before the labor courts and administrative bodies.

The measures necessary and designed to inform employees of their rights was designed by several procedures that were disseminated and delivered to each employee.

In the case of community members who do not have access to electronic devices and connectivity, who cannot read and write, or who speak the Mbya Guaraní language, face-to-face meetings will be held, using a translator and/or developing oral transmission techniques, using an ethnographic approach to ensure understanding of the meaning and to generate reports on content and degree of understanding of the content of the subjects participating in the informative and training meetings.

2.3.17 Occupational Safety Assessment (G3.12)

Through a job risk assessment, main risks have been identified for the different job positions and mitigation actions defined:

Security: for those responsible for the area of physical and property security, the risks include the hypothesis of "armed confrontation, especially with poachers", who carry firearms. These encounters may

be expected during the various tours of the property for the purpose of supervision of different sectors. In this instance, the security team of the GS1 does not have the necessary protective equipment, such as bullet-proof waistcoats and firearms, among other things. However, organized patrols are carried out with three security forces, the National Gendarmerie, the Provincial Park Rangers and the Misiones Police, so that police power is outsourced, without exposing the reserve's own personnel to such risks.

Forestry personnel: regarding personal safety when moving in the forest and when pruning, thinning and dismantling camps, the major risks identified are snake, insects and mites' bites (e.g., mosquitoes, spiders, bees, wasps, etc.), secondly falls, sunstroke, and dehydration, among others. Mitigations actions include training on main threatening species identification as well as the provision of basic equipment required, such as high-top rubber boots, high top boots, gloves, goggles, and fireproof waistcoats. The equipment must be complemented with a first aid kit containing general and specific elements such as anti-ophidic serum, immobilizing splints, creams for burns, sun protection creams, anti-allergic and anti-inflammatory creams as well as injectable corticoids, among others.

Regarding the containment and fighting of forest fires, in this case, the major risks are burns, asphyxia, suffocation, falls of trees, falls from miscellaneous grounds (fractures, traumatisms, injuries). For these cases training and Personal Protective Equipment (PPE) must be provided, with the basic elements for the performance of this task, such as safety footwear, helmets, flame-proof clothing, goggles, gloves, among other elements. Anyway, the task will be performed by firefighters, although first responders may include trained GS1 workers.

In conclusion, the measures to be implemented in relation to work safety include:

1. Provide information on the general regulations in force on conduct at work, as well as in each specific area to the personnel.
2. To apply the personal protection rules and to train personnel in their proper use.
3. To train personnel in the correct use of resources.
4. Develop accident procedures and train personnel in accident prevention and procedures.
5. Training in fire prevention and immediate fire procedures.
6. First aid training
7. Train staff in waste treatment
8. Provide security equipment
9. Provide first aid equipment

2.4 Management Capacity

2.4.1 Project Governance Structures (G4.1)

The Strategic Alliance team is made up of more than 30 professionals from Uruguay and Estonia, with two headquarters corresponding to the two legal entities that support it. Said strategic alliance was created for the development, production, marketing and management of financial, technological and sustainable products and services that we call the company ecosystem.

Through different contractual modalities (purchase, lease, joint venture, etc.), Nideport S.A incorporates carbon sinks either in their natural state or degraded and carries out a conservation or restoration process on them –as the case may be- with the objective of achieving the natural regeneration of the biosphere.

This action aims to restore the carbon sinks to their natural state and allows Nideport to carry out the issuance of carbon credits certified by a third party on a yearly basis, according to the capture and sequestration of GHG.

The carbon credits give us the cashflow for Opex for our restoration activities. Nideport assumes the commitment that all land incorporated will be restored and preserved for a period of one hundred years, after which it will be donated to the state for the creation of a National Park.

To achieve the stated objectives, a corporate structure has been created that responds to the needs of each stage of the project:

Heimdall Corp. USA

Heimdall Corp. is a holding company that owns 100% of the shares of Nideport SA and Heimdall Technologies OÜ.

Nideport SA (Uruguay)

Nideport SA is based in Montevideo, Uruguay, and it will carry out the following activities:

- Search and selection of lands that meet the eligibility requirements for the development of reforestation, restoration, remediation, conservation and non-harmful exploitation activities.
- Leasing and acquisition of land for project development.
- Commercialization of carbon credits within the framework of the voluntary carbon market, according to certification by VERRA
- Commercial relations with corporations.
- Development of software for the geolocation of photogrammetric indicators and tokenization of spatial polygons, as a technology transfer service to adherent companies.
- Exploitation of verifiable sustainable activities and services.

The governance structure of the project is detailed below:

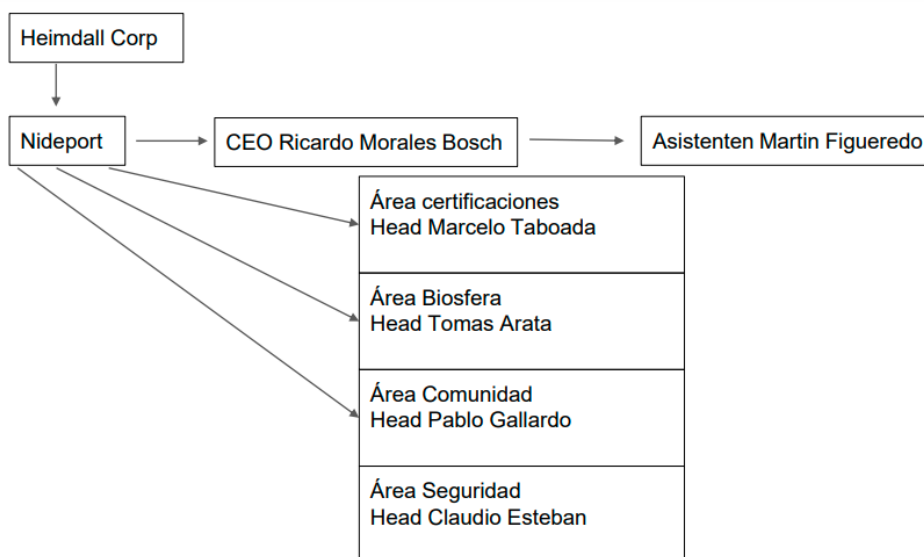


Figure 12: Project's hierarchy graph.

The mission of 1st level members of the structure and of the entities involved in the design and implementation of the project are described below:

Member	Mission ²²
General Manager	To lead the Company's operation and train the executive team in order to achieve the established business objectives. To permanently increase shareholder value. Design and execute the medium/long term Business Plan approved by the Board and shareholders, monitoring its progress and reporting any deviation or need for adjustment. Promote the security and protection of assets, minimizing risks to equity. To represent the Company institutionally.
Administration Manager	To plan and follow up the administrative management of the Group's companies and provide timely, valid and reliable information on the performance of operations to enable decision making, in order to meet strategic objectives while complying with established regulations at both national, regional and international levels.
Operation Manager	To manage, develop and operate the physical and logistical resources to ensure: remediation, land conservation and security, and community relations with the territory's native peoples, all in pursuit of providing reliable information to investors.

²² Complete list including main duties available for VVB during validation

2.4.2 Required Technical Skills (G4.2)

The key technical skills required to successfully implement the project, including community engagement, biodiversity assessment and carbon measurement and monitoring skills, are:

- Community Relations
- Community engagement methodology for project design, implementation, monitoring and evaluation.
- Anthropological and ethnographic approach in a framework of intercultural dialogue.
- Risk and threat assessment and mitigation
- Biodiversity monitoring

2.4.3 Management Team Experience (G4.2)

The knowledge and previous experience of the management team for the implementation of projects is detailed below:

To manage the participation of the community, in the staff of collaborators, there is a Community Relations Officer with a degree in sociology who has experience in Consulting, having been assistant in the implementation of public policies of prevention and security for municipalities (2016-2019). Carrying out diagnostics, coordination of intersectoral working groups and elaboration of suggestions for the efficient implementation of public policies in local governments. He also has experience in public management, working as Head of Social Work Coordination Division in the Secretariat of Human Development and Social Promotion in the Municipality of Zárate (2009-2010) and municipal referent of the shared social responsibility program for young people in vulnerable situations "Envión". Finally, participated in the coordination table for tackling gender violence. Coordination of the interdisciplinary Gender and Family team.

The Community Relations Unit carries out: ethnographic approach and intercultural dialogue with local communities, including Mbya Guaraní villages; gender focus in forest management and community strengthening; surveys, interviews and production of reports; design of appropriate methodology for projects according to CCB standards, Verra 3.1. The unit is integrated by:

A graduate in Anthropological Sciences. Member of the university extension project called "Consolidating educational social practices. Indigenous people in the city: visibilization and ethno-political organization in the framework of recent transformations". She has also carried out Methodology and field research techniques. Research work in the feminist self-defense workshop "Manifiesto".

A teacher of philosophy and psychology in numerous secondary schools in Campana (Province of Buenos Aires). Also, co-director of the sociocultural and interdisciplinary project "Al Ciervo de los Pantanos". Interdisciplinary work project in articulation with the Deer of the Marshes National Park aimed at generating

processes of aesthetic and socio-cultural valorization of the local and regional environmental heritage of the city of Campana and its surroundings. He carries out functions such as cartography and digital mapping; socio-community and anthropological surveys and mapping; theoretical advice; bibliographic and multimedia research on the town of San Pedro and its surroundings; bibliographic and multimedia research on the Mbya-Guaraní communities; development of transdisciplinary approaches to the local community.

A graduate in Political Science. Magister in course (Government Magister) (UBA).

To manage the Biodiversity Assessment, the staff of Collaborators includes:

A person in charge of Forest Management, graduated as Agronomist Engineer, with prior experience on crop monitoring, supervision of logistics and operations. He is also certified by INASE for the inspection and certification of seed production and classification, among others.

For carbon measurement and monitoring, the staff of collaborators includes a certification and sustainable development Manager who has a lawyer degree with institutional activity as President of the Sustainability Commission of the French-Argentine Industrial Chamber, Member of the Environment and Sustainability Commission of UIPBA Circular Economy Club Buenos Aires, and has been a participant and speaker at the Climate Change Conferences held in: COP 24 Katowice, COP 23 Bonn and COP 22 Morocco.

In terms of biodiversity monitoring, the project allied with Aves Argentinas for its consultancy service on biodiversity monitoring. The monitoring facilities will allow researchers to execute their work, and access 24/7 monitoring information.

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

Involved entities collaborating in the design and implementation of the project include:

Fotosíntesis, a consultant firm whose mission in the project is to carry out the inventory and calculation of biomass (carbon) baseline for Forestal Belga's properties.

Aves Argentinas, and NGO hired for the biodiversity inventory and as an external advisor for the monitoring plan elaboration.

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

To be completed in final PDD version

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

The project developer, and the other entities involved are legally registered companies in Uruguay, Estonia and Argentina. None of them were involved in or complicit in any form of corruption such as bribery, embezzlement, fraud, favoritism, cronyism, nepotism, extortion, and collusion.

As legally registered companies, the project owner and other involved entities have the obligation to comply with relevant regulations, including anti-corruption law. The annual audit by the correspondent governments makes sure that they operate with full compliance with national law and regulations.

This project has a whitepaper Forest Management General Manual where it is clearly explained that corruption and other unethical behaviors are totally forbidden.

Moreover, the project's legal notice describes actions and regulations in terms of fraud, corruption or other illegal action towards users regarding the use of the NIDEPOR platform²³, as well as commissions schemes²⁴.

2.4.7 Commercially Sensitive Information (Rules 3.5.13 – 3.5.14)

No information is considered commercially sensitive. Only in the case of species surveys, for endangered species and species with hunting pressure, the exact location where it is seen is not reported in public documents, but is available to VVB upon request.

2.5 Legal Status and Property Rights

2.5.1 Statutory and Customary Property Rights (G5.1)

Land tenure in the northeast of Misiones was first impacted by years of unpopulated fiscal lands, bordering Brazil, an area which was later defined in the 1970s as the Bernardo de Irigoyen Border Area (25 de Mayo, Guaraní, San Pedro & General Belgrano). In that year, National Law Nº 18.575 was enacted, containing regulations for the development and integration of the Nation's border zones and areas. Between 1972 and 1980, national decree established a border area comprising these areas. Officially defined by the "lack of development", "lack of infrastructure and services", "lack of physical and spiritual integration with the rest of the nation", and by the "irradiation and infiltration of neighbouring countries", the frontier began to be seen as a "space destined for forestry". Moreover, settlement and agricultural occupation were associated with Brazilian occupation²⁵.

The graph shows land tenure for the whole province, where a high percentage is under property category, both private and fiscal.

²³ Available to VVB during validation

²⁴ NIDEPOR whitepaper available to VVB during validation

²⁵ Gabriela SCHIAVONI (1995) Organización doméstica y apropiación de tierras fiscales en la Provincia de Misiones (Argentina) Available at: https://www.researchgate.net/publication/271810049_Organizacion_domestica_y_apropiacion_de_tierras_fiscales_en_la_Provincia_de_Misiones_Argentina/link/5de2b4fe299bf10bc334eee6/download

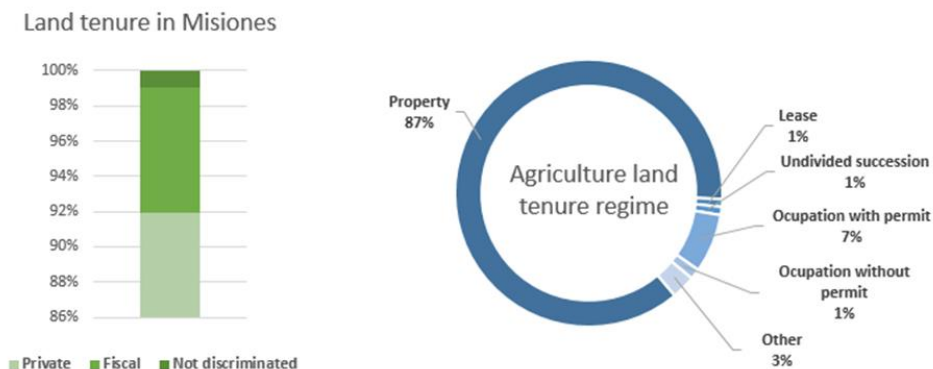


Figure 13: Agriculture land tenure, Misiones. Source: Based on Agriculture census 2018²⁶.

In addition to Brazilian immigration, these movements involve producers from older rural colonies in the province, immersed in an agricultural crisis triggered by the deterioration of the prices of their main products. Thus, the "occupant" is in many cases an impoverished colonist or a young producer from Misiones who migrates to the new territories in order to reproduce himself socially as an autonomous farmer.

The Andresito Colonisation Plan (1979) prohibits access to land "to natural persons originating from neighbouring countries"²⁷. During the 1970s and 1980s, informal colonisation took place on public lands; the unproductive large estates located on the Uruguay River remained uninhabited. From 1984 onwards, the provincial administration managed to relax the security zone regulations governing the use of public lands in border areas (Law Nº 21.900), promoting the legalization of spontaneous settlement through a system that takes into account unofficial occupation (Schiavoni. 1993). At the end of the 1980s, with the reserve of public lands exhausted, the occupants began to exert pressure on the private extensions, instituting "the land problem" among the demands of the agrarian organisations. In this sense, the occupants request "the implementation of the agrarian reform promoted by Justicialism in 1987" (El Territorio, 3-VII-94). Faced with the problem of the occupation of private land, the government initiated a Plan for the Regularisation of Private Land (MAA; 1994), which involved the acquisition of land from private individuals for subsequent division and sale to the occupants.

The vacant fiscal lands in the northeast of the province define a social space in formation, whose organization is marked by the scarce intervention of the state and the implementation of a society of agricultural occupants, structural surpluses of agrarian capitalism from the south of Brazil and family farmers from Misiones with deteriorated conditions of social reproduction in the oldest fiscal colonies.

As mentioned, the origin of the land occupation process in the municipality of San Pedro, leads to different degrees of colonization and development. In the Municipality there are between 47 and 49 locations

²⁶ Available at: <https://www.indec.gob.ar/indec/web/Nivel4-Tema-3-8-87>

²⁷ «Sistema de puntaje y adjudicación de lotes fiscales en Andresito», art. Nº 16 de la Ley Provincial Nº 1.071

distributed in approximately 85,000 hectares of public land with different degrees of ownership (Owners, permit holders, occupants with improvements).

The map below was generated by the Department of San Pedro, showing big private properties and an area of official colonization of communities.

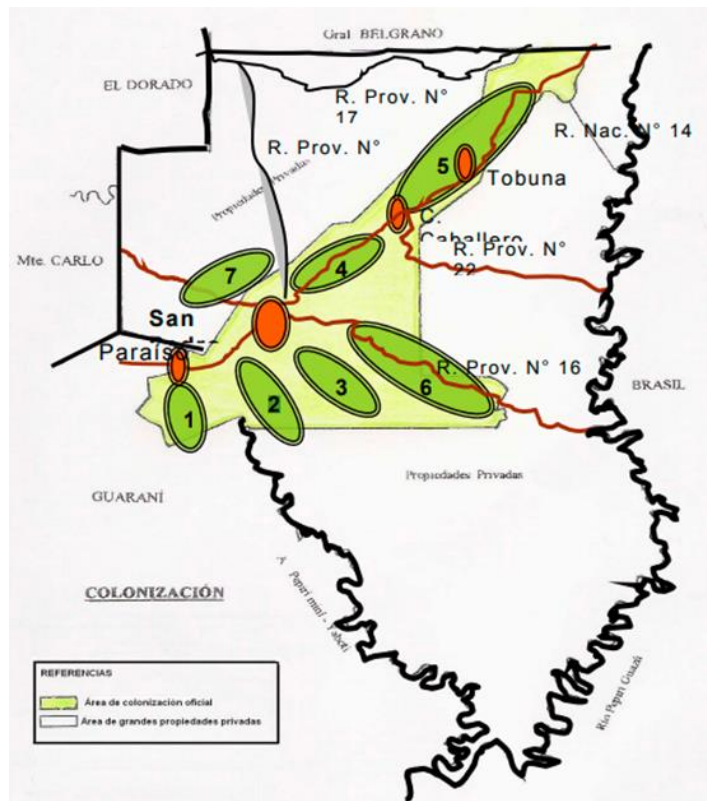


Figure 14: Areas of private and colonized areas in San Pedro Department. Green and orange reference are related to the proposed zones in the original source. Source: Plan de Desarrollo Estratégico de San Pedro, 2010²⁸

2.5.2 Recognition of Property Rights (G5.1)

Since these lands are private, the ownership is clear, and there is no dispute over land ownership in the project site. The project proponent has the legal right to conduct the proposed project activities inside the project area through a legal agreement with Florestal Belga, the company that owns the land²⁹. The corresponding public consultation took place, and no claims arose regarding land ownership and rights.

²⁸ Available at:

https://www.argentina.gob.ar/sites/default/files/plan_de_desarrollo_estrategico_sustentable_del_municipio_de_san_pedro.pdf

²⁹ Available to VVB during validation

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

Since prior to the project initiation, all the project land has been owned by Forestal Belga. To ensure the successful development of the project, the project proponent, which has legal authorization over the land, has made the corresponding research on the lands by requesting government authorizations and certifications. So, the project will not encroach uninvited on private property, community property or government property.

Moreover, there is not any community, individual or group of people living in the project area and the project land is privately owned.

The corresponding public consultation which took place during 2021 did not raise any complaints regarding property rights (see section 2.3).

2.5.4 Property Rights Protection (G5.3)

There are no communities, individuals or groups of people living in the project area and the project land is privately owned. Activity relocation will only occur to those related to biodiversity threats (hunting), while providing alternatives and productive projects to access basic family baskets to those communities that use the area for hunting, gathering (fruits and wood). There are also communities using the area for recreational/cultural use.

Moreover, the project will generate job positions to be filled by the local community (yerba mate cultivation, seedling production, native species plantation, bee keeping), allowing the population to improve well-being with formal forms of jobs.

2.5.5 Illegal Activity Identification (G5.4)

The planning of security actions is based on three fundamental pillars: early warning, management of institutions and crime map.

In the context of situational prevention, the integral nature of the approach considers different conflict scenarios, which, with due diligence and multi-agency collaboration, may lead to a positive result.

Early Warning

According to the Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis, carried out on the ground (remote pre-diagnosis), the necessary technological and human means (cameras, sensors, drones, operators, etc.) will be available to detect, in due time and manner, any activities evidencing the following problems:

- Forest fires (intentional or not);
- Deforestation;

- Poaching;
- Illegal trafficking (in any of its variants);

A Contingency Plan has been developed to address each of the problems outlined above.

In order to efficiently develop and subsequently apply contingency plans, the following institutions will provide support: Border Patrol, monitoring personnel, park rangers, and regional (provincial) firefighters. All institutions are in the process of agreement with the adherent company Global Seven SAS.

The contracting modality will be that of "additional cost for services to private persons" for public institutions and "employer-employee relationship" for monitoring tasks. In both cases, the participation in social areas will be of the essence to comply with the tenets of integration of indigenous peoples and local citizens.

Crime map

Intervention strategies are designed based on the reports provided by the local community (police, border patrol, Municipality of San Pedro, neighbors, etc), who by maintaining fluid local communication, allow one to be aware of any activity of interest within the property and its surroundings and to be able to evaluate the evolution of the place in the last two years as regarding the main threats identified: Drug trafficking; Poaching; Illegal logging. Later, the information provided by the analysis of monitoring control tower images will allow further definition and redesign of the intervention strategies.

Some equipment to be used includes:

Thermographic cameras: to be installed in the towers to allow automatic detection of fires as well as people's presence.

Drones: For automated patrol in predetermined routes, especially project area borders, with constant operator supervision.

Peripheral sound system: will allow personnel to identify different situations to be managed from the monitoring center. Impulsive sound detection, both through cameras and microphones, will allow gunshots, shouts or other sounds indicating threats, to be identified and triangulated in order to identify location.

Lorawan net: installation for the interconnection of appliances and equipment, such as meteorological centers with different sensors to measure environmental variables or others. The information provided and analyzed will allow to anticipate, for example, fire threats due to dry days, flooding, etc. and execute early warnings

2.5.6 Ongoing Disputes (G5.5)

The land is privately owned. There are no identified or ongoing conflicts over land rights, nor were there. There are no permanently settled local communities with customary land rights within the land.

2.5.7 National and Local Laws (G5.6)

National Constitution. Art. 14.- Right to work. Art. 14 bis.- Right to decent and equitable working conditions, limited working day; paid rest and holidays; fair remuneration; minimum living wage; equal pay for equal work; participation in the profits of enterprises, with control of production and collaboration in management; protection against arbitrary dismissal; stability of public employees; free and democratic trade union organization, recognized by simple registration in a special register. Trade unions are guaranteed: the right to conclude collective labor agreements; recourse to conciliation and arbitration; the right to strike. Trade union representatives shall enjoy the guarantees necessary for the performance of their trade union duties and those related to the stability of their employment. Social security benefits. Art. 19: Provide for human development for employment generation, vocational training of workers.

National laws:

Law 20.744 on Employment Contracts and its amendments;

Law 24.013 on Employment;

Law 24.557 on Labor Risks.

Law 26.390 on Prohibition of Child Labour and Protection of Adolescent Labour.

Law 19.587 on Hygiene and Safety at Work.

Law 11.544 on Working Hours

Law 26.727 on the agricultural labor regime.

Law 23.551 on trade union associations

Law 24.365 on compulsory conciliation

Provincial regulatory framework:

Provincial Constitution of Misiones. Art. 30 to 36 inclusive: Right to work, without distinction of sexes: dignified and equitable working conditions; limited working hours, rest and paid holidays; fair remuneration: minimum living wage; equal remuneration for equal work; participation in the profits of companies, with control of production and collaboration in management; protection against arbitrary dismissal; the right to strike and all labor legislation. Free choice of occupation; regulation and control of night and unhealthy work; women's and minors' work; safety at work and the right to hygienic and decent housing. Free and democratic organization of trade unions.

2.5.8 Approvals (G5.7)

None is necessary to carry out the project

2.5.9 Project Ownership (G5.8)

The land is privately owned by Forestal Belga, and the corresponding notarial certificates are available. Moreover, there is a signed contract for the irrevocable assignment of the right to the certification of reduction of greenhouse gas emission of carbon credits and the implement of corresponding activities in favor of Niderport.³⁰

2.5.10 Management of Double Counting Risk (G5.9)

The project has not received any form of environmental or social credit, including tradable climate, community or biodiversity units.

2.5.11 Emissions Trading Programs and Other Binding Limits

GHG removals generated by the project will not be used for compliance with binding limits to GHG emissions since Argentina does not have GHG emission compliance nor trading programs in place.

2.5.12 Other Forms of Environmental Credit

The project is a new AFOLU project and is not registered in any other GHG program. The project will only generate credits from the storage of carbon in forest pools, and these are claimed only under the VCS and CCB program.

2.5.13 Participation under Other GHG Programs

The project is a new AFOLU project and is not registered in any other GHG program. The project will only generate credits from the storage of carbon in forest pools, and these are claimed only under the VCS and CCB program.

2.5.14 Projects Rejected by Other GHG Programs

The project has not been registered or is seeking registration under any other GHG programs.

2.5.15 Double Counting (G5.9)

Double counting is avoided as credits will be only sold through the VERRA platform since Argentina does not have GHG emission compliance nor trading programs in place.

³⁰ Available to VVB during validation

3 CLIMATE

3.1 Application of Methodology

3.1.1 Title and Reference of Methodology

The project applies methodology VM0005 Methodology for Improved Forest Management: Conversion of Low Productive to High Productive Forest.

Reference	Title	Version
VCS Methodology VM0005	Methodology for Improved Forest Management: Conversion of Low Productive to High Productive Forest	1.2

The applied methodology uses other accessory methodologies and tools.

Reference	Title	Version
CDM Tool	CDM Tool for Calculation of the Number of Sample Plots for Measurements within A/R CDM Project Activities	2.1.0
CDM Tool	CDM Tool for testing significance of GHG emissions in A/R CDM project activities	1.0
CDM Tool	AR-ACM0002: Afforestation or reforestation of degraded land without displacement of pre-project activities	1.1.0
CDM Tool	Estimation of emissions from clearing, burning and decay of existing vegetation due to implementation of an A/R CDM project activity	4.0
VCS Tool	VT0002 Tool for the Demonstration and Assessment of Additionality in IFM Project Activities	1.0
VCS Tool	VT0003 Tool for the Estimation of Uncertainty for IFM Project Activities	1.0

VCS Tool	AFOLU Non-Permanence Risk Tool	4.0
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3.1.2 Applicability of Methodology

Methodology VM0005, version 1.2, is applicable under the following conditions:

Applicability condition	Project compliance
Project activities aim at the avoidance of relogging of logged-over, degraded natural Evergreen Tropical Rainforest, or the rehabilitation of logged-over natural Evergreen Tropical Rainforest through direct human intervention such as cutting of climbers and vines, liberation thinning and/or enrichment planting, or a combination of these activities;	The project aims to rehabilitate a logged-over and degraded area, the project area, located in the Misiones Forest, part of the Atlantic Forest biome. The project will be comprised activities such as: cutting of climbers and vines, liberation thinning and enrichment planting.
Land within the project area must have qualified as forest;	The project area qualifies as a forest: it is located within the Selva Misionera, or Misiones Forest, a type of vegetation formation in the Atlantic Forest biome.
In the baseline, the logged-over forest in the project area is unlikely to revert to normal regrowth patterns due to vines and climbers, which may include climbing bamboos, resulting from high-intensity logging operations in the past. In such cases, and subject to appropriate substantiation, regrowth of tree biomass before and following relogging in the baseline can be assumed to be zero. Where this is not the case, ex-ante estimates of regrowth must be made and monitoring of the baseline for ex-post confirmation of regrowth rates must be conducted;	Regrowth of tree biomass before and following relogging in the baseline is assumed to be zero.
The soil carbon pool within the project boundary is either in a steady state at project commencement, or, if not, the soil carbon pool is only expected to increase more or decrease less in the with-project scenario in comparison to the baseline, and may therefore, conservatively be omitted;	The soil carbon pool will be, conservatively omitted.
Site preparation is carried out so as to avoid levels of soil disturbance or soil erosion sufficient to significantly reduce the soil carbon pool over the project lifetime;	The site preparation will be carried out so as to avoid levels of soil disturbance or soil erosion sufficient to significantly reduce the soil carbon pool over the project lifetime.
The use of nitrogen fertilizer in the project activities is prohibited;	Nitrogen fertilizers will not be applied in the Project activities.
During the project crediting period, harvesting must not occur in the with-project scenario;	Harvesting will not occur in the project scenario during the project crediting period.

Biomass burning, fuel gathering, removal of litter, or removal of dead wood do not occur in the baseline scenario and in the with-project scenario within the project boundary;	The project does not involve biomass burning, fuel gathering, removal of litter, or removal of dead wood in the baseline or the project scenarios.
A reference area may be used to derive relevant parameter values for the baseline scenario. This area must be of similar size as the project area, or larger (ie, 75% of the project area or more), for which similarity with the project area can be demonstrated using criteria outlined in this methodology, and for which it can be demonstrated that the management is not affected by its selection as a reference area; and,	The project will not use a reference area.
Flood irrigation or drainage of primarily saturated soils are not permitted as part of the project activity, so associated non-CO2 greenhouse gas emissions can be neglected.	The project activity does not involve the flood irrigation or drainage of primarily saturated soils.
There is no peatland within the project area or emissions associated with peatland are not significant.	There is no peatland within the project.
The methodology is not applicable to grouped projects.	The project is not a grouped project.

3.1.3 Project Boundary

In this section, the geographical and temporal aspects of the project boundary are clearly defined. Also, the carbon pools and GHGs included in the project boundary are identified.

Geographical Project Boundary

The project area encompasses 22,878.5 of land authorized for timber harvesting inside GS1, which is located in the department of San Pedro, province of Misiones, Argentina.

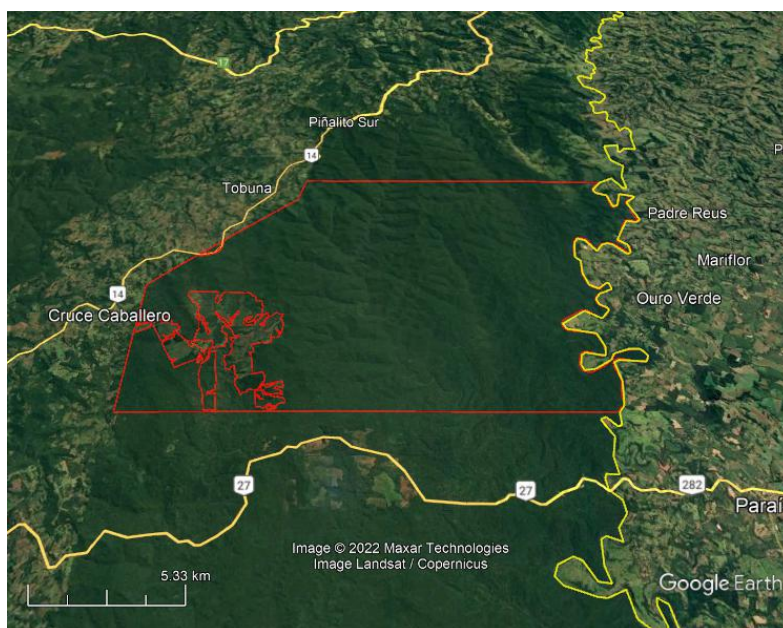


Figure 13: Geographical boundaries of the project area.

The KML files will be submitted along with this PD.

Table 1: The project area is comprised of five strata.

Strata	Strata subdivision	Area (ha)
Native forest	Natural forest with close canopy	2,711.3
	Natural forest with open canopy	13,517.8
	Natural forest with scattered canopy	6,069.7
Other native vegetation	Scrubland	298
	Shifting agriculture	281.7
Total		22,878.5

Temporal Project Boundary

The temporal boundaries are defined by the project start date and length of the project crediting period, as indicated in sections 2.1.14 and 2.1.15. The project duration is 100 years.

Carbon Pools

In accordance with VM0005, the carbon pools included or excluded from the project boundary are shown in the table below.

Carbon Pools	Included?	Justification/Explanation
Above-ground tree biomass	Yes	Major carbon pool assumed to significantly decrease in the baseline, or increase in the project, or both.
Above-ground non-tree biomass	No	Pool need not to be measured because it is not subject to significant changes or potential changes are transient in nature.
Below-ground biomass	Optional	Major carbon pool assumed to significantly decrease in the baseline, or increase in the project,

		or both. Not accounting for below-ground biomass is conservative.
Dead wood	Yes	Carbon pool likely to decrease as a result of the project activity. Accounting for dead wood as zero in the with-project scenario is conservative. Accounting for dead wood occurring prior to re-logging as zero is conservative.
Litter	No	Conservative approach - unlikely to decrease as a result of the project activity, or increase in the baseline
Soil organic carbon	No	Conservative approach - unlikely to decrease as a result of the project activity, or increase in the baseline
Wood products	Yes	Carbon pool likely to decrease as a result of the project activity. Accounting for wood products as zero in the with-project scenario is conservative.

Greenhouse Gases

The emission sources included in or excluded from the project boundary are shown in table below.

Source		Gas	Included?	Justification/Explanation
Baseline	Combustion of fossil fuel in vehicles / machinery	CO ₂	No	Re-logging is not the baseline activity
		CH ₄		
		N ₂ O		
		Other		
	Removal of herbaceous vegetation	CO ₂	No	Excluded based on VCS guidance
		CH ₄		
		N ₂ O		
		Other		
	Burning of biomass	CO ₂	No	Burning of biomass is not allowed.
		CH ₄		
		N ₂ O		
		Other		
	Nitrogen based fertilizer	CO ₂	No	The use of nitrogen-based fertilizer is not allowed.
		CH ₄		
		N ₂ O		
		Other		
	Tree harvesting	CO ₂	Yes	Carbon is stored in tree's biomass.
		CH ₄	No	Only CO ₂ is stored in tree's biomass
		N ₂ O	No	Only CO ₂ is stored in tree's biomass
		Other	No	Only CO ₂ is stored in tree's biomass

Source		Gas	Included?	Justification/Explanation
Project	Combustion of fossil fuel in vehicles / machinery	CO ₂	No	ReLogging is not the baseline activity
		CH ₄		
		N ₂ O		
		Other		
	Removal of herbaceous vegetation	CO ₂	No	Excluded based on VCS guidance
		CH ₄		
		N ₂ O		
		Other		
	Burning of biomass	CO ₂	No	Burning of biomass is not allowed.
		CH ₄		
		N ₂ O		
		Other		
	Nitrogen based fertilizer	CO ₂	No	The use of nitrogen-based fertilizer is not allowed.
		CH ₄		
		N ₂ O		
		Other		

3.1.4 Baseline Scenario

The baseline scenario is the Alternative Scenario A, detailed in section Additionality: the continuation of forest degradation with relogging.

For more than 50 years, the project area has been continually harvested. Although subjected to sustainable harvesting practices, the forest area is mostly degraded and only parts of it could be harvested.

In this scenario, no direct intervention is done to improve the forest quality or rehabilitate it. The areas which are more degraded are left with no harvesting, while those which are less degraded and still have some exploitable trees, are at least partially sustainably harvested. As no activities related to improve the forest quality (cutting of climbers and vines, liberation thinning and enrichment planting, etc.) are done, the forest continues to degrade more over the years.

The records and documented history of the forestry operator register timber cruise volumes, harvesting levels, the species collected and the periodicity of the logging operations.

The project proponent has the right to sustainably harvest the trees in the project area. This right is assured by Law 26.331/07 ³¹ and the legal permits to sustainably harvest and manage the forest that the project

³¹ <http://servicios.infoleg.gob.ar/infolegInternet/anexos/135000-139999/136125/norma.htm>

proponent has. The legal requirements are further detailed in section Additionality. Therefore, the project proponent has the right to continue harvesting the forest trees and it would do so in the absence of the project.

3.1.5 Additionality

In accordance with the applied methodology, additionality is assessed using VCS Tool for the Demonstration and Assessment of Additionality in IFM Project Activities.

STEP 0. Preliminary screening based on the starting date of the IFM project activity:

The project crediting start date and project start date are in accordance with the most recent version of the applicable VCS requirements in VCS Methodology VM0005, version 1.2 and VCS Standard version 4.2.

STEP 1. Identification of alternative land use scenarios to the IFM project activity:

“This step serves to identify alternative land use scenarios to the proposed IFM project activity(s) that could be the baseline scenario, through the following sub-steps”:

Sub-step 1a. Identify credible alternative land use scenarios to the proposed IFM project activity

- **Scenario A - Continued forest degradation with relogging:** harvesting activities in the project area have been going on for more than 50 years. As a result of these practices, the forest area is mostly degraded and only parts of it could be harvested. Therefore, in this scenario, no direct intervention is done to improve the forest quality or rehabilitate it. The areas which are more degraded are left with no harvesting, while those which are less degraded and still have some exploitable trees, are at least partially harvested. As no activities related to improve the forest quality (cutting of climbers and vines, liberation thinning and enrichment planting, etc.) are done, the forest continues to degrade more over the years.
- **Scenario B - Protection and enrichment of the forest without developing a carbon project:** this scenario involves the protection of the project area and the development of all project activities (cutting of climbers and vines, liberation thinning and enrichment planting) without the revenue from carbon credits. Relogging does not occur, as the entire area is protected. Therefore, this scenario is similar to the project scenario, but without the development of a carbon project. This option is not financially feasible.

Outcome of Sub-step 1a: two scenarios, A and B, are listed as credible alternative scenarios to occur on the project area.

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

In Argentina, Law 26.331/07³² legislates on territorial planning, as well as the minimum standards of environmental protection of native forests. In its chapter II, the law establishes three territorial categories for conservation of native forests:

- Red: very high conservation value areas where land use change and transformation is not allowed.
- Yellow: medium conservation value areas where forests may be degraded but which, in the judgment of the jurisdictional enforcement authority, with the implementation of restoration activities, may have a high conservation value and which may be subjected to sustainable management, tourism, collection and scientific research.
- Green: low conservation value areas that can be partially or totally transformed within the criteria of this law.

The project area is mostly comprised of areas classified as “yellow”, with a few patches classified as “green”, as shown in Figure 14. The strata displayed in Table 1 cannot be entirely harvested or deforested, only sustainably managed. In addition to complying with Law 26.331/07, the project proponent also holds legal permits to sustainably harvest and manage the yellow classified area, conceded by Misiones province government, more specifically the Ministry of Ecology and Renewable Natural Resources.

According Law 26,331, Article 9:

- Category II (yellow): sectors of medium conservation value, which may be degraded but which, in the judgment of the enforcement authority with the implementation of restoration activities, may have a high conservation value and which may be subject to the following uses: sustainable use, tourism, collection and scientific research.

Territorial planning does not classify the plantation because it is not native. The forest region that contained the surface, which is now a plantation, is conditioned by its edaphic and topographical characteristics and can be exploited. And therefore, the change of land use is authorized.

In addition to that area, there is an extensive region of land Series 9 and 6-A (7,850 hectares) in which, as above, the change of land use could be authorized. Therefore, the project proponent could request the change from yellow to green land use classification, which would allow them to expand even further the alternative activities that could be developed in the area.

Table 2. Types of soil inside the GS1 reserve.

³² <http://servicios.infoleg.gob.ar/infolegInternet/anexos/135000-139999/136125/norma.htm>

N° Lote	FORESTAL BELGA S. A. Superficie (hectáreas)				
	TOTAL del LOTE	Suelo 6 A	Suelo 9	TOTAL Suelo Reforestable	Suelo 6 B No Reforestable
2	3964	1751		1751	2213
3	4000	1322		1322	2678
4	4164	947		947	3217
5	3684	372		372	3312
6	3631	608	70	678	2953
Sub-TOTAL Lotes 2 a 6	19443	5000	70	5070	14373
7 (*)	5400	3975	805	4780	620
TOTAL del Campo	24843	8975	875	9850	14993

In Scenario A, a reduced sustainable harvesting activity happens in the land, since it is mostly degraded. The sustainable harvest of this area is allowed by Law 26.331/07 and the legal permits the project proponent has. Therefore, the project proponent would act in accordance with the regulations and requirements set for the area.

In Scenario B, the strata will not be relugged anymore as it will only host activities to improve the forest quality. There is no law, regional and national, that requires the continuation of the sustainable harvesting of native tree species. Therefore, choosing not to harvest any more native tree species is in accordance with the regulations and requirements set for the area.

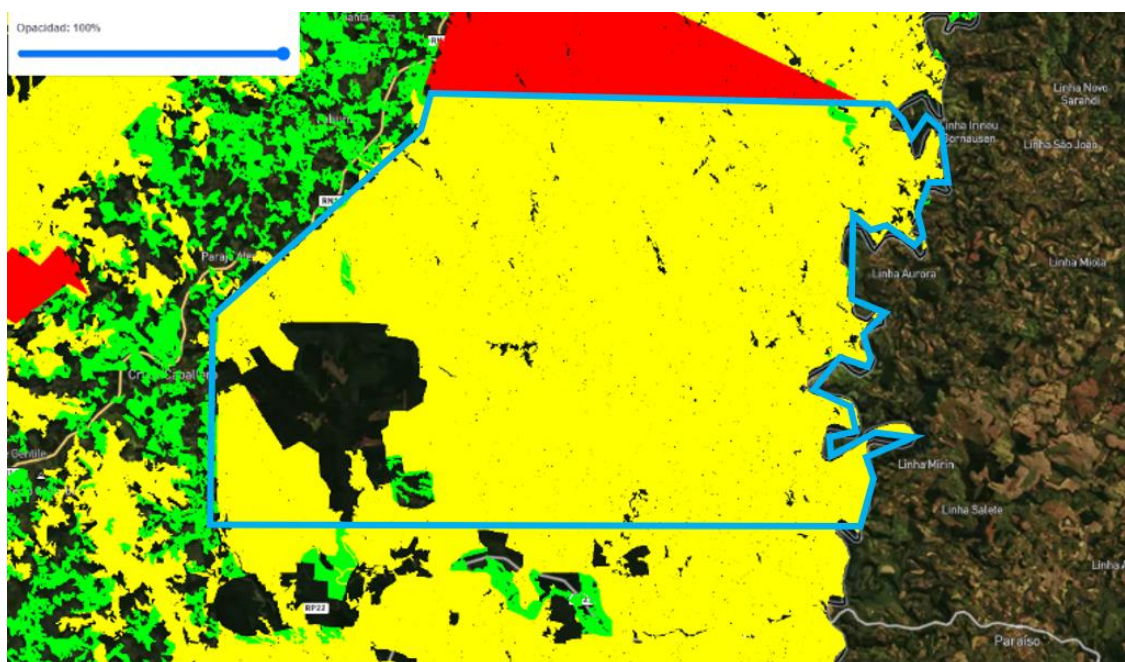


Figure 14: Project area territorial planning classification³³. The project area is delimited by the blue line.

³³ <https://www.crea.org.ar/mapalegal/otbn/misiones>

Outcome of Sub-step 1b: scenarios A and B are both plausible alternative land use scenarios to the IFM project activity that are in compliance with mandatory legislation and regulations in Argentina.

Sub-step 1c. Selection of the baseline scenario

As mentioned above, Scenarios A and B have no legal barriers that prevent them to happen. However, Scenario B is not plausible, as it is not financially possible to protect the land and develop activities to improve the forest quality without the revenues from carbon credits. Even if no enrichment or management activities are developed in the area, it is still not financially attractive to protect a land that will not generate revenue for the project proponent, who would benefit more from investing in other activities. In Step 2 of this additionality assessment, the financial analysis is better detailed.

In Scenario A, the company continues to profit from the remaining trees in the native forest. Although the revenue is lower than it could be if the area was in a good state of preservation, the company still profits from relogging activities in both strata, the native forest and the commercial forest. Therefore, this is the most plausible scenario to happen, as the company has no legal obligation to improve the quality of the forest and it could still exploit it.

Outcome of Sub-step 1c: Scenario A, continued forest degradation with relogging, is the baseline scenario.

STEP 2. Investment analysis to determine that the proposed project activity is not the most economically or financially attractive of the identified land use scenarios;

To be developed in future PD version.

STEP 3. Barriers analysis

To be developed in future PD version.

STEP 4. Common practice analysis.

To be developed in future PD version.

3.1.6 Methodology Deviations

There are no methodology deviations in the project.

3.2 Quantification of GHG Emission Reductions and Removals

3.2.1 Baseline Emissions

According to the methodology, the net baseline GHG emissions and removals can be estimated through one of the two following approaches:

1. Using Pre-relogging A-spatial Data; and,

2. Using Post-relogging Mid to High Resolution Spatial Data.

The project will use the pre-relogging A-spatial data approach. In both cases, the net CO₂ equivalent emissions in the baseline will be determined as:

$$\Delta C_{BSL} = \sum_{t=1}^{t^*} \sum_{i=1}^{M_{BSL}} (\Delta C_{REL,i,t} + \Delta C_{tree-exist,i,t}) + GHG_{BSL-E,t}$$

Where:

ΔC_{BSL} : Net CO₂ equivalent emissions in the baseline scenario up to year t^* , in t CO₂e.

$\Delta C_{REL,i,t}$: Net carbon stock change due to relogging in the baseline scenario in stratum i at year t , in t CO₂e/year.

$\Delta C_{tree-exist,i,t}$: Net carbon stock change in existing tree vegetation in the baseline scenario in stratum i at year t , in t CO₂e/year.

$GHG_{BSL-E,t}$: Greenhouse gas emissions as a result of relogging within the project boundary in stratum i at year t , in t CO₂e/year.

i : 1, 2, 3 ... M_{BSL} strata in the baseline scenario.

t : 1, 2, 3, ... t^* years elapsed since the project start.

The emissions due to relogging in the baseline scenario are determined as:

$$\Delta C_{REL,i,t} = \left[A_{REL,i,t} \times \left(C_{harvest,i} + (C_{damage,i} - C_{DW,i,t}) - (C_{WP100,i} + C_{WP20,i,t}) \right) + \sum_{t=20}^t \left(A_{REL,i,t} \times C_{WP20,i,t} \times \frac{1}{20} \right) + \sum_{t=10}^t \left(A_{REL,i,t} \times C_{DW,i,t} \times \frac{1}{20} \right) \right] \times \frac{44}{12}$$

Where:

$\Delta C_{REL,i,t}$: Net carbon stock change due to relogging in the baseline scenario in stratum i at year t , in t CO₂e/year.

$A_{REL,i,t}$: area relogged in baseline stratum i at year t , ha/year.

$C_{harvest,i}$: carbon stock in harvested timber in stratum i , t C/ha.

$C_{damage,i}$: carbon loss due to damage to the residual stand in stratum i , t C/ha.

$C_{DW,i,t}$: post-relogging carbon stock stored in long-term wood products (stock remaining in wood products after 100 years) in the baseline scenario in stratum i , t C/ha.

$C_{WP20,i,t}$: post-relogging carbon stock stored in short-term and medium-term wood products (stock emitted is quantified over 20 years with a linear decay function) in the baseline scenario in stratum i at year t , t C/ha.

i : 1, 2, 3 ... M_{BSL} strata in the baseline scenario.

44/12: the ratio of molecular weight of carbon dioxide to carbon, in t CO₂e/ t C.

Carbon Stock in Harvested and Damaged Wood

$$\Delta C_{harvest,i} = \sum_{j=1}^S (V_{harvest,i,j} \times D_j \times CF)$$

Where:

$C_{harvest,i}$: carbon stock in harvested timber in stratum i , t C/ha.

$V_{harvest,i,j}$: volume of timber harvested in the baseline scenario of species j in stratum i , m³/ha/year

D_j : basic density of the harvested wood of species j , t d.m. m³

CF : carbon fraction of dry matter, t d.m-1.

i : 1, 2, 3 ... M_{BSL} strata in the baseline scenario.

j : 1, 2, 3 ... S tree species.

$$C_{damage,i} = C_{harvest,i} \times f_{damage}$$

Where:

$C_{damage,i}$: loss of carbon due to damage to the residual stand in the baseline scenario, in stratum i , t C/ha

$C_{harvest,i}$: Carbon stocks in harvested timber in the baseline scenario in stratum i , t C/ha.

f_{damage} : factor for damage to the residual stand caused by relogging.

i : 1, 2, 3 ... M_{BSL} strata in the baseline scenario.

Harvested Wood Products

Step 1: Estimate the biomass carbon of the volume extracted by wood product type ty at year t from within the project boundary:

$$C_{damage,i} = C_{harvest,i} \times f_{damage}$$

Where:

$C_{XB,ty,i,t}$: mean stock of extracted biomass carbon by class of wood product ty from stratum i at year t , t C/ha.

A_i : total area of stratum i , ha.

$V_{ex,ty,j,i,t}$: volume of timber extracted from within stratum i (does not include slash left onsite) by species j and wood product class ty at year t , m³.

D_j : mean wood density of species j , t d.m.m-3.

CF: carbon fraction of biomass, t C t-1 d.m.

t : 1, 2, 3, ... t^* years elapsed since the project start.

j : 1, 2, 3 ... S tree species.

ty : wood product class – defined here as sawnwood, wood-based panels, other industrial roundwood, paper and paper board, and other.

Step 2: Estimate the proportion of biomass carbon extracted at year t that remains sequestered in long-term wood products after 100 years and estimate the proportion of biomass carbon extracted at year t that is expected to be emitted from short-term and medium-term wood products over 20 years with a linear decay function.

$$C_{WP100,i,t} = \sum_{s,w,oir,p,o}^{ty} C_{XB,ty,i,t} \times (1 - ww_{ty}) - C_{WP20,i,t}$$

and

$$C_{WP20,i,t} = \sum_{s,w,oir,p,o}^{ty} \left((C_{XB,ty,i,t} \times slp_{ty}) + (C_{XB,ty,i,t} \times (1 - slp_{ty}) \times fo_{ty}) \right)$$

Where:

$C_{WP100,i,t}$: Carbon stock in long-term wood products pool (stock remaining in wood products after 100 years) in stratum i at year t , t C/ha.

$C_{WP20,i,t}$: Post-relogging carbon stock in short-term and medium-term wood products pool (stock emitted is quantified over 20 years with a linear decay function) in the baseline scenario in stratum i at year t , t C/ha.

$C_{XB,ty,i,t}$: mean stock of extracted biomass carbon by class of wood product ty from stratum i at year t , t C/ha.

ww_{ty} : wood waste fraction. The fraction immediately emitted through mill inefficiency.

sl_{ty} : fraction of wood products that will be emitted to the atmosphere within 5 years of timber harvest.

fo_{ty} : fraction of wood products that will be emitted to the atmosphere between 5 and 100 years of timber harvest.

ty : wood product class – defined here as sawnwood, wood-based panels, other industrial roundwood, paper and paper board, and other.

i : 1, 2, 3, ... M_{BSL} strata in the baseline scenario.

t : 1, 2, 3, ... t^* years elapsed since the project start.

3.2.2 Project Emissions

Net CO₂ equivalent emissions in the with-project scenario (WPS) are estimated as:

$$\Delta C_{WPS} = \sum_{t=1}^{t^*} \sum_{i=1}^{M_{WPS}} \Delta C_{P,i,t} + GHG_{WPS-E,t}$$

Where:

Parameter	Description	Unit
ΔC_{WPS}	Net CO ₂ equivalent emissions in the with-project scenario up to year t^*	t CO ₂ -e yr ⁻¹
$\Delta C_{P,i,t}$	Net carbon stock change due to forest regrowth and silvicultural interventions in the with-project scenario in stratum i at year t	t CO ₂ -e yr ⁻¹
$GHG_{WPS-E,t}$	Greenhouse gas emissions related to project implementation at year t	t CO ₂ -e yr ⁻¹

Net carbon stock changes due to forest regrowth and silvicultural interventions

Estimation of $\Delta C_{P,i,t}$

Net carbon stock changes due to forest regrowth and silvicultural interventions in the with-project scenario are estimated as follows

$$\Delta C_{P,i,t} = \Delta C_{AGB,i,t} + \Delta C_{BGB,i,t} + \Delta C_{DW,i,t} + \Delta C_{WP,i,t} - E_{biomassloss,i,t}$$

Where:

Parameter	Description	Unit
$\Delta C_{P,i,t}$	Net carbon stock change due to forest regrowth and silvicultural interventions in the with-project scenario in stratum i at year t	tCO ₂ -e.yr ⁻¹
$\Delta C_{AGB,i,t}$	Net carbon stock change in above-ground tree biomass ¹⁵ in the with-project scenario in stratum i at year t	tCO ₂ -e.yr ⁻¹
$\Delta C_{BGB,i,t}$	Net carbon stock change in below-ground tree biomass in the with-project scenario in stratum i at year t	tCO ₂ -e.yr ⁻¹
$\Delta C_{DW,i,t}$	Net carbon stock change in dead wood in the with-project scenario in stratum i at year t	tCO ₂ -e.yr ⁻¹
$\Delta C_{WP,i,t}$	Net carbon stock change in wood products in the with-project scenario in stratum i at year t	tCO ₂ -e.yr ⁻¹
$E_{\text{biomassloss},i,t}$	Emissions due to site preparation for project activities in stratum i at year t	tCO ₂ -e.yr ⁻¹
t	1, 2, 3 ... t^* years elapsed since the start of the project activity	
i	1, 2, 3 ... M_{WPS} strata in the with-project scenario	

Accounting for dead wood in the with-project scenario as zero is conservative. Accounting for wood products in the with-project scenario as zero is conservative.

Estimation of $\Delta C_{AGB,i,t}$

The changes in the carbon stock in above-ground tree biomass within the project boundary are estimated using the following approach:

$$\Delta C_{AGB,i,t} = A_{i,t} \times (C_{AGB,i,t} - C_{AGB,i,t-T}) \times 44/12 / T$$

Where:

Parameter	Description	Unit
$\Delta C_{AGB,i,t}$	Net carbon stock change in above-ground tree biomass in stratum i at year t	t CO ₂ -e
$C_{AGB,i,t}$	Carbon stock in above-ground tree biomass in stratum i at year t	t C ha ⁻¹
t	1, 2, 3 ... t^* years elapsed since the start of the project activity	
i	1, 2, 3 ... M_{WPS} strata in the with-project scenario	
44/12	Ratio of molecular weights of CO ₂ and carbon	t CO ₂ -e t C ⁻¹
$A_{i,t}$	Area of stratum i at year t	ha
T	Number of years between monitoring times t_m and t_{m-1}	

Changes in C Stock in Above-ground Tree Biomass

The mean carbon stock in above-ground tree biomass per unit area is estimated for each stratum on the basis of field measurements in permanent sample plots. Two methods are available: the Biomass Expansion Factors (BEF) method and the Allometric Equations method.

BEF method

Step 1: Determine on the basis of available data, eg, volume tables (ex ante) and measurements (ex post) the diameter at breast height (DBH, at typically 1.3 m above-ground level), and also preferably height (H), of all the trees above some minimum DBH in the permanent sample plots. The exact tree dimensions to be measured will be specified by the information obtained in Step 2.

Step 2: Estimate the stem volume of trees based on available equations or yield tables (if locally derived equations or yield tables are not available use relevant regional, national or default data as appropriate).

It is possible to combine Steps 1 and 2 if volume tables allow for deriving average volume of trees, or field instruments (eg, a relascope) that measure the volume of each tree directly are applied.

Step 3: Choose BEF

Step 4: Convert the stem volume of trees into carbon stock in above-ground tree biomass via basic wood density, the BEF and the carbon fraction:

$$C_{AGB,I,j,i,sp,t} = V_{I,j,i,sp,t} \times D_j \times BEF_j \times CF_j$$

Where:

Parameter	Description	Unit
$C_{AGB,I,j,i,sp,t}$	Carbon stock in above-ground biomass of tree I of species j in plot sp in stratum i at year t	t C tree ⁻¹
$V_{I,j,i,sp,t}$	Stem volume of tree I of species j in plot sp in stratum i at year t	m ³ tree ⁻¹
D_j	Basic wood density of species j	t d.m. m ⁻³
BEF_j	Biomass expansion factor for conversion of stem biomass to above-ground tree biomass for species j	
CF_j	Carbon fraction ¹⁷ of biomass for tree species j	t C t d.m. ⁻¹
I	1, 2, 3 ... $N_{j,i,sp,t}$ individual trees of species j in sample plot sp in stratum i at year t	
i	1, 2, 3 ... M_{WPS} strata in the with-project scenario	

j	1, 2, 3 ... S_{WPS} tree species in the with-project scenario	
t	1, 2, 3 ... t^* years elapsed since the start of the project activity	

Step 5: Calculate carbon stock in above-ground biomass of all trees present in plot sp in stratum i at time t (ie, summation over all trees l by species j followed by summation over all species j present in plot sp).

$$C_{AGB,i,sp,t} = \sum_{j=1}^{S_{WPS}} \sum_{l=1}^{N_{j,i,sp,t}} C_{AGB,l,j,i,sp,t}$$

Where:

Parameter	Description	Unit
$C_{AGB,i,sp,t}$	Carbon stock in above-ground biomass of trees on plot sp of stratum i at time t	t C
$C_{AGB,l,j,i,sp,t}$	Carbon stock in above-ground biomass of tree l of species j in plot sp in stratum i at time t	t C tree ⁻¹
l	1, 2, 3 ... $N_{j,i,sp,t}$ individual trees of species j in sample plot sp in stratum i at year t	
i	1, 2, 3 ... M_{WPS} strata in the with-project scenario	
j	1, 2, 3 ... S_{WPS} tree species in the with-project scenario	
t	1, 2, 3 ... t^* years elapsed since the start of the project activity	

Step 6: Estimate the mean carbon stock in above-ground tree biomass for each stratum:

$$C_{AGB,i,t} = \frac{1}{A_{sp_i}} \sum_{sp=1}^{P_i} C_{AGB,i,sp,t}$$

Where:

Parameter	Description	Unit
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$C_{AGB,i,t}$	Above-ground carbon stock in trees in stratum i at year t	$t \text{ C ha}^{-1}$
$C_{AGB,i,sp,t}$	Above-ground carbon stock in trees on plot sp of stratum i at year t	$t \text{ C}$
$A_{sp,i}$	Total area in all sample plots in stratum i	ha
sp	1, 2, 3 ... P_i sample plots in stratum i in the with-project scenario	
i	1, 2, 3 ... M_{WPS} strata in the project scenario	
t	1, 2, 3 ... t^* years elapsed since the start of the project activity	

Allometric Equations Method

Step 1: Proceed as in Step 1 of the *BEF* Method. The exact tree dimensions to be measured will be specified by the equation selected in Step 2.

Step 2: Select or develop an appropriate allometric equation (if possible species-specific, or if not, from a similar species).

If default allometric equations are available for conditions that are similar to the project (same vegetation genus; same climate zone; similar forest type), then the equation may be used and considered conservative. Otherwise, it is necessary either to use conservatively assessed values, or to verify the applicability of the equation if mean predicted values are to be used.

When allometric equations developed from a biome-wide database, such as those in Annex 4A.2, Tables 4.A.1 and 4.A.2 of GPG LULUCF, or updated in IPCC 2006 Guidelines for AFOLU, are used, allometric equations can be verified by:

- Selecting at least 5 trees covering the range of DBH existing in the project area, and felling and weighing the above-ground tree biomass to determine the total (wet) weight of the stem and branch components.
- Determining the total dry weight of each tree from the wet weights and the averaged ratios of wet and dry weights of the stem and branch components.

If the biomass of the harvested trees is within about $\pm 10\%$ of the mean values predicted by the selected default allometric equation, and is not biased—or if biased is wrong on the conservative side (ie, use of the equation results in an under- rather than over-estimate of project net anthropogenic removals by sinks)—then mean values from the default equation may be used. (IPCC Good Practice Guidance for LULUCF, 2003, Section 4.3.3.5.1, under direct approach Step 3).

When allometric equations are used that are not developed from a biome-wide database as mentioned above, a one-sided t-test (with alpha = 0.05) should be applied to determine whether the biomass predicted by the allometric equation does not exceed the biomass from the harvested trees. To obtain biomass from the harvested trees, the same procedure as described above should be used.

Step 3: Estimate carbon stock in above-ground biomass for each individual tree l of species j in the sample plot located in stratum i using the selected or developed allometric equation applied to the tree dimensions determined in Step 1, and sum the carbon stocks in the sample plot:

$$C_{AGB,j,i,sp,t} = \sum_{l=1}^{N_{j,sp}} f_j(X, Y, \dots) \times CF_j$$

Where:

Parameter	Description	Unit
$C_{AGB,j,i,sp,t}$	Carbon stock in above-ground biomass of trees of species j on sample plot sp of stratum i at year t ;	t C
CF_j	Carbon fraction of dry matter for species or type j	t C t ⁻¹ d.m.
$f_j(X, Y, \dots)$	Allometric equation for species j linking measured tree dimension variables (eg, diameter at breast height (DBH) and possibly height (H)) to above-ground biomass of living trees	t d.m. tree ⁻¹
i	1, 2, 3 ... M_P strata in the with-project scenario	
j	1, 2, 3 ... S_{WPS} tree species in the with-project scenario	
l	1, 2, 3 ... $N_{j,i,sp,t}$ individual trees of species j in sample plot sp in stratum i at year t	
t	1, 2, 3 ... t^* years elapsed since the start of the project activity	

Step 4: Estimate the mean carbon stock in above-ground tree biomass for each stratum, as per the BEF method.

Estimation of $\Delta C_{BGB,i,t}$

The annual changes in below-ground tree biomass are estimated for each stratum on the basis of above-ground tree biomass. By using a root:shoot ratio, below-ground biomass is calculated from above-ground biomass, following Equation (40) below. Calculation of the

parameter $\Delta C_{AGB,i,t}$ is described in “Estimation of $\Delta C_{AGB,i,t}$ ”.

$$\Delta C_{BGB,i,t} = \Delta C_{AGB,i,t} \times R_j$$

Where:

Parameter	Description	Unit
$\Delta C_{BGB,i,t}$	Net carbon stock change in below-ground tree biomass in the with-project scenario in stratum i at year t	t CO ₂ yr ⁻¹
$\Delta C_{AGB,i,t}$	Net carbon stock change in above-ground tree biomass in the with-project scenario in stratum i at year t	t CO ₂ yr ⁻¹
R_j	Root:shoot ratio for tree species j	t root d.m. t ⁻¹ shoot d.m.
t	1, 2, 3 ... t^* years elapsed since the start of the project activity	
i	1, 2, 3 ... M_{WPS} strata in the with-project scenario	

Changes in carbon stocks in dead wood

Carbon stock changes in the project are monitored using the stock change method:

$$\Delta C_{DW,i,t} = (C_{DW,i,t} - C_{DW,i,t-T}) / T$$

Where:

Parameter	Description	Unit
$\Delta C_{DW,i,t}$	Annual net carbon stock change in dead wood for stratum i , at year t ;	t CO ₂ -e ha ⁻¹ yr ⁻¹
$C_{DW,i,t}$	Carbon stock in dead wood for stratum i , at year t ;	t CO ₂ -e ha ⁻¹
i	1, 2, 3 ... M_P strata in the with-project scenario	

t	1, 2, 3 ... t^* years elapsed since the start of the project activity	
T	Number of years between monitoring times t_m and t_{m-1}	

Changes in carbon stocks in wood products

Carbon stock changes in the project are monitored using the stock change method:

$$\Delta C_{WP,i,t} = (C_{WP,i,t} - C_{WP,i,t-T}) / T$$

Where:

Parameter	Description	Unit
$\Delta C_{WP,i,t}$	Annual net carbon stock change in wood products for stratum i at year t ;	t CO ₂ -e ha ⁻¹ yr ⁻¹
$C_{WP,i,t}$	Carbon stock in wood products for stratum i at year t ;	t CO ₂ -e ha ⁻¹
i	1, 2, 3 ... M_P strata in the with-project scenario	
t	1, 2, 3 ... t^* years elapsed since the start of the project activity	
T	Number of years between monitoring times t_m and t_{m-1}	

Emissions due to site preparation for project activities

If any site preparation occurs for liberation thinning and enrichment planting, then $E_{\text{biomassloss}}$ must be estimated when significant, using the most recent version of the CDM approved methodological tool “Estimation of emissions from clearing, burning and decay of existing vegetation due to implementation of an A/R CDM project activity”.

If however, the emissions due to changes in carbon stock in tree vegetation due to site preparation are insignificant they may be ignored. The removal of herbaceous vegetation (including climbers and vines) is deemed an insignificant emissions source and therefore is not accounted for in the with-project scenario.

GHG emissions as a result of the implementation of the project activity

There are various sources of emissions resulting from the general project implementation. These can include, but may not be limited to:

- Emissions due to administration, data-processing, and/or operating field station(s): grid or generator powered electricity;
- Emissions due to travel of project staff (ground transport, flights, etc.);
- Emissions due to travel and transport of external visitors (eg, auditing companies, consultants, etc.)

This will require information on kL fuel combusted, energy consumption or efficiency rates, km travelled, emission factors for various types of fuels, emissions associated with electricity generation, etc.

Approaches for estimating GHG_{WPS-E} are similar to those for GHG_{BSL-E} .

3.2.3 Leakage

VM0005 only provides for the determination of leakage due to market effects.

$$\Delta C_{LK} = \Delta C_{LK-ME}$$

This methodology applies to project activities, which reduce harvest levels in comparison with the baseline and possible reference areas. Therefore, the following leakage credit adjustment can be applied.

Project Action	Leakage Risk	Leakage credit adjustment (discount)
Substantially reduce harvest levels permanently (eg, RIL activity that reduces timber harvest by 25% or more across the project area; or, a forest protection/no logging project)	Moderate to High Depends on where timber harvest is likely to be shifted	Depends on where timber harvest is likely to be shifted to: • Similar carbon dense forests within the country: 40% • Less carbon dense forests within the country: 20% • More carbon dense forests within country: 70% • Out of country: 0% (according to stated VCS and CDM policy of not accounting for international leakage)

$$\Delta C_{LK-ME} = LF_{ME} \times \Delta C_{REL}$$

Where:

Parameter	Description	Unit
ΔC_{LK-ME}	Total GHG emissions due to market-effects leakage	t CO ₂ -e
LF_{ME}	Leakage factor for market-effects calculations	
ΔC_{REL}	Emissions from relogging displaced through implementation of the project activities across strata	t CO ₂ -e

LF_{ME} , the leakage factor, depends upon where in the country logging might be increased, as a result of a decrease in timber supply from the project area.

$LF_{ME} = 0$ if it can be demonstrated to the verifier that no market-effects leakage will occur within national boundaries, eg, if no new concessions are being assigned AND annual extracted volumes per hectare in existing concessions have not increased in comparison to previously documented and projected and authorised extraction levels within existing concessions in the host country.

$LF_{ME} = 0.4$ if $C_{BSLpre} = NCS$
(if $C_{BSLpre} \leq NCS \times 1.15$ and $\geq NCS \times 0.85$)

$LF_{ME} = 0.7$ if $C_{BSLpre} < NCS \times 0.85$

$LF_{ME} = 0.2$ if $C_{BSLpre} > NCS \times 1.15$

Where:

Parameter	Description	Unit
LF_{ME}	Leakage factor for market-effects calculations	
NCS	The mean national forest carbon stock	t C ha ⁻¹
C_{BSLpre}	Pre-relogging mean carbon stock in above-ground tree biomass across strata in the baseline scenario	t C ha ⁻¹

Estimating C_{BSLpre} involves area-weighting the stocks across the strata:

$$C_{BSLpre} = \frac{\sum_{i=1}^{M_{BSL}} (C_{BSLpre,i} \times A_{REL,i})}{\sum_{i=1}^{M_{BSL}} A_{REL,i}}$$

Where:

Parameter	Description	Unit
C_{BSLpre}	Mean carbon stock across strata in all pools selected in the baseline	t C ha ⁻¹
$C_{BSLpre,i}$	Carbon stock in all pools selected in the baseline in stratum i	t C ha ⁻¹
$A_{REL,i}$	Area relogged in baseline stratum i	ha
i	1, 2, 3 ... M_{BSL} strata in the baseline scenario	
M_{BSL}	The total number of strata in the baseline scenario	

ΔC_{REL} equals emissions from harvests displaced through implementation of the project activities as quantified in Sections 9.1.3 or 9.1.4 of the VM0005 summed across strata.

3.2.4 Net GHG Emission Reductions and Removals

The total net GHG benefits from the IFM project activity (ΔC_{IFM}) are calculated as the result of the total carbon loss in the baseline scenario (ΔC_{BSL}) and the net removals through the enhancement of forest growth due to liberation thinning and enrichment planting (ΔC_{WPS}), minus any potential leakage (ΔC_{LK}) that might occur.

$$\Delta C_{IFM} = \Delta C_{BSL} - \Delta C_{WPS} - \Delta C_{LK}$$

Where:

Parameter	Description	Unit
ΔC_{IFM}	Total net GHG emission reductions from the IFM project activity up to year t	t CO ₂ -e
ΔC_{BSL}	Sum of the carbon stock changes and greenhouse gas emissions under the baseline scenario up to year t	t CO ₂ -e

ΔC_{WPS}	Sum of the carbon stock changes and greenhouse gas emissions under the with-project scenario up to year t	t CO ₂ -e
ΔC_{LK}	Sum of the carbon stock changes and greenhouse gas emissions due to leakage up to year t	t CO ₂ -e

ΔC_{IFM} must be corrected for uncertainty, as follows:

$$C_{IFM_ERROR} = \sqrt{Uncertainty_{BSL}^2 + Uncertainty_{WPS}^2}$$

Where:

Parameter	Description	Unit
C_{IFM_ERROR}	Total uncertainty for IFM project activity	%
$Uncertainty_{BSL}$	Total uncertainty in baseline scenario	%
$Uncertainty_{WPS}$	Sum of the carbon stock changes and greenhouse gas emissions under the with-project scenario up to year t	%

The procedure for estimating C_{IFM_ERROR} must be in accordance with the most recent version of the *Tool for Estimating Uncertainty in IFM Project Activities*.

If $C_{IFM_ERROR} \leq 10\%$ of $\Delta C_{IFM, t}$ then no deduction must result for uncertainty.

If $C_{IFM_ERROR} > 10\%$ of $\Delta C_{IFM, t}$ then the modified value for $\Delta C_{IFM, t}$ to account for uncertainty must be:

$$= \frac{100 - C_{IFM_ERROR}}{100} \times C_{IFM, t}$$

Where:

Parameter	Description	Unit
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$\Delta C_{IFM,t}$	Total net GHG emission reductions from the IFM project activity up to year t	t CO ₂ -e
C_{IFM_ERROR}	Total uncertainty for IFM project activity	%

Calculation of Verified Carbon Units

The number of Verified Carbon Units is calculated as follows:

$$VCU_{t2} = (\Delta C_{IFM,t2} - \Delta C_{IFM,t1}) \times \left(\frac{100 - C_{IFM_ERROR}}{100} \right) - Bufferwithholding_{t2}$$

Where:

Parameter	Description	Unit
VCU_{t2}	Number of Verified Carbon Units at year $t2$	
$\Delta C_{IFM,t1}$	Total net GHG emission reductions from the IFM project activity up to year $t1$	t CO ₂ -e
$\Delta C_{IFM,t2}$	Total net GHG emission reductions from the IFM project activity up to year $t2$	t CO ₂ -e
C_{IFM_ERROR}	Total uncertainty for IFM project activity	%
$Bufferwithholding_{t2}$	The number of VCU's to be withheld in the VCS AFOLU Pooled Buffer Account at year $t2$	

The percentage to be withheld in the VCS AFOLU Pooled Buffer Account is to be determined using the VCS Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination. This percentage is to be multiplied with the carbon stock changes within the project boundary at year $t2$ in order to obtain the parameter $Bufferwithholding_{t2}$.

Year	Estimated baseline emissions or removals (tCO ₂ e)	Estimated project emissions or removals (tCO ₂ e)	Estimated leakage emissions (tCO ₂ e)	Estimated net GHG emission reductions or removals (tCO ₂ e)
Baseline	14.910.424 tn CO ₂ e			
Year 1	- 17.552	18.406	- 7.021	28.937

Year 2	-	18.429	38.196	- 7.372 49.254
Year 3	-	19.351	52.413	- 7.740 64.023
Year 4	-	20.318	64.161	- 8.127 76.352
Year 5	-	21.334	80.783	- 8.534 93.584
Year 6	-	13.278	82.903	- 5.311 90.870
Year 7	-	14.606	90.077	- 5.842 98.841
Year 8	-	16.066	96.036	- 6.426 105.676
Year 9	-	17.673	100.946	- 7.069 111.549
Year 10	-	19.440	121.599	- 7.776 133.263
Year 11	-		108.128	0 108.128
Year 12	-		110.607	0 110.607
Year 13	-		112.458	0 112.458
Year 14	-		113.753	0 113.753
Year 15	-		135.178	0 135.178
Year 16	-		114.925	0 114.925
Year 17	-		114.909	0 114.909
Year 18	-		114.554	0 114.554
Year 19	-		113.899	0 113.899
Year 20	-		134.464	0 134.464
Year 21	-		111.837	0 111.837
Year 22	-		110.492	0 110.492
Year 23	-		108.974	0 108.974
Year 24	-		107.308	0 107.308
Year 25	-		126.199	0 126.199
Year 26	-		103.614	0 103.614
Year 27	-		101.624	0 101.624
Year 28	-		99.561	0 99.561
Year 29	-		97.438	0 97.438
Year 30	-		114.310	0 114.310
Total	-		2.999.753	0 3.106.582

3.3 Monitoring

3.3.1 Data and Parameters Available at Validation

Data unit	ha
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Description	Project Area
Source of data	Monitoring of strata and stand boundaries, using Geographical Information Systems (GIS).
Value applied	22,879 ha
Justification of choice of data or description of measurement methods and procedures applied	
Purpose of data	• <i>Determination of baseline scenario</i> • <i>Calculation of baseline emissions</i> • <i>Calculation of project emissions</i>
Comments	

Data / Parameter	A _i													
Data unit	ha													
Description	Area of stratum i (projected planting areas)													
Source of data	GIS analyses and restoration plan													
Value applied	<table><tr><td>Stratum</td><td>Area (ha)</td></tr><tr><td>Natural forest with open/scattered canopy</td><td>500</td></tr><tr><td>Bambúceas in scattered canopy</td><td>200</td></tr><tr><td>Clear-cut</td><td>554</td></tr><tr><td>Scrubland</td><td>250</td></tr><tr><td>Total</td><td>1.504</td></tr></table>		Stratum	Area (ha)	Natural forest with open/scattered canopy	500	Bambúceas in scattered canopy	200	Clear-cut	554	Scrubland	250	Total	1.504
Stratum	Area (ha)													
Natural forest with open/scattered canopy	500													
Bambúceas in scattered canopy	200													
Clear-cut	554													
Scrubland	250													
Total	1.504													
Justification of choice of data or description of measurement methods and procedures applied	The stratification for <i>ex post</i> estimations is based on the actual implementation of the project planting/management plan. It may even be necessary to evaluate the possibility of re-stratifying the project boundary, according to the development of the stand models. It would enable the merging of several strata in order to optimize the costs and improving the outcomes in forest inventories. New strata could be defined too.													
Purpose of data	• <i>Calculation of project emissions</i>													
Comments														

Data / Parameter	R
Data unit	t root d.m. t ⁻¹ shoot d.m.
Description	Root:shoot ratio appropriate to species or forest type / biome
Source of data	The source of data must be chosen with priority from higher to lower preference as follows: a. Existing local and species-specific or group of species-specific; b. National and species-specific or group of species-specific (eg from national GHG inventory) c. Species-specific or group of species-specific from neighbouring countries with similar conditions (might be preferable to b under certain conditions) Climatic zone and forest type (eg IPCC literature: Table 3A.1.8 of the <i>GPG-LULUCF</i> (IPCC 2003) and Table 4.4 of the <i>AFOLU Guidelines</i> (IPCC 2006))
Value applied	Species-specific.
Justification of choice of data or description of measurement methods and procedures applied	
Purpose of data	• <i>Determination of baseline scenario</i> • <i>Calculation of project emissions</i>
Comments	Guideline for conservative choice of default values: • If in the sources of data mentioned above, default data are available for conditions that are similar to the project (same vegetation genus; same climate zone; similar forest type), then mean values of default data may be used and considered conservative. • A root:shoot ratio for mature forest must be selected. Usually the root:shoot ratio for young trees is greater than for old trees. Applying a root:shoot ratio for mature forest is conservative, because it underestimates carbon in

	young trees in the project scenario (which are more abundant as a result of enrichment planting).
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Data / Parameter	CF
Data unit	t d.m. ⁻¹
Description	Carbon fraction of dry matter
Source of data	IPCC default value 0.5.
Value applied	NA
Justification of choice of data or description of measurement methods and procedures applied	
Purpose of data	• <i>Determination of baseline scenario</i> • <i>Calculation of project emissions</i>
Comments	

Data / Parameter	D _j
Data unit	t d.m. m ⁻³
Description	Basic wood density for species <i>j</i>
Source of data	Forest Inventory and literature data
Value applied	See Forest Inventory in the Appendix
Justification of choice of data or description of measurement methods and procedures applied	
Purpose of data	• <i>Determination of baseline scenario</i> • <i>Calculation of project emissions</i>
Comments	

Data / Parameter	f _i (X, Y ...)
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Data unit	t d.m. tree ⁻¹
Description	Allometric equation for species <i>j</i> linking, for example, diameter at breast height (<i>DBH</i>) and tree height (<i>H</i>) to above-ground biomass of living trees
Source of data	See Forest Inventory in the Appendix
Value applied	NA
Justification of choice of data or description of measurement methods and procedures applied	
Purpose of data	• <i>Determination of baseline scenario</i> • <i>Calculation of project emissions</i>
Comments	

3.3.2 Data and Parameters Monitored

Data / parameter:	$A_{i,t}$
Data unit:	Ha
Description:	Area of stratum <i>i</i> at year <i>t</i>
Source of data:	Monitoring of strata and stand boundaries must be done preferably using a Geographical Information System (GIS), which allows for integrating data from different sources (including GPS coordinates and Remote Sensing data). Used in Equation (35) of VM0005
Measurement procedures (if any):	
Any comment:	

Data / parameter:	$A_{sp,i}$
Data unit:	Ha
Description:	Total area of all sample plots in stratum <i>i</i>

Source of data:	Field measurements. Used in Equation (38) of VM0005
Measurement procedures (if any):	
Any comment:	

Data / parameter:	DBH
Data unit:	cm
Used in equations:	
Description:	Diameter at breast height of tree
Source of data:	Field measurement in sample plots
Measurement procedures (if any):	Typically measured 1.3 m above ground. Measure all the trees above 5 cm <i>DBH</i> in the permanent sample plots.
Any comment:	For <i>ex-ante</i> estimations, tree dimension variables (eg, diameter at breast height (<i>DBH</i>) and possibly height (<i>H</i>)) should be estimated for tree species <i>j</i> in stratum <i>i</i> , at year <i>t</i> using a growth model based on these tree dimensions.

Data / parameter:	H
Data unit:	m
Description:	Height of tree
Source of data:	Field measurement in sample plots
Measurement procedures (if any):	
Any comment:	For <i>ex-ante</i> estimations, tree dimension variables (eg, diameter at breast height (<i>DBH</i>) and possibly height (<i>H</i>)) should be estimated for tree species <i>j</i> in stratum <i>i</i> , at year <i>t</i> using a growth model based on these tree dimensions.

Data / parameter:	$Dia_{n,i,t}$
Data unit:	cm
Description:	Diameter of piece n of dead wood along the transect in stratum i , at year t
Source of data:	Field measurements in sample plots
Measurement procedures (if any):	Lying dead wood can be sampled using the line intersect method (Harmon and Sexton 1996 ²⁷). Two 50-meter lines are established bisecting each sample plot and the diameters of the lying dead wood (≥ 10 cm diameter) intersecting the lines are measured.
Any comment:	

Data / parameter:	BDia
Data unit:	cm
Description:	Basal diameter of standing dead tree
Source of data:	Field measurements in sample plots
Measurement procedures (if any):	Measured at ground level. Measure all trees above some minimum $BDia$ in the sample plots, typically ≥ 10 cm.
Any comment:	

Data / parameter:	H_{SDW}
Data unit:	cm
Description:	Height of standing dead tree
Source of data:	Field measurements in sample plots
Measurement procedures (if any):	Height measured from ground level to either the top of a standing bole or to the base of crown if crown is persistent. Height is measured either directly or by using an instrument such as a clinometers, relascope or laser inventory instrument.
Any comment:	

Data / parameter:	N
Data unit:	dimensionless
Description:	Total number of wood pieces intersecting the transect
Source of data:	Field measurements
Measurement procedures (if any):	
Any comment:	

Data / parameter:	V_{extr}
Data unit:	m^3
Description:	The volume of timber extracted from within the project boundary (does not include slash left onsite), preferably reported by species and wood product class. Where no direct information on volume by wood product class is available (eg, illegal logging) it is acceptable practice to assign gross percentages of volume extracted to wood product classes on the basis of local expert knowledge of harvest activities and markets.
Source of data:	Timber harvest records and/or estimates derived from field measurements or remote assessments with aerial photography or satellite imagery.
Measurement procedures (if any):	
Any comment:	Note that this volume does not include logging slash left onsite (tracked as part of the dead wood pool). Data compilers should also make sure that extracted volumes reported are gross volumes removed (ie, reported volume does not already discount for estimated wood waste, as is often the practice in harvest records)

Data / parameter:	t_2 and t_1
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Data unit:	yr
Description:	Years of the monitoring activity
Source of data:	Field measurement in sample plots
Measurement procedures (if any):	
Any comment:	$T = t_2 - t_1$

Data / parameter:	$\Delta C_{P,i,t}$
Data unit:	t CO ₂ -e yr ⁻¹
Description:	Net carbon stock change due to forest regrowth and silvicultural interventions in the with-project scenario in stratum <i>i</i> at year <i>t</i>
Source of data:	Used in Equation (34).
Measurement procedures (if any):	
Any comment:	

Data / parameter:	$\Delta C_{AGB,i,t}$
Data unit:	t CO ₂ -e yr ⁻¹
Description:	Net carbon stock change in above-ground tree biomass ²⁸ in the with-project scenario in stratum <i>i</i>
Source of data:	Used in Equation (34) and (35).
Measurement procedures (if any):	
Any comment:	

Data / parameter:	$\Delta C_{BGB,i,t}$
Data unit:	t CO ₂ -e yr ⁻¹

Description:	Net carbon stock change in below-ground tree biomass in the with-project scenario in stratum <i>i</i>
Source of data:	Used in Equation (34) and (40).
Measurement procedures (if any):	
Any comment:	

Data / parameter:	$\Delta C_{DW,i,t}$
Data unit:	t CO ₂ -e yr ⁻¹
Description:	Net carbon stock change in dead wood in the with-project scenario in stratum <i>i</i> at year <i>t</i>
Source of data:	Used in Equation (34) and (41).
Measurement procedures (if any):	
Any comment:	

Data / parameter:	$\Delta C_{WP,i,t}$
Data unit:	t CO ₂ -e yr ⁻¹
Description:	Net carbon stock change in wood products in the with-project scenario in stratum <i>i</i> at year <i>t</i>
Source of data:	Used in Equation (34) and (42).
Measurement procedures (if any):	
Any comment:	

Data / parameter:	$E_{\text{biomassloss},i,t}$
Data unit:	t CO ₂ -e yr ⁻¹

Description:	Emissions due to site preparation for project activities in stratum <i>i</i> at year <i>t</i>
Source of data:	Used in Equation (34).
Measurement procedures (if any):	
Any comment:	

Data / parameter:	$C_{AGB,l,j,sp,i,t}$
Data unit:	t C tree ⁻¹
Description:	Carbon stock in above-ground biomass of tree <i>l</i> of species <i>j</i> in plot <i>sp</i> in stratum <i>i</i> at year <i>t</i>
Source of data:	Used in Equation (36), (37) and (39).
Measurement procedures (if any):	
Any comment:	

Data / parameter:	$V_{l,j,sp,i}$
Data unit:	m ³ tree ⁻¹
Description:	Stem volume of tree <i>l</i> of species <i>j</i> in plot <i>sp</i> in stratum <i>i</i>
Source of data:	Used in Equation (36).
Measurement procedures (if any):	
Any comment:	

Data / parameter:	$C_{AGB,,sp,i,t}$
Data unit:	t C
Description:	Carbon stock in trees in plot <i>sp</i> in stratum <i>i</i> at year <i>t</i>

Source of data:	Used in Equation (37) and (38).
Measurement procedures (if any):	
Any comment:	

3.3.3 Monitoring Plan under development

To be developed in future PD version.

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

Free and informed prior consultation with social impact assessment is a fundamental axis of the project. During this instance, surrounding communities were invited to the introduction of the project's main objectives, risks and benefits, with open instances to comment on it.

During the monitoring process, basic documents will be made, reporting results in a simple and inclusive language and with measures of evaluation of processes and results, they will be available on the website, social networks, publications in local newspapers, information meetings with stakeholders during monitoring instances. Moreover, the project's documentation (as well as local language summary) will be available on VCS and CCB webpage, and a public consultation period will take place for stakeholders to comment on each project's design

3.4 Optional Criterion: Climate Change Adaptation Benefits

3.4.1 Regional Climate Change Scenarios (GL1.1)

The national and sub-national governments have identified climate change scenarios at a subnational and regional level. For the case of Misiones, the expected impacts are^{34,35}:

³⁴ <https://cambioclimatico.misiones.gob.ar/plan-de-respuesta-misiones/>

³⁵ Source: Climate Change Ministry for Misiones: presentation on Climate Change Adaptation Plan based on "Cambio Climático en Argentina; Tendencias y Proyecciones" (Secretaría de Ambiente y Desarrollo Sustentable de la Nación, 2014), Plan Nacional de Adaptación y Mitigación al Cambio Climático

- Increase annual media temperature
- Increase of heat waves and tropical nights
- Increase of days with intense precipitation
- Increase in dry days
- Increase in wind storms intensity
- Increase in hail events

Although there are projects at a sub-national level to protect communities from drought and floods through headwater management and forest sustainable management of forest to assure food security, based on current land use maps the project area would have suffered degradation and deforestation, further increasing the risks and impacts of the changes observed and projected due to climate change.

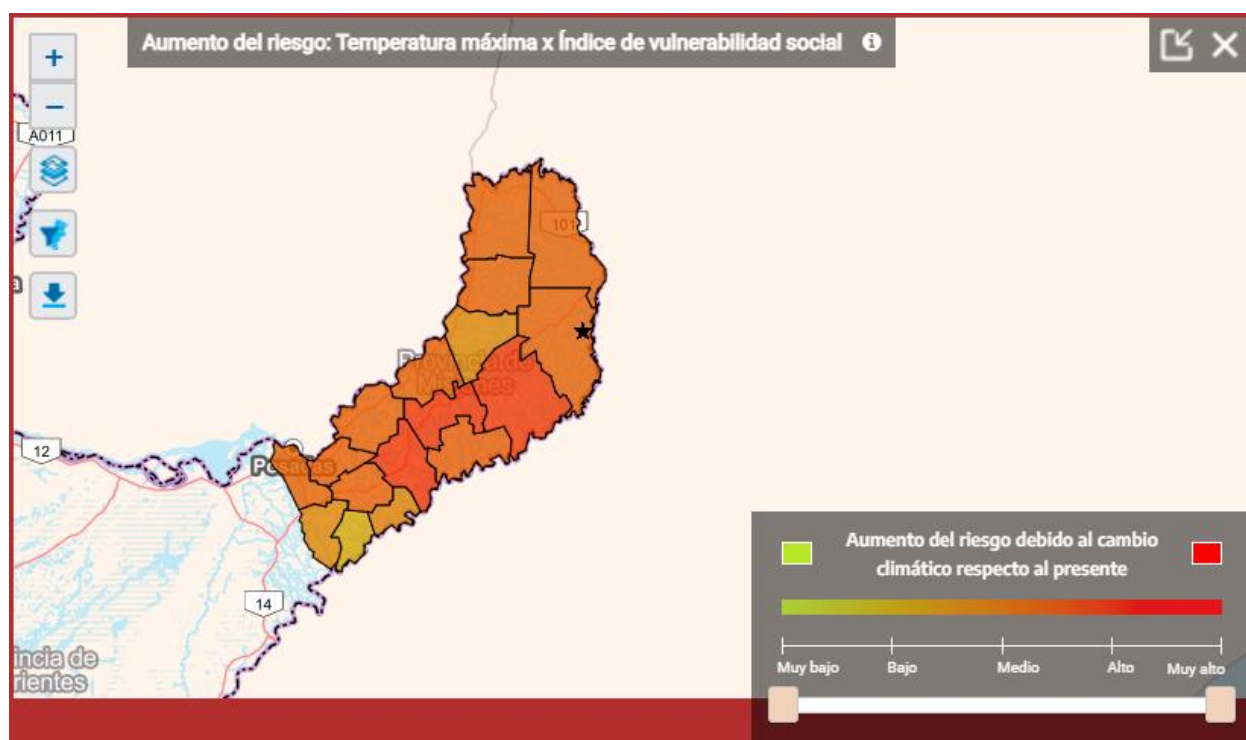


Figure 15: Climate change map risk for max temperature and social vulnerability index. Threat: Medium emission scenario (RCP 4.5) | Projection 2050-2100. Other threats and variables available at SIMARCC platform.

3.4.2 Climate Change Impacts (GL1.2)

In terms of community well-being and biodiversity, the provincial government has anticipated the following impacts due to climate change in the region, evaluated based on national climate change impact analysis³⁶
³⁷:

- Community well-being.
- ✓ Decreased access to drinking water and irrigation due to prolonged droughts.
- ✓ Decrease in comfort due to high temperatures with increasing need for cooling systems and water demand.
- ✓ Impacts over the food production system and the associated production chain due to prolonged dry days and/or hail leading to an increase in prices.
- ✓ Impact on public and private infrastructure due to an increase in extreme events: rural roads, bridges, drains, dams, electricity transmission and distribution networks, and other infrastructure.
- ✓ Increased sediment entrainment and obstruction of drainage routes, increased risk of flooding and waterlogging of soils, and soil erosion (changes in physical composition and potential loss of soil fertility).
- ✓ Increased impact on indigenous communities due to their close relationship with nature and natural resources.
- ✓ Increased heat-related illnesses, water supply, and deficiencies in electricity supply due to high demand; with reduced working days.
- ✓ Increased internal migration in search of better economic livelihood conditions, with increased momentum in rural-urban migration flows;
- ✓ Increase in vector-borne diseases (dengue fever, etc.) and water pollution;
- ✓ Increased risk of health problems, cardiovascular diseases (due to heat waves) and respiratory diseases (due to pollution).
- ✓ Increased risk of health problems, cardiovascular diseases (due to heat waves) and respiratory diseases (due to air pollution caused by an increase in the frequency of fires), mainly in the most socially vulnerable groups;

³⁶ National analysis available at: <https://simarcc.ambiente.gob.ar/cambio-climatico>

³⁷ Regional analysis available at: <https://cambioclimatico.misiones.gob.ar/wp-content/uploads/2022/04/Presentacion-Plan-de-Respuesta.pdf>

The level of risk of the population is an indicator resulting from the interaction between climate variables and the vulnerability index of the population. In the case of the rural area in the project zone has a value of 4 out of 5. Specifically, the risks are a consequence of changes in maximum temperature (°C), which by 2030 is expected to increase by 1.17°; annual precipitations and tropical nights increase.

- Biodiversity conservation status.
- ✓ Impacts on natural ecosystems due to changes in climate.
- ✓ Favorable conditions for the development of fires and damage to native forest, biodiversity, primary production and associated industries.
- ✓ Increased sediment entrainment and obstruction of drainage routes, increased risk of flooding and waterlogging of soils, and soil erosion (changes in physical composition and potential loss of soil fertility).
- ✓ Increased pressure on natural resources due to lack of productivity, price increases, extreme events, job losses, among others.
- ✓ Limitation to ecosystem services due to slow adaptation.

3.4.3 Measures Needed and Designed for Adaptation (GL1.3)

Based on the summary guideline from IPCC AR5: Climate change, adaptation and vulnerability³⁸, and the main risks identified by the communities during consultation, the project proponent has worked on a list of potential adaptation measures based on level of risk in the project zone. The actions needed to reduce the projected risks of climate change and that will be part of the project's programs include adaptation based on ecosystems and communities. Some of the measures include the need for the management and conservation of basin headers against drought and floods; the restoration of native forests; housing improvement; and securing food access as well as participating the community in the identification and implementation of adaptation measures. In this line, different programs are being or will be designed with the communities to be implemented in line with needs identified in public participation instances.

Risk	Potential adaptation measures	Climatic factor	Temporal term	Level of risk	Adaptation potential	Adaptation related program
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³⁸ Available at: <https://fundacion-biodiversidad.es/sites/default/files/informacion-institucional/guia-gt2ar5-final.pdf>

Low water availability	Water reservoirs construction; innovation on water recollection techniques; water use efficiency; rain water recovery and use	Drought	Short term	High	Medium	Ra yi; payment for ecosystem services; Forest security net;
Low crop yields. Loss of family income	Training on crop cultivation in climate change context; incentives for efficiency in water use for crops; innovation on water recollection techniques; water use efficiency	Drought	Short term	High	Medium	Ra yi; payment for ecosystem services; Forest security net;
Loss of natural resources' quality	Native forest recovery; native forest conservation; water reservoir construction	Drought	Short term	Medium	High	Forest security net
Impact on population's health	Actions to be coordinated together with communities	Drought	Short term	Low	Medium	Carbon participation

4 COMMUNITY

4.1 Without-Project Community Scenario

4.1.1 Descriptions of Communities at Project Start (CM1.1)

There are no community settlements within the project area. The "GS1" is located on a land of 25,000 hectares belonging to Forestal Belga S.A, located in the department of San Pedro. Outside the limits of GS1 there are rural agglomerates: Cruce Caballero, Tobuna, Colonia Alegría, Paraje Piñeiro, Picada San Miguel, and with greater distance Paraje Gentil and Tekoa Alecrín. The estimated total population in the project area is 1500 (more information in section 2.1.6).

It is of importance to mention that due to limited information on the communities in the project zone, the project included a census program, aiming to generate useful primary data. The methodology consisted of

research with a mixed - or triangulated - multistage design. With interviews of maximum variation; under the logics of "key actor", "snowball" and "Focus Group" logics. And with censuses in sites, villages and indigenous communities located in the project's area of influence; with a random sample selection by clusters for villages, and with a targeted and cluster sampling selection for the indigenous community. All information available for VVB during validation³⁹.

Settlements history and significant changes in the past

Cruce Caballero is a place administratively dependent on the department of San Pedro, whose urban center is 25 km away. It has its development center at the crossing between National Route 14 and provincial route 22, being the last locality before the Comandante Rosales International Bridge, which links it to the Brazilian town of Paraíso. Its main access route, Route 14, links it to Tobuna, the second most important site in the project area.

This site arises from the former Paraje las Ratas or Paduan, which was located since the late 1950s on the current site of the GS1 and whose establishment was due to the growth and consolidation of logging through different companies, including Argentine cellulose. Towards the end of the 60s and early 70s it already had an educational establishment of primary level, which had the support of the inhabitants and the patronage of the Catholic Church.

Towards the end of the 1970s, more precisely in 1978 there was a replacement of the site at the border, motivated by the installation of a store of general branches by a merchant named Caballero. The great traffic and movement between the routes opened new markets in the area and, according to the testimonies of the neighbors, that identification between the warehouse and the place was so strong that it was renamed as Cruce Caballero. The logging activity and sawmill remained as symbols of work and belonging after the disappearance of the warehouse.

The sawmill Cruz Seca, belonging to Forestal Belga S.A. and located at the access to Cruce Caballero, employed about 30 workers, being the main source of employment during the 1980s, 1990s and 2000s. During the period 2018-2019, the operations of the sawmill came to an end, being dismissed and compensated the 30 workers who were employed in the same and generating a process of growing unemployment and concern in the community about the sources of economic income. Many of them returned to the chacra and "rummaging" through "changas" or other temporary work both inside and outside the project area.

The town of Tobuna dates from around 1924 when a group of immigrants arrived from Brazil and settled in the area founding this town. According to the first data established by the descendants, the first families that arrived at the place were: Maidana, Ferreira, Pedrozo and Bandera, those that gave rise to the name of Tobuna. This name is of Guaraní origin and refers to a small bee class without a stinger that was

³⁹ Paula Matheu (2021) MAP soluciones público-privadas. Informe de resultados del censo realizado

frequently found in the area. Years later other families came to the site in search of new fertile lands for cultivation which attracted a hundred Brazilians residents of the rural border areas. In 1935 the first teacher arrived in the area, José Martín, who that same year would inaugurate the National School N°211 with the help of neighbors, which had a total of 15 students. Thus, the population increased due to constant immigration, which brought to the town the birth of industries such as a rolling mill located in the area of Puente Alto, which provided a source of work for the inhabitants; and a brick factory in the area of Santa Rosa a few kilometers from the urban area of the town. This new productive phenomenon resulted in the gradual growth of the school population, so that in 1969 and by Law N° 17.591 the National School N°211 changed its modality to Border School Full Day N°13. Years later he would be assigned the name Sgt. Eduardo Ramírez (El Chaque Che) in homage to a local policeman recognized as a hero for his acts of reaffirmation of our border. After this boom in the economy of the area, businesses would break up, producing a strong need for migration because of unemployment. Thus, both in this town and in the surrounding areas would remain the population whose economy depended on agriculture and livestock, being so until today.

It is also important to mention that in its prosperous years Tobuna had several services for the community that have now ended, like the Argentine Post Office, which was not only used with the postal service, but also involved the payment of other services such as electricity bills. Another significant State benefit for the area has been, and continues to be, a delegation from the National Register of Persons, which was discontinued for a few years until an office in the area was restored.

Since its inception the town has had a police delegation. Another aspect to highlight is the presence of a delegation of Vincentian Sisters of Charity, who worked to promote education and evangelization in the area, since the 1960s they received girls, pupils, who were educated in crafts and female professions. Years later, primary education for adults and open secondary education increased. Tobuna currently has 3 educational institutions, which are: A Border Primary School, a Primary School for Adults and a Polymodal Educational Center (which operates since 2006).

Housing and public services:

Cruce Caballero, Tobuna, Paraje Alegría and Paraje Piñeiro:

- 49.64% of households own land declared as their own, with precarious tenure with legal title pending, there being no conflict or demands for access to land.
- In most homes sleep 3 people per room, with three-thirds of households having 2, or 3, or 4 rooms.
- The predominant material of the floors of homes is cement, while the predominant material of the walls is wood and of the roofs, zinc.
- Most stoves run on wood, and most homes are heated by burning wood/charcoal.
- Almost all homes have electricity with 58% of households with internet access.

- Households obtain water through a public network, through water wells with a pump and through a pump at the nearest natural water source.

Tekoa Alecrín:

- Land tenure situation: current and public ancestral right, with de facto recognition by the State, in conflict with company Harriet SA.
- Most households are composed of 4-5 members or 8 members.
- Almost all households have one (1) room.
- Almost all households have between 1 and 3 beds (beds) for sleeping.
- The predominant material in the floors of households is soil, the walls are made of wood, and roofs predominantly of zinc.
- Homes do not have bathrooms.
- Stoves run on firewood and homes are heated by burning firewood.
- Almost all homes have electricity, but most don't have internet connection.
- Households obtain water through water wells with a pump and by collecting water with buckets from the nearest natural source.

Governance and social capital:

There are public, private and third sector institutions that address environmental problems, but they work in an isolated, uncoordinated manner, with a high level of institutional fragmentation, which shows that there is no governance scheme. These institutions are: USUBI Project of the Ministry of Environment and Sustainable Development, National Institute of Agricultural Technology (INTA), Wildlife Foundation, Ministry of Ecology of the province of Misiones, Ministry of Environment of the Province of Misiones, Aves Argentinas, Biosfera Yaboti, Asociación Civil de foresto ganaderos, Cooperativa La Nueva Esperanza, Unión vecinal de Cruce Caballero, among others.

Also, community organizations such as churches, neighborhood unions, cooperatives, and picnic areas do not have high participation except in specific problems on certain occasions. The neighborhood relationship is close; however, social cohesion is lacking for the management of community projects, having a medium-low level of trust in actors external to the local population. In this line, although the community tries to promote projects, they perceive themselves as lacking capacities or poorly trained for implementation, which they understand as a weakness they have themselves.

Community integration is therefore of low intensity. Although it is a community that is perceived to be predominantly secure, there are new realities of consumption and migration that make this security questionable in the medium and long term.

Situation of women and gender approach:

Historical trend has reinforced the differentiated allocation of productive and reproductive work, and within the project zone a marked division of labor according to gender can be found. In general, the tasks of production and provision are associated with the figure of the man, while the tasks of care and maintenance of domestic life are associated with the figure of the woman (confirmed through different methodological tools) and strongly influenced by the evangelical religion in the area. This translates into a scenario in which men tend to have salaried jobs mostly linked to forestry (extraction and processing of wood), production based on perennial crops (such as yerba mate, tea, etc.) while women tend to engage in unpaid domestic work ranging from sowing and harvesting food for both household consumption and sale, to preparing daily food, cleaning and tidying up the home, to the care of children/children, the elderly/children and persons with disabilities.

In turn, most women also perform productive work both inside and outside the home for which they receive considerably low pay. An example of this is the artisanal processing of processed food for sale whose monetary contribution, in general, does not exceed \$50 USD per month.

Another aspect that deserves to be mentioned is the scarcity and informality of waged labor. Although in rural areas this extends to men and women, it is men who have the most job opportunities, and who have the greatest possibilities to achieve better conditions of recruitment and/or formality. In this regard, during field visits, "there is no work for women" was heard that the situation is not due to educational level achieved, but a lack of job opportunities for women and a lack of institutions or training spaces.

The same is true of access to public government offices, since there is a large majority of men in the public sector such as the municipality, mainly in the most senior positions, which is an indicator of gender inequality in access to and control of public resources.

About access to education, similar access in the community in both genders is identified. According to the survey's results, almost the same number of women and men are literate, mainly interrupting studies during secondary level. One of the reasons may be teenage pregnancy, considering that most of the women surveyed have indicated having had their first pregnancy between the ages of 15 and 20.

On the other hand, we have the case of Alecrín. As found in the thematic literature, the symbolic geography of the Mbya Guarani has a strong role in their socialization and in the sexual division of labor. While the Tekoa is considered a feminine space par excellence, destined to the rearing of the youngest children and the domestic activities, the mountain and the white world are external areas with which only men deal, when they leave the Tekoa Alecrin boundaries. This aspect that characterizes the Mbya largely explains why most women do not speak Spanish and avoid contact with entities outside their community. It could be said, then, that this cultural trait somehow limits them to the tasks of the domestic sphere and, in turn, restricts their connection with the "white world" outside. In this regard we have found that it is only women who are engaged in certain domestic activities such as cleaning, washing clothes and cooking food; and in turn,

young men are the only ones who do salaried work outside the community, such as informal work on yerba mate crops.

Regarding access to education and the Spanish language, although there appears to be a cultural impediment for women in Tekoa Alecrin, the formal establishment of the "Vera Poty" school together with the bilingual intercultural education program, since 2008, it has led to greater schooling for young women and girls, and thus to greater knowledge of Spanish in recent years

4.1.2 Interactions between Communities and Community Groups (CM1.1)

Given the predominance of informal job conditions there are no groups formed around these activities. A special case is identified in terms of women interactions around the forestry sector and is the one for Nueva Esperanza Cooperative. It is an all women project born in 2006 and promoted by a group of 12 women between 30 and 50 years of Paraje Gentil, for the agroecological and sustainable production of preserves based on native wild fruits. The weekly work of these entrepreneurs consists in the gathering of fruits from the forest, for the subsequent elaboration and commercialization of vinegars, liqueurs and condiments.

Regarding participation, community organizations such as churches, neighborhood unions, cooperatives, and picnic areas do not have high participation except in specific problems on certain occasions. The neighborhood relationship is close; however, social cohesion is lacking for the management of community projects, having a medium-low level of trust in actors external to the local population. In this line, although the community tries to promote projects, they perceive themselves as lacking capacities or poorly trained for implementation, which they understand as a weakness they have themselves.

For the case of the Alecrín community, as previously mentioned, they used to be characterized for having developed a way of life linked to the forest, both in material, social and cosmological terms. Today, their traditional living conditions have been highly modified due to colonial and private encroachment on their ancestral territories, which has generated not only a series of impediments for the development of their traditional way of life, but also an increase in inter-ethnic contact with the dominant society due to unsatisfied basic needs, forcing the communities to change their patterns of political organization and intermediation with external agents. In any case, interaction with the other localities in the project area is rather limited and confined to state and private indigenous agencies, public services and commercial centers.

Due to the conditions of isolation typical of rural social life, the predominance of productive family units and the lack of resources for the development of shared activities and leisure time, in addition to the endo-group characteristics of the Mbya way of life, we conclude that social interactions between community groups and the wider community to which they belong are of low intensity.

4.1.3 High Conservation Values (CM1.2)

Due to the perceived impacts of climate change by the community, there is a vision of an immediate future in which, first, water sources will be reduced and, second, low land productivity and damage to crops will be deepened, which will significantly worsen the economic situation of small agricultural producers and the family economy. The lower the household monetary income, the greater the use of natural resources in the surrounding area (medicinal plants, firewood, etc.), thus leading to more dependence on native forests for the provision of these inputs and its ecosystem services.

Based on this, the identified HCV for the community during the public consultation and further specific HCV workshops in Alecrín village are:

High Conservation Value	Native forest woods
Qualifying Attribute	Firewood collection areas were identified by communities as HCV during surveys, interviews, and the participatory workshops carried out. Communities surrounding the project site have a high dependence on firewood for heating and cooking, being the forest the main source of this product. According to the census carried out in the communities of the project area, 74% of the households surveyed use firewood as fuel for cooking and heating their homes. This is what the HCV Resource Network's Generic Guide to Detecting High Conservation Values indicates as an "area that is critical to communities' livelihoods".
Focal Area	Through this project that promotes the protection of native forest on the project site, it is expected that this high conservation value will remain stable and develop, at least, on the project site, impacting directly on the surrounding communities. Efforts will be made to generate incentives and initiatives to promote native forest conservation in the project's area of influence.

High Conservation Value	Native forests for its ecosystem services
Qualifying Attribute	Through participatory HCV areas identification workshops conducted with the community, it was identified that the native forest ("mountain") is key to produce oxygen in general and for the mitigation of high temperatures derived from Climate Change in particular. Following the Generic Guide for the Detection of HCV Resource Network we can indicate the native forest areas of the project area as a critical ecosystem service for the community and humanity in general.
Focal Area	The participatory workshops of AVC also demonstrated the concern of communities about the threat of deforestation of native forest for productive purposes.

High Conservation Value	Laguna Encantada (Enchanted lagoon)
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Qualifying Attribute	From informal interviews with residents, it was found that the Laguna Encantada (located within the project site) is considered a place of landscape relevance (associative cultural landscape) and psychophysical well-being. In addition, the Laguna Encantada is present in some stories of folklore in the area. In this sense, following the Generic Guide this site can be categorized as "Sites, resources, habitats and landscapes significant on a global or national scale for cultural, archaeological or historical reasons, or of cultural, ecological, economic, religious or sacred importance critical to the traditional culture of local communities or people's indigenous people".
Focal Area	Located within the project area.

High Conservation Value	Arroyo Yabotí miní; Arroyo Invernada; Arroyo Toro; Acuífero Guaraní Streams without nomenclature; Numerous springs and water sinks
Qualifying Attribute	86% of the households surveyed believe that there are environmental problems in the area, being drought and water scarcity the main ones. Only 30% of households surveyed reported having access to water through public water networks. Most local people get their water from drilling or some other natural sources. Within the project area there are different sources and streams that act as an essential water service and a source of water consumed by households or used for the irrigation of their crops: slopes, streams, nappies. In addition to this, the waterways of the area function as sites where members of the community satisfy leisure time and aesthetic-landscape enjoyment. From very small-scale fishing to swimming in basin pots. In this sense, following the Generic Guide for the Detection of High Conservation Values of the HCV Resource Network we can indicate all these water courses and sources and their environment as an AVC as a critical ecosystem service for the community.
Focal Area	Contamination of water streams by companies using agrochemicals, deforestation of areas where water courses are located and no regulation of drilling for water were identified as potential threats.

High Conservation Value	Cultural or Community Values Sites: Churches, Soccer Fields, Community Hall, CAPS, Schools
Qualifying Attribute	From the participatory workshops, it was possible to identify those sites that the community identifies as culturally and communally valuable. The numerous churches, besides functioning as spaces of social gathering, are places where people practice and carry out their religious worship. The football fields are important because the community meets and plays sports of different kinds. The Cruce Caballero Community Hall is very important as it is a meeting point for the community. There are popular parties, meetings, and public consultations. CAPS are key to care for community health problems. The different schools: Key places for the education of the community in general.

	In this sense, following the Generic Guide these sites can be categorized as HCVs, as "Sites, resources, habitats and landscapes significant on a global or national scale for cultural, archaeological or historical reasons, or of cultural, ecological, economic, religious or sacred importance critical to the traditional culture of local communities or indigenous people".
Focal Area	Different buildings and infrastructure in the project zone. Through the NIDEPOR-projectGS1 that promotes the protection of the native forest on the project site along with initiatives of community inclusion it is expected that these high conservation values remain present and even acquire some revaluation from initiatives proposed by the community.

High Conservation Value	Forestal Belga's graveyard
Qualifying Attribute	Although not identified during a participatory workshop, it was possible to identify an abandoned graveyard within the GS1 land, near the farm's hull. It consists of different tombs in different conservation conditions. Some correspond to previous workers of the farm and others are thought to belong to previous communities settled long before Forestal Belga started working in the area (more than 40 years). Relatives were identified for some of the deceased, as they visit the tombs during special occasions. In this sense, following the Generic Guide these sites can be categorized as HCVs, as "Sites, resources, habitats and landscapes significant on a global or national scale for cultural, archaeological or historical reasons, or of cultural, ecological, economic, religious or sacred importance critical to the traditional culture of local communities or indigenous people".
Focal Area	Coordinates for the site are: 26°33'22.9"S 53°53'44.4"W Graveyard in farm's hull and surrounding area.

For the case of the Tekoa Alecrín community, these are the HCVs identified:

High Conservation Value	Wood/firewood collection areas in Tekoa Alecrín (Mbya Guaraní Community)
Qualifying Attribute	From the census, the surveys and the HCV workshop carried out in the Alecrín Village it is confirmed that the community has a strong vital dependence for the forest that is within the limits of the Tekoa. In the absence of a public gas network that reaches the community, the Wood/Firewood collection in the forest on the edge of the Tekoa are essential for cooking and heating homes. 100% of the households surveyed use firewood for cooking or heating. In this sense, following the Generic Guide these collection areas and their environment can be categorized as HCV areas as they are "Key sites and resources to meet the basic needs of local communities or indigenous peoples."
Focal Area	The area is shown in figure 9. The identified participatory risk that threatens these HCVs is the intrusion by settlers of communal lands belonging to the Tekoa. Through a process of interaction of NIDEPOR with the community, it will be sought to jointly establish initiatives for the

	accompaniment of the community in the protection and respect of this HCV area.
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High Conservation Value	Harvesting areas for wild products, medicinal plants, fruits and game in the Tekoa Alecrín (Mbya Guarani Community)
Qualifying Attribute	From the census, the surveys and the HCV workshop carried out in the Alecrín Village it is confirmed that the community of Alecrín has a strong vital dependence to the wildlife, medicinal plants, fruit and game collection areas in the forest surrounding the community, becoming vital inputs for the community's nutrition, health and culture. 100% of households surveyed reported using medicinal plants. Most households collect these plants from collection areas. Other essential products that were declared to be collected were: Wood, fruits, animals, honey, among others. On the other hand, it is worth mentioning that the surrounding space of the Tekoa also constitutes a sacred space, since they inhabit spirits and non-human entities of the forest that have wide importance for the Mbya cosmology. In this sense, following the Generic Guide these collection areas and their environment can be categorized as HCV areas as they are "Key sites and resources to meet the basic needs of local communities or indigenous peoples." as well as "area that is critical to the traditional cultural identity of the community."
Focal Area	The area is shown in figure 9. Native forest that is within the limits of the Alecrín village and surrounding areas. The identified participatory risk that threatens this HCV is the intrusion by settlers of communal lands belonging to the Tekoa. Through a process of interaction of NIDEPOR with the community, it will be sought to jointly establish initiatives for the accompaniment of the community in the protection and respect of this HCV.

High Conservation Value	Fishing zones in the Tekoa Alecrín (Mbya Guarani Community)
Qualifying Attribute	From the census, the surveys and the AVC workshop carried out in the Alecrín Village it is found that the community of Alecrín has a high dependence on fishing in watercourses that are within the territory of the Tekoa Alecrín community. The fishing areas in the territory of the Alecrín community are fundamental because these inputs are essential for the community's feeding. Fishing is one of the main collection activities declared by households surveyed in the census. Also, in several informal interviews it was possible to see the importance of fishing for the feeding of families and for the recreation and socialization of young people in the community. In this sense, following the Generic Guide these water courses and associated basins can be categorized as HCV providing a critical ecosystem service for the community as they are "Key sites and resources to meet the basic needs of local communities or indigenous peoples."
Focal Area	The area is shown in figure 9. The identified risks that threaten these HCVs are interference by settlers in communal lands belonging to the Tekoa and possible droughts. Through a process of interaction of the

	company with the community , it will be sought to jointly establish initiatives for the accompaniment of the community in the protection and respect of these HCVs.
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High Conservation Value	Bodies and streams in the Tekoa Alecrín (Mbya guaraní Community): Arroyo Alegría Arroyo Piray Guazú Arroyo Suturno Streams not named Other sources and streams
Qualifying Attribute	The community of Alecrín has a strong vital dependence for the streams and bodies of water that are in the territory of the Tekoa. In the absence of a public water network, the bodies and watercourses near the Tekoa Alecrín are essential for consumption, food production and other uses by Tekoa's households. The census found that most households receive water through a perforated well or some natural source of water. In this sense, following the Generic Guide these water courses and basins are identified as critical to prove ecosystem service for the community as "Key sites and resources to meet the basic needs of local communities or indigenous peoples."
Focal Area	The area is shown in figure 9. The identified risks that threaten these HCVs are interference by settlers in communal lands belonging to the Tekoa and possible droughts. Through a process of interaction of NIDEPOR with the community, it will be sought to jointly establish initiatives for the accompaniment of the community in the protection and respect of these HCVs.

High Conservation Value	Boundary of Tekoa Alecrín Community Terrain, "Rumbo" (Mbya guaraní Community)
Qualifying Attribute	From the participatory HCV identification workshops held in the Tekoa Alecrín community, it was found that the community considers the existence and respect of the boundaries that demarcate its territory of life as very valuable. The "Rumbo" demarcates the limits that separate the Tekoa from other inhabitants of the area.
Focal Area	Figure 9 shows the boundary of the Community Terrain and the identified HCV

High Conservation Value	P Places of worship of the Tekoa Alecrín, "Opys" (Mbya guaraní Community)
Qualifying Attribute	These spaces are important not only for a religious matter, but also serve as meeting points and various cultural activities. In this sense, following the Generic Guide Opys can be categorized as HCVs as "religious or sacred importance critical to the traditional culture of local communities or indigenous people".
Focal Area	Figure 9 shows the community's limit and HCVs identified including the Opys. The identified participatory risk that threatens these HCVs is the intrusion by settlers of communal lands belonging to the Tekoa. Through

	a process of interaction of NIDEPORT with the community, it will be sought to jointly establish initiatives for the accompaniment of the community in the protection and respect of this HCV.
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High Conservation Value	Tekoa Alecrín Graveyard (Mbya guaraní Community)
Qualifying Attribute	The community conceives the site where the community graveyard is located as very valuable. The ancestors of the community are buried there. In this sense, following the Generic Guide this site can be categorized as HCV of "religious or sacred importance critical to the traditional culture of local communities or indigenous people".
Focal Area	Figure 9 shows the community's limit and HCVs identified including the <i>graveyard</i> The identified participatory risk that threatens this HCV is the intrusion by settlers of communal lands belonging to the Tekoa. Through a process of interaction of NIDEPORT with the community, it will be sought to jointly establish initiatives for the accompaniment of the community in the protection and respect of this HCV.

High Conservation Value	Tekoa Alecrín School, CAPS, Craft stalls (Mbya guaraní Community)
Qualifying Attribute	The school (EIB-FJC n°938) is fundamental because it is the space where young people in the community receive education through an intercultural system. The CAPS is the place where medical checks and basic health care are performed for community members. Craft stalls are extremely important because they are part of the income of several of the families in the community through a traditional practice of community culture. In this sense, following the Generic Guide these other sites of cultural, economic and community interest are categorized as HCV for being "of cultural, ecological, economic, religious or sacred importance critical to the traditional culture of local communities or indigenous people".
Focal Area	Figure 9 shows the community's limit and HCVs identified including the HCVs identified

4.1.4 Without-Project Scenario: Community (CM1.3)

Making projections about the expected changes under the land use scenario without a project in terms of sociodemographic variables for which official data from IPEC and INDEC are not available, and which allow them to be sustained is not feasible. On the other hand, continued ecosystem degradation in the project zone is expected to increase existing poverty and destitution, as well as the absence of education levels that create economic opportunities. As already described in section 4.1.1 and 2.1.6, population in the project zone is already below the poverty line, under informal working conditions, and with institutional disarticulation which limits development assistance for the community.

However, the monitoring and follow-up strategy of the projects will be made through measurements through management evaluations where a group of participants under project will be taken to which an incentive will be applied (project benefits) and the impacts on this population will be measured against a control group composed of a group of people who at this stage will not receive benefits, but if at the next stage.

This strategy is given under the logic of scalability of the project. This will allow comparative measurements to describe and quantify a series of changes over time, between the population segment that does not receive benefits from the project (land use without a project) and those that receive it in a first phase (scenario with project). However, by means of flowcharts – participatory design- of expected changes in the welfare conditions under scenario of land use without project, we can make a first estimate of this point⁴⁰.

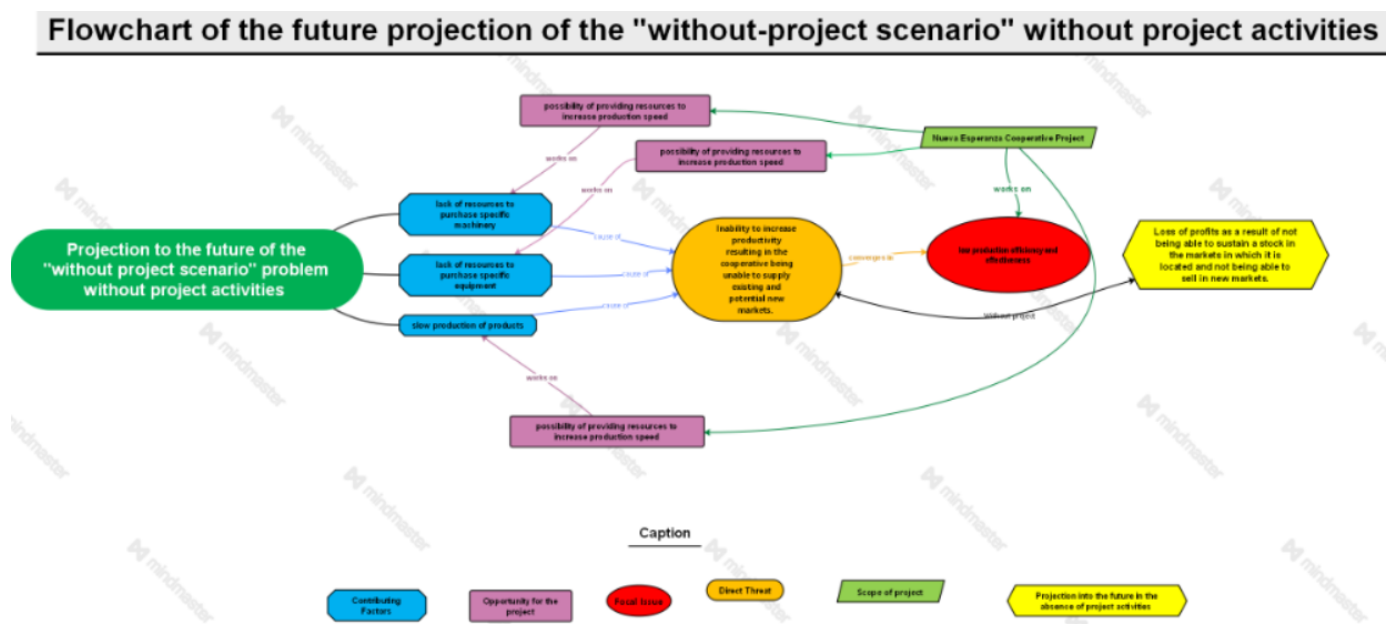


Figure 16: Flow chart for without-project scenario, particularly for environmental service payments.

4.2 Net Positive Community Impacts

4.2.1 Expected Community Impacts (CM2.1)

Community Group	Women
Impact(s)	1.specific consideration to women needs and voice 2.generation of equal job opportunities 3.training and technical assistance for project development
Type of Benefit/Cost/Risk	Predicted and actual direct benefit. The project is expected to generate 25 job positions for women.

⁴⁰ In this document only one flowchart is included, but for each project one has been elaborated and is available for VVB during validation.

Change in Well-being	1. the different consultation meetings, especially all women instances provide the women within the community with a safe place to raise their voice and present their needs, which can be met by the projects to be implemented. Moreover, community group partnerships can be strengthened and lead to the construction of self-respect and request for it from others. 2. provide women with the opportunity to provide economically for the family, or its own in a formal job under good working conditions. 3. improve and gain new skills as well as improve existing project's productivity and outcomes.
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Community Group	Indigenous community
Impact(s)	1.improved housing conditions 2.project development under free, prior and informed conditions 3.technical, legal and economic guidance for community development 4.training and equipment to improve food safety
Type of Benefit/Cost/Risk	Actual direct benefit to all the Tekoa Alecrín community (238 people)
Change in Well-being	The different type of development projects with the community will allow for different changes in the community well-being including: 1.improve health and family relations by reducing overcrowding in houses, and improving housing material conditions 2.Projects designed according to local culture and needs, given the group a sense of unity, belonging and security in the projects 3.NIDEPORT begins to intervene/mediate so that the Tekoa Alecrín can be guaranteed tenure of their land, and thus avoid intrusions, securing resources 4.improve health and community economy by securing healthy food access.

Community Group	Vulnerable people (economic and social vulnerability, with their income and livelihoods, schooling and food sovereignty in a critical state)
Impact(s)	Identify impact(s) 1.formal job opportunities in the area 2.improvement of water reservoirs 3.payment for environmental services

	4.training and capacitation
Type of Benefit/Cost/Risk	Predicted and actual direct and indirect benefits to all the rural communities surrounding the project area (1500 people from rural surrounding areas, of which 700 are women and 500 kids in school age; 250 for the case of water reservoirs improvement from communities neighboring the project area).
Change in Well-being	1.better working conditions and income than without project opportunities 2.water access and adaptation to climate change projected impacts. 3.increase in the number of economic activities, leading to better financial state of families. 4.capacity building in different subjects (food, technical skills, gender equality, biodiversity, others).

Community Group	All communities within project zone
Impact(s)	1.Limit illegal access to forest resources
Type of Benefit/Cost/Risk	Predicted direct risk
Change in Well-being	The monitoring of illegal activities that take place within the project area will limit the access to the land and forest resources. This will only be applied to those activities that put biodiversity in danger, like hunting, while firewood will be formalized and is expected to increase access in the medium turn with forest

4.2.2 Negative Community Impact Mitigation (CM2.2)

Through the project that promotes the protection of the native forest comes the risk of limiting communities' access to natural resources currently obtained from the native forests. Identifying the community's relation with the project area and main needs described by the community, allows the design of the corresponding development projects needed. In this sense, through the different participatory processes described above and the company's interactions with the community, it is sought to jointly establish initiatives for the development of communities that mitigate possible negative well-being impacts, as well as the protection and enhancement of the identified HCVs. Moreover, the participatory process to identify main threats to HCVs allows the design and monitoring plan to mitigate them.

In this sense, the first steps have taken place, with participatory assemblies and census with communities of the project zone, in order to better understand the communities' economic activities, dependence on natural resources, as well as social organization and main needs, fears and identified threats. Some threats identified are external to the project's activities, with some of them expected to be reduced due to the project. One example is the observed and expected droughts because of deforestation and mudslides

because of extreme events due to climate change. The project's main activity (forest enrichment and conservation) is expected to revert these threats.

Moreover, the first projects are in the design stage, these being improvement of water reservoirs, housing improvement, food garden training and material access (seeds for example), organic economic activities within the project area with local workforce such as yerba mate cultivation and bee keeping. These last, designed to guarantee ethical work conditions and salaries, contrary to the informal work conditions the communities face before the project start date.

Last, regarding access to forest resources, the project seeks to limit illegal activities that put biodiversity in danger, like hunting, while fuel wood will be formalized and is expected to increase volume in the medium term with forest enrichment.

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

The community and community groups are expected to see their well-being changed positively by the project, compared to the without-project scenario. Given the limited economic activities opportunities in the area, disarticulated public entities support and external threats including climate change impacts expected, the without project scenario includes migration, lower incomes, limited access to water, biodiversity loss and forest resources loss, among others.

The project benefits detailed lead to better well-being conditions of different types:

1. Participatory carbon program: a portion of the carbon credit emission will be used to support community projects (including education, health, HCV, community infrastructure); The funds worked with the community, are weighted, voted and implemented in a decentralized manner (e.g., community associations). There will also be payments for environmental services for neighbors who conserve biomass on their property.
2. Productive projects are expected to generate local formal job opportunities, with better working conditions, equal access to job positions (with 50% of job positions occupied by women). Moreover training will lead to capacity building within the communities as well as the recovery of cultural activities and knowledge (medicinal plant nursery, handcrafts, among others).
3. Forest safety net: people are going to be allowed to collect firewood and other resources within the property, but it must be organized in such a way that it does not go against the maintenance and restoration expected by the project.
4. HCV identified and selected, will be conserved, enhanced, and monitored in a merged action between project proponent and communities with projects designed exclusively for the purpose.
5. Forest enrichment and regeneration will mitigate climate change projections, while other programs (like housing improvement and water reservoir improvement) will allow communities to adapt to them.

4.2.4 High Conservation Values Protected (CM2.4)

As previously stated, the project is driven by community engagement. Identifying the community's relation with the project area and main needs described by the community, allows the design of the corresponding development projects needed. In this sense, through different participatory processes described and interactions of Nideport with the community, it is sought to jointly establish initiatives for the development of communities that mitigate possible negative well-being impacts, as well as the protection and enhancement of the identified HCVs. Moreover, the participatory process to identify main threats to HCVs allows the design and monitoring plan to mitigate them.

In this sense, no HCVs related to community well-being will be negatively affected by the project. For example, in the case of fuel wood, through this project that promotes the protection of native forest on the project site, this high conservation value is expected to remain stable and is highly likely to improve its availability in the medium term and be accessed coordinately by any community group that need it.

4.3 Other Stakeholder Impacts

4.3.1 Impacts on Other Stakeholders (CM3.1)

The town of San Pedro has a fire station, with firefighters trained and equipped to deal with forest fires. They are located some 30 km from the center of the project area. The investment plans include a provisioning and delivery scheme for critical equipment that can help to mitigate fires, not only in the "GS1" but also in the rest of the lands and the local community.

Misiones has a Ministry of Ecology and Natural Resources, where there is a Department of Park Rangers. Park Rangers have a great operational advantage, because even though they are not Police authorities, since 2015 they are authorized to carry weapons. Likewise, since the end of 2019, they have been provided with equipment and means, such as bulletproof vests and, since the beginning of 2020, they are being trained in Environmental Intelligence. Currently, Park Rangers are one of the human resources most used in the prevention of some of the threats described. They will be incorporated to perform the relevant tasks within the project area (tasks which will be paid extra by the project). In addition, the training of new park rangers will be promoted.

Regarding project's impact on other stakeholders, the cessation of native forest exploration activities in the farm could lead to changes in the production chain, affecting other companies related to the activity, like transport service companies. This activity was conducted by previous owners and has shown to go against forest productivity.

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

The only negative impacts to other stakeholders identified are companies in the production chain of wood products. Given the project is of medium scale and the plantation forestry activity is extended in the region,

it is not considered a mitigation measure is needed. Anyway, regarding local communities, job opportunities will be available in order to implement the project's forestry plan, as well as new productive projects.

4.3.3 Net Impacts on Other Stakeholders (CM3.3)

Other stakeholders are not expected to be negatively affected by the project as, in the case of other plantation forestry companies, the scale is medium and within a forestry region with other projects to work with.

4.4 Community Impact Monitoring

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

The project has in place different programs which identify the corresponding variables to be monitored in terms of community benefits and impacts. In this line, for every program a series of variables will be identified and measured in order to monitor the impacts on local communities identified as well as management evaluation for the project's proponent performance in achieving the main objectives. These indicators will allow to define the measure that need to be taken to reverse negative impacts or achieve the expected objective. Some examples include but are not limited to⁴¹:

Management evaluation	Impact evaluation
Failure/s or error(s) detected	Positive impact
Management evaluation results	Negative impact
Actions to correct failure/s or error/s	Measures to reverse / mitigate negative impacts, risks and costs
Short and long-term community benefits	Result of measures taken to mitigate / reverse negative impacts

Examples on the monitoring plan for the different programs are included in the table below and will be described in more detail in every monitoring report to cover the different impacts identified and expected of the project:

Program	Monitoring strategy	Monitoring methodology	Monitoring frequency	Impact indicators
Payment for environmental services	Management analysis during pilot test	Management analysis during pilot test	Management analysis during pilot test	Not measured: 1.Increased frequency of rainfall due to planting of native species 2.Security in the consumption of water by having larger quantities of reserves of this Measured:

⁴¹ Detailed monitoring plan available to VVB during validation

				Number of payments; Environmental services paid for; population with water access secured.
Participatory Carbon project	Participatory management evaluation among community, EPET N° 31 de Cruce Caballero, la EP N° 482 of Cruce Caballero & and its cooperative, and Recreative, Sports and Cultural Comitee of Cruce Caballero	Management evaluation reports	To be determined	1.Improvement in the quality of life of the population in the area of influence of the project. 2.Installation of a culture of good participation practices with axes in sustainability and equity 3.Substantive participation of women
Forest security net project	To be designed	Management evaluation reports	To be determined	May include: volume of fire wood delivered (m3); vulnerable population in list of beneficiaries; area reduction of illegal harvesting (m2)
Ra 'yi project	1. Monitoring sheets 2. Field tours and visual records of progress. 3. Interviews with the leaders of the community 4. Observation of the tools and supplies transferred. 5. Brief survey	Management evaluation together with Tekoa Alecrín community	During each harvest	1.Increase in the quantity and variety of cultivated species. 2.Increase in the number of people working in community gardens. 3. Increase in the size of community gardens. 4.Improved food security in the village. 5.Promotion of adaptation to climate change in agricultural production
Óga project	After the construction of housing modules, the monitoring includes: maintenance of housing; community housing conditions; construction capacity gained, and other indicators worked.	Management evaluation together with Tokoa Alecrín community	After 3 months	1. Quantity and quality of dwellings built. 2.Overcrowding family conditions 3. Material of the floor of the houses built. 4.Location of the kitchen in the houses built. 5.Existence of a bathroom in the houses built 6.Flooding or leaks in the houses built. 7.Adequate ventilation in built homes. 8.Risk of fire in built homes. 9.Capabilities transmitted to the community in modular construction. 10.Tekoa Alecrín's satisfaction with the OGA project.

Nueva Esperanza Cooperative	Monitoring will include analyzing the equipment maintenance; moreover, the creation of monitoring instruments to identify problems, and intermediate impacts of the program including production quantities and time.	Crossing management reports from Nideport and the cooperative on production, sales, needs, and problems raised during period	Every 3 months	1.Increased production line speed 2.Increase in products produced 3.Adequate supply of the markets in which it operates 4.Opening of new markets 5.Increased profits of the cooperative 6.Strengthening the gender perspective in agricultural production
Project area activities	Management indicators analysis	Management evaluation reports	Every monitoring period	May include: 1.Jobs generated (men and women) 2.Number of people trained

4.4.2 Monitoring Plan Dissemination (CM4.3)

Access to information throughout the life of the project will be through a strategy that includes news web portal and project social networks, local radios and newspapers, face-to-face briefings with stakeholders during verification instances. Moreover, the installation of a local Community Relations Office (RRCC) in Cruce Caballero, is projected in the short term. It will work with open hours in order to allow communities to reach out

Regarding indigenous peoples, all interested parties have access to the proceedings and documents of the free and informed public consultation and subsequent meetings in Spanish and Guaraní Mbya, both in digital and physical versions, as well as the survey and project documents, statutes, CCB and VCS regulations, etc.

Moreover, project documentation will be available at CCB and VCS webpage once validated and in NIDEPORT webpage with project details.

4.5 Optional Criterion: Exceptional Community Benefits

4.5.1 Exceptional Community Criteria (GL2.1)

The report "SITUATION OF POVERTY AND MULTI-CAUSAL INDIGENCE AGGLOMERATED POSADAS THIRD QUARTER 2018"⁴ of the Provincial Institute of Statistics and Mission Censuses used the "Index of Multi-causal or Multidimensional Poverty in Households of the Agglomerated Posadas". This index uses a methodology in which 3 methods are averaged:

1. **Absolute Indirect Method (MIA):** “is an indirect and one-dimensional method that is applied by comparing the income of declared households with the income declared as thresholds, that is, a household is considered poor if its income (sum of the income of the persons making up the family group) is lower than the “poverty line”. The approach adopted in the methodologies that follow this approach is to consider a consumption structure (total basic basket), which does not vary over time, and which arises from a “reference group” made up of households. The objective of this Poverty Line method is to measure the resources a household possesses and compare them with the resource requirements to meet the basic needs of a family type...”
2. **Relative Indirect Method (MIR):** “method that does not measure the consumption capacity of families through expenditure, but under their income levels. The calculation starts from taking the “median” of the total family income per capita. The median is the equidistant value between the two extremes of income reported by the INDEC EPH. This method is currently used by the General Directorate of Statistics and Censuses of the Government of the Province of Córdoba. The concept of indigence is associated with that of “severe deficiency”, which arises from dividing the total income of each household by the total number of members relieved in the EPH...”
3. **Direct Basic Needs Satisfaction Method (SDM):** “households that have deficiencies or deprivations relating to housing, basic infrastructure and living conditions. Variables have also been used to identify poor households, such as the presence of children under 10 helping the household with money by working or asking.”

The Census by agglomerates carried out in Cruce Caballero, Tobuna, Paraje Alegría and Paraje Piñeiro⁴² gives result in terms of the number of members per household, with 5 being the highest average number of members. Of these households of 5 members, the census indicates that on the highest average 2 members work per household. On average, working people in the project zone earn between \$50 and \$150 USD/month (with a tendency to charge between \$75 and \$100 USD). At best, a household has \$300 USD of monthly income per salary. However, information collected by the census on monetary income through a state program shows that 72.7% of households receive State aid. Of that 72.7%, 57.1% receive the Universal Child Allowance (UCA). This aid amount, as of December 2021, for a child up to 14 years or with a disability was of \$60USD/child.

Considering the number of people working per household, the average wage and state aid received, we can assume that in the best of cases the households in the project’s area of influence have a monetary income of \$360 USD/month.

The Provincial Institute of Statistics and Censuses of Missions (IPEC)⁴³ establishes that the Basic Food Basket for a household of 5 members (father and mother of legal age, a teenager, a preteen child and a

⁴² Survey results available for VVB during validation

⁴³ See the following link: <https://ipecmisiones.org/canastademo/index.html>

child) -which is the composition of households derived from the census- is: \$445.4 USD/month. While the Basic Basket's Total is \$1142.1 USD/month.

For its part, the INDEC establishes monthly valorization of the basic food basket and the total basic basket⁴⁴. Greater Buenos Aires of October 2021⁴⁵ establishes that at the national level the basic food basket for a household composed of 5 members -with a man and a woman, both 30 years old, and three children of 5, 3 and 1 year- is \$325.2 USD, while the Total Basic Basket is \$761.1 USD.

Using the Absolute Indirect Method (AIM)⁴⁶ -which consists of adding the incomes of the working members of the household working members of the household (in our cases also taking into account the AUH received) and observing if this exceeds the Total Basic Food Basket - we observe that the average monetary income of a household in the area of influence of a household in the project's area of influence of \$360 USD/month does not exceed the provincial Total Basic Basket of \$1142.1 USD/month established by the IPEC, nor does it exceed the national Total Basic Basket of \$761.1 USD/month established by INDEC. In other words, the population in the area of influence of the project is below the provincial and national poverty lines.

Using the Relative Indirect Method (RIM) -which consists of taking the "median" of the total per capita family income per capita household income between the two extremes of the censused incomes. The concept of indigence is associated with that of "severe deprivation", which arises from dividing the total income of each household by the total number of members surveyed. We observe that the \$360 USD/month divided by the 5 members of the household gives us a ratio of \$51.4 USD per month to be spent per household member. According to the IPEC, the basic food basket for an adult is \$117.9 USD, for an adolescent it is \$138.5 USD and for a child between the ages of 4-5 years it is \$138.5 USD, child between 4-5 years old is \$59.5 USD, therefore, the \$51.4 USD is not enough to satisfy any of these Food Basic Basket values. On the other hand, according to INDEC, the basic food basket for an adult is \$100 USD/month. These values lead us to conclude, as with the AIM, that the population of the project's area of influence is below the provincial and national poverty lines.

In order to alleviate this situation of poverty, the population in the area of influence depends on the production of food for self-consumption in farms and vegetable gardens. However, the self-consumption of

⁴⁴ in Technical Reports / Vol. 5, n° 210, "Living Conditions Vol. 5, n° 16

⁴⁵ See the following link:

https://www.indec.gob.ar/uploads/informesdeprensa/canasta_11_2141284B3543.pdf,

For more information on the MIA and MIR methods, see the report "SITUACIÓN DE LA POBREZA E INDIGENCIA MULTICAUSAL AGLOMERADO POSADAS TERCER TRIMESTRE DE 2018". Link for consultation: <file:///C:/Users/usuario/Documents/misiones/varios%203/IPEC-Misiones-%C3%8Dndice-de-Pobreza-e-IndigenciaMulticausal-IPIM-3%C2%B0-Trimestre-2018.pdf>

⁴⁶ Para mayor información sobre los métodos MIA y MIR ver El informe "SITUACIÓN DE LA POBREZA E INDIGENCIA MULTICAUSAL AGLOMERADO POSADAS TERCER TRIMESTRE DE 2018". Link de consulta: <file:///C:/Users/usuario/Documents/misiones/varios%203/IPEC-Misiones-%C3%8Dndice-de-Pobreza-e-IndigenciaMulticausal-IPIM-3%C2%B0-Trimestre-2018.pdf>

what is produced in vegetable gardens and orchards does not help households to make significant savings. Furthermore, household savings derived from the consumption of these self-produced products is equivalent to an average of \$20 USD per month (2021 values), which can vary according to the season.

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

As previously stated, the project will generate net positive well-being benefits in the shape of formal job opportunities, better working conditions, environmental service payments to communities, HCV as well as native forest conservation and enhancement and the implementation of programs within the community.

In the short term, job opportunities, housing improvement, active community participation are some the benefits of the project leading to increased well-being of the communities in the project zone. Moreover, the conservation and enhancement of the communities' HCV areas potentially will improve the opportunities for social cohesion. In the case of food gardens technical assistance and training, it will directly benefit food security for the communities involved in the project. These are some of the short-term benefits that can be identified for the project and associated programs.

In the long term, the community benefits include an increase in well-being due to the conservation of forest and biodiversity ecosystem services which include avoidance of soil erosion and reduction in drought frequency, among others like local temperature control. Moreover, the different programs will have strengthened the gender perspective in agricultural production and training and job experiences will increase technical skills within the communities and installed capacities.

4.5.3 Community Participation Risks (GL2.3)

Regarding community benefits and risks, the project included communities from the beginning of the project design for them to identify risks and needs and get to know and understand the project. The community social and economic development projects are designed to be continued by the community throughout the project lifetime.

In this sense, following the public consultation, a participatory mapping of HCV identification and risk and threat estimates was carried out, as well as a focused focus group of women to assess the differentiated impact on their role in society, considering gender safeguards in the areas of division of labour, access to resources and substantive participation.

In the case of Tekoa Alecrín, a free informed public consultation (CPLI) took place, where a SWOT analysis, HCV identification and project formulation workshops took place. This included a workshop on gender perspectives in the benefits of the project.

No specific risks from the participation of the communities in the project arised. The main issues would be related to communities hopes and trust to the project than specific risks from participating. For example, communities would mention previous experiences with other projects and organizations where high hopes

were generated in the communities and the outcomes were not those projected, fearing same outcome with this project.

Through a job risk assessment, main risks have been identified for the different job positions and mitigation actions defined as detailed in section 2.3.17

Security:

For those responsible for the area of physical and property security, the risks include the hypothesis of “armed confrontation, especially with poachers”, who carry firearms. These encounters may be expected during the various tours of the property for the purpose of supervision of different sectors. In this instance, the security team of the GS1 does not have the necessary protective equipment, such as bullet-proof waistcoats and firearms, among other things. However, organized patrols are carried out with three security forces, the National Gendarmerie, the Provincial Park Rangers and the Misiones Police, so that police power is outsourced, without exposing the GS1's own personnel to such risks.

Forestry personnel: with regard to personal safety when moving in the forest and when running, thinning and dismantling camps, the major risks identified are snake, insects and mites' bites (e.g. mosquitoes, spiders, bees, wasps, etc.), secondly falls, sunstroke, and dehydration, among others. Mitigations actions include training on main threatening species identification as well as the provision of basic equipment required, such as high-top rubber boots, high top boots, gloves, goggles, and fireproof waistcoats. The equipment must be complemented with a first aid kit containing general and specific elements such as anti ophidic serum, immobilizing splints, creams for burns, sun protection creams, anti-allergic and anti-inflammatory creams as well as injectable corticoids, among others.

Regarding the containment and fighting of forest fires, in this case, the major risks are burns, asphyxia, suffocation, falls of trees, falls from miscellaneous grounds (fractures, traumatism, injuries). For these cases training and Personal Protective Equipment (PPE) must be provided, with the basic elements for the performance of this task, such as safety footwear, helmets, flame-proof clothing, goggles, gloves, among other elements. Moreover, the task will be performed by firefighters, although first responders may include trained GS1 workers.

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

Community Group 1	Women
Net positive impacts	Different instances in place (focus group discussions) seek to generate safe spaces for women to raise their voice and present those needs which can be met by the projects to be designed and implemented, leading to further opportunities for well-being. The project will generate equal job opportunities for men and women, providing women with the opportunity to provide economically for the family, or its own, in a formal job under good working conditions.

	Training will take place improving and gaining new skills, which include technical assistance to improve existing project's productivity and outcomes.
Benefit access	Special consideration is paid to listen to women's needs, risks and desires, generating all-women moderated consultations and meetings ⁴⁷ .
Negative impacts	Constant follow up on project development is monitored using the indicators defined for the specific projects including women impacted. Moreover, there is public access to the project proponent through different channels to raise any concerns, comments. As well as a code of conduct which specifically mentions avoiding any kind of discrimination towards women. Any negative impact or risk to women, will be studied, and project redefined, if needed, to mitigate it

Community Group 2	Tekoa Alecrin community
Net positive impacts	The different type of development programs with the community will allow for different positive changes in the community well-being including: 1.improve health and family relations by reducing overcrowding in houses, and improving housing material conditions 2.projects designed according to local culture and needs, given the group a sense of unity, belonging and security in the projects 3.NIDEPORT begins to intervene/mediate so that the Tekoa Alecrin can be guaranteed tenure of their land, and thus avoid intrusions, securing resources 4.improve health and community economy by securing healthy food access.
Benefit access	The culture of the Alecrin community was studied before first encounter, in order to better understand hierarchy and respect its way of interacting with the outside. In this line, all meetings are coordinated through the community's leaders and summaries are extended to the community group. The projects are defined and designed through a prior, free and informed consultation during which community's needs are identified
Negative impacts	Constant follow up on project development is monitored and project development informed and discussed with the community group. Any negative impact or risk will be studied, and the project redefined, if needed, to mitigate it. Moreover, there is public access to the project proponent through different channels to raise any concerns, comments.

Community Group 3	Vulnerable people (economic and social vulnerability with their income and livelihoods, schooling and food sovereignty in a critical state)
Net positive impacts	The project's aim is to generate job opportunities with better working conditions and income and increase economic

⁴⁷ Meeting minutes and outcomes available for VVB during validation

	activities than without the project leading to better financial conditions of families. Moreover, different development projects to be defined with the community include water reservoirs to provide safe water access adaptation under climate change impacts projected avoiding water related diseases. These projects will also include training will lead to capacity building in different trades
Benefit access	Projects are defined and designed based on main needs identified during public consultations with and by the communities. Monitoring plan will allow to follow the project objectives, making sure the benefits are accessed by those in need.
Negative impacts	Constant follow up on project development is monitored and project development informed and discussed with the community group. Any negative impact or risk will be studied, and the project redefined, if needed, to mitigate it. Moreover, there is public access to the project proponent through different channels to raise any concerns, comments.

4.5.5 Net Impacts on Women (GL2.5)

The without project scenario shows a continued historical trend that has reinforced the differentiated allocation of productive and reproductive work, where a marked division of labor according to gender is identified. In general, the tasks of production and provision are associated with the figure of the man, while the tasks of care and maintenance of domestic life are associated with the figure of the woman strongly influenced by the evangelical religion in the area. This translates into a scenario in which men tend to have salaried jobs mostly linked to forestry (extraction and processing of wood), production based on perennial crops (such as yerba mate, tea, etc.) whereas women tend to engage in unpaid domestic work ranging from sowing and harvesting food for both household consumption and sale, to preparing daily food, cleaning and tidying up the home, to the care of children/children, the elderly/children and persons with disabilities.

In turn, most women also perform productive work both inside and outside the home for which they receive considerably low pay. An example of this is the artisanal processing of processed food for sale.

In this regard, during our field visits, our interlocutors have told us that "there is no work for women" and that this situation does not seem to depend so much on the level of education achieved, but a lack of job opportunities for women and a lack of institutions or training spaces.

As previously mentioned, different instances in place (focus groups) seek to generate safe spaces for women in the communities to raise their voice and present those needs which can be met by the projects to be designed and implemented, leading to further opportunities for well-being. The project will generate equal job opportunities for men and women, providing women with the opportunity to provide economically for the family, or its own, in a formal job under good working conditions. Training will take place improving and gaining new skills, which include technical assistance to improve existing project's productivity and outcomes.

It is relevant to distinguish a case in the project area where particular dynamics occur in terms of gender relations in forest governance. This is the case of the Nueva Esperanza Cooperative, a project born in 2006 and promoted by a group of 12 women between 30 and 50 years of Paraje Gentil, for the agroecological and sustainable production of preserves based on native wild fruits. The weekly work of these entrepreneurs consists in the gathering of fruits from the forest, for the subsequent elaboration and commercialization of vinegars, liqueurs and condiments. In addition to this, they are currently working on the creation of a nursery in order to conserve native species and generate greater environmental awareness, since they have noticed a growing shortage of certain species due to the felling of trees.

Another of the actions offered by this project is the realization of workshops and training focused on the preservation of the environment, the care and conservation of native plant seeds and the prevention of gender violence in the community, thus generating a socio-community contribution.

This enterprise therefore constitutes a source of income for these women, through self-management and independent work and a particular way of linking and using forest resources. However, the income it provides is limited, given that its production still develops on a small scale due to lack of resources to expand it. According to the survey carried out in the area, the monthly income provided by this project does not exceed \$50 USD, which is a very small contribution considering that each of these women make up families of at least 2 children/as.

The project includes a specific program seeking to provide equipment and related training (machinery as well as economic and marketing courses and gender equality) for the cooperative to increase production.

Tekoa Alecrin women community

In the case of Tekoa Alecrin women community during the visits, despite the requests to have a broad and equal participation of the different community subgroups, a more peripheral participation on the part of women, in terms of their presence and their verbal intervention was found. Although the presence of women has represented between 30% and 50% of all those attending the meetings, they have almost always remained in a separate physical area, with a rather timid attitude. Although there is a language barrier that prevents direct communication with external interlocutors in the case of old women, no interventions on the part of the cacique or any other intermediary indigenous authority was observed, during the meetings, which could demonstrate effective participation. However, this form of participation does not directly indicate a situation of inequality, nor does it deny its decision-making power at the most intimate level of the community, which perhaps can only be perceived by the members of the community, in the absence of strange people.

As found in the thematic literature, the symbolic geography of the Mbya Guarani has a strong role in their socialization and in the sexual division of labor. While the Tekoa Alecrin community is considered a feminine

space per excellence, destined to the rearing of the youngest children and the domestic activities, the mountain and the white world are external areas with which only men deal, when they leave the Tekoa Alecrin boundaries. This aspect that characterizes the Mbya largely explains why most women do not speak Spanish and avoid contact with entities outside their community. It could be said, then, that this cultural trait somehow limits them to the tasks of the domestic sphere and, in turn, restricts their connection with the "white world" outside. In this regard we have found that it is only women who are engaged in certain domestic activities such as cleaning, washing clothes and cooking food; and in turn, young men are the only ones who do salaried work outside the community, such as informal work on yerba mate crops.

Regarding access to education and the Spanish language, although there appears to be a cultural impediment for women in Tekoa Alecrin, the formal establishment of the "Vera Poty" school together with the bilingual intercultural education program, since 2008, it has led to greater schooling for young women and girls, and thus to greater knowledge of Spanish in recent years. However, we have not yet noticed the impact of this policy on our field visits. Their influence is likely to be identifiable soon.

On the other hand, with respect to substantive participation, both our key informants and the women in the community with whom we have been able to interact briefly, have informed us that they have broad decision-making power within the community, even though our limited stay in the field has made it difficult for us to notice. On the other hand, it could be thought that a substantive and public participation by women can be an aspect in transformation considering the new indigenous female leaderships that have emerged in recent years in other Mbya Guaraní Tekoa Alecrin, and increased access to intercultural education, which would allow them greater verbal intervention in the long term.

The first projects designed with the community will lead to positive impacts for women as it includes improving housing conditions as well as new houses to reduce family overcrowding. Moreover, the vegetable garden training and improvements will allow to secure food and adapt to climate change impacts projections. All projects designed and implemented will only be considered if no apparent negative impacts to women in the community arise from them.

4.5.6 Benefit Sharing Mechanisms (GL2.6)

To be developed in future PD version.

4.5.7 Benefits, Costs, and Risks Communication (GL2.7)

As previously mentioned in 2.3.3, in order to guarantee the full and effective participation of the parties the project has developed its own Consultation Plan.

Different stakeholder consultations were conducted taking into consideration special procedures needed in order to include the indigenous community Tekoa Alecrín. In this line, different meetings and assemblies took place with the community chiefs. Between December 2020 and February 2021 prior investigation was carried out in meetings with the Council of Authorities of the Tekoa Alecrín community, as well as with other

members of the community that wanted and could be part of them. Then, two meetings were held. In the first one, the corresponding presentations were made between the **members of the company** and the Council of Authorities. The second meeting allowed the **company** team to tour the village and meet with community members. With the Council of Authorities and various members of the Alecrín community (2 adult women, 3 adult men, 5 young men, 1 girl and 3 or 4 children) it was agreed to carry out a process of CPLI to be able to define a project/s that focus on problems that the Tekoa Alecrín considers to be of first order.

More meetings took place in order to define together the housing project, design, materials, training, including also family census in order to define those most needed. The conclusions are clearly stated, including objectives, next steps, in order to match expectations with reality or possibilities.

In the case of rural communities prior to the stakeholder consultation different communication meetings took place. In order to maintain continuous communications, a portal is expected to be installed in the short term, with opening hours to bring together project proponents and communities looking to achieve informal and periodic communication.

4.5.8 Governance and Implementation Structures (GL2.8)

The project is privately owned and managed by Nideport. Anyway, as previously stated, all development programs in the project zone are defined based on main needs and threats identified by communities in the public consultation. These programs are further discussed and designed by the community together with Nideport in meetings with the community including focal groups. The implementation of the programs is done by the community, generating job opportunities or based on environmental service payment, according to project. The monitoring of the program is publicly available to the community and management, although led by Nideport is worked together with the community group defined for the task.

In the case of the project area, the main plan and design is defined by Nideport and a group of external experts (forest and biodiversity experts), but the economic activities programs (yerba mate and beekeeping) will be defined and worked together with the communities. Specifically, a nursery project was conceived to contribute to the conservation and dissemination of a person from the community, highly valuable ethno-botanical knowledge - in the context of the disappearance of traditional knowledge- and which, at the same time, guarantees him an economic income for his subsistence and material well-being by including eco-tourism and education activities.

Each program is analyzed separately, with its own governance structure, monitoring plan, etc. In the case of Cooperativa Nueva Esperanza program, where Nideport accompanied the project with training and materials to increase productivity, governance structure for this program is based on a relationship of coordination and cooperation relationship between NIDEPORT and the cooperative but maintaining the cooperative's independence.

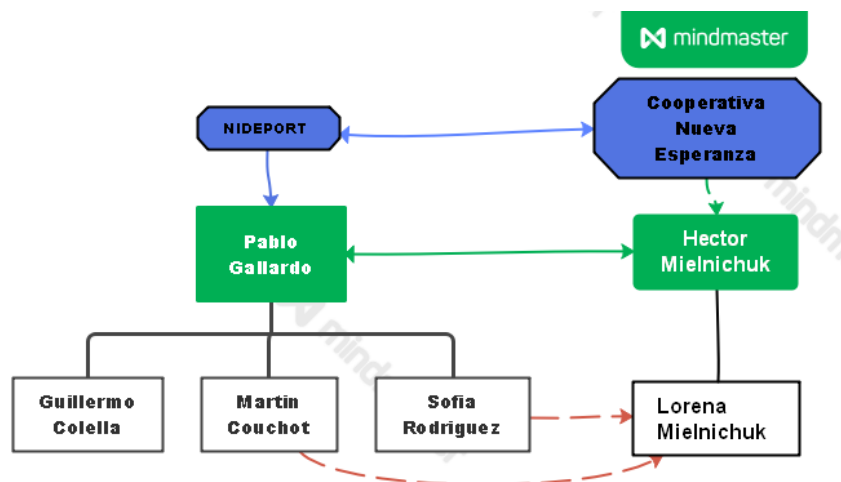


Figure 17: Cooperativa Nueva Esperanza governance structure.

In the case of Tekoa Alecrin program *Oga*, on housing improvement, the program definition is accompanied (technically and providing access to materials) by Nideport but the design, implementation and management is defined by the community based on their culture. All interested parties have been consulted through the prior, free and informed public consultations with the Tekoa Alecrin community or representatives. The governance structure is defined as the diagram below shows:

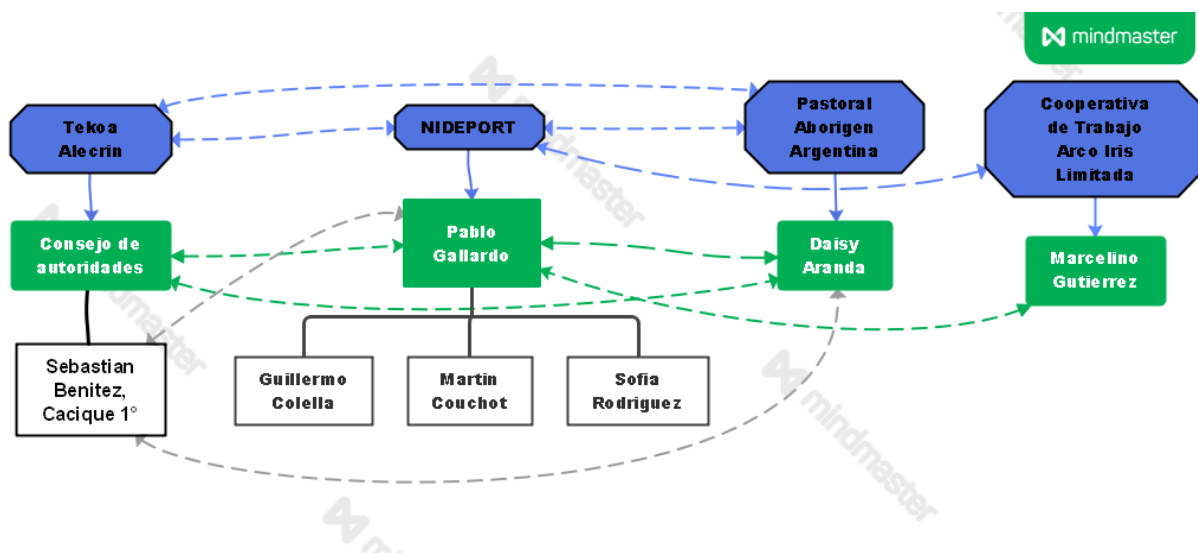


Figure 18: Oga program governance structure

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

As previously stated, all development programs are defined based on main needs and threats identified by communities in the public consultation. These programs are further discussed and designed by the community together with Nideport in meetings with the community including focal groups. The implementation of the programs is done by the community, generating job opportunities or based on

environmental service payment, according to project. The monitoring of the program is publicly available to the community and management, although led by Nideport is worked together with the community group defined for the task.

In the case of the project area, the main plan and design is defined by Nideport and a group of external experts, but the economic activities programs (yerba mate and beekeeping) will be defined and worked together with the communities. Specifically, a nursery project was conceived to contribute to the conservation and dissemination of a person from the community, highly valuable ethno-botanical knowledge - in the context of the disappearance of traditional knowledge- and which, at the same time, guarantees him an economic income for his subsistence and material well-being by including eco-tourism and education activities.

Moreover, human force needed for the different projects' implementation, both economic activities as well as native forest regeneration and enrichment, will be based on local communities, prior training and capacitation.

In the case of Alecrin community, the programs' definition is accompanied (technically and providing access to materials) by NIDEPORT but the design, implementation and management is defined by the community based on their culture.

5 BIODIVERSITY

5.1 Without-Project Biodiversity Scenario

5.1.1 Existing Conditions (B1.1)

The Paranaense rainforest, better known as the Misiones rainforest, is located in the north of Argentina, in the province of Misiones on the border with Brazil and Paraguay. At the beginning of the last century, the jungle had an extension of 1 million square kilometers, today it has only 5% of its original total area and continues to shrink.

The Selva Misionera represents one of the most important remnants of the Atlantic Forest. Its forests are considered "hotspot" because they represent a unique environmental value for the planet. It is one of the most biologically diverse habitats in the country, and at the same time one of the ecosystems most affected by deforestation. Thousands of species live in it, to such an extent that 7% of the world's plant species and 5% of the world's vertebrates are found in the Atlantic Forest as a whole. The native forest there consists of Parana pine, rosewood, black lapacho, guatambú and anchico. All endangered species.

The reduction of the natural forest has several causes such as the advance of agriculture and livestock, logging, among others that cause environmental problems such as soil degradation by overexploitation of the same, loss of natural habitat for hundreds of species, reforestation with non-native species that are very harmful, the danger of extinction of flora and affecting ecosystem services.

Timber extraction in the Selva Misionera relies on a very small number of tree species. This highly targeted and concentrated extraction over decades reduces or destroys the natural regeneration chain, as fewer and fewer seed trees of the extracted species remain in the forest composition, causing an effect comparable to mining activities, exploiting an ore to the point of leaving only what is called the "tailings". This continuous erosion of genetic richness leads to the total loss of species such as, for example, Palo Rosa or Lapacho.

Selective logging, has been implemented in the whole of the GS1, normally implementing a rotation of approximately 25 years, intervening intensively on approximately 1,000 hectares per year, impacting only on that area that is actually represented by the desired wood species. Therefore, the elimination of these individuals leads to the destruction of the community that surrounds them, causing an irreversible impoverishment of the Selva Misionera ecosystem, being specifically visible with the presence of large areas dominated by bamboo species.

The loss of native forest endangered species such as the jaguar, the puma and the ocelot and other mammals such as the tapir, monkeys, corzuelas, two species of peccaries and the coat, seriously affecting biodiversity due to the large number of species of trees, bushes and vegetation, as well as insects, mammals, birds and reptiles, and freshwater sources.

It is a great reservoir of possible medicines, vaccines, foodstuffs, textiles and many other products that could be of great use in improving people's lives, but which have not yet been discovered, and which may be lost if this place continues to be destroyed.

As one of the largest remnants of Atlantic Forest globally, it serves as a refuge for species that need large areas. Among them is the Jaguar, an emblematic animal for Argentina, which despite having been granted the highest category of protection, is today in danger of extinction and continues to suffer the effects of deforestation. More than 85% of its original habitat in this area of Argentina has been destroyed, leaving only 200 specimens in the country today, and studies confirm that if nothing is done about it, it could disappear completely within the next 50 years.

In the project area, within the Selva Misionera, the conservation of the species is in a critical situation. Habitat loss, illegal hunting of wild animals and conflicts with domestic animals are the main threats to the jaguar population, and with unfavorable climates, these forests will retreat to "refuges" where they will survive even more isolated, which would be reflected in sites with greater endemism.

Aves Argentinas, a national non-profit organization, carried out a campaign during 2019 in order to survey the existing species in the Bosque Atlántico, province of Misiones. During the campaign, information was obtained on the following biological groups: fish; amphibians; reptiles; birds; bats; micro rodents; weasels; medium and large mammals; ectoparasites and ortho hantavirus of micromammals; mosquitoes and phlebotomine sandflies; mosquitoes and sandflies of sanitary importance; diurnal and nocturnal butterflies; taturana (a species of poisonous caterpillar moth of sanitary importance) and ants. These studies have

identified critically and endangered species with potential to regenerate if the habitat is conserved, and biological conditions enhanced.

Forestal Belga SA, previous owner for the project land, is a forestry company in the Province of Misiones, concentrating its activity on pine crops in some 2,000 hectares and exploitation of native forest in the rest of the property, with native forests areas that have hardly been explored in terms of biodiversity. Moreover, the labor camps generate special conditions for biodiversity threats. These include waste generation, alteration of animal life and facilitate the work of poachers by covering them up on several occasions for the basic reason of avoiding any kind of confrontation. Regarding the likelihood of forest fires, by relying on wood fires for basic needs, or simply lighting a cigarette, they become a potential fire hazard. Their activity, given the way they carry it out in the Forestal Belga property, makes them, unfortunately, the protagonists of a serious degradation.

5.1.2 High Conservation Values (B1.2)

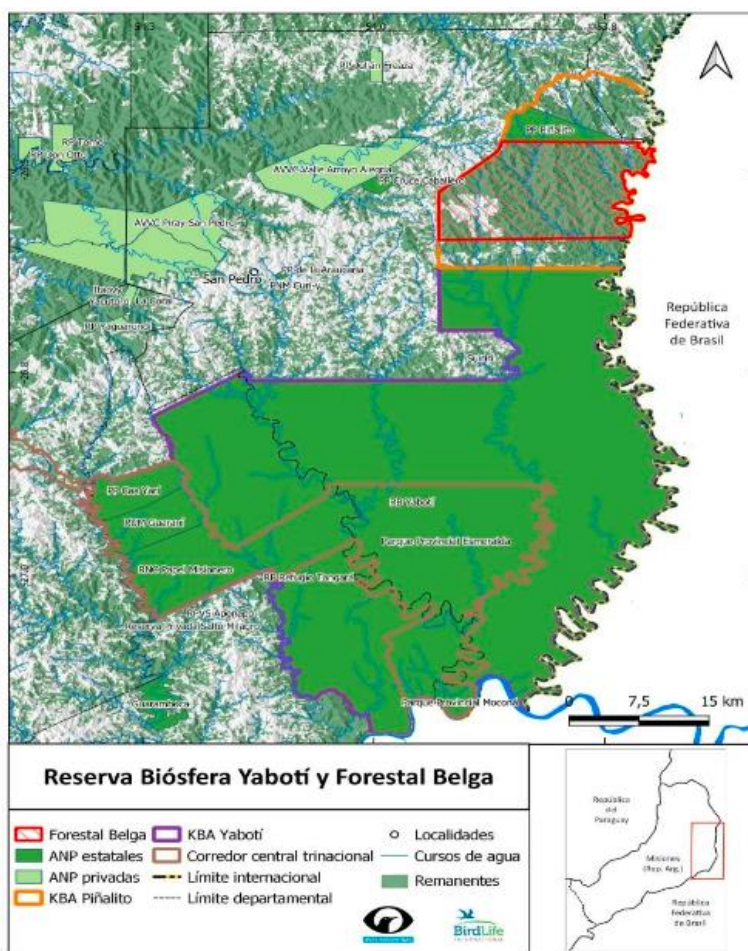


Figure 19: public, private conservation areas as well as identified KBA in the project zone.

High Conservation Value	KBA Piñalito
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Qualifying Attribute	The site, along with the adjacent Provincial Park, hosts populations of threatened species and restricted distribution, which made it valuable as a KBA: • Black-fronted Piping-Guan (<i>Pipile jacutinga</i>) - Endangered. • White-bearded Antshrike (<i>Biatas nigropectus</i>) - Vulnerable. • Helmeted Woodpecker (<i>Celeus galeatus</i>) - Vulnerable. • Tirica (<i>Leopardus guttulus</i>) - Vulnerable. • Chanchita (<i>Australoheros ykeregua</i>). • Rock bats (<i>Myotis izecksohni</i>). Furthermore, the endangered Vinaceous-breasted Parrot (<i>Amazona vinacea</i>) was reported as present by Chebez (2007a) and was detected in flight on the edges of Forestal Belga, on PR 22 (this KBA) and NR 14 (KBA San Pedro) and in plantations of native Araucaria and exotic pines. At the same time, the Eucalyptus plantations were used during different seasons by groups of <i>Amazona vinacea</i> to roost in the village of Cruce Caballero (KBA San Pedro) at a very short distance from this KBA. As for the Tirica (<i>Leopardus guttulus</i>), Vulnerable, it was detected in 2019 and it was estimated that the area could host about 54 individuals (based on Cruz et al., 2019b; Chebez, 2007a, Gil, 2020, Dr. Paula Cruz, pers. comm.).
Focal Area	As seen in figure 19 above, the conservation of the project area (in red) would mean an enhancement of HCV given the lack of protection in the whole area, as well as the conservation of the whole KBA area (orange).

High Conservation Value	KBA Yabotí
Qualifying Attribute	It shows a great diversity of environments as part of the highland forest with araucarias. The most striking bird species detected because of their rarity or threat were the macuco, the widowed eagle, the greenish golden woodpecker, the eared alicucu, the ocellated and the dusky atajacaminos, the pine warbler, the tacuarero, the leaf-scratcher, the widow-tailed widow and the beaked cuckoo. Some highly persecuted and key mammals find refuge in this area, such as the tapir, the white-lipped peccary and the jaguar⁴⁸.
Focal Area	As seen in figure 19 above, the conservation of the project area (in red) would mean an enhancement of the HCV reducing the connection distance with piñalito public natural area (within KBA Piñalito) given the lack of protection state. The conservation of the whole Piñalito KBA area (orange) would mean the connection of both KBAs.

High Conservation Value	Cruce Caballero Provincial Reserve
Qualifying Attribute	The Cruce Caballero Provincial Park is a protected natural area, near the town of Cruce Caballero. It initially occupied a surface area of 434 ha currently reaching 522ha after new land was annexed. The objective of its creation is to protect a group of specimens of Parana pine (<i>Araucaria angustifolia</i>), the only native

⁴⁸ List and study available at: <https://www.avesargentinas.org.ar/noticia/relevamiento-de-aves-en-la-reserva-de-biosfera-yabot%C3%AD>

	conifer in the ecoregion, and to use the area for educational and scientific activities. Cruce Caballero Park is also part of Argentina's network of Important Bird Areas (IBAs) because of its ornithological richness. Vulnerable, threatened or simply rare or scarce birds were observed. Specimens like: macuco (<i>Tinamus solitarius</i>), yacutinga (<i>Pipile jacutinga</i>), black-crested eagle (<i>Spizaetus tyrannus</i>), red-backed maracana (<i>Primolius maracana</i>), vinaceous parrot (<i>Amazona vinacea</i>), barred owl (<i>Strix hylophila</i>) were recorded, ocellated woodpecker (<i>Nyctiphrynus ocellatus</i>), eared alilicucu (<i>Megascops sanctaecatarinae</i>), banana sandpiper (<i>Pteroglossus bailloni</i>), cinnamon-faced woodpecker (<i>Dryocopus galeatus</i>), pine warbler (<i>Leptasthenura setaria</i>) and yellow-eared woodpecker (<i>Clibanornis dendrocolaptoides</i>), among others⁴⁹.
Focal Area	As seen in figure 19 above, the conservation of the project area (in red) would mean an enhancement of the HCV reducing the connection distance with piñalito public natural area (within KBA Piñalito) given the lack of protection state. The conservation of the whole Piñalito KBA area (orange) would mean the connection of both KBAs.

High Conservation Value	Valle Arroyo Alegría private HCV
Qualifying Attribute	Representatives of the multinational company Arauco Argentina SA and the provincial environmental agency agreed to incorporate the property "Valle de la Alegría" into the Provincial System of Natural Protected Areas as a private natural area, according to Law XVI-No. 29. The nature reserve covers an area of 8,550 hectares of high conservation value of the Selva Paranaense.
Focal Area	The protected area forms part of a continuous block of Atlantic Forest or Selva Misionera, bordering the "Cruce Caballero" Provincial Park, and is located within the Provincial Green Corridor area

High Conservation Value	Water bodies
Qualifying Attribute	Identified by Aves Argentina, an NGO, as habitat for different endangered species
Focal Area	Identify the area(s) that need to be managed to maintain or enhance this HCV.

5.1.3 Without-project Scenario: Biodiversity (B1.3)

The existing conditions detailed in section 5.1.1 indicate continuous biodiversity loss would occur in the absence of the G1S project. Within the province, four main threats have been identified:

- Extraction of native wood, loss of forest functionality and connectivity: The property has been used for forestry extraction since the beginning of its productive use. This action has degraded the forest

⁴⁹ Bodrati, Alejandro; Cockle, Kristina; Segovia, José Manuel; Roesler, Ignacio; Areta, Juan Ignacio; Jordan, Emilio (2009). *La avifauna del Parque Provincial Cruce Caballero, Provincia de Misiones, Argentina*

in many areas within the property, finding only young specimens and, at times, with little species diversity. In this context, the steepest hillsides are the areas with the best-preserved native forest.

- **Illegal hunting:** During the campaigns, traces of hunting have been recorded in different areas. firearms cartridges, recent traces of horses, barking and encounters with dogs and even people have been heard in the bush. At the same time, in the context of the tours conducted by the Yacutinga Project, cartridges and bonfires were also found on the banks of the streams. In the case the Arroyo Toro has a very marked trail that accompanies it for kilometers, with both horse and dog feces and dog tracks along almost all its course.
- **Fish poaching:** The Yacutinga monitoring confirms the presence of spinels and fishing gear in old campsites.
- **Presence of invasive exotic species:** Directly related to the high hunting pressure is the presence of dogs on the property. All the dogs seen were crossbreeds of hunting breeds, which suggests that they were either on the hunt with their owners or were lost in the forest after an outing.

As previously mentioned, Forestal Belga SA is a forestry company in the Province of Misiones, concentrating its activity on pine crops in some 2,000 hectares and exploitation of native forest in the rest of the property, with native forests areas that have hardly been explored in terms of biodiversity. Moreover, the labor camps generate special conditions for biodiversity threats. These include waste generation, alteration of animal life and facilitate the work of poachers by covering them up on several occasions for the basic reason of avoiding any kind of confrontation. Regarding the likelihood of forest fires, by relying on wood fires for basic needs, or simply lighting a cigarette, they become a potential fire hazard. Their activity, given the way they carry it out in the Forestal Belga property, makes them, unfortunately, the protagonists of a serious degradation. With permission to continue forest extraction and forest monoculture plantations, the without-project scenario identified included continuous forest degradation, as well as illegal poaching.

More frequent droughts are a consequence of both, climate change and deforestation. The lack and reduction of forest canopy reduces the water available in strands, as it moves faster along the land. A flowchart for this impact of current and expected conditions is detailed below:

Flowchart of the future projection of the "without-project scenario" without project activities

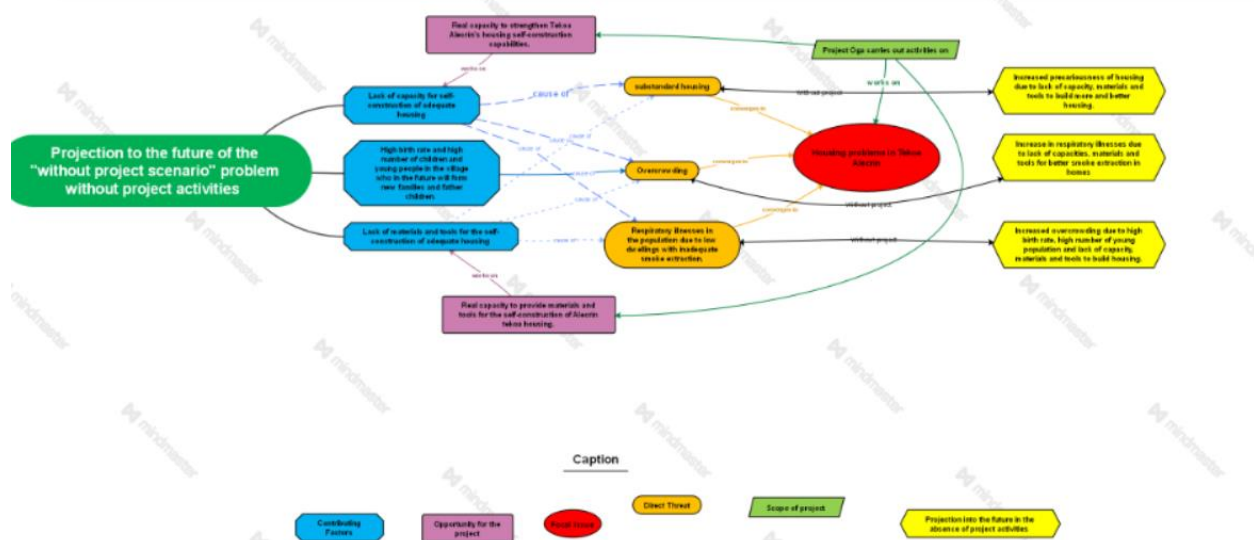


Figure 20: Flowchart for drought enhancement in the without-project scenario.

5.2 Net Positive Biodiversity Impacts

5.2.1 Expected Biodiversity Changes (B2.1)

Biodiversity Element	Fauna biodiversity
Estimated Change	Enhancement of biodiversity in the areas to be regenerated and conserved as well as surrounding protected areas working as green corridors
Justification of Change	Degraded areas will be enriched and restored with native species from seedlings. Other areas natural regeneration will take place after bamboo species are controlled. These actions will allow for fauna to return to the property, by recovering feeding, reproduction and rest areas for animals and extending the green corridor connecting different natural reserves.

Biodiversity Element	Invasive species
Estimated Change	Reduction
Justification of Change	Monitoring of reforestation and enrichment activities will allow the project to identify invasive species growth (specially pines from plantation near project area) and eventual implementation of an invasive species plan will reduce invasive species numbers.

Biodiversity Element	Native forest
Estimated Change	Degradation reduction in the areas to be regenerated and conserved
Justification of Change	Monitoring and mitigation of illegal activities such as harvesting and forest fires are expected to reduce degradation, added to enrichment of native species activities. Indicators on threats reduced and areas enriched, as well as individuals installed will allow the monitoring of the estimated change.

Biodiversity Element	IUCN species
Estimated Change	Numbers increased in the project area (over the 7 IUCN bird species identified)
Justification of Change	Based on Aves Argentinas studies ⁵⁰ , species in the project zone have a potential to regenerate. The restoration of habitats, as well as the monitoring and control of illegal poaching and hunting will reduce threats to endangered species, as well as their habitat, leading to an increase in their population.

5.2.2 Mitigation Measures (B2.3)

In order to enhance existing HCV areas, the project works as an extension of the Green Corridors between Peñalito Reserve and Yatubai, its conservation (and regeneration) means the opportunity for habitat restoration and a bigger area for endangered species population to enhance. The project includes training and equipment facilitation to stakeholders related to threat control (fire, illegal activities), which will mitigate biodiversity threats both, in the project area and project zone. These added to the state-of-the-art monitoring technology to be implemented within the project area premises, will reduce threats in the area. At the same time, this technology will allow a continuous biodiversity monitoring which, together with a professional team, will generate periodic information of the species response to the activities in the area.

Regarding the enrichment activities, **the project has a Forest Restoration** Plan in place for GS1. In this line, a failure of 30% in the establishment of seedlings is estimated. This failure can be caused by various biotic and abiotic factors. However, to reduce their impact, two instances are annually planned in which the plantations of the last two campaigns will be monitored to assess the status of each seedling.

The activities will include:

- Adversities Management,
- Lift in case of falls due to wind, branches, animal trampling, etc.
- Replacement or replant if necessary.

The status of the stratum will also be monitored. For example, the state of the forest structure and soil conditions, like soil moisture, soil cover, water erosion risks, etc.

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

As detailed throughout the biodiversity section, all the project activities are focused on preserving and recovering the exploited and degraded area, restoring its natural capital, recovering its biodiversity, protecting native species of flora and fauna in danger of extinction, favoring the strengthening of ecosystem

⁵⁰ **General bird inventory, management and recommendations, and future actions. Argentine Birds for the company. 2021**

services, preserving cultural values, contributing proactively with the local communities and generating positive effects to combat climate change.

By avoiding deforestation and recovering native forests the project will provide not only larger areas (connecting existing KBA areas) for species to be able to find food, shelter as well as reproductive sites, but to allow the forest to provide ecosystem services related to climate change adaptation, including flooding control, reduce temperatures, limit soil erosion, among others.

The state-of-the-art monitoring system to be implemented will allow biodiversity communities to respond to the expected changes, generating valuable information to define further actions needed to fully adapt to them.

5.2.4 High Conservation Values Protected (B2.4)

As seen in figure 19 and detailed in section 5.1.2, the project will enhance the biodiversity from other protected natural areas within the project zone, working as a corridor (or at least reducing distances) between two state natural areas: Piñalito and Yabotí. Moreover, other HCV identified, as water bodies, will be conserved, given the reduction of anthropogenic activities in the area with negative impact in the HCV (including plantation forestry and associated activities), as well native forest conservation together with the environmental service they provide.

One of the main aspects of the project is the technology in place in order to monitor both biodiversity evolution and threats. This will include the construction of a Monitoring and Control Centers where the administration and management of all the systems and operations will be centralized, focusing on two main functions: fire, and deforestation and poaching control, as relevant activities in terms of security as well as forestry and environmental issues. Moreover, the enrichment and regeneration of native forest, based on thorough study on best species to use according to stratum needs, is expected to enhance HCV protection including water courses, endangered species, as well as other ecosystem services.

5.2.5 Species Used (B2.5)

A list of species for planting seedlings in the Restoration and Enrichment Plan for the first 10 years was established. This list of 16 different native species was made through a rigorous analysis of several reports (for example: harvest shipments and the folders of the Sustainable Management Plan of the last 20 years provided by Forestal Belga SA, the list of species present informed in the Biomass inventory for the baseline, different bibliography such as the National Forest Inventory, etc.) (e.g.: harvest shipments and Sustainable Management Plan folders for the last 20 years provided by Forestal Belga SA; the list of species present as reported in the Biomass inventory for the baseline; different bibliography including the National Forest Inventory; etc.).

It also includes Yerba mate, a native plant to be installed as an organic productive project.

These species are listed below:

Common Name	Scientific Name
Araucaria	<i>Araucaria angustifolia</i>
Cañafistola	<i>Peltophorum dubium</i>
Caroba	<i>Bignonia caroba</i>
Cedro	<i>Cedrela fissilis</i>
Cerella	<i>Eugenia involucrata</i>
Guabiroba	<i>Campomanesia xanthocarpa</i>
Guaica	<i>Ocotea puberula</i>
Guatambu amarillo	<i>Aspidosperma olivaceum</i>
Guatambu blanco	<i>Balfourodendron riedelianum</i>
Incienzo	<i>Myrocarpus frondosus</i>
Jabuticaba	<i>Plinia cauliflora</i>
Lapacho Amarillo	<i>Handroanthus albus</i>
Petiribi	<i>Cordia trichotoma</i>
Pitanga	<i>Eugenia uniflora</i>
Siete capotes	<i>Campomanesia guazumifolia</i>
Timbo colorado	<i>Enterolobium contortisiliquum</i>

The distribution and number of species to be planted in each of the strata will depend on the particular situation of the stratum and the area of the field to be treated. Determining which species and how many seedlings to install in each stratum has required an in-depth study of different variables using various tools such as the baseline report, satellite images, etc. and, in collaboration with a professional team, to guarantee the preparation of a plan with the scientific rigor required for a project of these characteristics.

5.2.6 Invasive Species (B2.5)

The project plans only to reintroduce baseline native species, so no known invasive species will be introduced. The productive plan on agroforestry characteristics includes yerba mate (*Ilex paraguariensis*) cultivation at sub-canopy. Yerba mate is a native species, not known to be invasive.

Moreover, the project includes frequent biodiversity monitoring, and the presence of invasive species will be controlled as needed, based on the monitoring plan results.

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

Species	None
Justification of Use	<i>Pinus elliotti</i> may be present in the project area given the species was already planted at the start of the project in the project zone and may have invaded parts of the project area, but the project does not include the use of any non-native species.

Potential Adverse Effect	The introduction may have led to seedling invasion in the area, which will have to be controlled as part of the project's enrichment and regeneration activities.
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5.2.8 GMO Exclusion (B2.7)

No GMOs are used to generate GHG emissions reductions or removals as the project aims to enrich and regenerate the area with native species, and for a small area generate a productive project on yerba mate production.

5.2.9 Inputs Justification (B2.8)

Yerba mate (*Ilex paraguariensis*) production in the project area is expected to be certified organic, so no chemical pesticides are expected to be used.

The enrichment and regeneration of native forest activities will include the use of native species seedlings. Regarding fertilizers, due to soil condition and nutritional characteristics, the establishment of individuals is not conditioned to the use of mineral additives in the field.

Finally, weed control will be carried out manually, through the implementation of programs with the communities. Campaigns will be carried out with workers who will go around plantations that are up to two years old. Weeds will be cleared within a radius of 1mt around the plant and the evolution and health of the seedling will be monitored.

Name	Native species seedlings
Justification of Use	For forest enrichment and regeneration
Potential Adverse Effect	There is a low chance seedlings may have invasive seeds in the soil used, this will be controlled by carefully studying seedling pots, to avoid any other specimen establishment in the area.

5.2.10 Waste Products (B2.9)

The project itself will generate mainly domestic waste-like, from offices, monitoring centers, among others. This waste will include source-classification and treatment in the nearest town.

The infrastructure construction will mean the generation of debris and construction waste during this stage. The waste management plan in place for this waste includes different steps which will be extended to the waste management throughout the project lifetime:

Waste planning

Consists of the implementation of a "sorting center", with the installation of bins or containers in an area with enough space for maneuvering trucks. The containers should have their volume determined according to the demand projected and have a control register. In addition, each container must be identified in terms of waste type.

Waste prevention

Waste generation will be minimized, taking into consideration different practices during construction period:

- Sustainable preliminary works.
- Short-term work.
- Low waste construction design (Modulated).
- Recyclable materials.

During the lifetime of the project, different practices will be implemented to reduce the amount of waste generated in the area.

Source waste separation

Generated waste will be sorted and differentiated in recyclable, composting and waste materials. Later, disposed of in separated containers.

Collection

There is a collection planning in place to reach the different containers in the project area. This collection will prevent the sorted material from being mixed.

Treatment

Material will be treated according to typology, with recyclables being taken to waste sorting cooperatives which recovers materials with market interest and distributes them.

Waste will be taken to disposed of, while organics will be composted on site.

In the case of Yerba mate organic production, the waste generated will be minimized. Practices include the use of biodegradable materials, such as tubes for seedlings, no use of agrochemicals, avoiding containers, among others.

5.3 Offsite Biodiversity Impacts

5.3.1 Negative Offsite Biodiversity Impacts (B3.1) and Mitigation Measures (B3.2)

Negative Offsite Impact	Mitigation Measure(s)
The increase in security in the premises of the project area could lead to higher poaching and hunting pressure on other lands.	The project includes training, and job positions for the communities living in the project zone and the project expects to expand during the project lifetime, the area of influence of its projects.
Public sector could rest in private conservation projects, reducing investment to other HCV areas.	The project includes training and equipment to rangers, firefighters, helping local governments to mitigate risks in the area.

5.3.2 Net Offsite Biodiversity Benefits (B3.3)

The negative impact identified outside the project zone includes the potential increase in poaching and hunting pressure on other areas which, compared to the positive effects of the project on biodiversity this seem compensated, being:

- Connection to the other two areas that make up a major green corridor in the province.
- Enrichment and regeneration, avoiding plantations and indiscriminate logging in an area with critically endangered species.

Moreover, the project identifies mitigation actions including:

- The creation of jobs and training opportunities to reduce illegal activities in project zones.
- Increase capacity building with training and equipment for first responders and rangers.
- Increase the project's influence zone, including more communities throughout the project's lifetime.

5.4 Biodiversity Impact Monitoring

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

The biodiversity monitoring plan in place is designed in order to evaluate the expected result of the project, which is to ensure that species at risk of extinction can recover and reproduce in a protected environment. Through the implementation of the Biodiversity Restoration Plan by means of periodic monitoring of flora and fauna, biodiversity will be considered restored based on the species identified as indicators, meaning as targets for monitoring. The main variables considered are those describing the demographic behavior of a population and based on monitoring and tracking plans, endangered species will be determined.

The first approximation to the knowledge of species diversity in GS1 consisted of a compilation of historical records of spectacle species in areas close to the site under study. The areas considered were the Piñalito Provincial Park and the Yabotí Biosphere Reserve, as these are the closest protected areas. For this purpose, a literature review was carried out and all specimens deposited in the herpetological and mastozoological reference collections of the Evolutionary Genetics Laboratory of the Institute of Subtropical Biology (CONICET-UNaM) were examined.

In August 2021, a general bird survey was carried out, in addition to two other ornithological initiatives, as a complement to it:

- "Density and occupancy of three rare woodpecker species (Picidae, Aves) in the forests of northeastern Argentina: identifying priority areas for conservation".
- "Yacutinga Project (*Pipile jacutinga*): update on the status of populations in the province of Misiones".

Methodology:

The monitoring strategy was established as a comprehensive and exhaustive inventory every three years, with two limited surveys of indicator species for the years in between. The plan is then divided in two different strategies:

Intermediate monitoring (annually)

With the objective of detecting the presence and location of nationally and internationally threatened species within the GS1, strengthen the survey of birds and to issue management recommendations to favor the conservation of the site and especially of threatened birds within the Reserve annual surveys will be conducted.

The monitoring plan for the intermediate years will be less intensive. It is understood that, given the dynamics of the fauna communities, it is not necessary to repeat exhaustive monitoring annually. Therefore, these surveys are only intended to identify changes in the communities of species that we have identified as indicator species for the health and biodiversity enhancement of the site.

These monitoring is expected to provide information on the species. Therefore, these surveys are only intended to identify changes in the communities of species that would have already been identified as indicator species for the health and biodiversity enhancement of the site.

Exhaustive monitoring (every three years)

Monitoring campaigns will be carried out every three years (the first one having been carried out in 2021), foresees the installation of three campaigns covering different sectors of the property. These will be carried out during the months of June, September and November. The choice of these periods in particular, is due to the need to get to know the avifauna of the property and the migratory species.

Free-ranging transect walks will be carried out between the different plots on the site. This method increases the probability of detecting nests, territories, species of very low density, and transiting through environments not considered or of very low presence. In addition, searches will be carried out by means of song reproduction (playback).

In terms of biodiversity monitoring plan, variables to be monitored include direct count of individuals of a species, presence or absence of species, breeding success or habitat area. In the case of rare and endemic species, indicators of abundance can be used (e.g. through a survey of tracks, signs or nests). In the case of very rare species, radio monitoring can help to track the movements of individuals. To describe changes in habitat quality, the relative abundance of indicative groups such as butterflies, birds, beetles and plant communities can be used.

Monitoring involves multiple sampling approaches depending on the taxonomic group being targeted. Sampling that requires visual or auditory recording methods will be prioritized over those that require trapping methods. Likewise, priority will be given to live capture methods over dead capture methods. The latter would be limited to scientifically rigorous work coordinated by a career researcher, duly authorized, and where no other non-lethal option is available (in addition, when it does not imply putting the population at risk). On the other hand, the eventual collection of specimens, dead or alive, parts of these (antlers, bones, hairs, faeces, etc.), tissue or blood samples, etc., will be contemplated, for taxonomic determination purposes.

Indicators include:

	Forest Landscape	Ecosystem	Population
Composition	The stratification carried out for the forest inventory exposed a very important heterogeneity and of great impact for the development of biodiversity. 9 strata were differentiated	Through surveys and monitoring relative abundance, frequency, richness, evenness and diversity of species will be determined. Proportions of endemic, exotic, threatened and endangered species calculated.	Absolute or relative abundance and frequency will be determined.
Structure	Heterogeneity; connectivity spatial linkage; patch porosity; contrast; grain size; fragmentation; configuration; juxtaposition; patch size frequency distribution; perimeter-area ratio; habitat layer distribution pattern.	Substrate and soil variables; foliage density and layering; horizontal patch; canopy openness and space proportions; abundance, density and distribution of physical features and structural elements (snags, trunks); water availability and resources.	Dispersal (microdistribution)
Function	Disturbance processes, erosion rates, geomorphic and hydrologic processes; human trends in land use.	Biomass and resource productivity, patch dynamics, rates and intensities of human intrusion	Population fluctuations, acclimatization, adaptation
Inventories	Aerial photographs (satellites and UAVs), Geographic Information System (GIS) technology, multi-temporal image analysis.	Physical habitat measurements and resource inventories; habitat suitability indices (HSI, multi-species); observations, surveys and inventories, captures and other sampling methodologies.	Camera trap surveys, sightings, audio recordings for bird community assessment.

Monitoring will consider the behavior and dynamics of the different species in order to define areas where it will take place. Camera traps will be set up in wetlands, streams, "barreros" (sites where salts are found

in the soil), wildlife trails, etc. In addition, transects will be traced from the camps to be established in each campaign. Trails will be walked for at least 5 kilometres around the camp.

Moreover, sampling methodology varies according to animal groups:

- In order to survey the fish, amphibian, reptile and mammal fauna of the property, campaigns of at least 14 days of sampling will be carried out.
- Sherman traps and live trapping cages will be used to capture rodents and marsupials. All traps will be placed in transects along streams and main roads and will be activated for three consecutive nights, checked in the morning and afternoon.
- For the survey of small and large mammals, transects will be made along main roads, stream banks and camera traps.
- For the bird survey, 4 campaigns will be carried out, covering different sectors of the site. These will be carried out during the months of May, June, September and November in order to detect existing and migratory species. Since the composition and abundance of species may vary according to the different environments, work will be carried out in different plant communities that are broadly distinguishable, and representative of the whole property as well as accessible by roads or paths. In order to carry out such monitoring, free roaming will be carried out through well-distributed transects. This method increases the surface area worked in relation to the point methodology, which in turn increases the probability of detecting nests, territories, very low-density species, and transecting through environments not considered or of very low presence. In addition, searches will be carried out by means of song reproduction (playback).

Trigger species

The site, together with the neighboring Provincial Park Piñalito, has populations of threatened and restricted distribution species, which gave it its KBA category. The trigger species to be monitored include:

Yacutinga (*Pipile jacutinga*) - Endangered.

Tirica (*Leopardus guttulus*) - Vulnerable.

Vinaceous Parrot (*Amazona vinacea*) - Endangered.

Chanchita (*Australoheros ykeregua*).

Rock Bats (*Myotis izecksohni*) - Endangered.

Black-breasted Batara (*Biatas nigropectus*) - Vulnerable.

Cinnamon-faced Woodpecker (*Celeus galeatus*) - Vulnerable.

For these species, in addition to the variables analyzed during monitoring of biodiversity, others include:

- changes in stock abundance, and trends in stock size and structure for assessing size and structure of stocks to assess the health and viability of stocks, both before and viability of populations, both before and after any management intervention.
- changes in genetic diversity
- predator numbers to assess the effectiveness of control programs

Effectiveness assessment

As the project is in its initial stages, the effectiveness of the measures to be implemented will be evaluated every year and, depending on the results obtained, the necessary improvements will be implemented.

5.4.2 Biodiversity Monitoring Plan Dissemination (B4.3)

As mentioned in points 2.3.1 and 2.3.2, project information will be available for the public through different means. During the monitoring process basic documents will be made, reporting results in a simple and inclusive language and with measures of evaluation of processes and results, they will be available on the website, social networks, publications in local newspapers, information meetings with stakeholders during monitoring instances. Moreover, the project's documentation (as well as local language summary) will be available on VCS and CCB webpage, and a public consultation period will take place for stakeholders to comment on the project's design.

5.5 Optional Criterion: Exceptional Biodiversity Benefits

5.5.1 High Biodiversity Conservation Priority Status (GL3.1)

The project area is found within the proposed KBA Piñalito (see figure 19 in section 5.1.2). This property has a strategic location for the connectivity of the Piñalito Provincial Park and the Yabotí Biosphere Reserve, parts of the Misiones Green Corridor.

It conserves an area close to 22,000 ha of forest with the globally critically endangered *Araucaria angustifolia*, with different degrees of conservation, but always with a continuous tree canopy. This allows the permanence of globally endangered species such as the Yacutinga (*Pipile jacutinga*), Loro Vinoso (*Amazona vinacea*), the white guatambú (*Balfourodendron riedelianum*) and other globally vulnerable species such as the Black-breasted Batara (*Biatas nigropectus*), the Cinnamon-faced Woodpecker (*Celeus galeatus*), the Tirica (*Leopardus guttulus*), and cedar (*Cedrela fissilis*). It also has species of special value due to its high degree of endemism, such as the Chanchita (*Australoheros ykeregua*) (Gil & Bosso, 2020).

5.5.2 Trigger Species Population Trends (GL3.2, GL3.3)

Trigger Species	Yacutinga (<i>Pipile jacutinga</i>) – Endangered at global level
Population Trend at Start of Project	Rare throughout the property, heard in the vicinity of the camp on lot 2 and two specimens seen on Arroyo Toro. The high hunting pressure, together with the extraction of timber in some areas of

	gallery forest, would be the causes of this low abundance. Animals were also found to be unfriendly to human presence characteristic.
Without-project Scenario	The continuation of habitat loss for these species would mean a reduction in population numbers
With-project Scenario	For the conservation and recovery of the population on the property, it is necessary to incorporate a body of rangers. The conservation of this and other endangered species that suffer from this problem depends on this action. At the same time, it is advisable to make efforts to recover the banks of the streams, especially those of the streams, specifically those that were deforested in their entirety.

Trigger Species	Carpintero Cara Canela (<i>Celeus galeatus</i>) – Vulnerable at global scale
Population Trend at Start of Project	Rare species on the property. The species depends on laurel trees for breeding and feeding, and on natural hollows, usually in Guatambú for roosting. The abundance of the species is much lower than in the large blocks of well-preserved forest in the area of the central highlands of the province of Misiones. On the site, breeding was recorded twice during 2019 and 2021, in lots 6 and 4 respectively.
Without-project Scenario	Further degradation of native forest is expected to reduce the population's number.
With-project Scenario	The regeneration and reforestation with laurels and guatambú would be direct management actions that could lead to an increase in the populations of the species on the property.

Trigger Species	Loro Vinoso (<i>Amazona vinacea</i>) Endangered at global level
Population Trend at Start of Project	Rare, with only two specimens recorded in flight in lot 7. The Araucaria trees present in this area of the property provide an optimal environment for the presence and possible reproduction of the species.
Without-project Scenario	The Araucaria angustifolia clear cut harvest expected from forest plantation activities would lead to habitat loss and further reduction in population numbers.
With-project Scenario	It is of vital importance that Araucaria angustifolia specimens are not removed, both for the conservation of this species and the Blue magpie. Due to the proximity to established populations of the species in the vicinity of Cruce Caballero, the property owned by Forestal Belga would appear to be a potential colonization area for the species, which would lead to an increase in the number of individuals at a global level. In this line, the Forest Regeneration Plan takes into consideration this recommendation and specimens will only be thinning

Trigger Species	Batará Pecho Negro (<i>Biatas nigropectus</i>) Vulnerable at global level
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Population Trend at Start of Project	An insectivorous habitat specialist. Although it is a rare species, it was found widely distributed on the property. This particular situation is due to its close relationship with the Caña Yatevó (<i>Guadua trinii</i>). At the same time, the high degree of degradation of the native forest in many of the plots has allowed the advance of this cane, which has the distribution of this endangered species. However, the Caña Yatevo has a reproductive cycle in which it dies and takes a few years to regenerate, creating a favorable environment for the species.
Without-project Scenario	
With-project Scenario	The reproductive cycle of the reed was manifested during 2020 and 2021 and the status of the species is unknown. The recommendation is applying no management of any kind in the areas covered by Yatevo reed in the coming years, in the hope that, with a favorable environment for the species, they will return.

This list can be extended to other species identified and in an almost endangered status at global level. It must be added that at a local level, all present a degree of vulnerability.

APPENDICES

Appendix 1: Stakeholder Identification Table

Appendix 2: Project Activities and Theory of Change Table

Activity description	Expected climate, community, and/or biodiversity			Relevance to project's objectives
	Outputs (short term)	Outcomes (medium term)	Impacts (long term)	
Population and social parameters census	Generate local social information	Improve knowledge on local communities (stakeholders)	Allow for more inclusive participatory events; project's design accordingly (infrastructure, development, schooling, etc.)	Information needed to identify stakeholders
Prior, free and informed consultation process	Presentation of GS1 project and possibility to understand community's requests, needs, fears, etc.	Design and implementation of development projects accordingly	Directed benefits to targeted beneficiaries, reduction of poverty, and long-term capacity building	CCB certified project, development projects definition
Native forest enrichment and restoration	Seedling plantation based on a Regeneration plan	Native species installed and growing under thorough monitoring	Habitat for endangered species restored and biodiversity recovered	Activity needed to improve premises management and achieve biodiversity enhancement
Implementation of agriculture activities (yerba mate plantation)	Employment and training to local communities	Economic project in place with yerba mate production	Wellbeing improvement and capacity building within local community	Provide economic opportunities to communities in the area
Beekeeping development project activities	Employment and training to local communities	Economic project in place with honey production	Wellbeing improvement and capacity building within local community	Provide economic opportunities to communities in the area
HCV areas identification with communities	HCV monitoring and conservation plan	HCV enhancement and protection	Updated HCV monitor and protection	Cultural and biodiversity HCV conservation to increase communities' well-being and allow ecosystem services functioning.

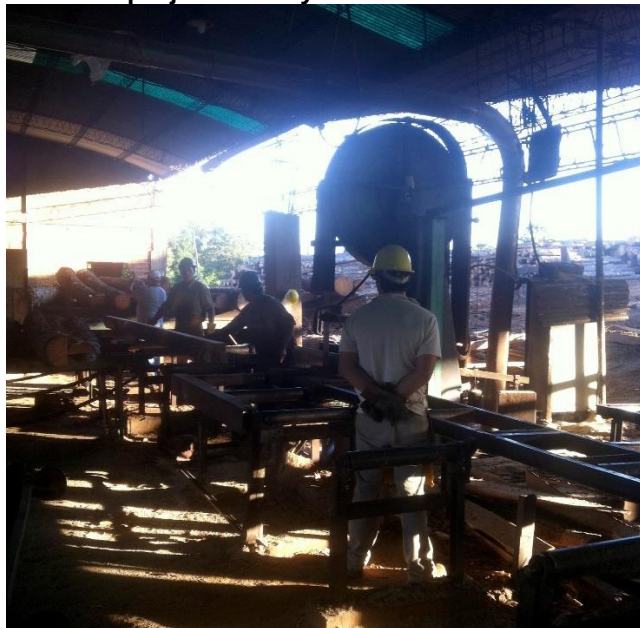
Monitoring technology installation	Design and first period of implementation of monitoring infrastructure	Monitoring towers with state-of-the-art cameras and the use of drones with photogrammetric cameras, the entire area will be monitored, controlling fires and illegal logging	Reduction in the number of illegal activities and threats to the premises.	Reduced threats to natural ecosystem
New social and economic development projects	Identification of needs and opportunities for projects by the community	Training and equipment provision to local communities for the implementation of project	Projects in place aiming to increase local well-being	Provide economic opportunities to communities in the area with capacity building
Enhance existing social and economic development projects	Training and equipment provision to local communities' developments	Improved conditions and production of economic projects; increase benefits of existing social projects	Projects in place aiming to increase local well-being	Improve conditions for development projects to enhance development in the area with capacity building

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
Extreme storms and precipitations	Tree individuals' loss, access to area could be difficult, projects with communities could be delayed	Early warnings and replacement of individuals in large, affected areas; keep fluent communication with communities and update on project's deadlines
Natural and intentional fires	Loss of biodiversity and infrastructure	24/7 monitoring to provide quick response and avoid large areas affected. Training and equipment delivered for firefighters and rangers to prevent and mitigate effects.
Extreme wind events	Trees fell in large areas; damage to monitoring infrastructure.	Early warnings and replacement of individuals in large, affected areas as well as equipment damaged.
Low establishment levels	Reduction in carbon sequestration	Regeneration plan and monitoring actions in place to replace individuals not established.
Illegal encroachment and hunting	Biodiversity loss due to direct hunting or habitat loss.	24/7 monitoring to provide quick response and mitigate fauna and flora affected; community social and productive projects; job generation and training for neighboring communities.
No agreement reached among stakeholders on community projects	Change in benefits achieved and stakeholders engaged	Periodic meetings, understand cultural characteristics of communities and needs.

Appendix 4: Additional Information

4.1 Pictures of the sawmill before the starting date of the project activity





4.2 Pictures of the sawmill after the starting date of the project activity in 2022





4.3 Species used in the enrichment planting (but not limited to)

Common Name	Scientific Name
Araucaria	<i>Araucaria angustifolia</i>
Cañafistola	<i>Peltophorum dubium</i>
Caroba	<i>Bignonia caroba</i>
Cedro	<i>Cedrela fissilis</i>
Cerella	<i>Eugenia involucrata</i>
Guabiroba	<i>Campomanesia xanthocarpa</i>
Guaica	<i>Ocotea puberula</i>
Guatambu amarillo	<i>Aspidosperma olivaceum</i>
Guatambu blanco	<i>Balfourodendron riedelianum</i>
Incienzo	<i>Myrocarpus frondosus</i>
Jabuticaba	<i>Plinia cauliflora</i>
Lapacho Amarillo	<i>Handroanthus albus</i>
Petiribi	<i>Cordia trichotoma</i>
Pitanga	<i>Eugenia uniflora</i>
Siete capotes	<i>Campomanesia guazumifolia</i>
Timbo colorado	<i>Enterolobium contortisiliquum</i>