THE LAST HABITAT REDD+ PROJECT

Bam
Bosques Amazónicos

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Project Title	*THE LAST HABITAT REDD+ PROJECT - Bosques Amazónicos BAM*
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Project Location	*Perú, Region Ucayali*
Project Proponent(s)	*Bosques Amazónicos SAC* *Av. Víctor Andrés Belaunde 147 Vía Principal 123, Office 201 Edificio Real Uno San Isidro, Lima 27, Perú* *Jorge Cantuarias Falconi* *Phone: +(51 1) 480 11 92* *www.bosques-amazonicos.com* *jcantuarias@bosques-amazonicos.com* *mcantuarias@bosques-amazonicos.com*
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Validation Body	*TBD*
Project Lifetime	*01 March 2020 – 28 February 2039; 20-years*
GHG Accounting Period	*01 March 2020 – 28 February 2039; 20-years*
History of CCB Status	*No previous applications*
Gold Level Criteria	None
Expected Verification Schedule	*2022*

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1 SUMMARY OF PROJECT BENEFITS

The Last Habitat REDD+ project is a conservation initiative developed by Bosques Amazónicos SAC (BAM) in Ucayali-Peru, a Peruvian region which ranked first nationally in terms of deforested area in 2020 and second in the period between 2001 and 2020. The project area is comprised by two private estates belonging to BAM: the properties of Nuestro Señor Jesucristo with 8,049.87 ha and Selva Maestra with 14,176.13 ha, a total area of 22,226.00 ha mainly of primary floodable forests.

This forested area is one of the last remaining ecosystems in the vicinity of Pucallpa, capital of Ucayali, an Amazon city undergoing constant growth due to intense migration from both Andean and Amazon regions. Located near the city of Pucallpa (45 minutes) and surrounded by deforestation pressures from agriculture, urbanization and others, the project area harbors an extraordinary ecological wealth, being the last habitat or refuge for various species of flora and fauna (with different degrees of threat according to national regulations) and a “green island” of outstanding ecological value in the zone, which creates an opportunity for scientific research on biodiversity and around the value of Amazon rainforests. In addition, the area includes several types of valuable forests, among them the “aguajales”, which are the wetlands with the greatest carbon sequestration capacity in the Amazon, making this an essential ecosystem to conserve.

Due to the permanent pressure for the expansion of population settlements and the expansion of the agricultural frontier over primary forests, the project area and its surroundings are in constant threat by socio-environmental conflicts (illegal logging, forest fires, deforestation from unsustainable production activities, land invasion, overlapping rights, among others), which represents a latent risk to the ecological wealth found in the area. In a context of accelerated growth of habitat degradation in the region, BAM allocated these areas for conservation since its purchase more than a decade ago, protecting the ecological value found and allowing the forest to survive the threats and difficulties mentioned above.

The Last Habitat REDD+ Project is designed under the avoided planned deforestation methodology as this area was originally sold to the project proponent with the authorization to convert the forested areas in agrarian production lands (camu camu, palm oil, piñon and cattle ranching). Despite having the legal authorization to carry out traditional productive activities, BAM, with its own resources, has promoted the conservation of these valuable forest and its biodiversity over the years by implementing different strategies and activities such as: territorial supervision with technical and legal support, forest surveillance activities, permanent work with communities for improving their capacities in sustainable forestry management, among others. Such conservation efforts will only be feasible and sustainable over time with the support of carbon revenues from the proposed REDD+ project, which will allow for protection against the growing threats of deforestation in the long term.

In order to continue and strengthen conservation efforts in is area, in a scenario of increasing threats and pressures, it is essential to generate resources through the REDD+ mechanism (carbon credits). These resources will generate the necessary income over time to implement the different strategic activities required for avoiding deforestation in the face of a high risk scenario and making the conservation of these areas more productive, convenient and profitable than its opportunity cost: changing the use of land.

The main expected benefits that the project will provide over time are summarized below:

Reduction of GHG emissions: the contribution to environmental balance, avoiding 15,637,305.81 tons of CO_2 equivalent into the atmosphere due to the conversion of forest cover in degraded soils for agricultural

purposes. Emission reductions are possible as a result of the implementation of activities for the identification, control and permanent monitoring of deforestation risks in the project area, training and capacity building of stakeholders in sustainable forest management, among others.

Protection and enhancement of environmental balance, strengthening the capacity of the ecosystem to provide goods and services, and increasing the value of the standing forest: the contribution to the preservation of valuable biodiversity, including threatened wildlife (flora and fauna), and the preservation of ecosystems of high importance such as the "aguajales" (wetlands) included in the project area. Ecosystem preservation is achieved as a result of activities carried out by the project such as the implementation of a scientific program that seeks to permanently evaluate and monitor the composition and value of the ecosystems (flora, fauna, water sources) in the project area.

Improvement of ways of life and well-being of local and indigenous populations: the contribution to improving the quality of life of the communities and their capacity to sustainably manage the forest, generating value chains in harmony with the integrity of the forest and its ecosystem products/ services.

Table 1. Summary of expected benefits in The Last Habitat REDD+ Project

Outcome or Impact Estimated by the End of Project Lifetime	Section Reference
1) Under the implementation of a plan for the protection of critical habitats, 09 species of mammals (including a Peruvian endemic species) categorized in appendices I, II and III of CITES will be protected; 02 species of birds in Appendix I (almost threatened in Peru), 01 amphibian species, 02 species of reptiles and 34 species of birds categorized in Appendix II, and one forest species, the quinilla (*Manilkara bidentata*), categorized in situation vulnerable by national regulations (D.S.004-2014-MINAGRI).	2.1.11 5.1.1.2 5.1.1.3
2) Conservation of the biodiversity of the project area as part of an almost continuous biological corridor, around a set of protected natural areas, fragile ecosystems, conservation concessions, and indigenous territories that provide and configure an ecological space necessary for species to ensure connectivity, functionality, and ecological integrity.	2.1.11
3) Generation of a greater knowledge of biodiversity, on the status of prioritized species and evaluated in inventories, and the ecological characterization of natural communities, through the development of a Science Program, which allows zoning, establishing areas for protection of critical habitats and conserve the project area.	2.1.11
4) Boosting the promotion of 04 mitigation measures (USCUSS sector) and adaptation (Forest sector) to climate change, within the framework of the NDC.	2.1.11
5) Ensure the maintenance of ecological processes and environmental services provided by the forest, such as water regulation of both the Lower Manantay basin, a tributary of the Ucayali River, and the Lower Pachitea, resilience to climate change, pollination services and natural regeneration of the forest, among other provision, support, and cultural services.	2.1.11

1.1 Standardized Benefit Metrics

Table 2. Estimates of the net benefit for different metrics during the lifetime of The Last Habitat REDD+ project

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	Does not apply	
	Net estimated emission reductions in the project area, measured against the without-project scenario	15,637,305.81 tCO2e	3.2.4
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	14,507 ha	3.1.4.3
	For ARR[3] projects: Estimated number of hectares of forest cover increased in the project area measured against the without-project scenario	Does not apply	
Improved land management	Number of hectares of existing production forest land in which IFM[4] practices are expected to occur as a result of project activities, measured against the without-project scenario	Does not apply	
	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	Does not apply	
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	To be defined	
	Number of female community members who are expected to have improved skills and/or knowledge resulting from training as part of project activities	To be defined	

[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
Employment	Total number of people expected to be employed in project activities,[5] expressed as number of full-time employees[6]	To be defined	
	Number of women expected to be employed as a result of project activities, expressed as number of full-time employees	To be defined	
Livelihoods	Total number of people expected to have improved livelihoods[7] or income generated as a result of project activities	To be defined	
	Number of women expected to have improved livelihoods or income generated as a result of project activities	To be defined	
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	To be defined	
	Number of women for whom health services are expected to improve as a result of project activities, measured against the without-project scenario	To be defined	
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	To be defined	
	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	To be defined	
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	To be defined	

[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 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	To be defined	
Well-being	Total number of community members whose well-being[8] is expected to improve as a result of project activities	To be defined	
	Number of women whose well-being is expected to improve as a result of project activities	To be defined	
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	22,225.74 ha	2.1.11 5.1.3
	Expected number of globally Critically Endangered or Endangered species[10] benefiting from reduced threats as a result of project activities,[11] measured against the without-project scenario	03 species in the Vulnerable category (IUCN): Mammals *Tapirus terrestris* ("sachavaca"); *Myrmecophaga tridactyla* ("hormiguero bandera") Birds *Myrmoborus melanurus* ("hormiguero de cola negra")	5.1.1.2

[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

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

2 GENERAL

2.1 Project Goals, Design and Long-Term Viability

2.1.1 Summary Description of the Project (G1.2)

The Last Habitat REDD+ project is located in Ucayali, one of the regions with the highest rates of deforestation in Peru (31,543.29 ha in 2021). The areas in the proximity of the project have been identified by the Ministry of Environment as one of the largest deforestation hotspots in the country (MINAM, 2021). As an example, town of Masisea, located near to the project area, has been intensively exploited by a religious group (Mennonites) who have degraded biodiversity in the region at an unprecedented pace.

The project comprises the maintenance and conservation of forest cover in two properties owned by the project proponent: the Nuestro Señor Jesús (JCC) and Selva Maestra private lands, purchased by BAM in 2009 and 1998, on an area of 8,049.87 ha and 12,730.41 ha, respectively. Since the purchase of the properties, BAM has been protecting these forest and its biodiversity, using its own resources to implement different conservation measures such as: the monitoring and control of environmental crimes in the project zone, the establishment of guard posts around the area, the patrol of a territorial security team, the work with the surrounding communities for improving sustainable management capacities, among others.

The Last Habitat REDD+ Project is designed under the avoided planned deforestation methodology since these properties were acquired with legal authorization for the implementation of an agro-industrial project that included the installation of oil palm, camu camu and pine nut plantations on 7,507 ha of the Nuestro Señor Jesús property, and the development of cattle ranching activities in an area of 7,000 ha in the Selva Maestra property. To date, BAM has been able to manage and protect its properties by conserving the forested area, however, due to the type and magnitude of the threats affecting the region and, particularly, the project zone, it is unlikely that the area can continue to be conserved optimally without generating the required financial resources for the implementation and straightening of prevention, protection, and conservation measures for the ecosystem within the project area. The estimated emission reduction for the project is 15,637,305.81 tCO2e at an average of 781,865.29 tCO2e/year.

The reduction of emissions will be achieved over time through the implementation of various activities grouped into three strategic lines of intervention: mitigation of deforestation risks, protection of biodiversity and ecological processes, and socio-economic management for community development.

Mitigation of deforestation risks: direct threats are those that can cause damage to the ecosystem, induced by direct human actions on the forest, mainly from groups living in the project area. Despite their great ecosystem value, these areas face increasing threats of deforestation such as land invasion and trafficking, overlapping of rights, illegal logging, expansion of agricultural frontiers for the implementation of unsustainable agricultural practices that, in many cases, use fire as a preparation to open crop areas in the dry season which put at continuous risk the loss of forest cover within BAM properties. Such hazards are and will be addressed by the project over time through the implementation of different monitoring and control strategies as well as social actions that seek to prevent and reduce risk factors. These conservation activities include: the implementation of a territorial security system in cooperation with the forestry authorities and competent entities, actively participating in public coordination spaces, such as the Regional Table for Forest and Wildlife Control and Surveillance (MRCVFFS) led by the regional government of Ucayali and promoted by the SERFOR of

MIDAGRI, with the aim to coordinate joint actions to identify, stop and prevent deforestation, illegal wildlife and non-timber forest species trade, as well as illegal logging and associated corruption. Furthermore, the installment of infrastructure for optimal monitoring and control, the consolidation of committees for forest surveillance and control, the implementation of training programs to local communities in sustainable forestry management and practices, among others.

Protection of biodiversity and ecological processes: for an adequate conservation and management in the sustainable use of the forest, since 2020 BAM implements a Scientific Program in cooperation with prestigious organizations and universities, whose purpose is to understand and monitor the functioning of the forest and its components and identifying habitats and dominant species, oriented to the protection of valuable flora and fauna habitats, specially of those species that may be in some category of threat. Currently, the research area is located very close to the city of Pucallpa, the capital of the department of Ucayali (barely 27 km along the shortest motorized road). The results to date indicate that the area has excellent potential to be considered a protected area of conservation, vital for the protection of fauna species that use these forests as a refuge. Inventories have also allowed the registration of various species classified with some category of threat according to national legislation and the IUCN. Also, in alliance with the Herbarium of the Universidad Nacional Agraria - La Molina, it has been possible to install a first permanent sampling plot to monitor and produce long-term useful scientific information on floristic taxonomy, plant-animal interactions and dynamics of these forest sections, and which could become an international scientific research station. For this reason, the company has requested recognition of the JCC property as Private Conservation Area, a procedure that is being processed before the competent entity that is SERNANP (National Service of Natural Areas Protected by the State), a dependency of the Ministry of the Environment. In addition, the project promotes awareness of the importance of Amazonian biodiversity and works in coordination with other specialized organizations to train different stakeholders in the sustainable and harmonious management of the forest, the prevention and control of wildlife crime, the rescue of animals at risk or in danger, among other protection activities.

Socio-economic management for community development: being located in a region of limited resources, neighboring populations have inadequate access to basic social services, limited access to land and formalization of productive activities, insufficient capacities for social management, a marked absence of good sustainable agricultural and forestry practices and little knowledge of appropriate technologies. All which configures a forest landscape in the process of degradation, with weak or non-existent governance processes that promote restoration and create a mosaic of land uses on fragmented forest areas. In this line, the inclusion of the populations and interest groups is fundamental for the development of the project and the compliance of forest protection. Hence, the project involve neighboring communities in its value proposition for improving community livelihood and assuring the impact of the efforts in the long term.

Project activities include socioeconomic initiatives such as: permanent training for communities in sustainable forest management, the generation of sustainable production chains to promote alternative sources of income that do not involve logging, the recovery of degraded areas as a strategy to reduce pressure on areas with forest cover, management and respect for biodiversity, risk control, implementation of projects to provide better conditions in terms of basic services for the populations (drinking water, electricity), promotion of productive economic initiatives that indirectly favor neighboring populations, contributing to improve their way of life, with an intercultural and gender approach.

OBJECTIVES:

Table 3. Objectives of The Last Habitat REDD+ Project

General: Reduce greenhouse gas emissions caused by degradation and deforestation, designing and implementing a REDD+ project for forest conservation in the Ucayali region, Peru.	
SPECIFIC OBJECTIVES	**IMPACTS**
1. Avoid deforestation and forest degradation in the project area.	Reduction of GHG emissions.
2. Protect the integrity of biological diversity and ecological processes in the project area.	Protection and enhancement of environmental balance, strengthening the capacity of the ecosystem to provide goods and services, and increasing the value of the standing forest.
3. Strengthen the socio-economic situation of the interest groups, specifically the villages and communities neighboring the project area.	Improvement of ways of life and well-being of local and indigenous populations.

2.1.2 Project Scale

Table 4. Project scale

Project Scale	
Project	
Large project	X

2.1.3 Project Proponent (G1.1)

Table 5. Identification, contact and responsibility of the proponents of the The Last Habitat REDD Project

Organization name	Bosque Amazónicos SAC (BAM)
Contact person	Jorge Cantuarias Falconi
Title	General Manager
Address	Av. Víctor Andrés Belaunde 147 Vía Principal 123, Office 201 Edificio Real Uno San Isidro, Lima 27, Perú
Telephone	+(51 1) 480 11 92
Email	www.bosques-amazonicos.com jcantuarias@bosques-amazonicos.com mcantuarias@bosques-amazonicos.com

2.1.4 Other Entities Involved in the Project

Table 6. Identification, contact and responsibility of other entities involved in the Project

Organization name	PASKAY SAC
Contact person	Jorge Torres Padilla
Title	General Manager
Address	Jr. Junín 881 Of. 1024 Torre B Magdalena, Peru
Telephone	+(51 1) 943 206 810
Email	www.paskay.pe contacto@paskay.pe jtorres@paskay.pe
Role / Responsibilities	Preparation of the PD and provide general advice on the implementation of the project. Paskay will be in charge of monitoring the changes in GHG emission reductions resulting from project activities, for use as offsets, in accordance with the monitoring plan established in the PD. Likewise, it will be in charge of preparing the monitoring reports according to the validated design, and the requirements of the CCB&VCS standards.

2.1.5 Physical Parameters (G1.3)

2.1.5.1 Location and limits:

Departments: Ucayali / Huánuco

Provinces: Coronel Portillo / Puerto Inca

Districts: Manantay, Campo Verde / Honoria

The area where the project is located is in the Ucayali River basin, in a system of floodplain terraces and humid forests that, according to the list of terrestrial ecoregions of the world by WWF (Olson et. al. 2001), are characteristic of the tropical ecoregions known as: humid forests of the southwest of the Amazon, the Humid forests of Ucayali and the Varzea de Iquitos. Taking as a reference the descriptive memory of the National Map of Ecosystems of Peru (MINAM 2019), in the project area and its surroundings, up to eight ecosystems can be differentiated that are characterized by different plant formations, being the most dominant in the project area flooded alluvial forest, palm swamps, non-flooded terraced forests and shrubby herbaceous swamps. In the environment, agricultural areas, pastures or grasslands and areas with secondary vegetation are also identified.

On the other hand, the project area is located in the area where two large regions of endemism for birds converge, which forms a kind of "ecotone" and houses species from both regions. These are the so-called Lowlands of southeastern Peru, which includes the areas of Tambopata and Manu (the project area would be located in the far north), and the Upper Amazon-Napo Lowlands, which includes the ecosystem influenced by the large rivers, such as the upper parts of the Amazon River up to the Maranon and the Ucayali, and the Lower Napo area at its intersection with the Amazon.

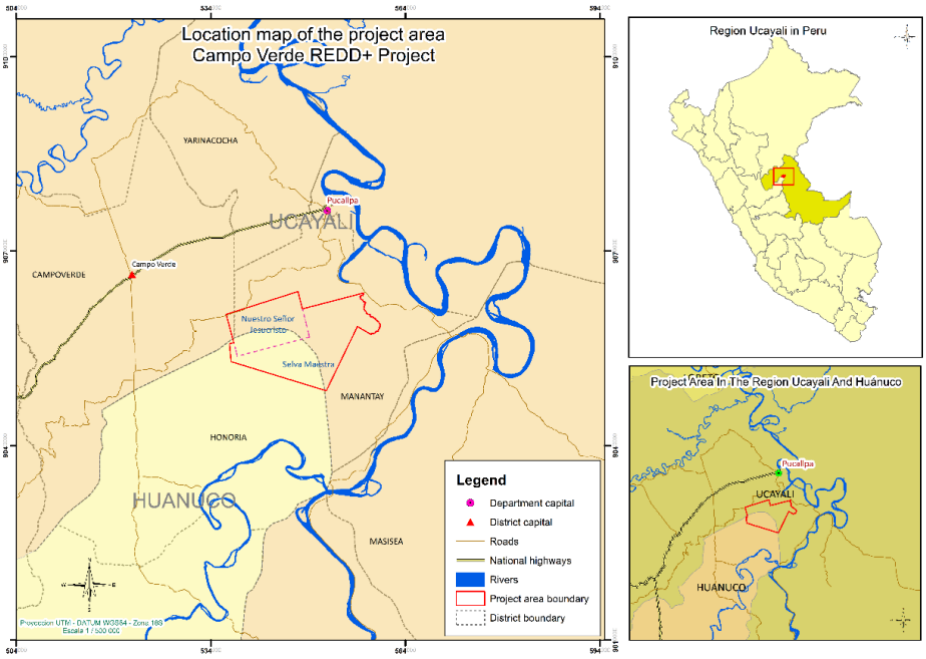
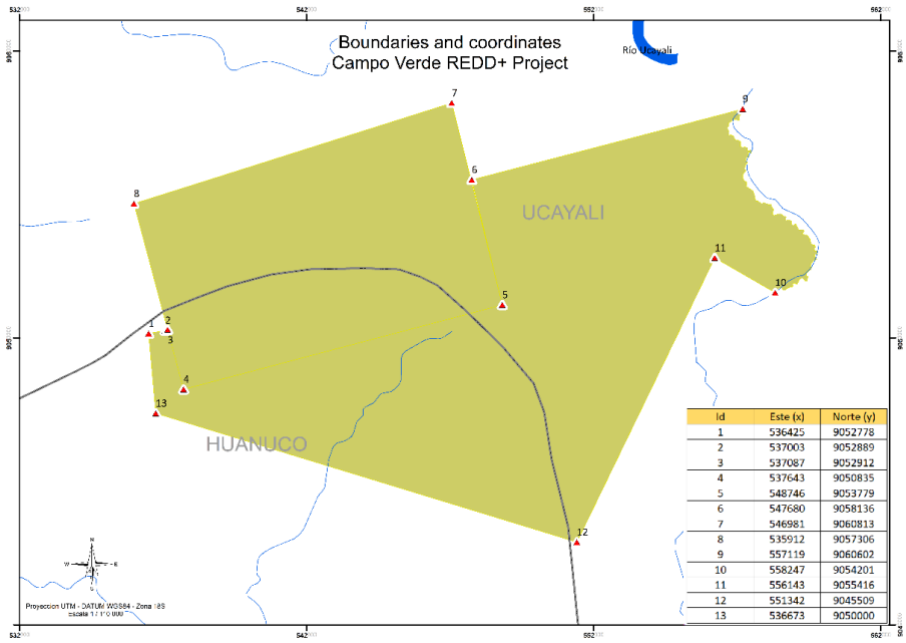


Figure 1. Location map of the project area



Id	Este (x)	Norte (y)
1	536425	9052778
2	537003	9052889
3	537087	9052912
4	537643	9050835
5	548746	9053779
6	547680	9058136
7	546981	9060813
8	535912	9057306
9	557119	9060602
10	558247	9054201
11	556143	9055416
12	551342	9045509
13	536673	9050000

Figure 2. Limits and UTM WGS84 19S coordinates of the vertices of the project area.

2.1.5.2 PHYSIOGRAPHY

The entire area of the NSJ and Selva Maestra properties is classified as Alluvial Plain Physiography, also known as “Lowland Forests” (in accordance with the Malleux classification, 1981), according to

the studies carried out in the zone of the influence properties of the area of work of BAM SAC. This physiography is defined based on its similarity of the geo-genetic aspects of the area, which allows the differentiation of an alluvial landscape (alluvial plain), generated by the Manantay River and tributary streams of the first order river that is the Ucayali River (formed of recent or sub-recent sediments of the Quaternary), where the outstanding geo-forms have been originated mainly by climatic factors of floods and hydroerosives, producing a great well-defined landscape that is the Great fluvial-alluvial landscape.

Its main characteristic is that it presents a predominantly flat relief, with the formation of low terraces that in some cases are temporarily flooded and others that are not, made up of recent alluvial materials accumulated during times of higher rainfall and others with older characteristics. There are also swamp-type forests and aguajales, which are permanently flooded.

2.1.5.3 CLIMATE

The area of the JCC and Selva Maestra properties has a permanently humid tropical climate, rainfall is in the order of 1,700 mm per year. The annual temperature average is 26.7 ºC, with some monthly maximums around 32 ºC and with monthly minimums of 20 ºC. Relative humidity has an annual average of 84.3%, being the wettest season from February to April.

2.1.5.4 BIOPHYSICAL ASPECTS - FOREST INVENTORIES

A. Selva Maestra Property: The first study of forest inventories was carried out by the consulting company Peru Forest, in 2007, on the Campo Verde II and Selva Maestra properties, in an area of 15,058.2 ha in which the following results were found:

It was determined that 14,396.2 ha of land where potentially productive forests, which represents 95.6% and on which the field sampling of the forest inventory was carried out. Seven types of forest were determined in the potentially productive areas, with the largest area corresponding to the low terrace forest with 4,189.3 ha (27.8%), followed by the lowlands with sparse vegetation (3,446.2 ha, 22.9%), the restinga with low vegetation (1,998.1 ha, 13.3%), the restinga with semi-dense tree vegetation (1,831.9 ha, 12.2%), the shallows with dense vegetation (1,285.7, 8.5%), the aguajal (1,167.0 ha, 7.8%) and finally the restinga with dense tree vegetation (478 ha, 3.2%) The other units correspond to small formations of little importance in terms of their extension and are made up of secondary forests, swamps, gallery forests, streams, lagoons and areas for agricultural use, whose total extension is 662.0 ha, equivalent to 4.4% of the total area due to the timber potential and the type of soil to support heavy machinery. In addition to being the most extensive, the low terrace forest represents the stratum with the greatest productive potential of the studied area. Other stratums present certain limitations due to flooding and drainage. The most representative timber species of the forests, especially in the low terraces, are represented by quinilla colorada, catahua, quinilla blanca and cahuapuri, since only in this type of forest there are 6.61, 6.36, 3.43 and 3.28 m^3, respectively, per hectare.

Low terrace forest (Tb)

It is the most extensive type of forest with 4,189 ha (27.8%). It is located on flat land that is temporarily flooded during the flood season, with an average flood height of one meter, and can reach up to 2.7

m. Regularly structured forest, generally presenting three differentiated tree strata and dense undergrowth; clay soil and fair to good drainage. From 30 cm DBH a total of 48.7 individuals per hectare have been recorded, with a total timber volume of 58.6 m³ per hectare/ha distributed in all diameter classes, with trees exceeding 100 cm in diameter, stems between 25 and 28 m and commercial heights up to 20 m. The most important species are Catahua with 2.6 trees/ha and a total timber volume of 6.2 m³/ha, Quinilla Colorada with 3.6 trees/ha and a total timber volume of 5.6 m³/ha, Cahuapuri with 2.7 trees/ha and a total timber volume of 2.9 m³/ha and quinilla blanca with 2.8 trees/ha and total timber volume of 2.8 m³/ha. From 10 cm DBH, 74.5 m³/ha is reported.

Lowland forest with sparse vegetation (Bvr)

It is the second largest type of forest, occupying 3,446 ha (22.9%). It is located on flat land, normally flooded, with poor drainage; in the growing season, the average height of the flood is 0.8 m and the maximum is 1.8 m. Forest not very well structured, differing from two to three tree strata, with dense undergrowth, clay to loam soil. From 30 cm of DBH there are 27.4 individuals per hectare, with a total timber volume of 34.2 m³/ha distributed in all diameter classes, with trees that exceed 100 cm in diameter and stems up to 20 m and commercial heights up to 16 m. The most important species are catahua with 4.6 trees/ha and total timber volume of 10.4 m³/ha, cahuapuri with 8.6 trees/ha and total timber volume of 9.4 m³/ha, punga colorada with 1, 1 trees/ha and total timber volume of 2.1 m³/ha, and yacushapana with 1.7 trees/ha and total timber volume of 1.6 m³/ha. From 10 cm DBH, 49.28 m³/ha is reported.

Restinga forest with low vegetation (Rvb)

It is the third largest type of forest, occupying 1,998 ha (13.3%). It is located on flat land, with poor to regular drainage; in the flood season, the average height of the flood is 1.8 m, and the maximum is 2.5 m. Forest not very well structured, differentiating from two to three tree strata, with dense undergrowth, clay soil. Above 30 cm DBH there are very few trees per hectare (4.6 individuals), with a total timber volume of 3.9 m³/ha. Small trees that do not exceed 50 cm DBH and stem height, normally 8 m, exceptionally they reach 16 m, and the commercial height reaches a maximum of 8 m. The most important species are pashaquilla with 1.1 trees/ha and a total timber volume of 1.4 m³/ha and tangarana with 1.1 trees/ha and a total timber volume of 0.8 m³/ha. From 10 cm DBH, 13.43 m³/ha is reported.

Restinga forest with semi-dense tree vegetation (Rvsd)

It is the type of forest that in extension ranks fourth with 1,831.9 ha (12.2%). It is located on flat land that is temporarily flooded during the flood season, with an average flood height of one meter, and can reach up to 2.5 m. Poorly structured forest, generally presenting two differentiated tree strata and sparse to dense undergrowth; clay soil and fair to poor drainage. From 30 cm of dbh, 34 individuals are found per hectare, with a total timber volume of 24.6 m³/ha distributed in all diameter classes, with trees that exceed 100 cm in diameter, stems up to 20 m and commercial heights up to 16 m. The most important species are catahua with 4.2 trees/ha and a total timber volume of 6.9 m³/ha and cahuapuri with 6.9 trees/ha and a total timber volume of 5.0 m³/ha. From 10 cm dbh, 32.93 m³/ha is reported.

Lowland forest with dense vegetation (Bvd)

It is the type of forest that occupies the fifth place in extension with 1,285.7 ha (8.5%). It is located on flat land that is temporarily flooded during the flood season, with a flood height of half a meter. Forest regularly structured, presenting three to two differentiated tree strata; dense to sparse undergrowth, with the presence of ropes; clay soil and generally poor drainage. From 30 cm of dbh, 45.3 individuals are found per hectare, with a total timber volume of 87.7 m³/ha distributed in all diameter classes, with trees that exceed 100 cm in diameter, stems up to 20 m and commercial heights up to 16 m. The most important species are catahua with 6.7 trees/ha and total timber volume of 39.7 m³/ha, punga colorada with 6.7 trees/ha and total timber volume of 12.8 m³/ha and cachimbo with 2.7 trees/ha and total timber volume of 5.6 m³/ha. From 10 cm dbh, 99.16 m³/ha is reported.

Aguajal forest (A)

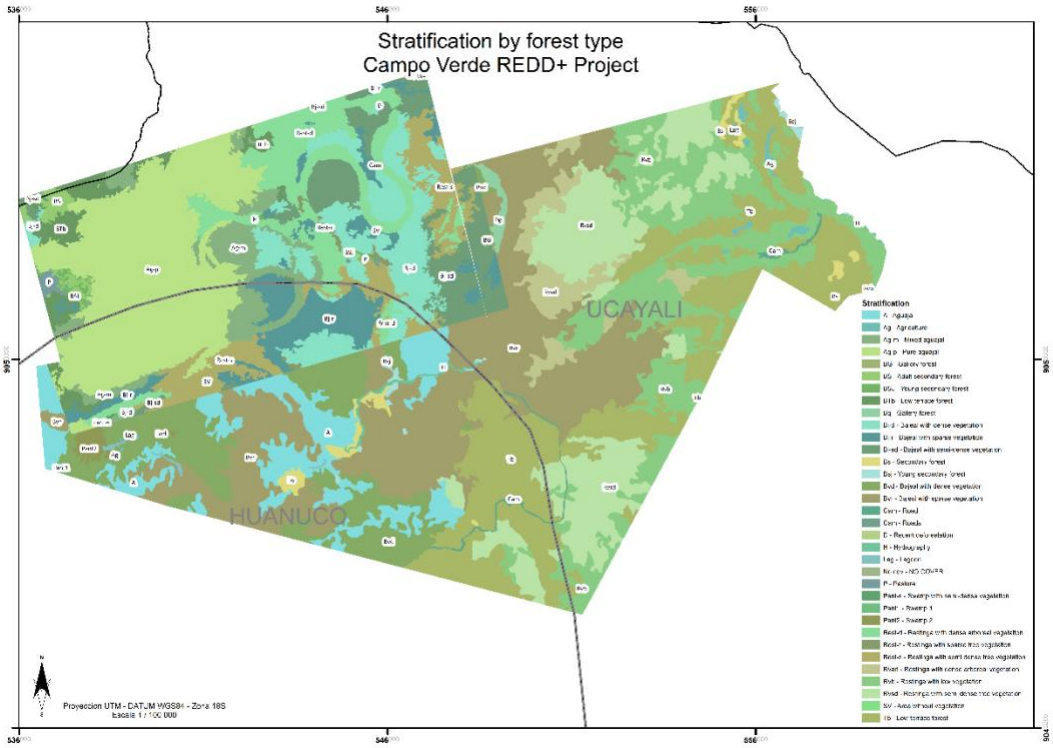
It is the type of forest that occupies the fifth place in extension with 1,167 ha (7.8%). It is located on flat land, permanently wet with poor drainage, which allows for permanent storage of water due to temporary flooding. approximately half meter. Forest regularly structured, presenting three to two differentiated tree strata; dense to sparse undergrowth; clay floor. From 30 cm of dbh, 99 individuals are found per hectare, with a total timber volume of 230.6 m³/ha distributed in all diameter classes, with trees that exceed 100 cm in diameter, stems up to 18 m and commercial heights up to 16 m. The most important species are aguaje with 29 palm trees/ha and a total volume of 48.9 m³/ha, catahua with 12 trees/ha and a total timber volume of 22.7 m³/ha, white oje with 6 trees/ha and a total timber volume of 90.8 m³ /ha and red cumala with 25 trees/ha and total timber volume of 41.2 m³/ha. From 30 cm dbh, 230.64 m³/ha is reported.

Restinga forest with dense tree vegetation (Rvad)

Of the forests evaluated, it is the one with the least extension with 478 ha (3.2%). It is located on flat land that is temporarily flooded during the flood season, with a flood height of about one meter. Poorly structured forest, presenting two differentiated tree strata; dense undergrowth, presence of ropes; clay soil and fair to poor drainage. From 30 cm of dbh, 20 individuals are found per hectare, with a total timber volume of 22.1 m³/ha. The trees do not exceed 70 cm dbh and stem heights up to 15 m and commercial heights up to 9 m. The most important species are cahuapuri with 8 trees/ha and a total timber volume of 10.6 m³/ha and punga colorada with 2 trees/ha and a total timber volume of 4.1 m³3/ha. From 10 cm dbh the following volumes are reported:

Total timber volume of 9.4 m³/ha, being punga colorada with 1.1 trees/ha and total timber volume of 2.1 m³/ha, and yacushapana with 1.7 trees/ha and total timber volume of 1.6 m³/ha. From 10 cm dbh, 45.77 m³/ha is reported.

Figure 3. Stratification by forest type in the Selva Maestra and JCC properties



Nuestro Señor Jesucristo Property: The second study of forest inventories was carried out by the consulting company Tropical Forest Development SRL, in 2007. Forest Inventory of the JCC – Nuestro Señor Jesucristo property, with a work area of 8,049 ha; in which the following results were found:

Low terraces (TB)

They are flat surfaces of Holocene origin with slopes less than 5% floodable, in certain cases of large floods and located after the forest of the meandering plain and swamps or aguajales, they are between 5 and 10 m above the level of the Ucayali River. They are made up of recent alluvial sediment of a sandy nature. This type of forest has been originated in the last periods of active erosion and deepening of the river.

This forest has initially occupied 48.60% of the entire area, which was subsequently modified by anthropogenic activity in recent years, becoming part of it in recent deforested areas 2.10% and secondary forests or "purmas" from agricultural activities greater than 5 years 6.4%, leaving a remnant covered with forests with timber trees of approximately 3,235 ha (40.1%).

From the results of the inventory in this type of forest, 156 species were identified, distributed in:

• 134 spp. within the category of shafts greater than 10 cm in diameter

• 12 palm spp.

• 56 spp in the category of "latizales" (diameter between 5 to 10 cm)

• 60 spp in the “saplings” category (diameter less than 4.99 m, but height greater than 1.3 m

Of the 134 spp identified, 30 species represent 85.15% of the number of trees per hectare. The number of trees per hectare is 51.04, with a total of 3,235 ha of 165,114 trees for trees from 10 cm in diameter, of which less than 40 cm represent 41.01 trees/ha and greater than 41 cm 10.03 trees/ha. Volume per hectare of 45.30 m³/ha, being the total in 3,235 ha of 146,547 m³/ha for trees from 10 cm in diameter, of which less than 40 cm represent 13.02 m³/ha and greater than 41 cm 32.28 m³/ha.

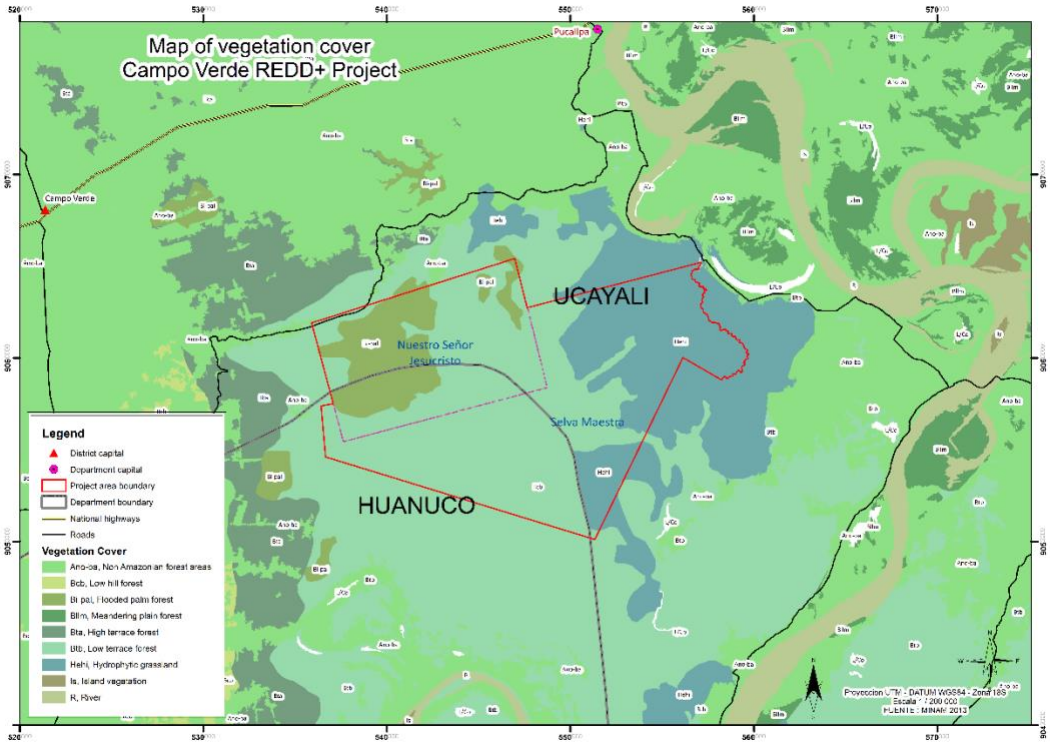
Aguajales (Ag)

This category of forest was determined by the spatial zoning of the area. It was not sampled because it was considered a protected flood forest, but the approximate area was determined, using the RapidEye satellite image and the Forest Guide of the Peru Forest Map of the year 2000 of the former INRENA, occupying 3,481 ha, which represents 43.3% of the total area. Due to the amount of area, it represents within the evaluated property, a description of the characteristics of this forest has been considered.

INRENA (2000) and Malleux (1981), point out that this forest constitutes a large hydromorphic system which remains flooded most of the year, as a result of the overflow of the adjacent rivers and the surface runoff itself. They also belong to the recent and sub-recent Alluvial Plain physiography. They constitute depressed terrain, with extremely poor drainage, with a clayey and impenetrable subsoil that prevents water runoff.

The importance of the aguajales is multiple, mainly due to the aguaje palm (*Mauritia flexuosa*), which predominates over other forms of plant life, with other palm trees such as huasaí (*Euterpe precatoria*), huicungo (*Astrocaryum sp.*), shapaja (*Scheelea sp.*), among others, and in some cases scattered trees of the timber species cumala (*Virola sp*.), palosulfur (*Symphonia sp*.), renaco (*Ficus sp*.). It should be noted that the aguaje (*Mauritia flexuosa*) constitutes one of the most nutritious foods of the fruits of the Amazon, since it has high amounts of vitamin A (retinol), enough to eliminate malnutrition that affects children. It also works as an excellent skin protector against ultraviolet rays and helps maintain the skin, preventing it from drying out and premature aging.

Figure 4. Plant cover map in the Project area

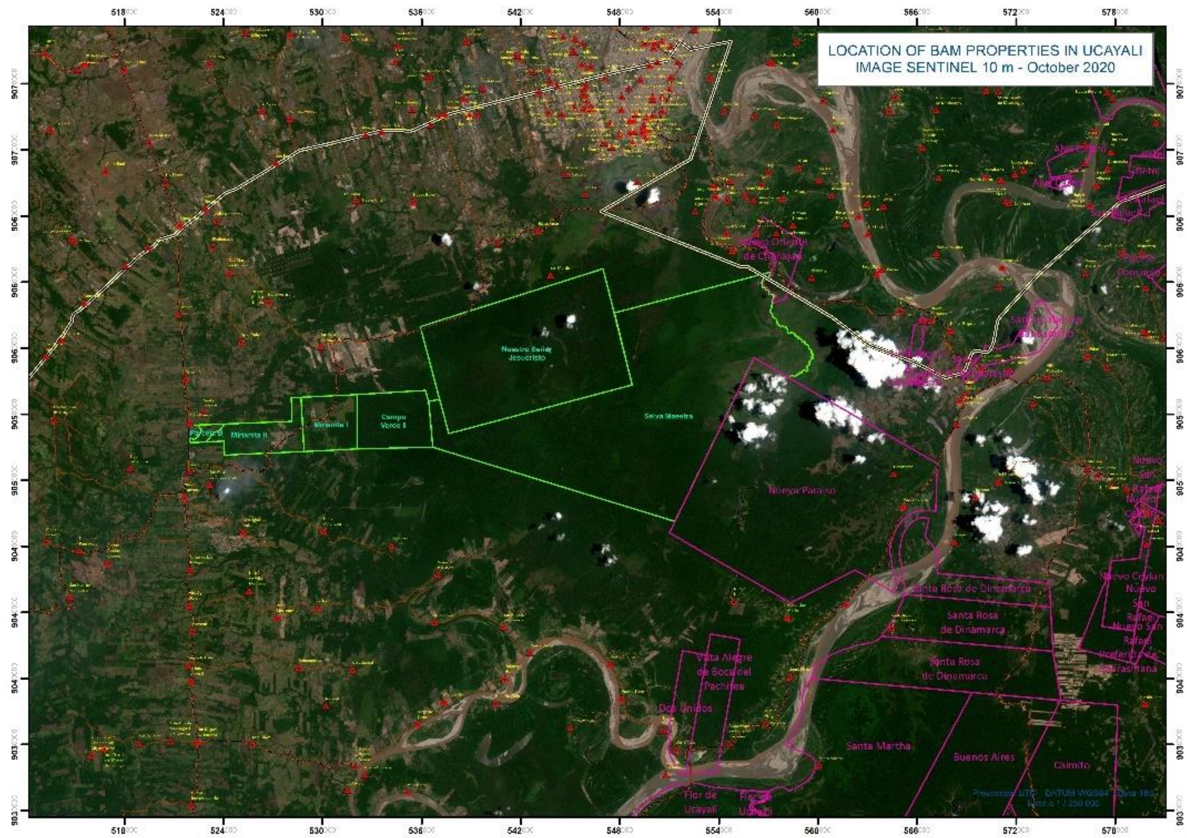


2.1.6 Social Parameters (G1.3)

The local populations within the project zone (area of influence) belong to three districts of the department of Ucayali (Campo Verde, Manantay, Masisea) and one of the departments of Huánuco (Honoria). These are rural population centers that do not have defined limits, since they are not political administrative constituencies that exercise government and administration. Their populations are mainly engaged in agricultural activities (crops of rice, banana, cocoa, oil palm, corn, citrus, and, to a much lesser extent, livestock) providing unskilled labor services related to these activities, including timber extraction from the forest. These population centers are spatially connected through a road network that eventually reaches the city of Pucallpa, capital of the department of Ucayali (the country's main timber production center), a network through which the producers of these populations transport their agricultural products. The main paved national highway in the area is the Federico Basadre Highway (CFB), which connects capital cities like Pucallpa to the city of Lima (capital of the country). There are also secondary or penetration roads (unpaved) that leave from the CFB or the main town of Campo Verde (capital of the district of the same name) and reach the areas where the population centers of the project area are located (corresponding to the regions of Ucayali and Huánuco), whose population centers are generally scattered around an urban-rural nucleus.

Another communication/transportation route in the area is the Ucayali and Pachitea rivers, which are used by the settlements located near this waterway, which in this case correspond to the east and southeast of the project area.

Figure 5. Location map of BAM properties and surrounding communities



Based on the main accesses identified to the project area and other BAM properties, through main highways, rivers and secondary roads or penetration routes, the communities around the BAM properties have been grouped into 5 sectors:

Sector km 15 of the Federico Basadre highway towards the JCC property: local communities of 30 de Mayo (km 3), Bella Durmiente (km 5), Viento Alegre and Sol de Pucallpa (km 7 on both sides of the road), 28 de Febrero - Santa María (km 8), CP Nuevo Belen (km 9), La Lupuna de Manantay and Ampliacion Tupac (km 10 on both sides of the road), CP Tupac Amaru (km 12); The Union and Solitude.

Figure 6. Location of the communities on the access road of km 15th (Federico Basadre highway)

Sector km 29 of the Federico Basadre highway towards the JCC, Mirianita and Campo Verde properties: local communities of Alto Manantay, Pimientococha, San Martín de Mojaral, Tupac Amaru Limón, CP San Cristóbal de Agua Blanca**.**

Figure 7. Location of the communities on the access road of km 29th (Federico Basadre highway)

Sector km 12 of the Campo Verde - Tournavista highway, towards the main BAM camp: local communities of Agua Dulce, Manco Capac, Sta. Teresita, Agua Blanca; Red Land, New Dawn, Sheborea; New Hope, Alto Agua Dulce.

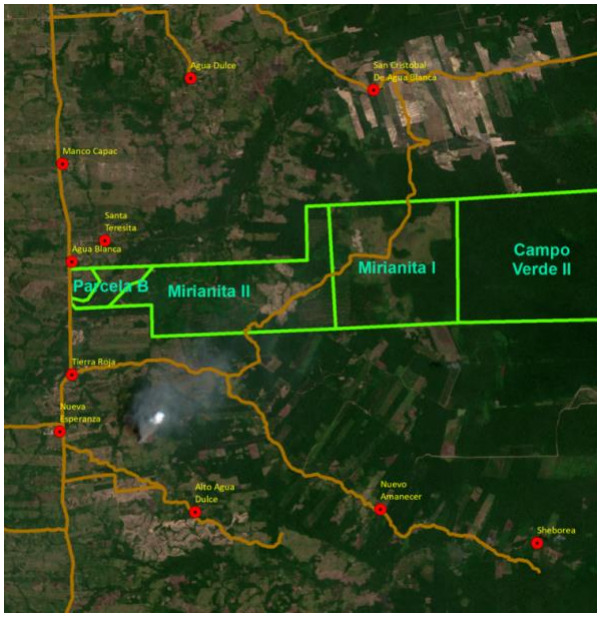


Figure 8. Location of the communities on the access road of km 12th (Campoverde – Tournavista roadway)

Sector Honoria in the area of the banks of the Pachitea and Ucayali rivers, towards the Selva Maestra property: local and indigenous communities of Antigua Honoria, Nueva Unión, San Antonio de Honoria, Nuevo Eden, Nuevo Jerusalem; New Alliance, Free Town, New Naranjal, New San Martin; New Jordan, Dos Unidos, Vista Alegre de Boca del Pachitea, Nuevo Progreso, Santa Elena, Palmeras. Native communities of Nueva Alianza and Nuevo Paraíso.

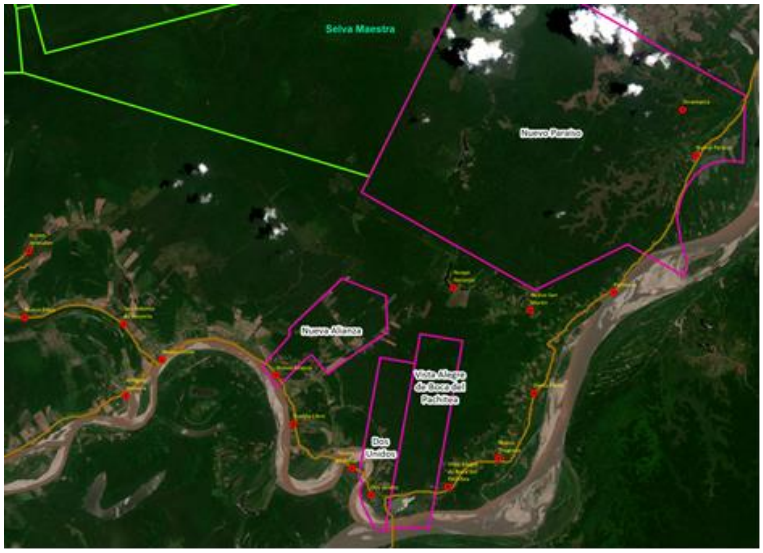


Figure 9. Location of the communities, with access through Honoria District sector (Region of Huanuco)

Sector Pucallpillo Ucayali river area and Maputay ravine, towards Selva Maestra property: Abancay, Nueva Juventud, Isla San Lorenzo, José Olaya, Alfonso Ugarte, Jorge Basadre, Luz y Paz, Sagrado Corazón, Pucallpillo. CCNN New East of Chanajao

Figure 10. Location of the communities, with access through Pucallpillo Populated Center sector (Manantay District, Ucayali Region)

The legal physical status of the lands/properties located in the project zone, which the family farming producers allocate to carry out their agricultural activities, corresponds to property titles, or documents that in one way or another certify or prove that they exercise possession directly and continuously and economically exploit said land for a period of time determined by legal regulations, such as proof of possession (granted by the directorates of the agrarian agencies and district municipalities as proof of fact) and in other cases contracts of formal and informal purchase-sale, transfer documents or others that have been granted by a notary public or justice of the peace, which does not imply that the State grants the producer the property right for the use and exploitation of said lands or a recognition of real right over the property, therefore they need to follow a process of formalization and titling, and of ins registration of rural property, within the national rural cadaster system and registration in the registry office of SUNARP (National Superintendence of Public Registries). The Ministry of Agriculture and Agrarian Development is the governing body in matters of legal physical reorganization of agrarian property, through the General Directorate for the reorganization of agrarian property and rural cadaster.

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

The project area is made up of the areas that correspond to the properties of Nuestro Señor Jesucristo and Selva Maestra, owned by the company Bosques Amazónicos SAC, which covers and shares areas of the districts of the department of Ucayali and Huánuco, belonging to the provinces of Colonel Portillo and Puerto Inca respectively. The limits are defined based on the legal limits of each property, which are established in the respective adjudication and purchase and sale contracts granted by the State, represented by the Regional Directorate of Agriculture of Ucayali, and the other documents and records that they recognize the rights of said properties.

The indirect area of influence is the geographical space around the project area limits, in which population settlements and areas where the inhabitants develop mainly agricultural and livestock production activities are located, and where part of the project activities (related to community development) are implemented to generate benefits in social and productive aspects, as a strategy to meet the project's goals. In said area of influence, 19 communities have been identified in which, through project activities, good neighborly relations with BAM are strengthened, generating reciprocity agreements aimed at territorial security to curb the threats of deforestation and degradation of the forest areas, consolidate forest surveillance committees, mitigate illegal logging activities, promote good agricultural practices to reduce the expansion of the agricultural frontier that generates pressure and demand on areas with forest cover, and develop capacities in authorities and community leaders to manage works for the improvement and/or expansion of basic social services, so that these communities have better access. The limits covered by the area of each populated center, settlement or community are not defined by law, since they are not a political-administrative constituency that exercises government and administration.

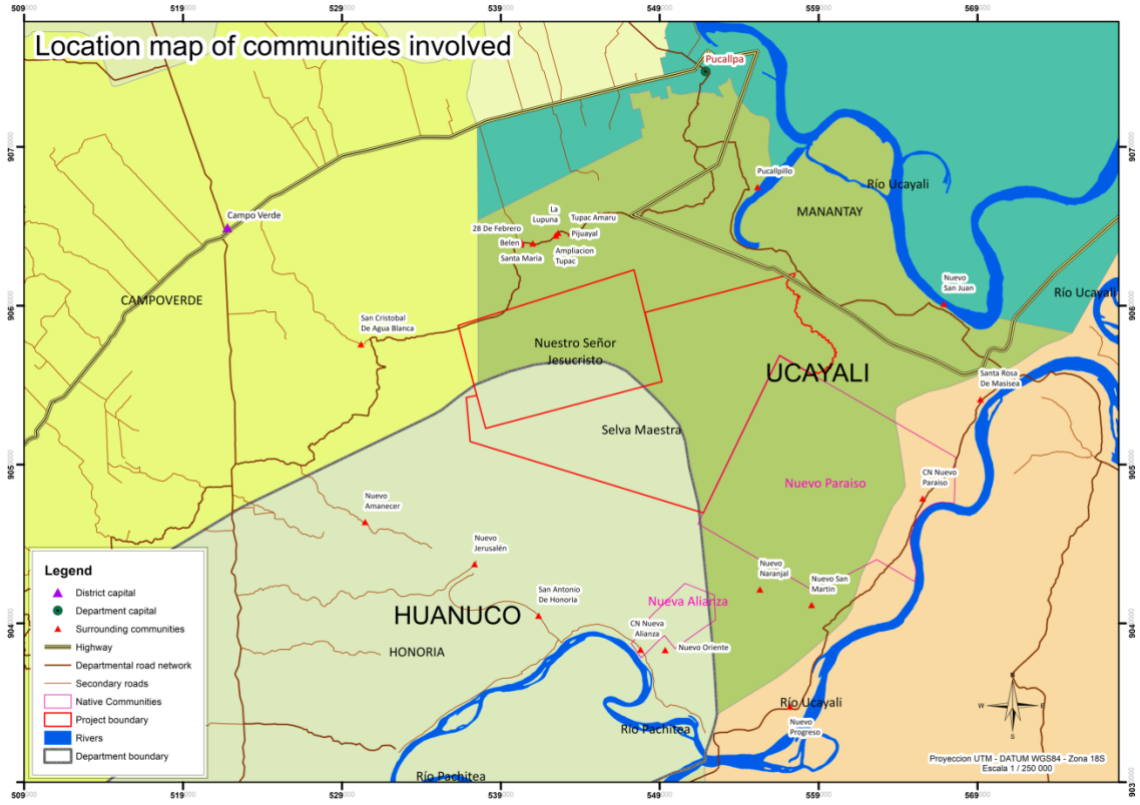


Figure 11. Project area map, with the location of involved communities within the indirect influence

Likewise, in the area of the project that corresponds to the Selva Maestra and JCC properties, the areas of high conservation value HCV have been determined, made up of strata of forest types such as low/high terraced forests, hydrophytic grasslands, flooded forest of palm trees (“aguajales”), and an area of fragile ecosystem within the Selva Maestra property, constituted by a flooded alluvial forest, identified and incorporated by the national forestry authority SERFOR, to the “Sector List of Fragile Ecosystems”.

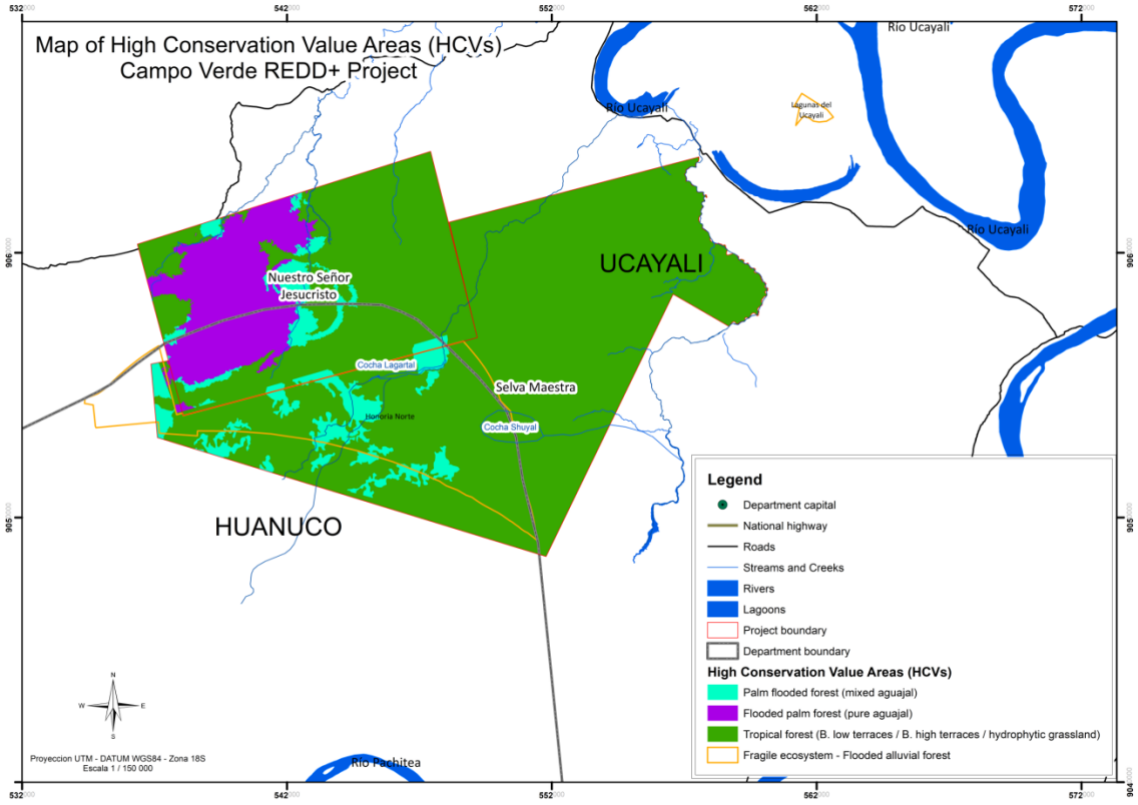


Figure 12. Map of High Conservation Value Areas HCV identified in the project area

2.1.8 Stakeholder Identification (G1.5)

For the development of the actor identification processes, the following general criteria have been used:

- Opinion leaders or communities that can positively impact or affect the achievement of the project's objectives
- Communities or interested groups that see their interests affected or have certain expectations of benefiting from and having a positive impact on the project.
- Public and private entities that have competencies, roles, functions and/or develop programs, projects and activities related to the sustainable management of natural resources in the project area, with which actions can be complemented and synergies strengthened.
- Administrative political authorities at the regional and local government level

In order to identify institutional actors, the following considerations were taken into account:

- Institutional actors are those public or private institutions or organizations that can contribute to strengthening and facilitating the technical decision-making processes, as well as to the

implementation of the project activities and management. In this sense, the project aims to generate synergies with both the public and private sectors for an adequate implementation of the activities, facilitating the success of the REDD project results. The project establishes the appropriate conditions to ensure and motivate the participation of said institutions in the project.

- The project seeks to establish articulation and coordination mechanisms with the identified institutions (groups of interest), in which the participation of the organizations is required to provide advice or support in technical and management matters related to the project activities, validating the interventions that are developed over time and allowing the project management, in accordance with the established governance structure, to have the necessary elements of judgment to make the most appropriate decisions.

Likewise, the identification of these actors is based on the potential commitments and activities that such institutions bring to the project:

- In the case of strictly technical consultations, to develop productive activities (agroforestry systems, selection and application of technologies complemented by good agricultural practices, management and conservation of biodiversity, development of planning instruments and management of forest resources, implementation of methodologies among others) it has been considered public institutions that among their functions and activities promote research, technological development or carry out the corresponding studies, implement ECAs, have projects or programs for product development, production chains, demonstration plots installed in the area, forest management, among others, that benefit agricultural and forestry producers. These institutions are the ones that can support the technical aspects, facilitating the correct and adequate implementation of activities for the development of productive technical capacities.

- In the case of organizations or entities that can facilitate the implementation of activities (competent entities for control and surveillance, conflict resolution, application of regulations, guidelines, directives in the field of the forestry and environmental sector, identification and implementation of projects social and productive, organization and articulation of producers with productive companies) and strengthen project management processes, entities such as the District Municipalities, the GOREU, agricultural companies, and others that provide support in organizational, administrative, legal and management processes have been considered. management. The participation of representatives of local communities and their community organizations is also recognized in this group.

The local communities are located in the surroundings of the project area (JCC and Selva Maestra properties) and are generally incorporated as part of the project strategy in order to achieve the objectives and generate community benefits. In the identification process to involve them in the implementation of some of the project activities, the following criteria (not exclusive) were taken into account for their definition and selection:

- Communities settled in the surroundings of the project area and that have an area of influence of 4 km on average (from outside the limit of the BAM properties), an appropriate

distance at which it is considered that they may have some type of impact (positive or negative) over the project area, through spaces in the vicinity of the BAM boundaries, where its inhabitants move to develop their mainly agricultural activities, due to the dynamics and expansion of agricultural frontiers.

- Communities that currently have conflicts and/or threats of deforestation risk on the JCC and SM properties, related to illegal logging, land invasion, forest fires due to uncontrolled burning of their farms, use of forest and fauna resources without authorization from BAM.

- Communities with which BAM maintains a certain type of relationship and which could have a positive impact on the project.

- Conflict prevention: other communities that must be monitored because it is perceived, due to the attitudes or behaviors of the populations developed in recent years, that they may represent a potential threat to the project area or negatively affect the fulfillment of the objectives of the project, due to the implementation of the REDD activities that BAM will develop. It is expected that these communities will be involved from the second year, prior analysis of the context, etc.

- Dynamics of agricultural frontiers: it is assumed that the mobilization of migrant farmers and the installation of their agricultural activities, implemented permanently or discontinuously (on titled plots or without legal land tenure) in areas near the boundaries of the JCC and Selva properties Maestra, are developed by groups of organized settlers settled in places that are not necessarily close to the boundaries (dispersed or nucleated settlements, located at a distance greater than 5 km)

- Surrounding communities or organized groups of residents of the same, who use different access routes (ravines, trails, penetration routes or carriageways) that are activated according to the season and that facilitate the entrance to the BAM properties or close to the boundaries.

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

Table 7. Description of the stakeholders of The Last Habitat REDD Project

Stakeholder	Rights, Interest and Overall Relevance to the Project
Local communities, small agricultural producers	Composed of families of settlers or mestizos, who have migrated to the area in search of land to develop productive activities in a subsistence economy. They develop family or migratory slash-and-burn agriculture, adopting an unfriendly position with areas with forest cover. The majority of the inhabitants do not have title to the land, and only have other documents to verify their possession of the land, such as the certificate of possession, purchase and sale contracts (informal or formal), etc. or they simply do not have any document that supports their possession on the ground. They have an interest in expanding their lands at the cost of affecting the forest heritage, which paradoxically occurs with the consent of the State, which is responsible for ensuring the conservation and sustainable

	use of forests. In this sense, the project area, with tree cover and little commercial timber potential, is a resource of interest that they wish to access to take advantage of the land through threatening forced invasions and supported by armed groups of land traffickers. The Populated Centers are places of the rural or urban territory, inhabited with a spirit of permanence. Its inhabitants are linked by common economic, social, cultural, ethnic, and historical interests. According to their attributes, the populated centers have the following categories: hamlet, town, village, city, or metropolis. The category of Town is the rural populated center with a population concentrated between 1,001 and 2,500 inhabitants. Homes located contiguous and continuous, which make up streets and a central square. It has education services with infrastructure, equipment, and personnel for the complete primary level; health services with infrastructure, equipment and staff of a health post; local community of multiple use and recreational areas. The Caserio corresponds to a rural populated center with a concentrated population of 500 to 1,000 inhabitants and has dwellings located continuously or partially dispersed, with a multiple communal premises and an educational center in operation. The Minor Population Center (Local Government point of view) is that population center (Caserio, Peasant or Indigenous Community, etc.), in which a Delegate Municipality (Municipal Agency) functions, determined by the Provincial Council, prior knowledge of the Council respective district.
Productive business organizations	OLAMSA: Oil palm processing plant. Organization with 1,300 palm producers organized in 9 bases in the Ucayali region. It processes 24 MT RFF/hr. at the Neshuya plant and 30 MT RFF/hr. at the Campo Verde plant. They have organic palm initiatives and the start of RSPO certification with 104 producers, with a business model that incorporates the zero-deforestation approach, and they are evaluating opportunities for carbon credits in palm plantations and their industrial processes, complemented with awareness-raising activities on the conservation of forests with partner producers and increased productivity through good agricultural practices. It is a business alliance between OLAMSA, COCEPU and AOPSA (Oleaginous Agroindustry of Peru). COCEPU (Committee of Palm Growers of Ucayali): Organization that brings together oil palm producers distributed in 6 base committees. The area of influence includes from km 34 to km 86 along the axis of the main road of the Federico Basadre CFB highway and the Neshuya-Curimaná axis. Currently more than 1,300 producers (800 palm growers between partners and shareholders) of palm with 8,500 cultivated hectares. There are, not in large numbers, farmers around the project who grow palm and cocoa, which is promoted both by the producing companies and by GOREU itself, and if the objective of the companies mentioned is to get closer to RSPO certification initiatives (in the case of palm) and a gradual production towards carbon neutrality, would be a good strategic ally for the project. Another company related to the cultivation of cocoa is the Agrarian Cooperative of Aromatic Cocoa Colpa de Loros, which has its production plant located at Km 66 of the CFB, in the district of Neshuya, with a rapid growth of its social and productive base, counting on more than 500 partners and cocoa benefit centers in baba, allocating part of its production of cocoa differentiated in quality and with organic and fair trade certifications for export, which has allowed it to have the opportunity to market its product to the European market, through strategic alliances with chocolate companies. Provides technical assistance, provision of

	inputs, execution of reforestation projects, cocoa crops under agroforestry systems, among other benefits to the producer families associated with the cooperative.
Regional Government of Ucayali - GOREU: Regional Forestry and Wildlife Authority Regional Environmental Authority Regional Directorate of Agriculture Regional Management of Economic Development	Entities (02) of the GOREU in charge of managing forest, wildlife and environmental resources - GERFFS and ARAU: **The Regional Forestry and Wildlife Management** GERFFS (Regional Ordinance No. 003-2019-GRU-CR), is the line organ dependent on the Regional General Management, which is constituted in the Regional Forestry and Wildlife Authority ARFFS, in charge to define policies, organize, direct, control, monitor, regulate and exercise functions in matters of forest resources and wildlife, within the framework of current regulations within the scope of the department of Ucayali. It maintains technical-regulatory relations with the Presidency of the Council of Ministers (PCM) through the Supervisory Body for Forest Resources and Wildlife (OSINFOR), and the Ministry of Agriculture through the National Forestry and Wildlife Service (SERFOR). It has two-line Organic Units: deputy management of forestry and wildlife management and use, and the deputy management of inspection, supervision, forestry and wildlife control. The ARFFS has the function of controlling and supervising the sustained use, conservation and protection of forests and wild fauna; promotes and establishes a citizen participation mechanism for forest management in coordination with the Local Governments GOLOs; designs and executes a technical assistance and advice plan for small producers and native communities. **The Regional Environmental Authority of Ucayali** (ARAU) as a body dependent on the Regional General Management, is in charge of consolidating, planning and exercising authority in environmental matters, territorial planning and sustainable management of renewable natural resources within the regional scope in charge of a regional manager, appointed by the regional president. The ARAU is in charge at the regional level of planning, managing, administering, controlling and inspecting land use planning, sustainable management and conservation of renewable natural resources, biodiversity and the environment. The Regional Sectoral Directorate of Agriculture DRAU of the GOREU is the body responsible for directing, guiding, coordinating, executing, supervising, controlling and evaluating the different agricultural production activities within its jurisdiction. It is attached to the Regional Management of Economic Development and is in charge of a Regional Director whose appointment depends on the President of the Regional Government. Among the functions exercised by the DRAU are: formulate, approve, execute, evaluate, direct, control and administer the plans and policies of the region in agrarian matters in accordance with the National policies and the Sectoral plans and the promotional proposals of rural development of part of the Rural Municipalities; promote and provide Technical Assistance services in Agricultural Health; promote research and technology transfer and agricultural extension; promote, manage and administer the process of physical-legal reorganization of agrarian property; comply with and enforce the regulations regarding natural resources inherent to the competence of the agricultural activity; promote activities that facilitate the organization of agricultural producers for the development of the productive chain of the

	most significant products in the Regional, National and International markets. Through national programs and projects, they provide training to producers in the production chains of bananas, pineapples, among other crops, keeping the register of agricultural producers to improve the services provided to them. Within the framework of the Work Plan of the DRAU Environmental Management and Watersheds Directorate, it has prioritized promoting the establishment of Agroecological Schools, to improve the productive skills of farmers, and implement an agricultural training center with a regional agroforestry nursery and germplasm bank of strategic crops. Leads the Regional Technical Table of Productive Chains of prioritized crops in the region, a space for dialogue and agreement between agricultural producers and competent institutions. **The Regional Management of Economic Development** GRDE of the GOREU, is the line body dependent on the Regional General Management, responsible for the design, management, coordination, supervision and evaluation of regional public policies for economic development; it performs specific regional functions in the sectors of agriculture, industry, commerce, tourism, handicrafts, fisheries, mining, energy and hydrocarbons. Its functions include the following: Promote the business development of small and medium organized producers; encourage and support the articulation of actions for the promotion of economic development; promote favorable conditions for the creation of regional economic corridors. It is a member of the Regional Technical Commission for Bio trade, which is in the process of preparing the Strategic Plan for the Promotion of Bio trade and the Action Plan for 2025. It promotes and provides advice and technical assistance for the implementation of development mechanisms in the Department of Ucayali, such as PROCOMPITE (Project to strengthen the competitiveness of rural associative companies), a Competitive Fund to co-finance production proposals (business plans) and which aims to improve the competitiveness of production chains through the development, adaptation, improvement or transfer of technology.
Public Ministry – Specialized Prosecutor for Environmental Matters FEMA	FEMA is the prosecutor's office in charge of preventing and directing the investigation of environmental crimes. Exercises interdiction actions: special confiscation, destruction and reduction of the commercial value of the objects on which the crime falls and/or the instruments of the crime linked to illegal logging and related activities. It is the body in charge of presenting and sustaining criminal cases before the competent judge, with the aim of determining the levels of responsibility of the accused.
Forest and Wildlife Management Committee - CGFFS: Forest and Wildlife Management Unit - UGFFS	**CGFFS** is a space for citizen participation of forest users, local communities, producers, local governments, representatives of civil society and other public and private institutions that develop activities within a given Forest and Wildlife Management Unit. It is recognized by the ARFFS. Its functions include: Contributing to the administration, control and supervision activities carried out by the competent agencies or entities; promote the prevention and resolution of conflicts between the actors that have an impact on forest resources and wildlife; establish strategic alliances with public or private entities to fulfill their functions

Regional Table for Forestry and Wildlife Control and Surveillance - MRCVFFS	**UGFFS:** These Units constitute the regional territorial organization for the management, administration and control of forest and wildlife resources, under the administration of the ARFFS. The UGFFS may have Technical Units for community forest management. The Regional Governments exercise functions of control of forest resources and wildlife within the scope of their territorial competence, within the framework of the specific regulations established by SERFOR and in coordination with the institutions that make up SINAFOR. Within their scope and in coordination with local governments and civil society, they establish strategies for the prevention of illegal logging and trade in wood. **MRCVFFS Ucayali** (RER N°0739-2018-GRU-GR) It is a space for dialogue and articulation of joint actions between the ARFFS and the Institutions that make up SINAFOR, whose objective is to establish prevention and control actions on deforestation, illegal logging, wildlife trafficking and genetic resources. It has the support of the National Forest and Wildlife Control and Surveillance System (SNCVFFS). Representatives of the Regional Government, SERFOR, the Ministry of Culture, SERNANP, OEFA, SUNAT, OSINFOR, the National Police of Peru through its Specialized Division, the Joint Command of the Armed Forces, the General Directorate of Captaincies participate. and Coast Guard, and FEMA. **SNCVFFS**, led by SERFOR, works on the implementation of the Satellite Monitoring Unit, on the issuance of alert reports for use of land change, on articulation with all the monitoring offices and on the presentation of the SERFOR Geoportal, among others.
Institute of Agrarian Innovation INIA - EEA Pucallpa	INIA is a decentralized public agency in the agriculture sector, responsible for developing a new approach to research, innovation, extension and technology transfer. Its function is to provide new technologies for the development of crops native to the country, and to innovate in those others where the versatility of the ecosystems allows it, venturing into the development of research, which must be available and within the reach of agricultural producers. Through Law No. 31368, the agricultural extension service is regulated in order to increase the productivity and competitiveness of the agricultural producer, as well as promote rural development. Said norm provides provisions on the execution of extension in agroforestry and forestry activities at the national level by the National Institute of Agrarian Innovation (INIA), in coordination with SERFOR and regional governments within the framework of their powers.
National Forest and Wildlife Service SERFOR - Ucayali Liaison Functional Unit	SERFOR is a specialized technical public body, with legal status under internal public law and as a budget statement attached to the Ministry of Agrarian Development and Irrigation - MIDAGRI, and its function is to plan, supervise, execute, support and control the National Forest Policy and of Wild Fauna. It is the governing body of the National Forestry and Wildlife System SINAFOR and is constituted as the normative technical authority at the national level, in charge of dictating the norms and establishing the procedures related to its field. According to the State Organization Guidelines (Supreme Decree No. 054-2018-PCM), a Functional Unit does not constitute an organizational unit but rather a work team within the body or organic unit within which it is constituted. The objective of a Functional Liaison Unit - UFE is to strengthen forestry and wildlife management in the territory, within the framework of SERFOR's powers; Its purpose being to combine efforts and execute joint actions of

	mutual interest with the Regional Governments, with the purpose of developing strategy and strengthening management services in the field of wild fauna and flora. The UFE reports to the Executive Directorate of SERFOR and consists of a Coordinator in charge and a team of professionals. It also reports functionally to the Executive Directorate, which is responsible for managing that the functions assigned to the UFEs and the staff of it. The UFE (RGG No. D000014-2022-MIDAGRI-SERFOR-GG) fulfills responsibilities and functions, among which are: Conduct guidance, advice and care activities for users of the services provided by SERFOR, in forestry matters and wildlife; propose to the Executive Directorate of SERFOR, as appropriate, the preparation and updating of directives, procedures, or other management instruments in forestry and wildlife matters, as well as internal management of user service, document management and operation of the UFE, as well as ensure its compliance; support the strengthening of capacities in the field of wild flora and fauna; advising and accompanying the control actions carried out by the Regional Forestry and Wildlife Authority (ARFFS); coordinate and direct actions of dissemination, awareness or transfer of capacities related to forest and wildlife resources, acting jointly with the ARFFS; advising the ARFFS on the implementation of Strategies and Programs related to forest and wildlife management The Functional Unit of Forest Plantations (UFPF) of SERFOR, has the general function of implementing actions for the promotion and management of forest plantations, forest restoration, agroforestry systems and urban afforestation; within the framework of the National Forestry and Wildlife Policy and the National Forestry and Wildlife Plan. Other functions: disseminate and implement the tools and mechanisms to promote and manage forest plantations; coordinate and/or execute mitigation and adaptation measures within the framework of the NDC, in matters related to plantations; contribute to the consolidation of capacities and expertise in the ARFFS, native communities, peasants and organizations of forest producers, in matters related to plantations; implement operational actions that contribute to the increase of plantations.
Research Institute of the Peruvian Amazon - IIAP Pucallpa	The IIAP is an autonomous body of internal public law, it is related to the National Government through the Ministry of the Environment and directly with the GOREs in its field. It is oriented towards scientific and technological research for development, specializing in the sustainable use of biological diversity in the Amazon region and carrying out its activities in a decentralized manner, promoting the participation of public and private institutions, and civil society.
National Agricultural Health Service SENASA - Executive Directorate SENASA Ucayali	SENASA is a specialized technical body of the Ministry of Agriculture and Irrigation, as a National Authority that protects and improves agricultural health, promotes and controls the quality of agricultural inputs, organic production and Agri-food Safety, for the benefit of sustainable and competitive social development. of the agrarian sector, granting the country a framework of agro-sanitary security. SENASA Ucayali has 3 specialized areas: animal health, plant health, and the area of agricultural inputs and food safety. Its purpose is to encourage the production of healthy and safe food, free of contaminants; in this way, guarantee the well-being of producers and consumers. Promotes the use of biological controllers to reduce the application of chemical products that can affect the health of producers and consumers. SENASA works hand in hand with family farming, developing

	various activities such as training, crop field inspections, health surveillance for the prevention of pests that can affect crop production, prevention of the entry of pests into crop fields, monitoring of chemical residues and other contaminants in primary agricultural foods and feed, vaccination campaigns against anthrax, rabies, and others, implementation of FFS Field Schools to address phytosanitary problems, implementation of good agricultural practices in the production of various economically important crops in the region, among the main activities.
Local governments: Municipality of Campo Verde Municipality of Manantay Municipality of Honoria	They are basic entities of the territorial organization of the State and immediate channels of neighborhood participation in public affairs, which autonomously institutionalize and manage the interests of the corresponding communities, being essential elements of the local government, the territory, the population and the organization. The district municipalities are the government bodies that promote local development, with legal status under public law and full capacity to fulfill their purposes. The District Municipality of Campo Verde has 08 managements, among which is infrastructure and public works, public services and environmental management, social and economic development. The District Municipality of Manantay has 04 departments, 2 of which are the department of social and economic development and the department of public services. In agreement with the National Rural Sanitation Program, it will develop in 2022, two projects to improve the drinking water service and hygienic services in the Nuevo San Juan town center (it will benefit 743 inhabitants) and in the Túpac Amaru hamlet (it will benefit 422 inhabitants).
National Universities: National University of Ucayali - UNU National Intercultural University of the Amazon - UNIA	The University is an academic community focused on research and teaching, which provides humanistic, scientific, and technological training with a clear awareness of our country as a multicultural reality. Universities are public (legal persons under public law) or private and the State recognizes university autonomy. Among its purposes are (Law 30220): To train high-quality professionals in an integral manner and with a full sense of social responsibility according to the needs of the country; project its actions and services to the community to promote its change and development; carry out and promote scientific, technological and humanistic research; promote human and sustainable development at the local, regional, national and global levels; serve the community and integral development. They organize and establish their academic system by Faculties, which are the units of academic, professional and management training. Research is an essential and mandatory function of the university, which promotes and carries it out, responding through the production of knowledge and the development of technologies to the needs of society. The universities permanently coordinate with the public and private sectors, for the attention of research that contributes to solving the country's problems. They establish strategic alliances for better basic and applied research. The UNU has the School of Agricultural Sciences and of Forest Engineering and Environmental Engineering, among others. In previous years, the BAM company has developed agreements with this university and is currently in the process of continuing with said alliance and updating a new agreement. UNIA's mission is to train competitive professionals committed to sustainable development, incorporating the wisdom of the indigenous peoples of the Amazon and the country. It has

	the Faculty of Engineering and Environmental Sciences and the Professional Career of Agroforestry and Aquaculture Engineering, and the Professional Career of Agroindustry Engineering. The importance of establishing an agreement with this university is based precisely on the professional career that it offers and that is related to agroforestry activities that the project wishes to implement and/or promote in the area surrounding the project area, as forms of use of land that have a great environmental impact, by applying sustainable production practices that in one way or another reduce the pressure on forest lands and the expansion of the agricultural frontier and rather is oriented towards recovering tree cover.
NGO "Plant your future"	This Civil Association implements projects for agricultural production development with forest plantations together with producers from the villages, whose scope of action is centralized in the district of Honoria (Department of Huánuco), in the area surrounding the south side of the project (Selva Maestra), focusing its actions on the town center of Nueva Esperanza and radiating in the nearby villages.

2.1.10 Sectoral Scope and Project Type

The project falls within scope 14 (Agriculture, forestry and other AFOLU land uses) of the VCS This grouped project belongs to the REDD category (planned and unplanned avoided deforestation and degradation - APD, AUD) of the AFOLU sector and complementarily addresses in the development of its activities, as part of the strategies to reduce GHG, some actions related to the categories of afforestation, reforestation (ARR) and improved forest management (IMF), through the identification and implementation of agroforestry practices and of forest management to be applied in the surroundings and within the project area, and to support the sustainable use of wood, to be carried out specifically in the Nuevo Paraíso native community as a key strategic actor, since it shares the same boundary with the property Selva Maestra. Said actions and others to be developed by the project promote the promotion of climate change mitigation and adaptation measures in the LULUCF sector (agroforestry systems and community forest management) and forests (forest fire risk management, early warning system for deforestation, control and forest surveillance) respectively, within the framework of the implementation of the NDC.

The project seeks to conserve an area of the forest ecosystem and its carbon reserves, avoiding the change of use that was planned to be carried out in order to implement an agro-industrial exploitation project with the establishment of camu camu (Myrciaria dubia), oil palm (Elaeis guineensis) and higuerilla (Ricinus communis) and develop livestock activity with the installation of pastures. No settlements or local communities have been established in these areas, therefore, the activities in these areas will be oriented mainly to the management and conservation of biodiversity, complemented with strategic actions that reduce threats and dangers of deforestation and external pressures due to agricultural activities. and changes in land use that take place in the surroundings of the project area.

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

The procedure for designing the intervention activities of the project was as follows:

- Review of the results of the social diagnosis and evaluation of the biodiversity carried out in the BAM, Nuestro Señor Jesucristo (JCC) and Selva Maestra properties carried out in the months of July and August 2021.

- Review of documents prepared by BAM with information (2006-2021) on diagnoses, conflicts, and administrative technical files of JCC and Selva Maestra

- Field visits carried out in the months of July, August and September 2021, with interviews with BAM personnel

- Secondary information: publications on the web (CIFOR, ICRAF, etc.) on restoration, production chains, SAF, deforestation, among others.

  Formulation of problem tree and means; viability matrix of alternatives based on causes, strengths / opportunities, in order to identify viable activities.

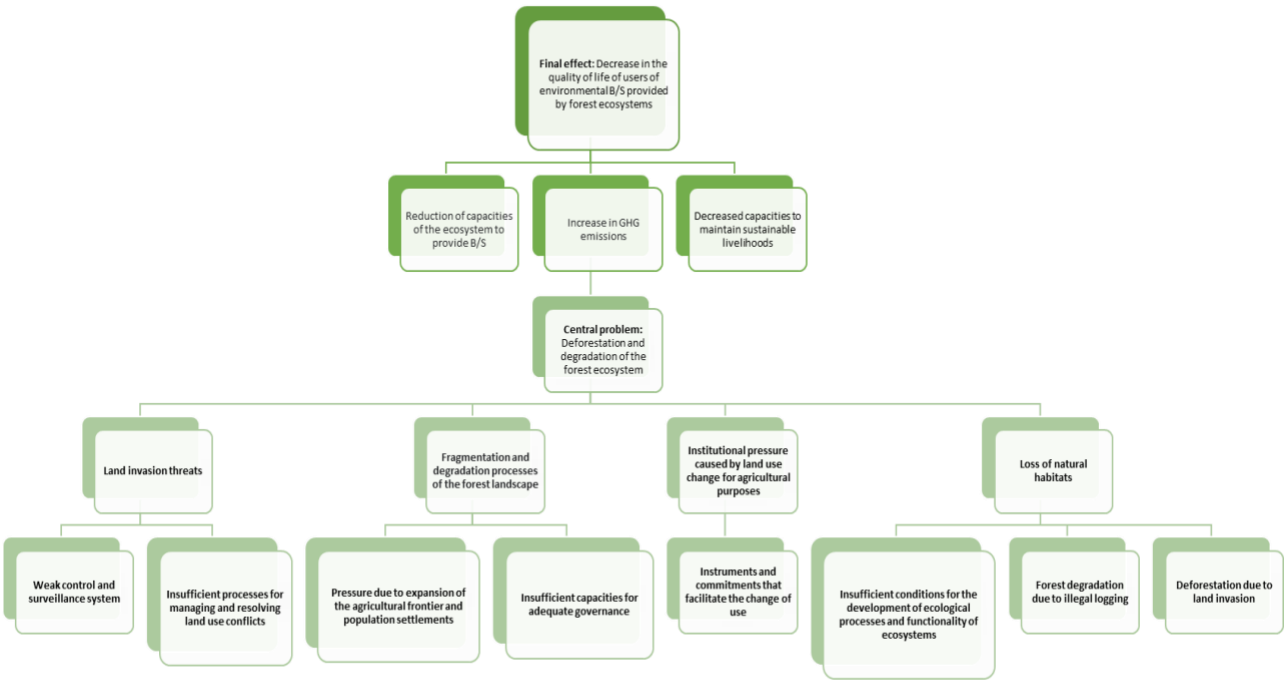


Figure 13. Tree of problems and consequences

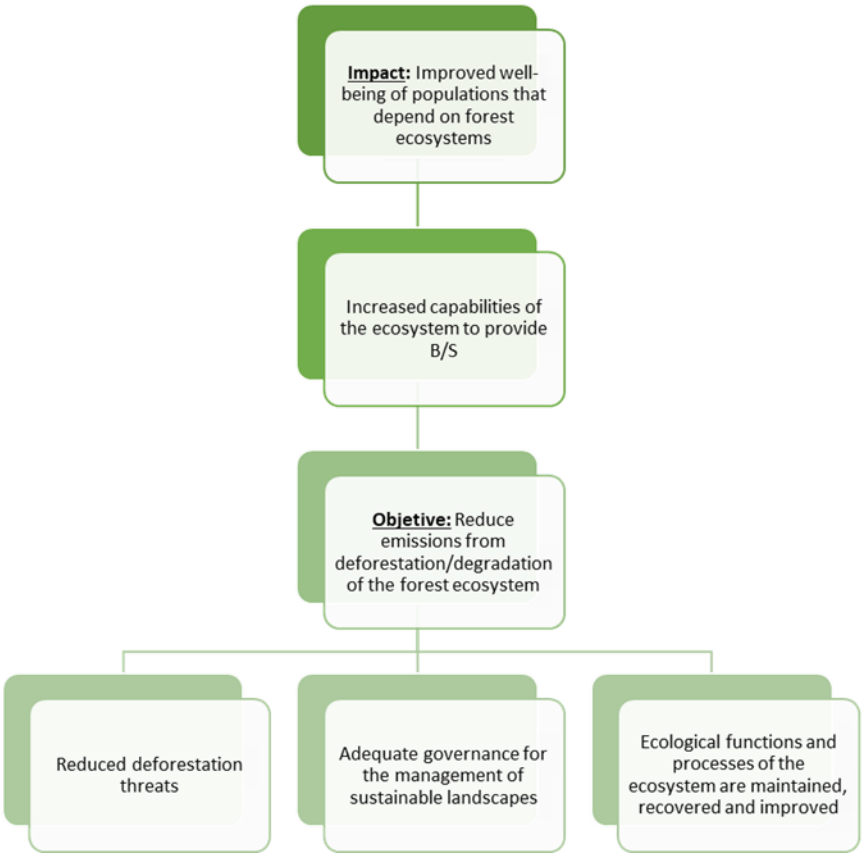


Figure 14. Tree of means and ends

Identification of strengths/ opportunities:

- Research actions being implemented in the JCC property through a Science Program
- Regulatory framework in Restoration of landscapes of forest ecosystems (Guidelines / National Strategy); and for the granting of assignment contracts in use for CCUSAF agroforestry systems. United Nations Decade for Ecosystem Restoration
- BAM maintains good relations with some local communities around the project area, with mutual cooperation, and with the Nuevo Paraíso native community, adjacent to the Selva Maestra property.
- CGFFS coordination spaces

- Administrative legal framework for the formulation and implementation of public investment projects through budget programs (MINAM, MIDAGRI) and Works for Taxes
- Forests with potential for biodiversity products and services (bio business, ecotourism)
- Biological relevance: CORBIDI has reported endangered fauna species (BAM property) and the need to maintain their habitats
- Provision of ecosystem services (water) for rice cultivation and water supply for consumption (Garzal creek / Tierra Roja). Area conservation interest for New Jerusalem (Honoria)
- Forest Fire Risk Prevention and Reduction Plan 2019-2022 (SERFOR)
- Regional and Municipal Plan for Community Control and Surveillance – Masisea (2019)
- Communal forestry surveillance and control committee (PFSN ronderos custodians) recognized by the ARFFS GOREU / Infrastructure of camps for territorial supervision and patrols in JCC and Selva Maestra properties, which helps to establish joint actions for the surveillance of a common boundary with Selva Teacher
- Part of the Selva Maestra estate (4,596 ha Bai –Btb-i) on the List of Fragile Ecosystems (RDE 004-2020-MINAGRI-SERFOR-DE), becoming a priority area for the conservation of Biodiversity – HCV with endemic species and threatened

- Expectant position of the REDD project area, with potential for integration into the biological corridor of ANPs (RC Sira, ACR Imiría, Alto Tamaya Abujao communal ACR, Sierra del Divisor NP) and fragile ecosystems.

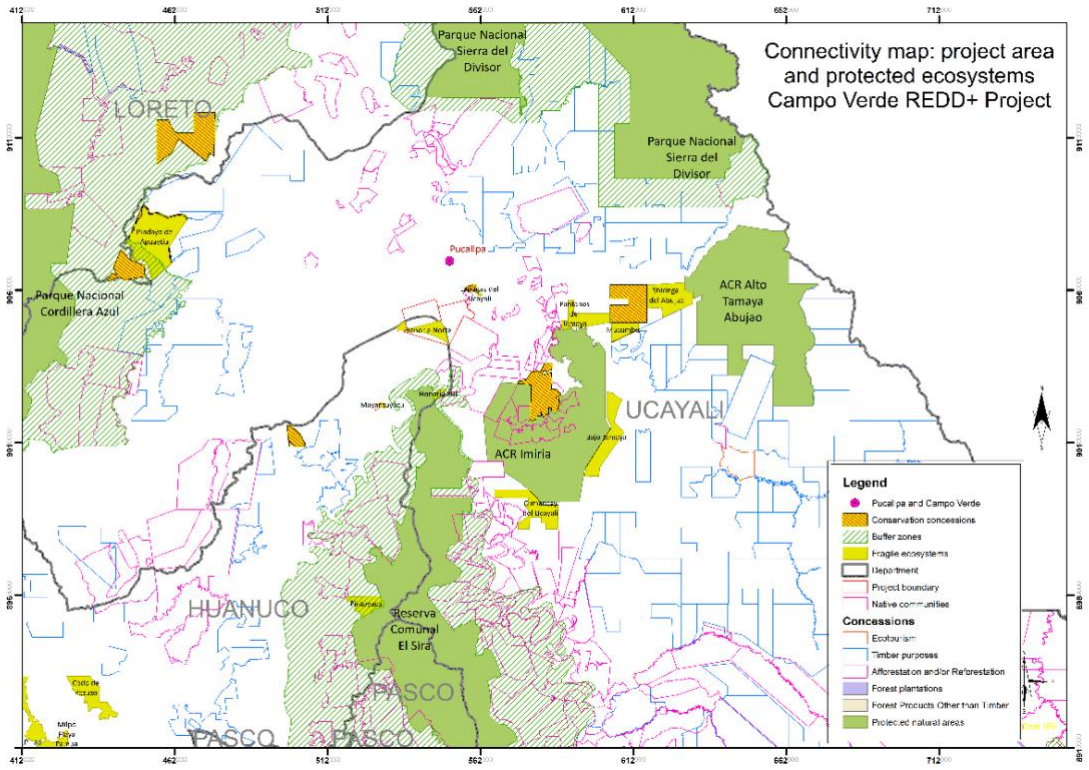


Figure 15.

Connectivity map of the project area with protected ecosystems

Based on the above, the theory of change matrix is presented below:

Table 8. The Last Habitat REDD Project activities and Theory of Change

Specific Objective 1: Reduce greenhouse gas emissions caused by degradation and/or deforestation in the project area				
Activity description	Expected climate, community, and/or biodiversity			Relevance to project's objectives
	Outputs (Short term)	Outcomes (Medium term)	Impacts (Long term)	
1.1 Define efficient strategies to mitigate the risks of deforestation and	- 01 Validated risk identification and analysis report	Response measures to deforestation threats,	Reduction of risk levels of deforestation and	Very high

degradation in the project area	- 01 identification map of risk areas - 01 validated report of strategies against threats of deforestation and environmental crimes - 01 Complete protocol of action against risks of deforestation and/or environmental crime	monitoring and control actions, and conflict resolution are implemented	degradation in the project area	
1.2 Implement an efficient Territorial Security (Monitoring, Control and Surveillance) system that allows identifying and stopping any threat of deforestation within the project area: satellite, technical and legal	- Daily early warning reports - Monthly technical reports of Territorial Security - Monthly reports of the legal team (Report and follow-up of legal cases before authorities) - Weekly surveillance round reports	Reducing the vulnerability of the forest ecosystem against threats of deforestation and environmental crimes	Maintenance of forest cover in the project area	Very high
1.3 Consolidate strategic alliances with competent authorities and other neighboring organizations (e.g., communities) in order to strengthen the response capacity against threats of deforestation and/or environmental crimes in the project area	- 02 cooperation agreements concluded annually with government entities - 02 cooperation agreements concluded annually with non-governmental entities	Improved response capacity against threats of deforestation and/or occurrence of environmental crimes	Reduction of deforestation events and/or that constitute environmental crimes in the project area	Very high
1.4 Implementation of adequate infrastructure for optimal monitoring	- 01 Restructuring plan, with schedule and complete budget	System for control and monitoring of deforestation	Protection of areas with forest cover	High

and control of threats in the project area	- 06 surveillance posts duly implemented - 01 Kit of equipment purchased according to approved budget - 01 Annual Maintenance Report of boundaries, milestones, fences, other signs (access roads, plots) to identify the project area	threats in operation		
1.5 Help form and consolidate V&CF Committees with the participation of neighboring communities to prevent and stop threats of deforestation and/or environmental crimes	- 04 C&VF Committees formed, implemented and/or strengthened - 01 Validated regulation of organization and functions of the C&VF committees formed - 01 C&VF Plan, prevention, control of deforestation threats (forest fires) - 01 Action protocol between C&VF committees - 01 Training plan aimed at the members of the C&VF committees - 02 trainings carried out per year directed to each brigade - 01 kit of equipment purchased for the management of each C&VF committee (brigade) according to the agreed plan and schedule - 04 brigades formed to fight forest fires	Actions to prevent and reduce threats of deforestation and/or environmental crimes, articulated in a participatory manner with the communities	Forest ecosystems less vulnerable to risks of deforestation and/or environmental crimes	High

1.6 Train interest groups in general in order to promote conservation, sustainable forest management and response to threats of deforestation in the area of influence of the project	- 02 annual trainings aimed at communities and interest groups - 02 annual training and impact reports	Communities and stakeholder groups are aware of the impacts of unsustainable forest management practices and deforestation threats on their livelihoods	Communities and stakeholder groups support efforts for conservation and sustainable management of the forest	Average

Specific Objective 2: Protect the integrity of biological diversity and ecological processes in the project area				
Activity description	Expected climate, community, and/or biodiversity			Relevance to project's objectives
	Outputs (Short term)	Outcomes (Medium term)	Impacts (Long term)	
2.1 Promote silvicultural and restoration practices for the recovery and rehabilitation of the forest ecosystem	- 01 Technical report on the identification and selection of disturbed areas for their recovery - 01 Technical report on the identification of silvicultural and restoration practices - 01 Report on the implementation of silvicultural practices for rehabilitation	Disturbed forest areas, improve their plant succession processes and recovery capacity	Disturbed areas in the forest ecosystem improve its composition and structure towards an original state	High
2.2 Permanently identify, monitor and protect the biological wealth (flora and fauna) within the Project Zone	- 02 annual biodiversity inventory reports in the project area - 02 annual ecological characterization reports of the natural communities in the project area - 01 Forest permit granted by the competent authority	Area of the project zone for its conservation and sustainable use	Biological wealth of the project area is protected	High

	for the economic use of forest ecosystem services - 01 Forest execution report for each operating year - 02 cooperation agreements per year for the international recognition of the information generated - 02 Annual critical habitat protection reports			
2.3 Control the illegal extraction of flora and fauna in the project area with the support of the authorities and other competent organizations	- 01 Annual cooperation agreement to control threats to biodiversity - 01 annual report of complaints of environmental threats or crimes against biodiversity	Reduction of threats and risks of forest degradation	Protection and conservation of tree cover of forest ecosystems	Very high
2.4 Implement workshops and awareness efforts on the importance of protecting biodiversity in the project area	- 01 training workshop per year, on identification and conservation of biodiversity, aimed at interest groups - 02 Annual awareness campaigns	Communities and stakeholder groups are aware of the impacts generated by the protection of biodiversity on their livelihoods	Communities and stakeholder groups support efforts for conservation and sustainable management of the forest	Average

Specific Objective 3: Strengthen the socio-economic situation of the interest groups, specifically of the villages and communities neighboring the project area				
Activity description	Expected climate, community, and/or biodiversity			Relevance to project's objectives
	Outputs (Short term)	Outcomes (Medium term)	Impacts (Long term)	

3.1 Define efficient strategies to improve the socio-economic situation of the interest groups (hamlets and communities)	- 01 Validated stakeholder mapping report - 01 validated report of strategies, schedule and budget for social development - 02 cooperation agreements per year with interest groups	Stakeholder groups support and recognize BAM's efforts to reach agreements that benefit the surrounding communities	Project is implemented with social license, based on reciprocal collaboration	Very High
3.2 Improve the capacity of communities to cover basic services	- 01 Validated implementation plan with budget and execution schedule - 02 service and/or social infrastructure projects implemented per year - 01 monthly impact report	The social benefits, in terms of improvement of basic services generated by the Project, are recognized by the communities and groups of stakeholders.	Project is implemented with social license, based on reciprocal collaboration, to reduce anthropogenic pressures on the project area	High
3.3 Improve the technical capacities of the community to develop sustainable production chains	- 01 Validated technical training plan - 01 Mapping of allied organizations - 02 cooperation agreements per year with public and private organizations - 02 annual training workshops - 02 Annual reports on monitoring and evaluation of training	Productive community groups improve their knowledge in productive practices and techniques in important or critical links of the productive chain, identified by said groups	Community groups apply productive techniques to improve links considered critical by said community groups	High
3.4 Develop production chains in the project or buffer area that involve the	- 01 Production chain implementation plan - 01 Report on contracts with third parties for the implementation of pilot projects	Community groups obtain productive benefits in links identified and considered critical by said	Community groups apply production techniques and practices to improve sustainable	High

surrounding communities	- 02 productive and/or commercial pilot projects implemented - 01 Semi-annual report on the impact of the implemented pilot project	community groups	land use systems	
3.5 Design and implement a Community Communication Plan to strengthen the company with stakeholders, ensuring an adequate flow of bilateral communication	- 01 Community communication plan - 01 communication and consultation strategy implemented - 01 Annual report on registration procedures and attention to complaints and claims	Strengthening trust and harmonious relations between BAM and neighboring communities	Management and negotiation of socio-environmental conflicts are sustained in a latent state, through consensual agreements with neighboring communities	Very High

2.1.12 Sustainable Development

The sustainable development priorities established in Peru are described and evaluated in the State Policies, which define the general guidelines for long-term State action in order to achieve well-being and sustainable development of the country, as a result of a consensus reached in the Forum of the National Agreement in 2002, through the Act of Subscription of the National Agreement. 35 State policies grouped into 4 axes were defined, in which State Policy 19, referring to Sustainable Development and Environmental Management, is determined and included in Axis III Competitiveness of the Country.

Based on this Policy 19, the State undertakes to integrate the national environmental policy with economic, social, cultural and territorial planning policies, to help overcome poverty and achieve sustainable development in Peru. It also commits to institutionalize public and private environmental management to protect biological diversity, facilitate the sustainable use of natural resources, ensure environmental protection, and promote sustainable population centers and cities; which will help improve the quality of life, especially for the most vulnerable population in the country.

With this objective, the State will carry out various actions, among which we can mention those aimed at strengthening the institutionality of environmental management; promote the responsible and informed participation of the private sector and civil society; promote land use planning, forest management as well as the recovery of degraded environments; stimulate environmental investment and technology transfer for the generation of cleaner and more competitive sanitation and energy activities, as well as the sustainable use of forest resources, biotechnology, bio trade and tourism; permanently promote and evaluate the efficient use, preservation and conservation of soil, subsoil,

water and air, avoiding negative environmental externalities; recognize and defend traditional indigenous knowledge and culture; comply with international treaties on environmental management; as well as facilitating the participation and support of international cooperation to recover and maintain the ecological balance.

In 2011, the Strategic Plan for National Development - PEDN "Bicentennial Plan" was published: Peru towards 2021 (Supreme Decree No. 054-2011-PCM), which has a time horizon until 2021, framed in 6 strategic axes, establishing axis 6: Natural Resources and Environment. The objective is to achieve the rational and sustainable use of natural resources and biodiversity, in order to guarantee their conservation for future generations, as well as the right of people to enjoy a balanced and adequate environment for the development of their lives. The achievement of this objective requires adequate measures for the country's adaptation to climate change and the promotion of information mechanisms and citizen participation, as well as environmental education at all educational levels, among other measures related to the strengthening of the National Environmental Management System.

The PEDN was based on the 31 State Policies existing at that time and contained a vision for the 21st century and guidelines to guide the national development policies that the country should have followed. As its validity is until 2021, it was necessary to start the process of building a new vision of the country and the formulation of the next PEDN in charge of the National Center for Strategic Planning CEPLAN. In 2019, the Vision of Peru to 2050 was approved in the National Agreement Forum, proposing 5 major axes, corresponding to axis II Sustainable management of nature and measures against climate change and axis III Sustainable development with decent employment and in harmony with nature.

To implement the Vision of Peru by 2050, CEPLAN has been developing (according to Directive No. 001-2017-CEPLAN/PCD) a process for the formulation of the PEDN (proposal - Working Document, version 2, November 2021), strategic planning instrument that is oriented towards compliance with State Policies and represents a medium and long-term commitment to the sustainable development of the country.

State policies are specified in the PEDN; the general government policy, the national, sectoral and multisectoral policies are specified in the multiannual sectoral strategic plans (PESEM) and the multisectoral strategic plans (PEM); territorial policies, in concerted regional development plans (PDRC) and in concerted local development plans (PDLC).

The PDRC Concerted Regional Development Plan for the Ucayali region by 2021 (Regional Ordinance No. 007-2016-GRU-CR) is a territorial-based management instrument with a climate change approach, comprehensive and dynamic, guiding development, which It allows the optimization of economic resources, directing them to the development of activities and projects that satisfy the needs and expectations of the citizens determined in the axes of development, in order to achieve the outlined vision. It is part of six policy guidelines determined by the PEDN, whose national strategic objectives are linked to the 07 regional strategic objectives (OER), in order to improve the factors of the territory of Ucayali, the sixth OER being: to conserve and sustainably use the renewable and non-renewable natural resources and the biological diversity of the territory.

The Regional Climate Change Strategy (ERCC) of Ucayali 2019-2022 (Regional Ordinance No. 021-2019-GRU-CR) is a management instrument, which allows planning and developing actions, programs and projects in a coordinated and articulated way with the policies that lead to adequate adaptation and mitigation of the inevitable climate change. It is aligned with the Nationally Determined Contributions (NDC) that Peru assumes in the Paris Agreement on climate change, identifying 153 adaptation and mitigation actions against climate change; of which 53 are in the region, linked to adaptation and mitigation.

Table 9. Coordination and contribution of The Last Habitat REDD+ project to sustainable development

NATIONAL AGREEMENT	NATIONAL DEVELOPMENT STRATEGIC PLAN - PEDN			CONCERTED REGIONAL DEVELOPMENT PLAN - UCAYALI		REDD PROJECT + CAMPO VERDE		
STATE POLICY	STRATEGIC AXIS	SPECIFIC OBJECTIVES	STRATEGIC ACTIONS	REGIONAL STRATEGIC OBJECTIVE	REGIONAL STRATEGIC ACTION	SPECIFIC OBJECTIVE SO1	SPECIFIC OBJECTIVE SO2	SPECIFIC OBJECTIVE SO3
Policy 19: Sustainable development and environmental management	Axis 6: Natural Resources and Environment	SO1: Natural resources and biological diversity conserved and used in a sustainable manner, with the participation and benefit of local populations	Inventory, evaluate and assess the country's natural resources and biological diversity in order to determine its economic potential for sustainable use and conservation.	OER 6: Conserve and sustainably use the renewable and non-renewable natural resources and the biological diversity of the territory	AER 6.6 Promote alternatives, financing and training for the conservation and sustainable use of natural resources and biological diversity		X	
			Supervise and control the sustainable management of terrestrial and aquatic ecosystems			X		
			Supervise and control the sustainable management of forest resources, ensuring the comprehensive use of forest resources and services.			X		
		SO4: Vulnerable population and productive systems, adapted to climate change	Improve response capacity to deal with emergencies related to climate change through awareness raising and training of the authorities and the population, the creation of mechanisms that produce rapid disbursements of economic resources and the response of the health sector in highly vulnerable areas		AER 6.1 Manage funds for the development / execution of reforestation projects, ecosystem services, adaptation and mitigation of climate change			X
			Identify and adopt protective measures to prevent harmful impacts of change climate on biodiversity		AER 6.2 Implement strategies for the reduction of greenhouse gas emissions and management in degraded areas		X	X
		SO5: National Environmental Management System implemented in the three levels of government, with active citizen participation	Improve the institutional framework for permanent research on the natural heritage, the sustainable use of natural resources and the reduction of vulnerability, and ensure adequate budget resources				X	
			Actively participate in international organizations that support conservation of biodiversity and take advantage of the financing and support mechanisms available internationally				X	

Source: Own elaboration, based on the documents approved by the competent institutions.

2.1.13 Implementation Schedule (G1.9)

In the Annex 1 it is established the Schedule for the implementation of project activities and it also indicates the milestones.

Table 9. Milestones in The Last Habitat REDD Project's development and implementation

Date	Milestone(s) in the project's development and implementation
2020	Start of the first rapid assessment of biodiversity. Project start date

2020	Start of improvement of the infrastructure of surveillance posts and maintenance of boundaries of the project area
2020	Start of preparation of reports, complaints, verifications, inspections and legal proceedings before the competent authorities
2021	Training and formation of brigades to fight forest fires, for their prevention in neighboring towns
2021	Approval and signing of the contract for the start of the PD formulation process
2021	Beginning of the definition of strategies to mitigate the vulnerability of the forest ecosystem in the face of threats of deforestation and environmental crimes: Dialogue tables begin with the CC. PP Tupac Amaru
2021	Start of strengthening the capacities of local communities to cover basic services: Social support begins with medical campaigns and construction of a health post in a populated center “February 28”
2022	Start of the PD validation process
2022	Approval by the ARFFS of the Management Plan for the economic use of forest ecosystem services and start of the process of preparing the annual reports (operational year) of forest execution
2025	End of the first VCS monitoring period from the project start date and start of annual monitoring periods.
2025	First approximate verification audit date
2025	End of the first CCB monitoring period, from the start date of the project
2039	End of project crediting period

2.1.14 Project Start Date

Biodiversity assessment activities, actions to mitigate deforestation risks, and strengthening of social management in communities neighboring the project area, all of them aimed at reducing emissions within the framework of the logical framework matrix of the project (Annex 2), begin gradually and almost sequentially in the order mentioned, starting in March 2020 with the rapid biodiversity assessment fieldwork, as supported by the respective results reports (Annex 3). Therefore, the project has defined a start date of March 1, 2020.

The execution of biodiversity assessment activities in the "quinillal" area within the JCC property (https://www.Bosques-amazonicos.com/blog/en/https-www-Bosques-amazonicos-com-blog-en-notes-from-the-field-walter-h-wust-expedition-to-quinillal-2020/), was developed by a group of researchers from the CORBIDI institution, aimed at fulfilling the specific objective 2 of the project, corresponding to the activity with code ACT01 (OE02-AE02) of the logical framework matrix. In

addition, in the same year, activities corresponding to specific objective 1 of mitigation of deforestation risks (ACT03 - OE01-AE02; ACT04 - OE01-AE02) are also carried out, carrying out field inspections to control the unauthorized entry of third parties to the properties JCC and Selva Maestra, and that they referred to the illegal extraction of wood, having continued to date with said territorial supervision activities carried out by the personnel of the 04 surveillance camps distributed in the JCC and Selva Maestra properties (reports are attached respective in Annex 4). In the field of social support and community development of the population centers around BAM, in 2021 medical campaigns were carried out and in the first months of 2022 the dialogue tables with the population centers began, beginning with the Tupac Amaru CP (acts of agreement are attached in Annex 5) to address issues of illegal logging and unauthorized access to BAM properties.

2.1.15 Benefits Assessment and Crediting Period (G1.9)

March 1, 2020, to February 28, 2039. The accreditation period is for a period of 20 years and corresponds to the same benefit evaluation period.

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

No differences

2.1.17 Estimated GHG Emission Reductions or Removals

Table 10. Estimated reductions or removals of GHG emissions for The Last Habitat REDD+ Project

Year	Estimated GHG emission reductions or removals (tCO_2e)
2020	663,849.44
2021	702,507.69
2022	525,768.18
2023	1,736,722.78
2024	1,842,393.52
2025	1,948,064.26
2026	2,053,735.00
2027	752,197.47
2028	763,680.50
2029	775,163.52
2030	759,415.03
2031	668,020.91
2032	505,456.10
2033	435,659.68
2034	365,863.25
2035	296,066.83

2036	226,270.40
2037	215,880.41
2038	205,490.42
2039	195,100.43
Total estimated ERs	15,637,305.81
Total number of crediting years	20
Average annual ERs	781,865.29

2.1.18 Risks to the Project (G1.10)

Table 11. The Last Habitat REDD Project risks

Identify Risk	Potential impact of risk on climate, community and/or biodiversity benefits	Actions needed and designed to mitigate the risk
Uncontrolled burning	Prolonged drought events in times or days of low or no rainfall continuously, contribute to expanding forest fires that are caused at that time of year (June to September) in which farmers take the opportunity to open their farms (grave and clearing, burning of forests, low secondary vegetation, grasslands) and cannot control the burning that expands with the help of climatic events (strong winds and high ambient temperatures), affecting the project area, forests and biodiversity. In 2021, in the department of Ucayali, a total of 234 forest fires were alerted, identifying 7,488.6 affected hectares, with the Manantay district (where the project area is located) being the most affected with 2,637.6 hectares (35%), and the August, the month with the highest occurrence of forest fires https://www.facebook.com/permalink.php?story_fbid=359532442870227&id=100064404236894https://www.facebook.com/permalink.php?story_fbid=359532442870227&id=100064404236894	Prior to the start of the forest fire season, priority areas will be identified where uncontrolled burning frequently occurs as a result of the opening of farms. Training in early fire management and organization of producers, forming firefighting brigades and an early communication and monitoring system to give notice before burning occurs, mainly in times when the intensity and frequency of precipitation decreases to the minimum of the annual average. (Between May and September). Likewise, as part of the Control and Surveillance Monitoring System (Territorial Security), actions will be reinforced in times of high heat sources, through surveillance rounds by the personnel of the territorial security team who carry out their work from the surveillance spaces or camps installed. On the other hand, the application of satellite technologies used and provided by the SERFOR Geoforests platform allows visualizing and identifying heat sources, which constitutes a support tool for the prevention and implementation of fire control strategies.

Climatic events of precipitation and extreme "droughts"	Both events represent a potential risk for the ecosystem and access problems to the project area. In seasons of low rainfall (June to September) it is relatively easy to enter the project area and its surroundings with vehicles (trucks, motorcycles), and walking through trails or roads to places where there are low depressions, and it is flooded almost all year round, which facilitates entry to develop community relations activities in the surrounding area and research within the project area. However, there are many flood-prone sites, which are difficult to access (on foot or by boat) due to muddy terrain with a lot of mud or streams and streams with low flow, which does not allow going beyond certain sites. In the opposite case, in times of high rainfall, it is no longer possible to enter the temporary flooding areas with vehicles (trucks, motorcycles), considering that a large part of the project area is floodable. However, income is facilitated by using the hydrographic network by means of small boats (commonly called small boats) to cover large areas of the project area and develop certain specific activities, with the disadvantage or limitation of installing temporary camps. Both situations can extend the period of previously planned activities, affect the execution of activities and make it difficult to comply with the products that are aimed at generating benefits for the climate, biodiversity and communities.	The programming of activities will take these risk factors into account, taking the necessary precautions, planning actions and tasks in order not to affect the fulfillment of the products in the scheduled time. In the case of logistics actions, it has been considered to have the appropriate vehicles (4x4 truck, farm motorcycles, small boat) that meet the characteristics and requirements necessary to be able to travel on the types of terrain and access roads that exist in the work zone and that their conditions change at these 2 times of the year that are well marked, in order to move to the work zones. Likewise, preventive actions will be taken in the execution of the works, to reduce the risks that protect the safety of the personnel and of the equipment or materials to be used, based on the Internal Occupational Safety and Health Regulations.
Illegal logging and timber extraction activities	They are developed by groups of organized settlers who mainly come from the surrounding communities and who are facilitated (logistics, budget, payment of wages, equipment) mainly by a wooden "enabler", to be able to enter the project area from different fronts, mainly using the streams through small boats (peque peque). According to BAM reports, in the last 4 years there has been a tendency to increase these types of income, even with forestry tractors, so much so that BAM annually has to file the corresponding complaints for illegal logging and channel them through the ARFFS, which is the competent public entity for its administrative action and inspection, and the Public Ministry through FEMA to carry out criminal investigations of illegal logging crimes and identify those responsible for the illegal activity, proceeding in accordance with its powers, presenting the criminal case before the competent judge. FEMA	Reinforce surveillance, monitoring and control in the project limits, after evaluating the access sites and areas within the project area that are most vulnerable. Consideration has been given to addressing these conflicts through round tables with the communities where these groups of illegal loggers live or come from and to reach reciprocity agreements. Likewise, carry out communication activities explaining the benefits of the project. Coordination with the Community Forest Control and Surveillance Committee of the native community of Nuevo Paraíso, an area adjacent to the Selva Maestra property, and

	is the one that asks the ARFFS to issue substantiated reports (documented evidence of the crime), as the case may be. In 2021, the FEMA of the fiscal district of Ucayali attended to 76.79% of the total cases registered and entered (complaints, files, preventive investigation), being the fiscal district or region at the national level that attended the least cases, according to the Statistical Yearbook of the Public Ministry, 2021. https://cdn.www.gob.pe/uploads/document/file/2912946/Anuario%20Estadistico%202021.pdf.pdf These illegal logging activities increase the level of degradation of the forest ecosystem within the project area, affecting the biodiversity that it contains and the capacity of its forests to continue providing environmental goods and services.	reach agreements of mutual benefit. At the moment it is the only community with which the project area borders, and that said Committee has been recognized by the Regional Forestry and Wildlife Authority. However, actions will be coordinated with the other adjoining native community of Nuevo Oriente de Chanajao. All these measures will be coordinated with the regional forest and wildlife authority and involving the participation of surrounding communities, through joint actions of the forest control and surveillance committees formed
Land invasion	The demand for access to forested land to install agricultural crops is high in an area characterized by limited land availability, a wave of migrants from other areas or regions in search of new land, which leads them to see opportunities, from their perspective. , in those forested areas (private or free) where agricultural activities are not carried out and therefore are not being used economically and where the standing forest as such has no productive value, after commercial trees have been extracted for the sale of wood . Therefore, these people believe they have the right to access and be assigned by the competent authorities, said forested lands that are being occupied by their owners without developing any productive economic activity or for agricultural purposes, and based on said analysis made by them, a process of land invasion begins (which legally should not proceed) in a planned and organized way in groups of migrants or producers who seek more land than they need, often supported by interests of groups of armed land traffickers. In the case of the BAM properties, there have already been several periodic events of invasion of their properties (supported by reports and complaints) trying to take possession and settle in various places, and they have been later evicted, but these groups of people continue trying to Several fronts enter and achieve their goal. These actions are harmful because they lead to clearing, felling and burning of forests, which is the migratory agricultural system that they use to open farms,	Identification of invading groups. Alliances with competent entities, in order to facilitate logistics capabilities so that they fulfill their functions. Conflict management and resolution considering the needs of these groups to access land. Articulated work between the technical and legal team of the project, to proceed with the complaints and legal proceedings, when the identified events of invasion of the area occur. The forest ecosystem of the project area mainly sustains the provision of water resources in the area, providing a set of ecosystem services. In this sense, it will be made known that the REDD project is aimed at conserving the forest and as a result of the activities it will generate benefits for the communities, the ecosystem services and the benefits that the population would obtain indirectly from the conserved ecosystems will be valued. , they themselves will be able to perceive and observe it in their daily activities (hunting for family consumption, use of water for domestic services and in agriculture) and potentially community tourism as

	consequently it would reduce the chances of complying with emission reductions and conserving biodiversity.	a product of ecotourism activities in the area of the bird watching project. Suggest developing alternative livelihoods, involving sustainable activities (fish farming, beekeeping, others) Monitoring of the project area using drones, in critical and vulnerable areas.
Unauthorized entry for the use of non-timber products	Residents of the environment often enter the project area without the corresponding authorization, to take advantage of the fruit of the aguaje palm trees (Mauritia flexuosa), ecosystems that mainly dominate the JCC property and Selva Maestra.	A natural characterization and zoning of the properties will be carried out to evaluate the potential for the use and management of biodiversity, formulating the respective forest management plans for a sustainable use of non-timber products, increasing the economic value of the standing forest, which does not mean tree removal. Based on these results, it will be possible to make alliances with community groups to develop and implement sustainable productive enterprises, taking advantage of market opportunities that benefit the communities.
Expansion of the agricultural frontier in the surroundings of the project area	The inhabitants of the settlements around the project area who practice migratory slash-and-burn agriculture, as well as the mobilization of migrant population groups that settle around the project area, become drivers of unplanned deforestation in an effort to find and access to new lands with forest cover, developing extensive agricultural activities, applying unsustainable practices to the detriment of forests (primary, residual, secondary), expanding and advancing the agricultural frontier in the vicinity of the limits of the BAM properties which puts at risk the forested areas within their properties, as observed in the deforestation maps in the last 22 years, as well as the reports of land invasions that occurred in said properties.	Provide technical assistance and develop capacities to strengthen production chains and apply good sustainable agricultural practices, with a market approach. Implement together with the authorities and representatives of the local communities and leaders of community groups, a strategy of negotiation and resolution of conflicts, which leads to the generation of reciprocity agreements, with commitments aimed at putting an end to incursions and land invasion events.

2.1.19 Benefit Permanence (G1.11)

The project is designed to develop community relations, negotiation and conflict resolution activities, through dialogue tables that are established with local communities and community groups, in which reciprocity agreements are planned, established and generate shared value in the medium and long-term whose commitments are aimed at reducing the expansion of the agricultural frontier, pressure

on forests, deforestation, illegal logging and land invasion, ensuring that these activities are self-sustaining in the long term, including forest control and surveillance activities that are and will be continuous during the life of the project, in which the community groups will be organized into vigilance committees that will be strengthened, interacting and carrying out joint activities with BAM, previously agreed upon and planned, involving the competent forestry authorities of the regional government and others institutions that have competence and functions in these issues, such as SERFOR, FEMA, OSINFOR.

The capacity development plan (fire control, productive chains, forestry control and surveillance, social management, among others) and the technical assistance strategies for community groups, support and permanent accompaniment for community leaders and authorities, have been planned and designed in such a way that the intervention actions of the project are self-sustaining (with a focus on the theory of change) fulfilling an important role for the sustainability of the activities that lead to reducing deforestation and strengthening productive chains complemented with the implementation of good agricultural practices, which has led community groups to find sustainable productive opportunities that do not mean new openings of forested areas, considering the potential of goods and services provided by ecosystems and the context, to achieve a balance between social needs, economic, productive and environmental. In this sense, the chances of success of the project and fulfillment of long-term objectives are high, which ensures the sustainability of the benefits generated.

2.1.20 Financial Sustainability (G1.12)

Financial sustainability is evaluated through the project's cash flow table (Annex 6) anticipating reaching the break-even point in the year 1.

2.1.21 Grouped Projects

This Project is group type.

1) Eligibility Criteria for Grouped Projects (G1.14)

The incorporation of new instances of project activities will meet the following conditions:

- Areas with similar characteristics that present the current areas.
- Be located within the territorial scope belonging to the Ucayali and Huánuco regions, which correspond to the Amazon biome, defined by MINAM and for which there is information regarding GHG.
- Private properties with property title.
- The properties must contain areas with forest cover.
- Both private properties and properties belonging to native communities are considered.

- The agents of deforestation in future instances must be of the same typology as the current project instance.

  The project activities described in this PD are the same as those that will be implemented in future instances of the project.

2) Scalability Limits for the Grouped Projects (G1.15)

The limits of scalability are limited by geographic criteria, mainly to the areas of the Amazon biome within the limits of the Ucayali and Huánuco regions. The CCB standard provides guidance for working in communities up to 20km from project area boundaries where communities impact the project area. The project activities have been designed to generate a positive impact on biodiversity in the project area, therefore, outside the limits there would be no negative impacts on biodiversity. However, it must be taken into account that an over-expansion of the project will lead to requiring greater economic resources and operational capacities, but on the other hand, it has the advantage that there is a whole network of roads and accesses that interconnect with the possible instances to group, which relatively reduces project costs and facilitates operation.

3) Risk Mitigation Approach for Grouped Projects (G1.15)

BAM has more than 17 years of extensive experience in carbon projects validated and verified under the VCS and CCB standards for more than a decade, and in the commercialization of VCUs, which has allowed it to position itself and win awards in the field, product of knowledge, skills and abilities developed by the project management team. Since 2004, BAM has been carrying out a restoration and reforestation program with native species in other of its properties adjacent to the project area, aimed at enriching and recovering secondary forests and soils that have been degraded mainly for livestock activities conducted for decades. These plantations have been certified under the VCS standard.

Furthermore, BAM is the first forestry company in Peru to enter the Lima Stock Exchange and place thematic debt instruments (green / sustainable) successfully and fulfilling all its financial responsibilities. In addition, it has strategic partners to take on much greater scalability responsibilities in terms of financing, operational and management capacity, which allows it to handle and manage risks of different magnitudes.

2.2 Without-project Land Use Scenario and Additionality

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

The main agent of planned deforestation is the company Bosques Amazónicos. The company has authorization from the Regional Directorate of Agriculture of Ucayali to develop agricultural activities, that is, to change the use of land with forest cover to other non-forest uses, based on an approved plan. In order for it to be economically viable for the company to continue maintaining and conserving these forested areas, it is necessary to generate resources through the REDD+ mechanism

(commercialization of carbon credits). Additionally, the area is under threat from producers who develop migratory agriculture in the vicinity of the project area, under an unplanned and planned deforestation approach, characterized by subsistence migratory agriculture with annual crops of rice, corn and other semi-permanent crops. such as banana and permanent such as cocoa, oil palm, extensive livestock, among others. In addition, there are risks of land invasion, illegal logging (facilitated by a network of roads and various accesses to the project area), and forest fires as a result of the opening of farms. Likewise, the probability of deforestation (L-Di) is set at 100%, in accordance with the criteria of the VMD0006 module (section 1.4), as referred to in section 3.1.4.4 of this document.

2.2.2 Most-Likely Scenario Justification (G2.1)

The most likely scenarios of land use within the project area are listed below:

- The forest lands of the project area continue to be under constant threats and occurrences of deforestation and degradation events, such as land invasions, illegal logging and other unsustainable activities, both within the project area and in the surroundings, activities that are not protected under any legal framework established by the State and that are very frequent and widespread practices in the project area, since the laws of the forestry sector do not have adequate governance to be applied effectively in those areas that are not authorized to take advantage of the forest resource and that due to their fragile conditions and ecological and edaphic characteristics (land with greater forest use capacity and for protection) cannot be used for agricultural activities either. This scenario of permanent threats has been confirmed during the field evaluation, different control and surveillance reports and the deforestation rates in the project area. The project area thus becomes the last barrier to the illegal expansion of the agricultural frontier.

- Commitment to protect the forest and conserve its biodiversity within the project area in compliance with the established legal framework, through activities of a VCS project that has not yet been registered, which will be supported by the income obtained from the sale of carbon credits, despite the fact that the legal framework does not prohibit the proponent from maintaining forest cover in areas whose greatest capacity for use is agricultural aptitude. In other words, in order to conserve these areas and not lose them to existing threats, BAM should generate a return equal to or greater than the opportunity cost of the land.

- Change of land use in the area with forest cover, through the establishment of 14,507 ha of agro-industrial crops (“camu camu” Myrciaria dubia, “oil palm” Elaeis guineensi) and “higuerilla” Ricinus communis) and pastures, which were legally authorized by the Ministry of Agriculture when these lands were awarded to the project proponent.

  More detail is referred to in section 3.1.5.1.

2.2.3 Community and Biodiversity Additionality (G2.2)

Considering the probable scenarios that result in the absence of the project and the analysis and evaluation of additionality carried out for VCS sector AFOLU projects (sectoral scope 14), it is concluded that the project is additional (developed and demonstrated in section 3.1.5).

The project does not expect to generate financial or economic benefits beyond the income related to the sale of carbon credits, if the project is carried out the company does not intend to sell the properties to third parties for their conversion to agro-industrial crops (oil palm, higuerilla or camu camu) and/or grazing, nor is it intended to deforest on a large scale, as legally authorized. In this sense, only the simple cost analysis was applied (it did not apply the comparative analysis of investments and benchmark analysis for decision making), and the analysis of common practices, determining that the activity of the proposed project is the most economical alternative or financially attractive among the identified land use scenarios.

The project plans to opt for forest management and restoration activities for forest conservation purposes, instead of the authorized change of land use to agricultural crops. In accordance with the Forestry and Wild Fauna Law No. 29763 (LFFS), the title deeds to both the Selva Maestra property and the property of Nuestro Señor Jesús, include the property over the emission reductions. In addition, the project complies with all the national and regional regulatory framework relevant to the Project's activities, according to the legal analysis developed in section 2.5.7.

If the current existing conditions of threats of deforestation and degradation of the forest ecosystem continue, with illegal activities, coupled with the pressures that exist to open new forest areas in order to access new lands, expand the agricultural frontier and sustain populations in growth, these pressures, threats and risks of deforestation and forest degradation, in the absence of this project, would be expected to continue and increase in the following years. Additionally, ecosystem services, which depend directly on the level of state and functioning of these ecosystems and the biodiversity they contain, when they suffer degradation, the ability to provide goods and services also decreases. Flora and fauna populations are reduced to levels that affect their repopulation rates, with a loss of wildlife habitats, especially species that are currently in the threatened category. Precisely, the intervention activities of the project have been designed to address actions related to reducing the effects produced by these drivers and facilitators of deforestation, providing financing and support for forest control and surveillance activities, resolution of social conflicts, capacity building for social management and to have sustainable productive options, the application of good agricultural practices compatible with the conservation of forest resources, monitoring of biodiversity through a science program, among others. In the absence of this project, it would not be possible to obtain a source of financing and support for the conservation of the forest, to comprehensively address and promote solutions to this problem, to the consequences of these risks of deforestation mentioned and of a weak application of the legal framework.

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

No climate (as a result of reduced greenhouse gas emissions), community or biodiversity benefits will be used for any other offset project.

2.3 Stakeholder Engagement

2.3.1 Stakeholder Access to Project Documents (G3.1)

In general, regarding aspects of transparency of information, principle 28 of the Code of Good Corporate Governance (Annex 7) will be applied, which has an Information Policy for shareholders,

investors, other interest groups and the market in general, with which defines in a formal, orderly and comprehensive manner the guidelines, standards and criteria that will be applied in the management, collection, preparation, classification, organization and/or distribution of the information generated or received by society. For which the company has a corporate website, as mechanisms for internal and external dissemination of corporate governance practices. Likewise, in its Corporate Governance Policy, it establishes in section IV the guidelines for transparency and information. On the other hand, all the documents generated by the project will be stored in a digital database of the project, which will be available in the archives of the BAM offices in Pucallpa, for access by both the members of the management team of the project or whoever requests it through the formal means and internal procedures of the company.

The PD for this project in its first version (before the validation process) will be shared by calling a meeting with the representatives and/or authorities of each of the communities involved in the project. Likewise, once the project has been validated and the first monitoring report has been verified, meetings will be held in each community in order to share the final PD and the monitoring report, this process being repetitive after each monitoring period. In order to reach the communities with a precise and consistent message for the understanding of the development of the PD, the exhibitions and presentations (ppt, flip charts), with informative materials (brochures, etc.) will be combined, with the participation in these meetings, of local translator personnel in the case of native communities (prior induction and training), and specialized personnel belonging to the project partners, such as PASKAY. In the case of indigenous translators and authorities of indigenous communities, training will be provided to enable them to describe and explain the content of the PD, the validation and verification process and the nature of the documents, with which they may be prepared to complement or clarify any questions or queries that may be raised by participants in or outside the briefings.

2.3.2 Dissemination of Summary Project Documents (G3.1)

A project socialization process aimed at communities and public and private institutions has been planned and has begun to be implemented, which consists of 2 stages whose guidelines are described below:

Stage 1:

• Identification of communities to be involved with the project in the first year (process carried out)

• Preparation of a “Socialization plan with the communities surrounding the JCC and Selva Maestra properties”, in which the objectives, methodology, actions, requirements, and respective work schedule are established.

• Outreach reunion with the communities, in order to inform their authorities that BAM wishes to have an informative meeting with their representatives (identification of "project community liaisons" in each community) and that the community designates, in order to socialize with them and provide them with more details about the process of starting and implementing a REDD project that the BAM company is going to carry out on its JCC and Selva Maestra properties, and whose main objective is to conserve the forests and the biodiversity they contain.

Stage 2:

• Formalize through a letter, the invitation and call (including proposed dates, place, objectives, agenda) to each of the communities.

• Preparation of the content and printed informative materials about the project, and communication (PPT) that will be disseminated to the representatives of the communities.

• Generate and define the speech that will be taken to the meetings and the communication process (narrative aspect to take into account in these meetings).

• Carrying out the informative meetings: In these informative meetings, with the presence of the representatives of each of the convened communities, they will be provided with precise and consistent information on the execution and implementation of activities of The Last Habitat REDD project, indicating the benefits that it will generate the families that are going to participate in it. The objectives and process of communication or visits that will be carried out with the project validators (PD), through their representatives or authorities, will be explained to them.

• As means of verification to be obtained in this process, the meeting minutes, registration of participants in the form of the attendance list, charge for the delivery of informative material of the project, informative material of the project used (presentation PPT, triptych or other material) and photographic panel of the meetings held.

Among the informative materials, brochures will be prepared in which the approach and intervention strategy of the proposed project are clearly described, specifying the REDD+ activities. These materials will be widely distributed to each of the representatives and authorities of the communities involved in the implementation of the State activities and institutions identified. It has been considered to place small informative posters in each participating community, so that the information is available and is disseminated more widely to the rest of the population of the communities and is also used to channel through the authorities or representatives of the community groups, some questions, comments and concerns that the population has at a given time.

In order to guarantee an adequate explanation and adequate dissemination of the project activities, the local characteristics and requirements that are used in these types of informative meetings will be considered, for which the project personnel in charge of said activities will be trained. In the case of indigenous communities, there will be members of the community, who will also be trained, for the respective translation in their native language.

In the case of socialization to the identified institutions, the procedure will be similar to the previous process with the communities, with the difference that the meetings will be personalized with the most appropriate representatives of each institution or that the person in charge (Manager and/or Director) designate, in which they will be shown the interest that the company has for the institutions to participate in the project activities, and in which BAM will provide the facilities to ensure the presence of said entities. The strategies to be used, the type of support to be requested from these institutions in the corresponding project activities, and the BAM commitments must be defined, for which the proposals for inter-institutional agreements that could be established would have to be drawn up.

Section 2.3.1 describes the dissemination to communities and other actors of the monitoring results.

2.3.3 Informational Meetings with Stakeholders (G3.1)

As described in the previous sections (2.3.1, 2.3.2), information meetings will be held in each of the participating population centers involved in the project, implementing mechanisms for greater dissemination of project information and facilitation of comments of the stakeholders at the level of communities and institutions engaged.

However, approaches have been made with the authorities and representatives of the possible local communities in the vicinity of the project area, to whom a letter was previously sent summoning the corresponding authority to an informative meeting, to inform them that BAM is working on the elaboration of a REDD project to be carried out in the properties of Nuestro Señor Jesús and Selva Maestra and the will of the project proponent to involve the communities in said project so that they can benefit, as a result of the implementation of the various activities to be developed with said project. These personalized meetings took place within the framework of information gathering in order to carry out a social characterization of the communities surrounding the project, in which 148 families belonging to 11 communities were interviewed. Apart from the Nuevo Paraíso native community, in which there was a consultation meeting for them to analyze and decide on their participation as a direct partner in the project, presenting themselves and explaining the mechanisms and operation of the REDD projects, the proposed activities and the possible positive results and impacts that the project would generate, as an opportunity for the development of the community. The following table shows the meetings held with the representative or authority of the communities:

Table 12. Meetings with communities in the area of influence, around the area of the The Last Habitat REDD Project

DATE	COMMUNITIES	MOTIVE
04/08/2021	Agua Dulce y Manco Cápac	First approach with the community through its authority or its representative. Inform them that BAM is formulating a REDD project, the possibility of their involvement and authorization for the collection of social information (LB)
05/08/2021	Agua Blanca, Tierra Roja y C.P Nueva Esperanza	Idem
06/08/2021	Tupac Amaru Limón, y San Cristobal de Agua Blanca	Idem
07/08/2021	José Olaya hamlet and Nuevo Oriente de Chanajao native community	Idem
09/08/2021	Nueva Alianza y Nuevo Paraíso native communities	Idem
10-11/08/2021	C.P Nuevo Belén, Ampliación Tupac Amaru hamlet y La Lupuna de Manantay hamlet	Idem
11-12/08/2021	C.P Nueva Esperanza y La Soledad hamlet	Idem
13/08/2021	Nueva Alianza native community	Idem
19/03/2022	Nuevo Paraíso native community	Consultation so that the community analyzes its participation as a direct partner of the project: presentation of the operation of the REDD projects, proposal of activities and the possible results and positive impacts towards the community. The community decides to internally evaluate the proposal

For the calls, the internal mechanisms and conditions required by the authorities and representatives of the communities will be respected, so that the calls have greater effectiveness in terms of participation. In these cases, it is preferred to first have a coordination approach with the community to verbally explain the objectives of the meetings, agenda and type of participants, place where the community wishes to hold it, date, and duration. Based on this prior coordination, the corresponding letters are sent well in advance of the date to convene the meetings, ensuring that the authorities or their representatives receive it personally and to be able to receive any other additional information, if any. One or two days before the meeting is confirmed.

Through a series of informative meetings with stakeholders that will be held at the level of representatives and authorities of each of the local communities involved in the project, they will be informed about the project and its implementation, the validation processes and verification and visits by auditors. These informative meetings will be developed by personnel belonging to BAM, with knowledge of the reality of the area and of the local actors, who have previously had coordination and some type of communication with them and who will precisely be trained for this task. Specialized personnel from the project partner will also participate, such as PASKAY, which has experience in these social processes. A similar process will be carried out with the representatives of the public and

private institutions that have been previously identified. The meetings will follow the methodology described in the work plan of the previously prepared socialization process, with the aim of guaranteeing that all the aspects to be considered are communicated in a precise, timely, transparent, and consistent manner. In the case of indigenous communities, which are also bilingual (mostly the indigenous inhabitants of the area speak Spanish and their original language, which in this case corresponds to the Shipibo language belonging to the surrounding communities), they will be accompanied by a translator in the native language, so that not only the objective message is provided, but also the comments and questions made by the residents and their representatives are properly received. Informative materials (brochures) will also be developed as supporting documents, which briefly describe the activities of the project, the benefits that will be generated in climate, biodiversity and community aspects. Likewise, it will be explained how the PD validation process will be, in which the auditor will visit, as well as the subsequent verification processes. The material will be distributed to the representatives and authorities of the communities and institutions that will participate in this process. In addition, the information brochures will be available in digital format on the company's website as support and dissemination documents.

Participatory evaluation workshops are scheduled to be held with local communities once a year, where they will be made aware of the results and benefits that are being obtained from the project, as well as informed about the activities to be carried out in the following annual period. The authorities and/or representatives will be provided with a summary document of the reports and information provided in said workshops, which will also be available on the BAM website. Your comments and contributions will be collected for the continuous improvement of the project for which the corresponding calls will be made to all interested parties (local communities, public and private institutions).

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

In the informative meetings with the communities, the Project will share relevant information on the costs of the activities, the benefits to be generated with the implementation of the project and the risks, which implies responding to the growing threats and taking actions to improve the surveillance and control of the project area, provide productive alternatives that are sustainable and friendly to the environment, and implement a training plan, technical assistance and accompaniment for community development.

This process will be well documented, through the corresponding reports that express the informative meetings that were carried out with the communities, receiving the contributions and comments from the participants, in order to make the necessary adjustments to the results matrix and improve the intervention of the project, which allows the communities to make an informed decision, since their participation in the project is voluntary, and finally they can sign the minutes of the community's consent agreement, so that the corresponding agreement is later drawn up with each community. As mentioned in section 2.3.3, participatory evaluation workshops will be held with the participating communities and entities.

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

The basic and formal communication mechanisms to be used include letters sent by the General Coordinator of the project as a representative of BAM, to the authorities and representatives of the communities, community groups and stakeholders; emails, phone calls, personal messages (WhatsApp), and radio communications. WhatsApp groups can be created to have rapid and permanent communication with groups of authorities, community groups and others that are considered relevant to communicate various actions and coordination.

Having been informed in the informative meetings (section 2.3.3), what the validation and verification processes consist of, they will be communicated about their execution, by means of letters and radio communications, in which the messages will include the programming of the field activities and their description.

Likewise, to complement the information, informative materials (brochures / triptychs) that describes and explains the validation and verification process will be distributed in physical and digital form to the authorities of the local communities, groups of interested parties, their representatives and leaders. These materials will also be available on the company website.

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

BAM proposes a set of communities that will be invited to participate in the project and the response and decision made by the community is voluntary. The communities involved are part of the project strategy, but they do not have a commitment to the project to generate any benefit to the climate, biodiversity and community.

Similar to the process that has been followed for the project dissemination and validation process (section 2.3.3), BAM will ensure that the schedule for the auditor site visit and community meetings will be widely announced, both through announcements disseminated through local staff, implementing partners, and community institutions, as well as formalized through letters sent to community representatives, ensuring that the auditor's visit has been widely, openly, transparent and public. This communication process will be documented before the meetings and/or visits that take place.

On the other hand, personalized meetings will be held with the representatives of the communities and community groups to agree on the most appropriate means to use for direct and fluid communication with the auditor. For the visits of the audit team, BAM will provide the logistical facilities, for the entrance to the communities and the meetings or interviews are carried out in the most appropriate and fruitful way possible, directly without the presence of the project team, and ensure that any interested party can communicate with the audit team during the field visit, so that they freely express their perception of the project.

2.3.7 Stakeholder Consultations (G3.4)

The involvement of communities is part of the project's strategy to reduce GHG emissions and generate benefits for biodiversity, climate, and communities. Beyond the interviews carried out with the authorities of the communities for the social characterization and that has served as input for the

design of the project, in the formulation of the strategy, intervention and activities of the project, initially only BAM and its partner PASKAY have participated, without the participation and influence of communities and other interest groups. However, in the informative meetings that will be held with the communities, in accordance with the socialization process of the project, the project will be presented, and they will receive contributions, comments and concerns, which will be taken into account in order to improve and adjust the matrix. of activities. Likewise, this same process and mechanism will be repeated with the other identified stakeholders (regional and local authorities, partner and interest organizations and others research entities as San Marcos University and CORBIDI).

2.3.8 Continued Consultation and Adaptive Management (G3.4).

Carrying out the "Annual Workshops on Participatory Evaluation and Planning" generates important feedback that allows some modifications to be made to the proposed strategies and the necessary adjustments to be made to the design of the project, with an adaptive approach in order to advance in the fulfillment of the objectives of the project in a given period of time. It is designed as a participatory instrument to analyze and evaluate the progress of the project in terms of results and impacts, articulated to achieve levels of sustainability. In these workshops, an analysis of the limitations and potentialities regarding the proposals that are being implemented is carried out, the performance of the stakeholders involved and the functionality of the project are evaluated, recommendations are formulated, and strategic options are identified or reformulated aimed at achieving the objectives of the project, based on information obtained as a result of the various activities carried out, allowing activities to be planned in accordance with the needs of the producers and the project to achieve its results.

In addition, other community participation mechanisms will be used (suggestions box installed in strategic places, virtual channels, emails) to generate almost permanent feedback that allows continuous improvement processes. Likewise, a procedure will be implemented for dealing with complaints and claims, as part of the implementation of a Communication and Citizen Participation Plan (Annex 8), disseminating the procedure and informing the communities of its operation. Every six months, newsletters / brochures will be prepared and distributed (printed and electronic copies posted on the company's website and social networks) that will describe the most outstanding aspects that occurred during that period.

The results of these participatory communication processes of interaction with the communities are incorporated through the reports to the adaptive management of the project.

2.3.9 Stakeholder Consultation Channels (G3.5)

The channels used for consultations will be the different informative meetings that will be established with the communities and other social actors, based on the project's socialization process (see section 2.3.2), where the most appropriate periodicities for these meetings will be defined, taking into account the results of a process of exchanging information, opinions, comments, concerns, contributions made by the participants about the design and implementation of the proposed project. The results of these participatory processes will be reflected in the respective reports prepared, which contain the objectives, methodologies, material used, development of the meetings, results, recommendations, minutes of agreement, attendance list, photographic panel.

In order to carry out the informative meetings, the communities and community groups have to designate their legitimately valid representatives, elected based on their internal procedures and mechanisms, with which the channels of coordination, organization, communication, and agreements will be established. share information, provide authorizations or consents related to the community, guarantee facilities for the proper development of the different activities in the community, and will be the link that links the community with the project.

On the other hand, in the Corporate Governance Policy (Annex 9), section IV establishes the transparency and information guidelines, indicating its information policy for shareholders, investors, other interest groups and the market in general, as well as the channels available to request information. Likewise, BAM within its Corporate Sustainability Policy (Annex 10), establishes communication channels with interest groups, through email and corporate website, and other details that are established in the communication and citizen information program (Annex 8).

All the reports and progress of The Last Habitat REDD+ project that are generated (referring to the monitoring of the area, activities carried out, studies and reports on biodiversity, community projects, agreements, among others) will be communicated to the various communities surrounding the project and to other key players such as local authorities and BAM staff. Within the offline channels, easy-to-read information brochures, maps and periodic bulletins will be generated. These will go with the telephone number and contact email (info@bosques-amazonicos.com) of the company to maintain direct communication with the team. In addition, public information meetings and workshops will be held on dates and places mutually agreed upon with the communities and villages.

Similarly, regarding online channels, the company has a Facebook group where the brochures and bulletins mentioned above will be shared, as well as photos, videos, and testimonials, which will also be shared on the YouTube channel of Bosques Amazónicos. Lastly, relevant news and articles will be published in the Blog section of the BAM website (www.bosques-amazonicos.com).

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

There are 2 important spaces as mechanisms of interaction and effective participation with the actors, with which the communities have to be participants in the planning, implementation, monitoring and evaluation of the project: the initial information meeting through the execution of a process of socialization of the project (described in section 2.3.2) and the participatory evaluation workshops (described in section 2.3.8), in which it is guaranteed to collect and attend to the information referring to your queries, opinions, concerns, comments, contributions, and recommendations, using various participatory tools, and applying an intercultural and gender approach, which allows all interested parties and participants to have equal conditions to express themselves. This information will be systematically collected and taken into account, which will be reflected in the project planning.

Likewise, the guidelines and procedures contained in the Communication and Citizen Participation Plan have been designed to guarantee said aspects mentioned (Annex 8), and a call process that facilitates that the representatives and members of the local communities have the opportunity to be present at the meetings, making the calls to be made available on the BAM website. Similarly, within

the principles of the Corporate Sustainability Policy (Annex 10), BAM adopts practices based on transparency and mutual trust with the Stakeholders through the promotion of channels of communication and dialogue with them, thus favoring relationships of trust, working in collaboration with the community in the joint creation of value, including the identification and solution of their main common problems, investing in social programs in the community where it has its main activities.

2.3.11 Anti-Discrimination Assurance (G3.7)

BAM has a Human Resources Department that ensures compliance with Peruvian labor laws and regulations, referring to mitigating discrimination and sexual harassment, among which the following are cited:

- Law No. 26772, provides that job offers and access to educational training means may not contain requirements that constitute discrimination, cancellation or alteration of equal treatment opportunities, and its regulations.

- Ministerial Resolution No. 159-2013-TR, approving the document "Guide to good practices on equality and non-discrimination in access to employment and occupation."

- Law 30709: Law that prohibits remunerative discrimination between men and women; and its corresponding Regulation.

- Law No. 29742: Law for the prevention and punishment of sexual harassment; and its corresponding regulations.

- Legislative Decree No. 1410: Incorporates the crime of harassment, sexual harassment, sexual blackmail, and dissemination of images, audiovisual or audio materials with sexual content to the Penal Code, and modifies the procedure for sanctioning sexual harassment

Likewise, BAM, as the proponent of the project, has a Code of Ethics and Conduct, in which Section 3 on professional and personal integrity (Annex 11) refers to attitudes and behavior, to carefully evaluate situations that may constitute a conflict between their interests and those of the Group and/or unacceptable conduct from an ethical point of view, even if they do not cause physical loss to the Group; and the basic guidelines to follow in relationships in the work environment, emphasizing non-discrimination, harassment or intimidation.

These BAM policies are promoted and extended to any employee, worker or personnel belonging to the company or any subcontractor, who participate in the project activities. In addition, under the terms of the agreements or covenants signed with the local communities, threats, violence or blocking of access by personnel belonging to BAM or any partner institution of the project, to the areas of work, will be established as breach of the agreement, as a way of mitigating possible discrimination.

2.3.12 Feedback and Grievance Redress Procedure (G3.8)

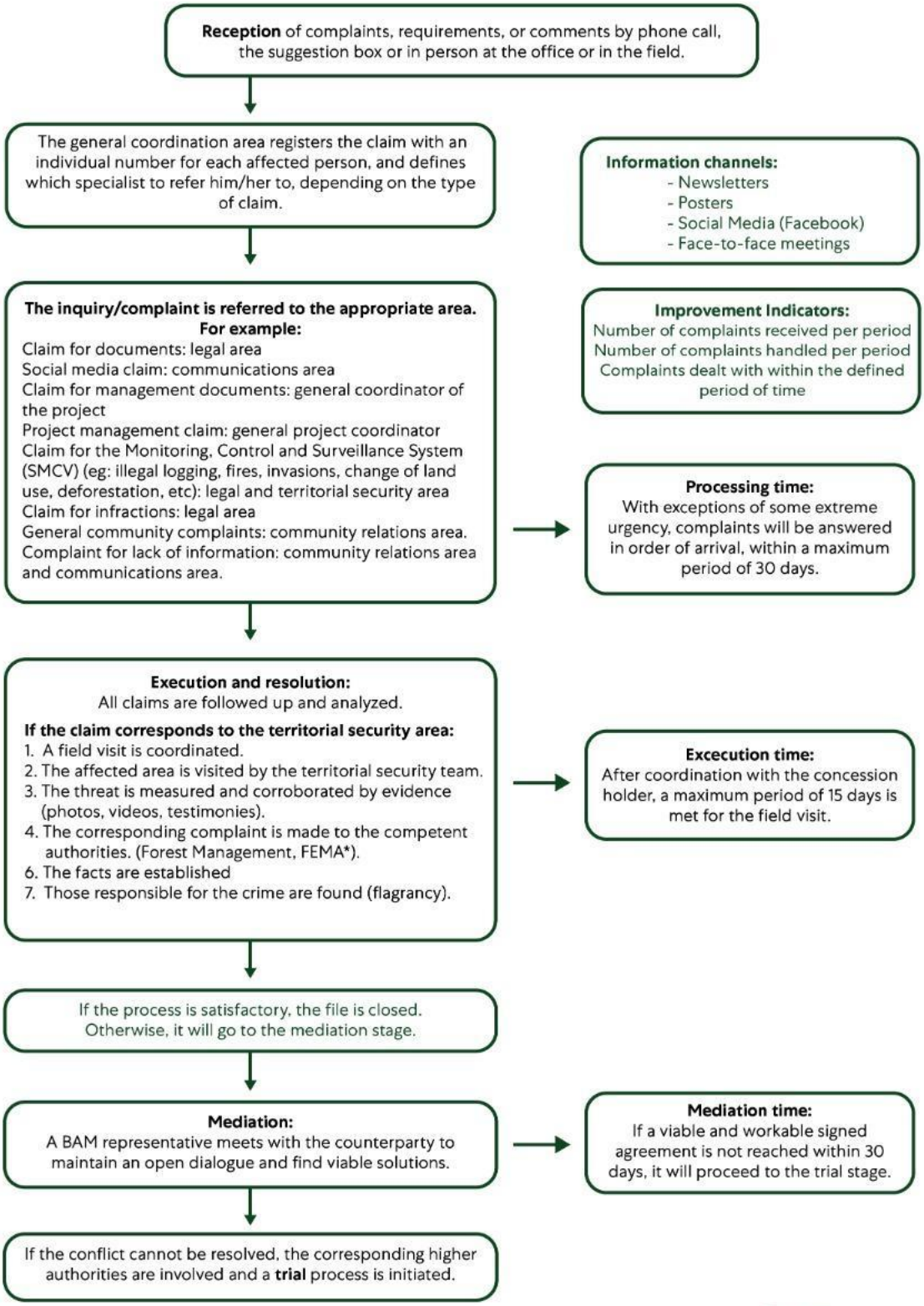
BAM has a well-established Complaints and Claims Procedure document (Annex 12), which has been designed to address and resolve any problem, establishing the guidelines to be followed in the process and how to document it, as well as the responses to said complaints in order to appropriately manage

and respond to the claims made by the population located within the project's area of influence. The procedure will help improve the social performance of the project since the number and nature of complaints received is an indicator of the manner in which activities will be carried out, as well as the behavior of employees and contractors. A high number of complaints will indicate the need to adjust some procedures and practices to reduce the level of negative impacts or conflict with the local population. The temporal scope of the Complaints Procedure includes all the stages or activities carried out by BAM.

On the other hand, BAM establishes as a General Principle of the Corporate Sustainability Policy (Annex 10), to adopt practices based on transparency and mutual trust with the Stakeholders through the promotion of channels of communication and dialogue with them, thus favoring relationships of trust. Likewise, it clearly establishes the commitment to act with the communities, contributing to the common objective of improving the quality of life of its members, building solid relationships of trust. Likewise, it establishes in its Internal Rules of Conduct (Annex 13) what is related to reports and complaints of irregularities, protecting the whistleblower.

Three stages are described in the flow of the process of attention and response to complaints and claims, each one with reasonable terms: attempted resolution, mediation and arbitration or courts.

Table 13. Flowchart of the stages in the development of the process of attention and response to complaints and claims


Reception of complaints, requirements, or comments by phone call, the suggestion box or in person at the office or in the field.
The general coordination area registers the claim with an individual number for each affected person, and defines which specialist to refer him/her to, depending on the type of claim.
Information channels:
- Newsletters
- Posters
- Social Media (Facebook)
- Face-to-face meetings
The inquiry/complaint is referred to the appropriate area. For example:
Claim for documents: legal area
Social media claim: communications area
Claim for management documents: general coordinator of the project
Project management claim: general project coordinator
Claim for the Monitoring, Control and Surveillance System (SMCV) (eg: illegal logging, fires, invasions, change of land use, deforestation, etc): legal and territorial security area
Claim for infractions: legal area
General community complaints: community relations area.
Complaint for lack of information: community relations area and communications area.
Improvement Indicators:
Number of complaints received per period
Number of complaints handled per period
Complaints dealt with within the defined period of time
Processing time:
With exceptions of some extreme urgency, complaints will be answered in order of arrival, within a maximum period of 30 days.
Execution and resolution:
All claims are followed up and analyzed.
If the claim corresponds to the territorial security area:
1. A field visit is coordinated.
2. The affected area is visited by the territorial security team.
3. The threat is measured and corroborated by evidence (photos, videos, testimonies).
4. The corresponding complaint is made to the competent authorities. (Forest Management, FEMA*).
6. The facts are established
7. Those responsible for the crime are found (flagrancy).
Excecution time:
After coordination with the concession holder, a maximum period of 15 days is met for the field visit.
If the process is satisfactory, the file is closed.
Otherwise, it will go to the mediation stage.
Mediation:
A BAM representative meets with the counterparty to maintain an open dialogue and find viable solutions.
Mediation time:
If a viable and workable signed agreement is not reached within 30 days, it will proceed to the trial stage.
If the conflict cannot be resolved, the corresponding higher authorities are involved and a **trial** process is initiated.
Bam
*FEMA: Special Prosecutor's Office for Environmental Matters, for its acronym in spanish

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

The Complaints and Claims Procedure document (Annex 12) will be available (company website) for any person, group, community or local employee who is considered affected by the activities; thus, they will be able to communicate their claims to BAM or its contractors. BAM will guarantee that the population of the area of influence knows about the Complaints Procedure, feels welcome to file a complaint, and knows how to do it. BAM's community relations officers will be in constant contact with the communities, and community leaders and social monitors will receive frequent visits from community relations staff. Community members will be encouraged to express their grievances, either in writing or verbally, directly to the community relations team. If they make a verbal complaint, the community relations staff will help them put it in writing and will channel the complaint to the BAM complaint center

As a General Principle of the Corporate Sustainability Policy (Annex 10), BAM adopts practices based on transparency and mutual trust with the Stakeholders through the promotion of channels of communication and dialogue with them, thus favoring relationships of confidence. Likewise, it establishes communication channels with interest groups, through email and the corporate website.

2.3.14 Worker Training (G3.9)

As part of the action commitments established by BAM in its Corporate Sustainability Policy (Annex 10), it promotes the training of workers, favoring professional promotion. In order to strengthen these processes, the company is working on developing a training and education plan for all its employees, in order to efficiently implement the project activities. On the other hand, in the results matrix of the project, it has been considered to develop productive technical and management training activities for social development aimed at community groups and local community authorities, respectively, which is indicated for the fulfillment of the objective 3 of the project (strengthening the socio-economic situation of the interest groups of the local communities in the project area).

Likewise, within the activities of the project to achieve objective 1 (avoid deforestation in the project area), training is considered, based on an elaborated Plan, to be developed for forest surveillance and control in the organizational, technical and operational, aimed at the members of the Control and Surveillance Committees of the local communities and the BAM personnel who carry out activities in the camps, for which the project's technical team will also be trained for the respective replication.

It is contemplated that the training provided by the project in the different topics described above will be given in collaboration with different expert organizations.

2.3.15 Community Employment Opportunities (G3.10).

BAM creates employment opportunities at the base of the pyramid, including neighboring communities within the value proposition, generating local rural jobs for both men and women. For example, in 2021, the company created 1,092 job positions, of which 18% were filled by women. These positions were covered mainly by people belonging to the neighboring communities and farmhouses.

In this sense, labor regulations are strictly complied with and decent, non-forced or child labor is promoted; based on the capabilities and experience of each person. Equality at work and performance

of activities is also promoted, without discrimination. All this as part of the action commitments established in the Corporate Sustainability Policy (Annex 10), adding that the recruitment, selection and retention of talent is carried out under a favorable framework of labor relations based on equal opportunities, respect for diversity, and in conciliation with personal and work life.

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

Concerning the fulfillment of the laws, regulations and Labor agreements, it is worth mentioning that both, the project and the company, strictly follow the legal framework and adjust to the Peruvian labor laws. The company is concerned about the fulfillment of the laws, as well as for the welfare of its personnel and good working conditions.

In the first place, the Project REDD+ is articulated under the standards of the Labor Productivity and Competitiveness Law No. 728, which promotes the training and labor formation of their workers as a mechanism to improve their income and labor productivity, while following the constitutional norms of labor security. In this sense, the project foresees to implement training activities (see project activities Plan).

In the second place, the workers enjoy the rights established in the Peruvian Labor Law. They receive a fair wage, which is over the minimum wage established by the Peruvian government, they have vacation days available, retirement compensation, bonuses, health insurance, education grants, and other benefits established in the law. There are complementary benefits for workers over fifty years of age, such as retirement benefits. Without affecting the aforementioned benefits, the workers can organize into labor unions to negotiate better working conditions if they deem it appropriate.

We can assure that the employers are aware of the workers' rights and benefits and that the project meets the laws and regulations regarding the rights of employees established by the Universal Declaration of Human Rights.

In this sense, BAM has a policy to promote and ensure the fundamental principles and rights in the work of its collaborators, rights that are guaranteed in the Code of Ethics and Conduct (Annex 11), respect and compliance with the legislation referred to labor rights (Annex 10). Among the main standards can be mentioned:

Supreme Decree 002-97-TR: Single Ordered Text of Legislative Decree No. 728, Law on job promotion and training

Supreme Decree 007-2002-TR: Single Ordered Text of the Law on working hours, hours and overtime work; and its respective Regulation

Supreme Decree 004-2006-TR: Provisions on the registration of attendance and exit control in the labor regime of private activity

Law No. 28051: Law on food benefits for the benefit of workers subject to the labor regime of private activity and its respective Regulation

Law No. 25129: Concept of family allowance to be received by workers in private activity whose remuneration is not regulated by collective bargaining

Law No. 27735: Law that regulates the granting of bonuses for workers of the private activity regime for national holidays and Christmas; and its respective Regulation

Law No. 29549: Law that modifies Legislative Decree No. 688 Law of consolidation of social benefits and creates the mandatory registration of life insurance contracts law; and its respective Regulation

Supreme Decree 009-2020-TR: Approves the regulations of the Emergency Decree No. 044-2019 related to life insurance

Supreme Decree 009-1998-TR: Regulation for the application of the right of workers in private activity to participate in the profits generated by the companies where they provide services

Supreme Decree 001-1997-TR: Single Ordered Text of the Law on compensation for length of service; and its respective Regulation

Supreme Decree 012-2016-TR. They specify the provisions of Law No. 30334, referring to the non-affectation of legal bonuses and the availability of compensation for time of service

Law No. 26644: They specify the enjoyment of the right to pre-natal and post-natal rest of the pregnant worker; and its respective Regulation

Supreme Decree 002-2016-TR: Adaptation of the regulations that regulate maternity leave and the payment of the maternity subsidy to the provisions of Law No. 30367, Law that protects working mothers against arbitrary dismissal and prolongs their period Rest

Law No. 27403: Law that specifies the scope of the permit for breastfeeding

Law No. 29409: Law that grants the right to paternity leave to workers in public and private activity; and its respective Regulation

Law No. 30012: Law that grants the right to leave to workers with direct family members who are seriously or terminally ill and suffer a serious accident; and its respective Regulation.

Law No. 30119: Law that grants the right to leave to workers in public and private activities for medical assistance and rehabilitation therapy for people with disabilities; and its respective Regulation

Supreme Decree 039-91-TR: establish the internal work regulations, which determine the conditions that employers and workers must abide by in the fulfillment of their benefits

Law No. 28783: Occupational Health and Safety Law; its modification (Law 30222)

Supreme Decree 005-2012-TR: Regulation of the Occupational Health and Safety Law

Supreme Decree 010-2014-TR: Approving complementary regulations for the adequate application of the Only Temporary Complementary Provision of Law 30222

Law No. 28048: Protection Law in favor of pregnant women who perform work that puts their health and/or the normal development of the embryo and fetus at risk; and its regulations

Law 29773: General Law of Persons with Disabilities; and its corresponding Regulation

Supreme Decree 020-2001-TR: Regulation of the General Law on labor inspection and defense of the worker (Legislative Decree No. 910 and its Amendment)

All project personnel will be informed of the rights that correspond to them as such, in accordance with the laws and regulations of the case, through induction talks before starting to work on the project, proceeding to:

Inform and explain the content and terms of the employment contract (agreement between the worker and the employer) or renewals, according to its nature and the conditions that both undertake to comply with, both in rights, duties and obligations, responding to queries and doubts that may arise, so that everything is understood, before signing or subscribing to it. These have been previously reviewed by the legal area of the project, to confirm that they comply with the law. In the case of contracts with personnel from indigenous peoples, additionally, the contractual terms of the same will be verbally translated into their native language, without leaving any doubts to attend to. They will also receive a copy of their signed contracts.

After the signing of contracts, workers will be provided with information on the legal benefits that they acquire when signing the respective contracts, and additionally they will be sent a "Personnel Guide" that will be prepared by the Human Resources department, in the which describes the social and labor benefits that the worker acquires (in the case of payroll modality) and the procedures to acquire said benefits.

2.3.17 Occupational Safety Assessment (G3.12)

As mentioned above, the company and the project are committed to protect workers, and therefore comply with the provisions of Law 31246 on occupational safety and health. In addition, BAM has an occupational health and safety policy. The following are some of the protective measures that have been implemented.

First of all, in order to ensure that all workers are fully aware of the company's framework, they are given manuals explaining the company's policies, practices and regulations, as well as the activities, methods and forestry techniques used during the project.

The workers then participate in training on the tools or instruments to be used in the execution of the activities. They also participate in a preventive training on intervention plans, where the potential risks of the tasks to be performed and the way to proceed are explained.

BAM is responsible for providing training courses on safety, first aid and the use of appropriate protective equipment. Likewise, action plans for forest fires or the presence of illegal loggers are explained. It is essential for BAM that all new employees joining the company receive the necessary training.

The company has an Occupational Health and Safety Regulation (Annex 14) which establishes and regulates the procedures to ensure the safety and health of workers when carrying out the different jobs and activities both within the project area and in the activities carried out with neighboring communities, related to community relations and the development of productive technical and social management capacities. In the case of occupational accidents, a record is kept, and the area in charge is the Regional Management, which reports hierarchically to the General Management. As part of the action commitments established by BAM in its Corporate Sustainability Policy (Annex 10), it ensures a safe and healthy work environment, complying with current legislation in matters of occupational safety and hygiene and sexual harassment.

2.4 Management Capacity

2.4.1 Project Governance Structures (G4.1)

BAM is a company whose purpose is to recover and maximize the value of Amazonian ecosystems in order to conserve the biodiversity of the Amazon and contribute to the economic, social and environmental development of Peru; and whose vision is to be the leading forestry and environmental services company in Latin America. At the moment, its actions are focused on the regions of Ucayali (reforestation and conservation) and Madre de Dios (conservation).

The company has a Board of Directors (made up of a President and 4 Directors) and a management team with vast experience in the sector made up of the General Manager, Manager of Conservation and Carbon Markets, Manager of Restoration and Reforestation, Manager of the Ucayali Region, Manager Financial Planning, General Accountant, Marketing and Communications Manager. An independent Director is the Science Program Leader, and an independent Director serves as Legal Advisor.

The project is implemented by BAM, who through its different areas (Carbon Conservation and Markets, Financial Planning, Accounting, Communications and Marketing, Human Resources, and Legal) provide technical, administrative, legal, and logistical support to the management team of the project. Project.

The project has a hierarchical structure in which each position has its assigned roles and functions (Annex 15), corresponding to the Manager of Conservation and Carbon Markets, who is in charge of executing the proper management and planning of the project, and coordinates with the Leader of Biodiversity and Science the corresponding activities to ensure the fulfillment of objective 2 of the project. Its functions include planning project activities, ensuring its execution and the availability of resources, managing risks, verifications and audits required for certifications (VCS, CCB).

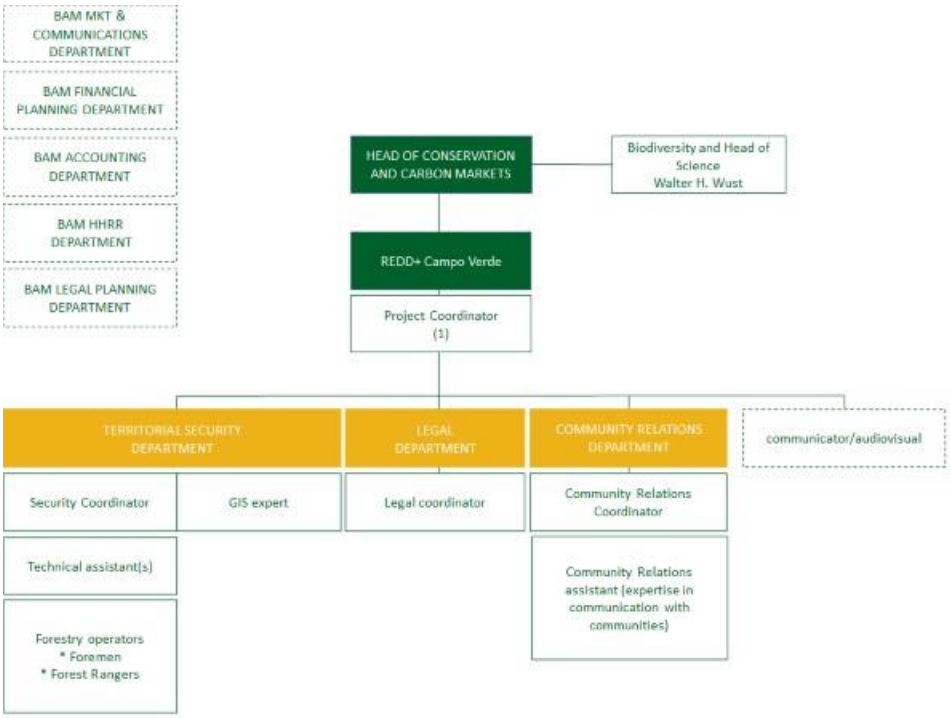


Figure 15. Organizational structure for the management of The Last Habitat REDD project

Science and conservation program leader

In 2019, BAM institutionalized the Science Program, which seeks to permanently evaluate the ecological value (flora, fauna, landscapes, water sources) of our conservation efforts and recovery of degraded areas. This program is developed through the signing of agreements with scientific organizations. To generate value, the company develops a sustainable business strategy, aimed at recovering and maximizing the value of the forest, protecting biodiversity and generating carbon sequestration, and generating knowledge about Amazonian ecosystems, promoting their value.

The leader of the Science and Conservation Program is the one who will lead the scientific studies to permanently evaluate the ecological richness within the area of influence of the project; ensure the integrity of biodiversity, executing strategies to prevent and curb environmental crimes against the flora and fauna that are home to the project's forests. Among its assigned functions is to carry out biodiversity inventories, perform ecological characterization, restore natural environments, lead training related to biodiversity conservation and prevention of environmental crimes, and establish alliances with scientific institutions.

General coordinator of the Project

The General Coordinator of the Project has the mission of ensuring the correct execution of the activities defined and approved by Management, ensuring compliance with the budget and the defined deadlines. Likewise, he is the representative of BAM in the project before interest groups such as competent authorities, collaborative organizations, community, among others, reporting the execution

of the project to the Management of Conservation and Carbon Markets. In turn, the General Coordinator has fluid and close articulation with each of the coordinators of the 3 Departments (territorial security, legal and community relations), in order to meet the project's results and objectives.

Coordinator of the Department of Territorial Security

The coordinator of the Department of Territorial Security has the role of ensuring the security of the territory, avoiding deforestation, degradation and any environmental crime or threat to the forests included in the project area. Identify, control and monitor any threat or conflict that could occur in the project area that prevents or harms the fulfillment of the Project goals. The department has the support of the GIS expert who performs the spatial analysis of the project area in order to identify early warnings of deforestation / degradation or any environmental crime in its scope. Likewise, the area has a technical assistant in territorial security, who provides support in the field for the execution of the security activities programmed by the coordinator of the project and territorial security. And for the tasks of carrying out the activities, the department has forest operators (foremen, camp personnel and forest rangers), who provide support in the field for the execution of the security activities scheduled by the project coordinator and territorial security.

Legal Coordinator

The Legal Coordinator carries out legal management in the face of environmental crimes that may be occurring in the project area and manages complaints and procedures for deforestation, degradation or other environmental crimes that harm the fulfillment of the project's objectives.

Community Relations Coordinator

The Community Relations coordinator ensures the continuous strengthening of the relationship between BAM and its stakeholders, specifically with the communities and villages surrounding the project area, ensuring fluid bilateral communication, a reciprocal and close relationship that allows achieving the objectives of the project, as well as to improve the life situation of the people directly or indirectly involved in it. Represents BAM before communities and opinion leaders. It has the support of an assistant who provides support to execute the scheduled activities of the area.

Audiovisual assistant / communicator

The audiovisual assistant / communicator is in charge of registering and archiving the events, activities, testimonies, etc. made by the project and around it in videos, photos, reports, or other communication tools that allow sharing and recording its progress. For its actions, it coordinates with the BAM communications and marketing department and reports to the community relations coordinator.

2.4.2 Required Technical Skills (G4.2)

The technical skills, knowledge, and experience required to implement the project efficiently and successfully are expressed in the terms of reference - ToR (Annex 16) that have been established for each job position with the objective of performing specific functions. Within the organizational structure of the project, however, minimum skills or requirements are established that must be presented by

each of the members that make up and lead the technical management team (territorial security, community relations, and project coordination), which is detailed next:

- Minimum general experience of 5 years and specific experience of 3 years in topics and knowledge related to the work to be developed and performed in the assigned position.
- Communication and coordination with rural populations and their authorities or representatives
- Management of participatory methodologies and tools in planning, evaluation and information gathering
- Articulation and coordination with public and/or private institutions
- Application of a participatory, intercultural and gender approach
- Knowledge in the use of techniques or procedures for conflict management
- Management of tools for the follow-up and monitoring of activities for the achievement of results and objectives
- Management of office (Excel, Word, power point), email, google
- Drafting of technical reports

2.4.3 Management Team Experience (G4.2)

BAM is a company with more than 17 years contributing to the restoration, conservation and sustainable development of the Peruvian Amazon. It has a great capacity for execution, highlighting the extensive experience in forestry and biodiversity issues of the Company's management team, accompanied by a human team capable of achieving the company's mission: recovering and maximizing the value of Amazonian ecosystems in order to mitigate the effects of climate change, conserve the biodiversity of the Amazon and contribute to the economic, social and environmental development of Peru.

BAM manages a total of 24,433 contiguous hectares of land and a consolidated plantation of 1,500 hectares, which makes it the forestry and environmental services company with the greatest economies of scale and the best logistics in Peru. Likewise, through its years of experience in the field of reforestation with native species highly valued in the international market, it has accumulated a genetic bank that constitutes a valuable intangible asset and that gives it a very important competitive advantage.

The reforestation model developed by BAM has been recognized internationally as one of the most successful companies in recovering deforested areas, having obtained the Antonio Brack Award for the “Most eco-efficient development model in Peru”, 2011; FAO United Nations Award "Best company for restoration of degraded areas" category jungle and Peru, 2015; National Entomology Award for "Integrated Biological Control of Forest Species" 2015; recognition of business initiatives in LOS

BÓSCARES PERÚ 2021, winning in the “Forests and Climate Change” category for the implementation of the REDD+ conservation programs Castañeros in Madre de Dios and reforestation in Campo Verde, Ucayali. The reforestation program in Ucayali is among the first initiatives in the world to have been validated and verified by the Voluntary Carbon Standard (VCS), the most internationally recognized voluntary carbon standard, reaching the gold standard level within the framework of the standards of the Alliance for Climate, Community and Biodiversity (CCB).

Throughout the years of operation, BAM has promoted scientific research and education in the Amazon, receiving more than two thousand students from universities around the world and working in cooperation with prestigious institutions such as USAID, WWF, GTZ, CIFOR, CORBIDI, the Javier Prado Museum of Natural History of the National University of San Marcos, the Herbarium of the National Agrarian University-La Molina, the San Diego Zoo and Peru Verde, among other organizations. Taking advantage of the fact that BAM's properties and the surrounding area have 8 different ecosystems, the company has institutionalized in 2019 a Science and Conservation Program to permanently study the ecological wealth (flora, fauna, water sources) of our region. This program is being worked on in agreement with prestigious scientific organizations such as CORBIDI, Perú Verde, the Herbarium of the National Agrarian University - La Molina, the Natural History Museum of the Universidad Mayor de San Marcos, among others. This Program will allow achieve the highest standards and biodiversity certifications in favor of the REDD+ program in Ucayali.

The Science Program establishes two initial lines of research: i) Inventories of biological diversity: with intensive collection efforts in expeditions of 7-15 days by specialists in the main branches of zoology (ornithology, herpetology, mammalogy, entomology and hydrobiology) and botany (flora and plant formations); ii) Camera trap system for documentation of biodiversity: in order to detect the elusive wild fauna of the tropical forest.

Regarding the carbon credit business, BAM has developed and has been operating two types of carbon-generating projects: credits generated by REDD+ projects (conservation) and credits generated by restoration and reforestation efforts.

REDD+: Since 2009, BAM has developed the REDD+ Castañeros conservation program in Madre de Dios (one of the richest areas on the planet in terms of biodiversity) in partnership with +500 local families in the region grouped in the Federation of Castañeros de Madre de Dios (FEPROCAMD) to protect more than 380,000 ha of Brazil nut forests. Since then, BAM and FEPROCAMD have been working together to protect the ancient brazil nut forests and promote the sustainable development of the community. REDD+ Brazil nut concessions was validated in 2012 under the VCS standard with great social and environmental impact, reaching the Gold Standard level under the CCB standard, which generates more than 2 million credits of VCS standard carbon per year.

ARR (Reforestation): BAM's reforestation project was the first reforestation initiative with native species in the world to be validated and verified under the VCS standard. This project involves reforestation with native species on 740 hectares. The project has two verifications up to the 2013 period and is in the process of verifying the period 2013 to 2017.

BAM maintains strategic alliances with strategic partners and main market players, ensuring the best price for credit generated. In 2020, BAM verified 5.3 million credits from the period 2013 to 2016 and

in 2022 verified 6.9 million credits from the period 2017 to 2019 generated by the REDD+ Brazil nut concessions project, which gives the company an available stock and significant financial capacity.

According to the Rating Report - PCR Pacific Credit Rating 2021. (Annex 17) BAM is considered to have an Optimal performance (GC2 category) with respect to its Corporate Governance practices and has an Outstanding level of performance (RSE1 category) with respect to its Corporate Social Responsibility practices.

The Board of Directors of the company BAM SAC is chaired by David Saettone Watmough, Bachelor of Arts in Economics from Queen's University in Kingston, Canada, master's in economics from Princeton University and master's in insurance management from Boston University. Mr. Saettone has extensive experience in business development and the execution of corporate transformation processes, with 21 years of experience as General Manager and member of the Board of Directors of different companies. He is Past-President of L+1, an organization that brings together leaders from different sectors, institutions, and local governments with the purpose of promoting sustainable economic development in Peru and mitigating the effects of climate change.

The company's Board of Directors is made up of 5 members, two of which are independent members. Walter Wust is Director and leader of the Science Program, he has more than thirty years leading biological diversity assessment programs in Peru. His publications – more than 600 books and guides – have led him to be the most important author on nature, culture, and sustainable resource management experiences in the country. He is the director of Wust Ediciones and WW Editores, as well as a member of the Board of Directors of SERNANP, ACCA, IBC, Lideres+1 and CCERO. In addition, he is the founder and image of the new Engineering and Environmental Management career at the Peruvian University of Applied Sciences UPC. Walter has a bachelor's degree in Forestry Engineering from the La Molina National Agrarian University with a specialization in forestry management.

The General Management is in charge of Jorge Cantuarias, Economist from the University of Lima with more than 25 years of experience in the development of projects related to agriculture and forestry operations; having served as presidential adviser on forestry and environmental programs during the period 2008-2010, he also founded BAM SFM in 2004. The Management Plan is completed with professionals specialized in commerce and marketing, with experience in the forestry and carbon credit markets.

The other members of the management team, such as the coordinators of the departments of territorial security, legal and community relations, and the project coordinator, have the knowledge, experience and profile required for the implementation of the project, as shown in their corresponding resumes (Annex 18).

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

They are two organizations and strategic partners, CORBIDI and PASKAY that will support and advise technically, providing the experience of their work team for the implementation of activities that are key to the project. On the other hand, BAM maintains agreements and conventions with other scientific

institutions and projects, through which efforts will be articulated and complemented to support the implementation of the project.

CORBIDI, the Center for Ornithology and Biodiversity, is a non-profit association that brings together researchers and conservationists created in 2006 with the aim of promoting natural sciences in Peru. It has divisions of ornithology, herpetology, mammalogy, limnology, plant ecology, and veterinary conservation. CORBIDI maintains a scientific collection of birds and has been registered with SERFOR as a repository of biological material since 2007. It has interinstitutional cooperation agreements with SERFOR, MINAM, Naval Medical Research Unit, University of New Mexico, Harvard University, the Royal Ontario Museum, and the University of Arizona, among others. Based on this experience, CORBIDI ensures an efficient implementation of the activities of identification, monitoring, and permanent protection of biological wealth (flora and fauna) aimed at achieving objective 2 of the project: protect the integrity of biological diversity and processes ecology of the project area.

PASKAY SAC is a consulting company that provides advice on the implementation of comprehensive sustainable development programs and projects with a climate and territorial management approach, contributing to the sustainable development of the environment and the population through the analysis of technical, legal, social, political and economic, design, execution and promotion of activities, projects, programs and research with various actors. PASKAY offers a multidisciplinary vision and innovative solutions, through transversal and comprehensive strategies. Within the framework of The Last Habitat REDD+ project, BAM contracted the services of PASKAY SAC for the preparation of the baseline of the community, biodiversity and climate components and the design and formulation of the PD of the project in question, under the VCS & CCB standard. and accompaniment until the corresponding validation. On the other hand, the project must establish a GHG information system to obtain, register, compile and analyze data and important information for the quantification and notification of GHG emission reductions. In this sense, in order to comply with the standards and the monitoring plan according to the validated PD, the activities that correspond to the measurement, monitoring and evaluation of the indicators referring to the generation of positive net benefits for the community, the biodiversity generated by the project, will be developed by the consulting company PASKAY SAC as a strategic partner of the project, with experience in REDD projects and MRV actions, counting on an interdisciplinary team of specialists in specific topics, to prepare the corresponding Monitoring Reports.

Museo de Historia Natural - UNMSM, is an academic institution that belongs to the National University Mayor de San Marcos de Lima, in charge of collecting, researching, and exhibiting representative organisms and samples of the natural heritage of Peru and humanity in relation to flora, fauna and gea, with the aim of generating scientific knowledge and imparting it at all levels. The specimens of such samples are studied, preserved, and guarded in the Museum, forming specialized scientific collections.

Likewise, BAM has established a Memorandum of Understanding (Annex 19) with the **PREVENIR Project - USAID**, in order to facilitate the implementation of REDD+ mechanisms through compensation for avoided deforestation to the private sector and carry out monitoring and surveillance actions with the use of technologies. The project is part of USAID's Green Amazon initiative, working with the Government of Peru and civil society to improve conditions to prevent and combat environmental crimes and thus reduce them, as well as reduce the negative impact within and around

the communities. protected areas and forests and indigenous lands, also includes working with environmental defenders in the Peruvian Amazon. This project receives support from the Norwegian Agency for Development Cooperation (NORAD) to deal with crimes in the forestry field. All project interventions will incorporate gender equality and social inclusion, mobilization of resources from the private sector, participation of civil society - particularly indigenous and vulnerable populations - and sustainability.

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

The company's audited Financial Statements are public and will be shared with the auditors and VERRA during the respective validation and verification processes.

Real assets: Bosques Amazónicos has a private property of 24,544 hectares in Ucayali, Peru, valued at 38 million dollars. Likewise, a forest plantation valued at 48 million dollars, value backs its operations as real assets.

Short-term income streams: Bosques Amazónicos is a proponent of a REDD+ project in Madre de Dios with more than a decade of operation, which generates an average of 2.5 million carbon credits per year, which supports its short-term income.

Long-term flows: Bosques Amazónicos manages a commercial plantation for more than 12 years, which has begun to be used sustainably since 2022. The commercial species of the BAM plantation, mainly marupa and shihuahuaco, are forest species with deep and excellent markets. prices, which ensures an additional revenue stream for the company.

Capital Markets: Bosques Amazónicos is the first forestry company in Peru to enter the Lima Stock Exchange, successfully placing thematic debt instruments (green/sustainable) in the market. In 2021 alone, Bosques Amazónicos placed around US$17 million in the capital market, fulfilling all its financial responsibilities, and maintaining an excellent relationship with its investors. Likewise, Bosques Amazónicos is the first company in LATAM to certify a green debt instrument under the Climate Bonds Standard of the Climate Bonds Initiative (CBI). The company and its financial health are supervised by the Superintendence of the Securities Market, a decentralized public body attached to the Ministry of Economy and Finance of Peru.

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

The BAM company, within its Internal Rules of Conduct (Annex 13, Chapter VII, 7.3 reporting and reporting of irregularities) encourages its employees and business partners to report in good faith, or based on a reasonable belief, the attempt of bribery, alleged or actual, or any violation or breach of the Rules of Conduct. Any complaint or query related to any suspicion of non-compliance with these rules may be submitted anonymously or by identifying yourself, through email channels or web page, protecting the complainant. Likewise, an internal regime of sanctions is established for those who fail to comply with what is indicated in the Internal Rules of Conduct. Any person who is under the scope of the Regulations will receive a copy of said document, recording its receipt in writing, as a sworn statement, in the sense of having received it and committing to read it carefully, understand it and comply with it. The same procedure will be followed with any person who obtains a position or position,

who will also be explained the principles and fundamental values contained in such Rules during the induction activities in which they participate.

The company applies for the development of its activities, policies for the prevention of money laundering and financing of terrorism, which is established in its Corporate Governance Policy (Annex 9) taking as reference the provisions set forth in the Prevention Rules. of Money Laundering and Financing of Terrorism issued by the Superintendency of the Securities Market (PLAFT Regulations), without prejudice to not being an entity supervised by any of the regulatory bodies. In this sense, the company operates under the following directives:

- Not participate and in no way assist in money laundering and financing of terrorism, having as its main commitment to abide by and comply with the regulations on the matter.

- The directors, managers and all company personnel are committed to complying with the PLAFT Standards through the application of the policies described in the Risk Management System document (Annex 20).

- The company will offer its support to the competent authorities through the provision of information that they require for investigation and analysis purposes.

  The company, in accordance with the provisions of the PLAFT regulations, considers prohibited operations those that imply the following:

- Customers who receive transfers from countries considered non-cooperative by the FATF, with risk related to money laundering and financing of terrorism, with little banking supervision, or from countries included in the OFAC list.

- Clients acting through trusts without identifying the identity of the settlor, trustee and trustees.

- Politically exposed persons (PEP) or who manage public resources. It is not considered a PEP when acting on behalf of a legal person participating in the State.

- Legal entities in which a PEP owns at least 5% of the capital stock, contribution or participation and that, according to the reporting entity, poses a high risk of money laundering or financing of terrorism.

Finally, BAM is an organization in which all the processes that are carried out for the hiring of personnel and service providers avoid nepotism and favoritism. Likewise, as part of its Corporate Sustainability Policy (Annex 10) it accepts to support the principles of the United Nations Global Compact, in the fight against corruption.

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

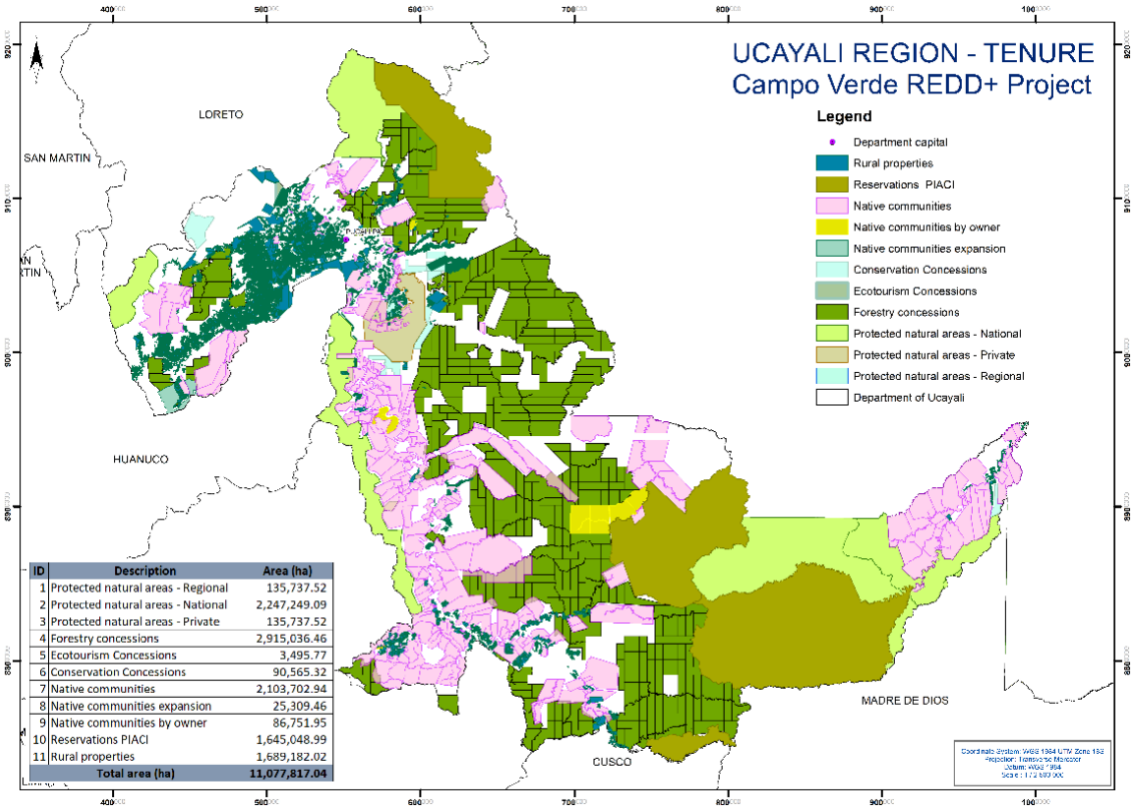
The privileged, reserved or commercially sensitive information that is excluded, will be subject to or will take into account the procedures and rules established for the flow and use of such information and that are indicated in the Internal Rules of Conduct (Annex 13) which has the purpose contribute to compliance with the current Regulation on Significant Events and Reserved Information,

establishing the procedures and mechanisms that guarantee the confidentiality of reserved or privileged information and the correct preparation and communication of Significant Events to the Superintendency of the Stock Market SMV. BAM, in the exercise of its activities, its representatives and the people who are directly or indirectly related to them must observe these Internal Rules of Conduct, as well as follow the procedures established therein.

2.5 Legal Status and Property Rights

2.5.1 Statutory and Customary Property Rights (G5.1)

In the Ucayali region territory, we find indigenous people territories, private property lands, rural properties, forest concessions, National and Regional Protected Areas as well as indigenous people reserves (PIACI), as mapped in figure 16 here below.



ID	Description	Area (ha)
1	Protected natural areas - Regional	135,737.52
2	Protected natural areas - National	2,247,249.09
3	Protected natural areas - Private	135,737.52
4	Forestry concessions	2,915,036.46
5	Ecotourism Concessions	3,495.77
6	Conservation Concessions	90,565.32
7	Native communities	2,103,702.94
8	Native communities expansion	25,309.46
9	Native communities by owner	86,751.95
10	Reservations PIACI	1,645,048.99
11	Rural properties	1,689,182.02
	Total area (ha)	**11,077,817.04**

Figure 16. Map Land tenure in Ucayali

Source: Own elaboration

In the project zone, most of the areas are rural lands granted for agriculture and grazing purposes as well as indigenous communities' territories as shown in figure 17 here below.

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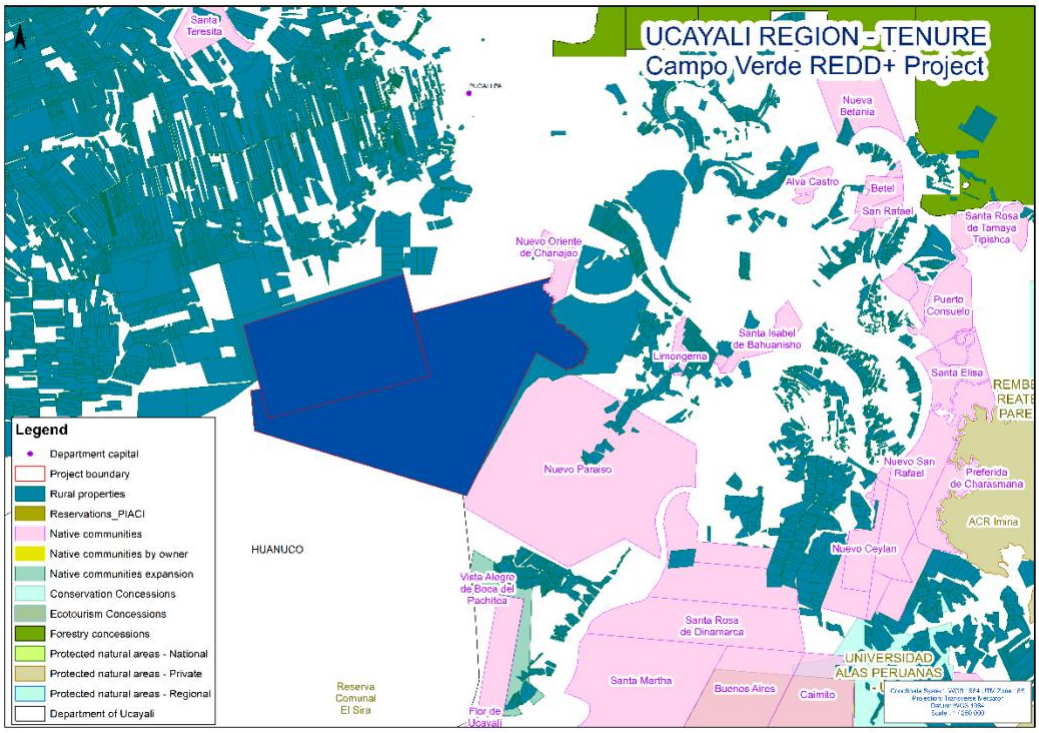

Figure 17. Map of Selva Maestra, Nuestro Señor Jesucristo, Nuevo Paraíso and land tenure in the project zone

Source: Own elaboration

The project is based in Fundo Nuestro Señor Jesucristo (JCC) and Selva Maestra. Both lands are mapped in Figure 17.

Fundo Nuestro Señor Jesucristo (hereinafter JCC) and Selva Maestra are both private property lands. JCC belongs to a company associated with Bosques Amazónicos S.A.C. (hereinafter BAM), which has assigned its land to BAM through an agreement signed between both entities. Selva Maestra is privately owned by BAM, as recorded in the SUNARP, National Property Registry Office, and protected by good faith registration, under the following references:

Table 14. References of land titles

Name	Date	Approval document	File	Area
Selva Maestra	December 15, 1998	Resolution Directorial N˚ 452-98	N˚40010854	12,730.41 ha
Nuestro Señor Jesucristo	January 9, 2009	Resolution Directorial N˚001-2009-GRU-P-DRSAU	N˚ 11042622	8,049.87 ha

Source: Own elaboration

2.5.2 Recognition of Property Rights (G5.1)

The property rights of both Selva Maestra and Nuestro Señor Jesucristo (JCC) were established through a purchase and sale contract approved by the Regional Directorate of Agriculture of Ucayali, which are presented as proof of title in Annex 21. All payments to the State have been done. Therefore, all property rights are recognized, respected, and supported.

Besides, BAM is starting the procedure to make JCC land a private protected area (named ACP according to the Peruvian legal framework). ACP procedure request may be found in Annex 22.

Regarding Selva Maestra, whereas all property rights are recognized and supported by its purchase and sale contract title there is an overlap with private lands. The surface area and coordinates of the lands corresponding to the orange square (see figure 18 here below and see the surface area and coordinates in Annex 23) as well as the surface area corresponding to the red square (see figure 18) have been identified (See section 2.5.6. for more details). In this regard, a land right consolidation process is underway by a Law firm as a measure implemented by the project to help to secure statutory rights in Selva Maestra (See section 2.5.6. for more details).

It must be mentioned that, whereas Selva Maestra property title identifies ownership over 12730.4100 ha. BAM´s shapes elaborated with more recent techniques identified that Selva Maestra ownership rights are over 14,176.13 ha. This is a common problem in Amazon and is due to evolving methods of surface area calculation. The hectares listed in the title were calculated using pen and paper while the most recent calculations done by BAM have been made using a much more accurate software.

Figure 18. Map of Selva Maestra

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

There are no indigenous group or traditional uses of forest resources limited by this project's activities. Thus, no Free, Prior and Informed Consent is needed and dispositions established in Prior Consultation Law, Law No. 29785, as well as in Agreement 169 of the International Labor Organization on indigenous and tribal peoples (ILO) are respected.

On the other hand, in the case of Selva Maestra and Nuestro Señor Jesucristo (JCC), since BAM is a private owner and no indigenous communities live inside Nuestro Señor Jesucristo and Selva Maestra, or are affected by it, it does not require a free, prior and informed consent process.

As explained in section 2.5.6. the project will not encroach uninvited on private property, community property, or government property.

It shall be mentioned that BAM will implement a socialization and information plan with the surrounding communities of both BAM´s lands to provide them with information about the project REDD+ that is going to be implemented (see socialization plan in Annex 24).

2.5.4 Property Rights Protection (G5.3)

Nuestro Señor Jesucristo and Selva Maestra have their rights protected by their sale contract approved by the Regional Directorate of Agriculture of Ucayali, which is protected by good faith registration purchase at the SUNARP, the National Property Registry Office.

Regarding Nuestro Señor Jesucristo, there is no overlap or ongoing disputes, no other landowners or land rights holders are affected. Thus, the project does not lead to the involuntary removal or relocation of property rights holders from their lands and does not force rights holders to relocate activities in Nuestro Señor Jesucristo.

Regarding Selva Maestra, there is no one living in this area, and only a few farmlands remain (mainly coca and yucca corps) with a minimal area (0.5 to 1 ha). However, as mentioned in sections 2.5.1 and 2.5.2. BAM has a recognized title by the authorities and a land right consolidation process is underway by a Law firm (See section 2.5.6. for more details).

2.5.5 Illegal Activity Identification (G5.4)

The main illegal activity that could affect the impact of the project is land encroachment, which is classified as an infraction under the Forest and Wildlife Law (Article 146 (e)). However, other threats may affect the project, such as forest fires or illegal logging caused by external agents.

In terms of measures, the Forest and Wildlife Law provides for control and surveillance actions at the regional government level within the scope of its territorial jurisdiction in the framework of specific regulations established by SERFOR and in coordination with the institutions that make up SINAFOR. It also encompasses communal monitoring, control, and surveillance measures, carried out by the community members themselves.

In the meantime, BAM's private lands are carrying out surveillance and patrol measures through the camps that have been set up on their lands. There are 4 camps on the two lands with permanent personnel (3 to 10 people) who oversee the surveillance work. Among their responsibilities, they are in charge of walking the boundaries to identify any possible breaches and reporting any suspicious activities to BAM.

In the event of suspected logging or invasion, the first action is to inform BAM. Immediately after, an action protocol is initiated, whereby the Forest Authority is notified so that it can gather any corresponding information. Simultaneously, the Public Prosecutor's Office and the national police are also notified that a complaint is filed.

In the event of forest fires, there is a verbal agreement between BAM and the surrounding communities that the community members or farmers must alert BAM when they are going to burn a field, to prevent it from spilling over onto BAM's property.

In any of the aforementioned events, BAM can request the police to intervene and has the logistics, tools, and staff to do so. With the project implementation, BAM is reinforcing the control of the area through a holistic monitoring and surveillance system based on 3 pillars: satellite monitoring, field monitoring and legal monitoring which is explained in detail in section 2.1.11

2.5.6 Ongoing Disputes (G5.5)

The following are the disputes that have affected the property and that have been resolved during the last twenty years, in addition to the dispute we are currently dealing with.

NUESTRO SEÑOR JESUCRISTO (JCC): all disputes are solved

Firstly, the overlapping dispute of land with the Instituto Superior Technological Suiza in JCC was archived by the authorities and therefore resolved. Report 28-2019-OPDR-ABOG/AAR of the Regional Attorney's Office of the Regional Government of Ucayali confirmed that the time limit to file a claim for nullity of the legal act of resolution of purchase and sale of the land in favor of BAM had expired (article 2001 of the Peruvian Civil Code establishes a 10-year time limit). In this sense, the definitive closing of the file was declared and, consequently, it is a closed conflict. There is no overlapping of properties with the Instituto Superior Technological Suiza.

Secondly, there was an issue of conciliation of balances for the purchase and sale of land in JCC. This dispute is archived and, therefore, solved. In this regard, Regional Directorial Resolution No.155-2020-GRU-DRA left without effect letter No.182-2016-GRU-DRA for the collection by conciliation of balances for purchase and sale of land and confirmed that BAM had already proceeded with the payment of this debt. Therefore, a letter from the Regional Management confirming that the reversion of the property does not proceed is not required because the Regional Directorial Resolution No.155-2020-GRU-DRA already confirms the non-reversion. In short, all balances have been paid and the dispute was solved.

Thirdly, there was a dispute of overlapping with public domain-State-owned land in JCC which was archived and solved by Report No. 002-2022-GRU-DRA/DISAFILPA/PSCR-TUPA of the Directorate for Land Rights Consolidation Processes of the Regional Directorate of Agriculture of Ucayali (see the

orange strip in Map No. 3 here below to visualize the overlap solved and archived). This report confirmed that BAM has ownership over the overlapping area.

Figure 19. Map of Nuestro Señor Jesucristo

Source: Own elaboration

PREDIO SELVA MAESTRA: overlap with few private lands; a land right consolidation process is being carried out by the Project

As mentioned in section 2.5.2., a land right consolidation process is being carried out by a law firm hired for this purpose. It must be also mentioned that all balances have been paid.

The surface area and coordinates of the lands corresponding to the orange square (see figure 20 and figure 21 here below and see the surface area and coordinates in Annex 23) and the surface area corresponding to the red square (see figure 20) have been identified as overlaps with BAM ownership rights title.

Superposiciones de predios inscritos sobre el Predio "Selva Maestra"

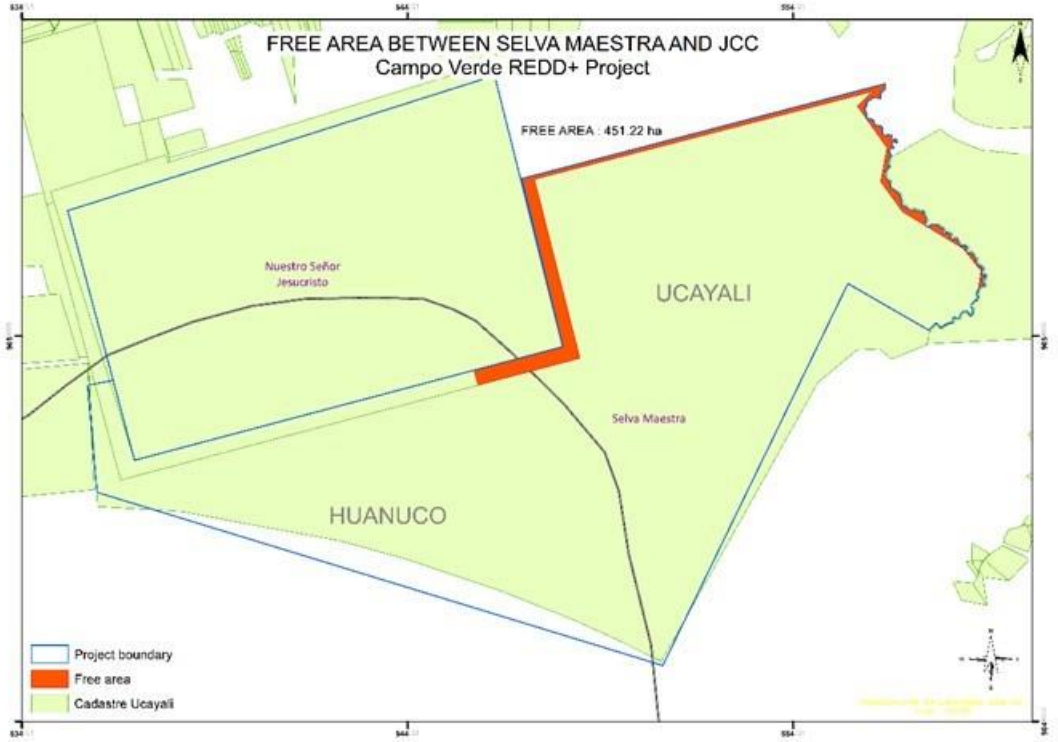

Figure 20. Map of Selva Maestra
Source: Developed by Bravo Rueda Law Firm

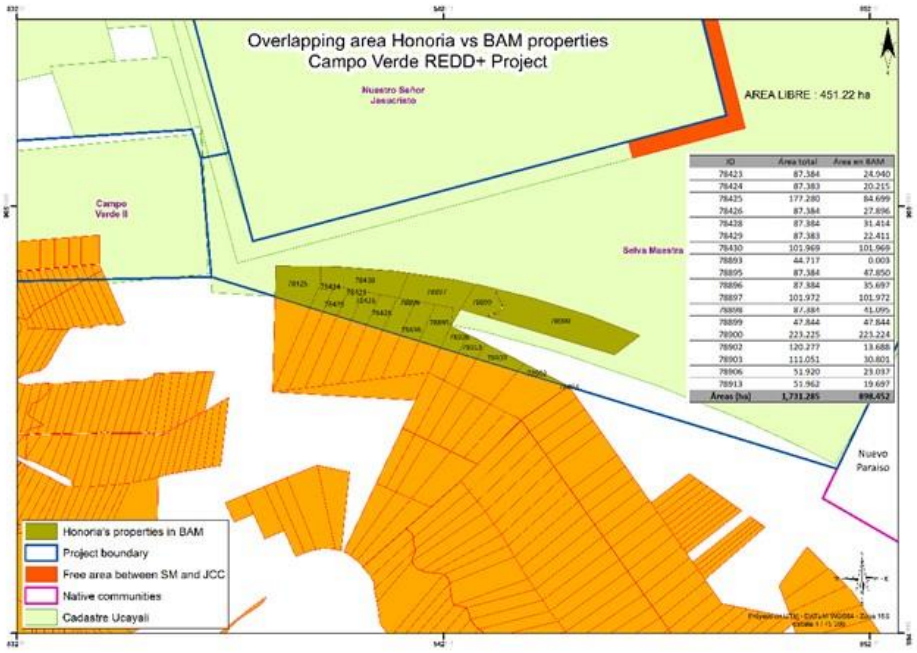

Figure 21. Map of overlapping area plot Honoria vs BAM

Source: Own elaboration

In the following Table 15, we describe the current legal status of the lands overlapping in Selva Maestra, which are included in the land rights consolidation process which is being carried out by the project.

Table 15. Legal status of overlapping areas in Selva Maestra

Land	Hectares	Landowner	Area and percentage overlapping	Legal status
Selva Maestra	12,730	Ganadera Campo Verde	11.32 ha 0.086%	BAM's title prevails over Ganadera Campo Verde's title because BAM title has an earlier date (previous).
Selva Maestra	12,430	Fundo Instituto Superior Tecnológico Suiza	0.15 ha 0.001%	Ministry of Education acquired this land right illegally as Legislative Decree 838 did not establish that public entities could benefit from it. However, Ministry of Education title's is older than BAM's title (previous).
Selva Maestra	12,730	Ganadera Campo Verde	404.62 ha	BAM's title prevails over Ganadera Campo Verde's title because BAM title has an earlier date (previous).
Selva Maestra		Cadastral Units (UC) (see red square in Map No. 4)		On October 26th 2021 BAM filed a claim at the Regional Directorate of Agriculture of Huánuco. The claim is currently under review. Furthermore, it must be mentioned that BAM´s titles are registered in the National Public Registry of Property (SUNARP) which prevails.

Source: Own elaboration

In addition, there is an overlap between BAM's Selva Maestra land and the lands of the community of Nuevo Paraiso (see the blue circle in Figure 22 here below). However, this does not constitute a dispute because BAM has always respected this Community's surface area and the Community´s title prevails over BAM's title because it was stated previously to BAM's title.

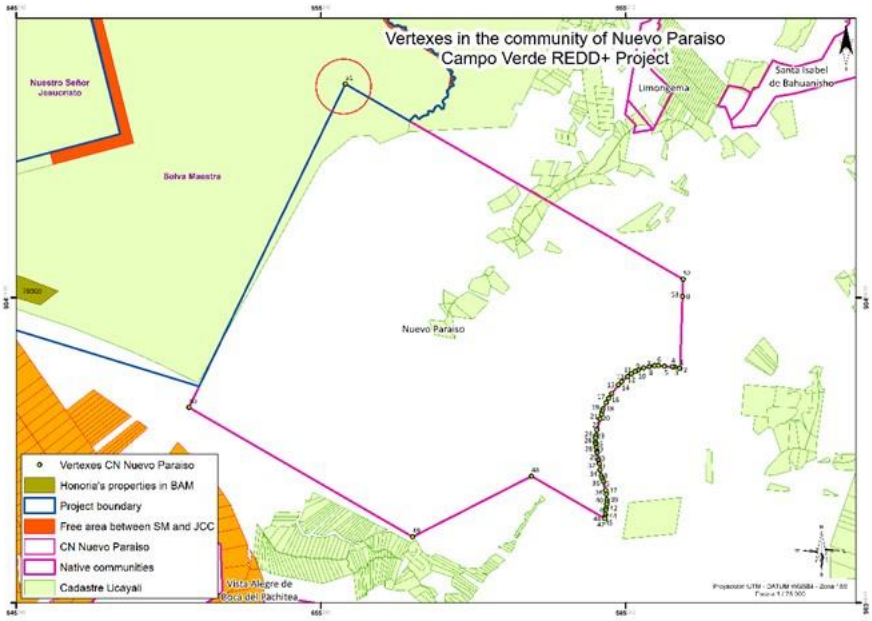

Figure 22. Map of vertexes in Nuevo Paraiso

Source: Own elaboration

2.5.7 National and Local Laws (G5.6)

The project complies with all relevant national and regional laws and regulations relevant to the Project activities. We detail this regulatory framework in table 16 here below.

Table 16. National and Regional regulatory framework relevant to the project activities

Law	Legal analysis
General Environment Law, Law No. 28611	According to article 92, the "State promotes the sustainable use of forest resources and wildlife, as well as the conservation of natural forests". Besides, "the State promotes and supports the sustainable management of wild fauna and flora, prioritizing the protection of endemic and endangered species and varieties, based on technical information, scientific, economic and traditional knowledge". In this framework and to achieve those goals, the State recognizes in article 94 that "natural resources and other components of the environment perform functions that allow maintain the conditions of the ecosystems and the environment, generating benefits that are used without mediate remuneration or compensation, for which the State establishes mechanisms to value, remunerate and maintain the provision of said environmental services, seeking to achieve the conservation of ecosystems, biological diversity and other natural resources". The State recognizes that mitigation of green gas emissions is considered environmental services (article 94.2). Thus, to achieve those conservation forest goals, "the National Environmental Authority promotes the development of mechanisms for financing, payment and supervision of environmental services", such as those developed in this project. In the same line, article 150 recognizes that "measures or processes that, at the initiative of the owner of the activity, are implemented and executed with the purpose of reducing and/or prevent degradation of natural resources, beyond what is required by the applicable regulations or the competent authority and that responds to the objectives of environmental protection", "constitute behaviors that can be rewarded with incentives". Accordingly, BAM and Nuevo Paraiso's activities which are implemented for forest conservation purposes can be rewarded with incentives such as carbon credits benefits.

National Environmental Policy approved by Supreme Decree No. 12-2009-MINAM	The elaboration of the National Environmental Policy is a mandate that comes mainly from the Political Constitution of Peru and the General Environmental Law, constituting a set of guidelines, objectives, strategies and instruments of a public nature that have the purpose of defining and orienting the actions of the entities of the National, Regional and Local Government, the private sector and the civil society, in environmental matters. The National Environmental Policy is divided into 5 objectives, 4 policy axes and specific objectives and guidelines for each policy. One objective of the National Environmental Policy relevant to the Project is to achieve the conservation and sustainable use of the country's natural heritage, with efficiency, equity and social welfare, prioritizing the integrated management of natural resources. The environmental services are identified within the National Policy of the Environment in diverse points, indicating the necessity to foment its economic valuation through economic and financial instruments, emphasizing the importance of implementing systems of conservation of forests and protection of such as far as the degradation and deforestation.
Organic Law for the sustainable use of Natural Resources, Law No. 26821	According to article 8 “the State shall ensure that the granting of the right to the sustainable use of natural resources is carried out in harmony with the interest of the Nation, the common good, and within the limits and principles established in this Law, in special laws and in regulatory norms on the matter”. On the other hand, the Law confirms that “all use of natural resources by individuals creates a financial retribution that is determined by economic, social and environmental criteria. The financial retribution previously mentioned, includes any concept that must be contributed to the State for the natural resource, whether as compensation, right of granting or right of validity of the title containing the right, established by special laws. In this regard, BAM has paid all balances.
Forest and Wildlife Law, Law No, 29763	Both Selva Maestra and Nuestro Señor Jesucristo, according to the Forest and Wildlife Law No. 29763 (LFFS), the title of ownership includes ownership over emissions reductions.
Regulation for forest management approved by Supreme Decree No. 018-2015-MINAGRI	According to article 39.1 “the enabling title is the administrative action granted by the forest and wildlife authority, that allows the natural or legal person the access for the sustainable use of natural resources, wildlife, and forest ecosystem services, through Management Plan. BAM has a title of ownership.

Prior Consultation Law	The implementation of this project does not constitute an administrative or legislative measure and, consequently, it does not require a prior consultation process in accordance with Article 1 of the Prior Consultation Law.
Law No. 27783 Law on the Bases of Decentralization	It regulates the structure and organization of the State in a democratic, decentralized and deconcentrated way, corresponding to the National Government, Regional Governments and Local Governments. It also defines the rules that regulate administrative, economic, productive, financial, tax and fiscal decentralization. Likewise, this law establishes the competencies of the three levels of government and determines the assets and resources of the regional and local governments; and regulates the relations of government in its different levels. Article 36 mentions shared competences, one of them being the promotion, management and regulation of economic and productive activities in their scope and level, corresponding to the different sectors, including the environmental sector.
Law No. 27867 Organic Law of Regional Governments	Law that, in its sections 9 and 10, establishes constitutional, exclusive and shared competences to Regional Governments in environmental matters to promote and regulate activities or services in the environmental sector. They also establish exclusive competences to promote the sustainable use of forest resources and biodiversity; and shared competences for the sustainable management of natural resources, the improvement of environmental quality and the preservation and administration of regional reserves and natural protected areas. Article 53 of the same law establishes the functions of the regional governments in environmental and land-use planning matters. For the Regional Governments to be able to exercise the competences assigned by this law, a process of transference of those competences must be followed, which has the objective of accrediting that this level of government has the institutional capacities to assume them.

2.5.8 Approvals (G5.7)

Attached in Annex 21 are the purchase and sale contracts of Selva Maestra and Nuestro Señor Jesucristo approved by the Regional Directorate of Agriculture of Ucayali.

2.5.9 Project Ownership (G5.8)

Regarding Selva Maestra and Nuestro Señor Jesucristo, it is private land granted by the Regional Directorate of Agriculture of Ucayali, thus, BAM has the right to carry out the project's activities and has the power to decide on the management of the activities.

2.5.10 Management of Double Counting Risk (G5.9)

The project does not seek to be eligible under any other program or scheme that generates environmental or social credits, except the voluntary market and through VERRA platforms. Traceability will be ensured by this way.

2.5.11 Emissions Trading Programs and Other Binding Limits

The project does not participate in any other emissions trading program. All the reductions will be traded in the VERRA voluntary carbon market.

2.5.12 Other Forms of Environmental Credit

As stated in 2.5.10, the project has not sought or received another form of GHG-related environmental credit, including renewable energy certificates, nor plans to do it.

2.5.13 Participation under Other GHG Programs

The Project does not participate under any other GHG program. It will apply only to the validation and verification of VCS and CCB standards.

2.5.14 Projects Rejected by Other GHG Programs

The project has never been rejected by any other GHG programs because it never applied to any GHG program as it is recently being developed.

2.5.15 Double Counting (G5.9)

Double sale and double counting are not allowed and will not be practiced. All the sales will be done under a unique voluntary carbon market so there is no risk of double counting. All the transactions will be public through the web platform of VERRA so there will not be in conflict with Peru climate commitments. In addition, it must be remembered that these reductions are originated from avoided planned deforestation, while Peru FREL is based on unplanned deforestation.

3 CLIMATE

3.1 Application of Methodology

3.1.1 Title and Reference of Methodology

This project is using VCS approved methodology **VM0007**, Version 1.6, 08 September 2020, Sectoral Scope 14, "REDD+ Methodology Framework (REDD+ MF)".

The project also applies a set of modules and tools:

Carbon pool modules:

- **VMD0001** Estimation of carbon stocks in the above- and belowground biomass in live tree and non-tree pools (CP-AB), Version 1.3, 08 September 2020, Sectoral Scope 14.

Baseline modules:

- **VMD0006** Estimation of baseline carbon stock changes and greenhouse gas emissions from planned deforestation/forest degradation and planned wetland degradation (BL-PL). Version 1.3, 08 September 2020, Sectoral Scope 14.

Leakage modules:

- **VMD0009** Estimation of emissions from activity shifting for avoiding planned deforestation/forest degradation and avoiding planned wetland degradation (LK-ASP), Version 1.3, 08 September 2020, Sectoral Scope 14.

Monitoring modules:

- **VMD0015** Methods for monitoring of greenhouse gas emissions and removals in REDD project activities (M-REDD), Version 2.2, 08 September 2020, Sectoral Scope 14.

Miscellaneous modules:

- **VMD0016** Methods for stratification of the project area (X-STR), Version 1.2, 08 September 2020, Sectoral Scope 14

Tools:

- CMD Tool for testing significance of GHG emissions in A/R CDM project activities (**T-SIG**), Version 1.
- **VT0001** Tool for the demonstration and assessment of additionality in VCS agriculture, forestry, and other land use (AFOLU) project activities, Version 3.0, 01 February 2012, Sectoral Scope 14.
- VCS AFOLU Non-Permanence Risk Tool (**T-BAR**), Version 4.0, 19 September 2019.

3.1.2 Applicability of Methodology

Table 17. Applicability of the methodologies

VM0007	Explanation

General	The justification of the choice of modules and why they apply to the proposed project activity must be given in the PD.	The justification for the choice of each module of the methodology is found in this table.
	Specific applicability conditions exist for each module and must be met for the module to be used.	The applicability conditions of each module will be met and explained in this table.
	This methodology includes unplanned forest degradation caused only by the extraction of wood for fuel.	This project does not contemplate degradation caused by the extraction of wood for fuel.
All project activities	All land areas registered under the CDM or under any other GHG program (both voluntary and compliance-oriented) must be transparently reported and excluded from the project area. The exclusion of land in the project area from any other GHG program must be monitored over time and reported in the monitoring reports.	The project area does not have land under a GHG program.
REDD	Land in the project area has qualified as forest (following the definition used by VCS; in addition, see Section 5.1.2) for at least 10 years prior to the project start date.	According to GeoBosques, the project area is forest for at least 10 years prior to the project's start date.
	If land within the project area is, peatland or tidal wetlands and emissions from the SOC pool are deemed significant; the relevant WRC modules (see Table 3) must be applied alongside other relevant modules.	The relevant modules WRC have been applied alongside the other modules.
	Baseline deforestation and forest degradation in the project area fall within one or more of the following categories: ● Unplanned deforestation (VCS category AUDD) ● Planned deforestation/degradation (VCS category APD) ● Degradation through the extraction of wood for fuel (fuelwood and charcoal production) (VCS category AUDD)	Baseline deforestation and forest degradation in the project area fall within the Planned deforestation / degradation (VCS category APD)
	Leakage avoidance activities must not include: ● Agricultural lands that are flooded to increase production (e.g., rice paddy) ● Intensifying livestock production through the use of feed-lots and/or manure lagoons.	These activities are not included.
Avoiding planned deforestation / degradation	Avoiding planned deforestation/degradation activities are applicable under the following condition: Where conversion of forest lands to a deforested condition must be legally permitted.	Conversion of forest lands to a deforested condition is legally permitted.
Module VMD0006	The module is applicable for estimating the baseline emissions on forest lands (usually privately or government-owned) that are legally authorized and documented to be converted to non-forest land.	Forest lands are private and have legal permission to carry out changes in land use.

	Where, pre-project, unsustainable fuelwood collection is occurring within the project boundaries Modules BL-DFW and LK-DFW must be used to determine potential leakage.	This activity was not carried out in the pre-project.
Module VMD0009	The module is applicable for estimating the leakage emissions due to activity shifting from forest lands that are legally authorized and documented to be converted to non-forest land, including activity shifting to forested wetland that is drained or degraded as a consequence of project implementation.	The project seeks to avoid planned deforestation, which is legally authorized and documented.
	The module is also applicable for estimating the leakage emissions due to activity shifting from non-forested wetlands that are legally authorized and documented to be converted and degraded. Under these situations, displacement of baseline activities can be controlled and measured directly by monitoring the baseline deforestation or wetland degradation agents or class of agents.	Leakage emissions due to change in activity of non-forest wetlands are not considered.
	This tool must be used for projects in areas where planned deforestation happens on forested wetlands, regardless of the absence of wetland within the project boundaries.	In the project area there are forested wetlands, like as Mauritia flexuosa dominated palm swamp and Palm and Mixed Palm Swamp Forest
	The module is mandatory if Module BL-PL has been used to define the baseline, and the applicability conditions in Module BL-PL must be complied with in full.	The BL-PL Module has been used to define the baseline, and the applicability conditions of the BL-PL Module are fully met.
Module VMD0015	Emissions from logging may be omitted if it can be demonstrated the emissions are de minimis using Tool T-SIG.	Logging emissions were excluded using the T-SIG tool.
	If emissions from logging are not omitted as de minimis, logging may only take place within forest management areas that possess and maintain a Forest Stewardship Council (FSC) certificate for the years when the selective logging occurs.	Logging emissions were excluded using the T-SIG tool.
	Logging operations may only conduct selective logging that maintains a land cover that meets the definition of forest within the project boundary.	Logging emissions were excluded using the T-SIG tool.
	All trees cut for timber extraction during logging operations must have a DBH greater than 30 cm.	Logging emissions were excluded using the T-SIG tool.
	During logging operations, only the bole/log of the felled tree may be removed. The top/crown of the tree must remain within the forested area.	Logging emissions were excluded using the T-SIG tool.
	The logging practices cannot include the piling and/or burning of logging slash	Logging emissions were excluded using the T-SIG tool.

	Volume of timber harvested must be measured and monitored.	Logging emissions were excluded using the T-SIG tool.
VMD0016	In case of REDD, aboveground biomass stratification is only used for pre-deforestation forest classes, and strata are the same in the baseline and the project scenario. Post-deforestation land uses are not stratified.	Aboveground biomass stratification was used for forest classes prior to deforestation.

3.1.3 Project Boundary

3.1.3.1 Geographical boundaries

The project area comprising two properties (Selva Maestra and Nuestro Señor Jesucristo) is located within the departments of Ucayali and Huánuco, Peru. Three districts are part of the project area, the Campo Verde and Manantay districts (Ucayali), and the Honoria district (Huánuco). Figure 3.1 shows the forest/non-forest status at the end of the year 2020, and Table 3.2 shows the vertices of the property limits.

Figure 3.1. Project area boundaries

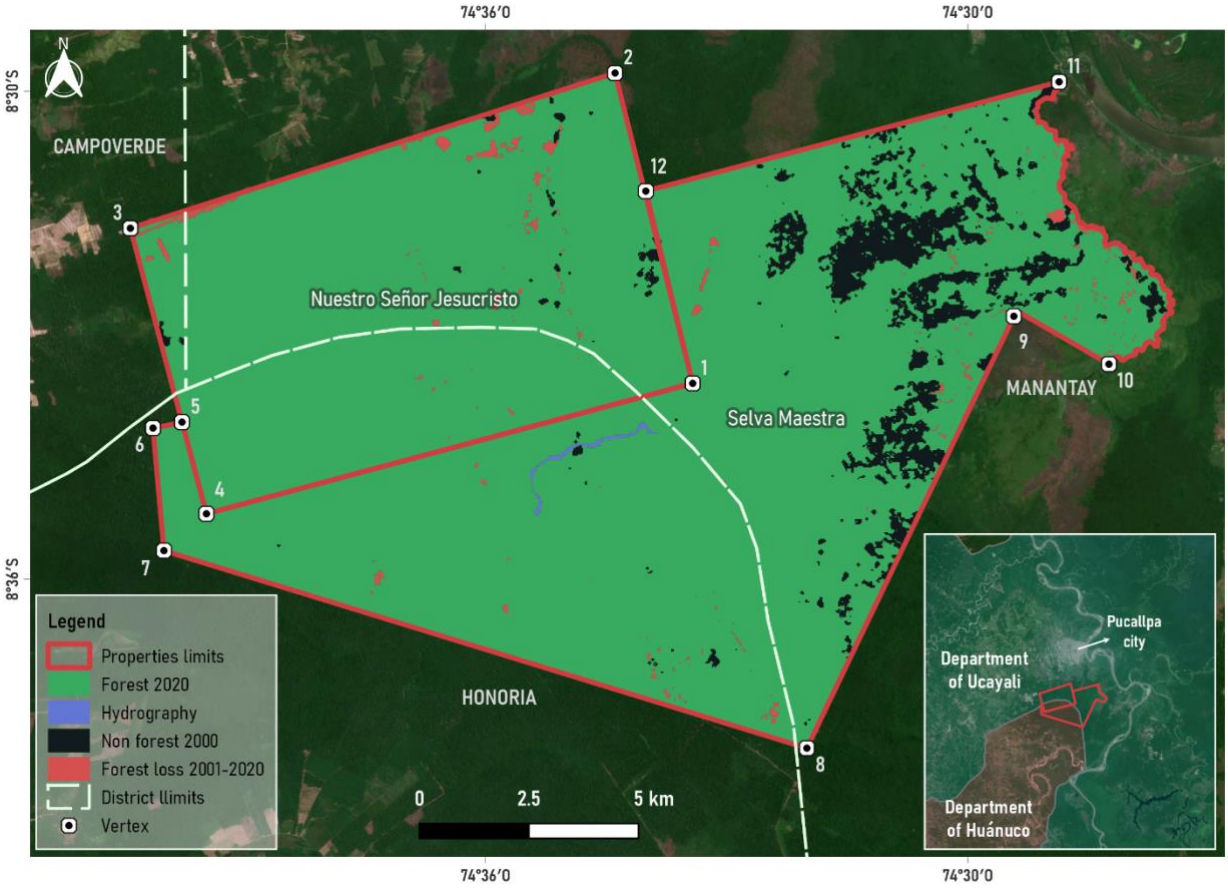

Figure 23. Project area boundaries

Table 18. Property limits vertices

Vertex	Coordinate East (UTM 18S) (m)	Coordinate North (UTM 18S) (m)	Coordinate X (Latitude) (°)	Coordinate Y (Longitude) (°)
1	548,745.75	9,053,778.57	-74.557037	-8.559872
2	546,980.92	9,060,812.79	-74.573144	-8.496265
3	535,912.21	9,057,306.16	-74.673683	-8.528080
4	537,642.73	9,050,834.54	-74.657907	-8.586603
5	537,087.29	9,052,911.71	-74.662971	-8.567819
6	536,425.24	9,052,777.99	-74.668987	-8.569034
7	536,672.52	9,049,999.73	-74.666718	-8.594162
8	551,342.41	9,045,509.27	-74.533349	-8.634640
9	556,078.00	9,055,290.00	-74.490427	-8.546119
10	558,247.19	9,054,201.49	-74.470703	-8.555938
11	557,118.54	9,060,601.78	-74.481037	-8.498061
12	547,680.14	9,058,136.17	-74.566764	-8.520468

3.1.3.2 Carbon pools

Table 3.3 shows the relevant carbon reservoirs considered in the scope of the project, according to VM0007 v1.6, table 4, and their respective justification.

Table 19. Carbon pools

Carbon pools	Included?	Justification/Explanation
Above-ground tree biomass	Yes	Inclusion is mandatory as per VM0007 v1.6, table 04. It does not include non-tree woody biomass.
Above-ground non-tree biomass	No	Not mandatory by methodology.
Belowground tree biomass	Yes	Not mandatory by methodology. Included in the project because it is generally the second most significant carbon pool in forest biomass and because it is significant (represents more than 5% of the tree woody biomass), as indicated by the T-SIG tool.
Belowground non-tree biomass	No	Not mandatory by methodology.
Deadwood	No	Not mandatory by methodology.
Harvested wood products	No	Optional. The inclusion of the harvested wood pool as part of the project boundary is mandatory when the process of deforestation

		involves timber harvesting for commercial markets, as per VM0007 v1.6, table 04.
Litter	No	Not mandatory by methodology.
Soil organic carbon	Yes	Not mandatory by methodology. Inclusion is optional in the case stocks are not greater in the baseline than in the project scenario, per VM0004 v1.0.

3.1.3.3 Sources of GHG emissions

The relevant GHG sources, sinks, and reservoirs for the project and baseline scenarios are shown in Table 3.4.

Table 20. GHG emissions included or not in the baseline and project scenarios

Source		Gas	Included?	Justification/Explanation
Baseline	Carbon Stock Changes	CO_2	Yes	Stock changes were included, once they are mandatory in the methodology.
		CH_4	No	Not applicable.
		N_2O	No	Not applicable.
		Other	No	Not applicable.
	Biomass Burning	CO_2	No	Carbon stock decreases due to burning are already accounted as carbon stock change.
		CH_4	Yes	Fire is used as an instrument for converting the forest to pasture or other land uses in the baseline scenario. In the process of legal forest suppression, commercial wood is extracted, and the remaining woody material is felled and burned on site. Non-CO2 gases are expected to be emitted due to woody biomass burning in the baseline scenario.
		N_2O	Yes	
		Other	No	No relevant source identified
	Fossil fuel Combustion	CO_2	No	As per methodology module E-FCC "Fossil fuel combustion in all situations is optional emission source."
		CH_4	No	
		N_2O	No	
		Other	No	
	Use of Fertilizers	CO_2	No	Carbon and Non-CO2 emissions from the use of fertilizers shall be excluded in the project scenario as they were conservatively excluded in the baseline scenario following VM0007 v1.6, table 7
		CH_4	No	
		N_2O	No	
		Other	No	

Source		Gas	Included?	Justification/Explanation
Project	Carbon Stock Changes	CO_2	Yes	Stock changes were included, once they are mandatory in the methodology.
		CH_4	No	Not applicable.
		N_2O	No	Not applicable.
		Other	No	Not applicable.
	Biomass Burning	CO_2	No	Carbon stock decreases due to burning are already accounted as carbon stock change.
		CH_4	No	Biomass Burning is not anticipated in the project scenario.
		N_2O	No	
		Other	No	
	Fossil fuel Combustion	CO_2	No	Carbon and Non-CO2 emissions from harvesting equipment, log transport, and primary forest product manufacturing in the project scenario shall be excluded as it was conservatively excluded in the baseline scenario, following VM0007 v1.6, table 7.
		CH_4	No	
		N_2O	No	
		Other	No	
	Use of Fertilizers	CO_2	No	Carbon and Non-CO2 emissions from the use of fertilizers shall be excluded in the project scenario as they were conservatively excluded in the baseline scenario following VM0007 v1.6, table 7
		CH_4	No	
		N_2O	No	
		Other	No	

3.1.4 Baseline Scenario

The baseline scenario was set according to VMD0006 v1.3 criteria. This module provides a stepwise approach for estimating GHG emissions related to planned deforestation. This section will calculate the annual area of land to be deforested.

3.1.4.1 Agent of Planned Deforestation

The company “Bosques Amazónicos SAC” is identified as the single agent of planned deforestation in the baseline, which is considered as the “simplest scenario”, according to VMD0006 v1.3, section 1.1.

3.1.4.2 Area of deforestation

The area of deforestation ($A_{planned,i}$) is defined according to an immediate site-specific threat of deforestation, which is demonstrated by documentary proof of the following:

a) Legal permissibility for deforestation:

The Selva Maestra property was awarded under Legislative Decree No. 653 (1992), and the Nameless Property (Nuestro Señor Jesucristo) was awarded under Legislative Decree No. 838 (1996). Both are regulations for the promotion of agrarian activity, by means of which lands were awarded for carrying out agricultural activities (agricultural and livestock), did not include forestry activities that were regulated by special laws (e.g., Law 22174, Law 27308, Law 29763). Table 3.5 presents the contractual conditions of these two properties.

Table 21. BAM (Bosques Amazónicos SAC) contractual conditions

Property	Contract	Date	Law	State	Particular
Selva Maestra	Contract for the Purchase and Sale of Lands in the Ceja de Selva No. 126666-AG-PETT (Annex 21)	20/09/1999	D.Leg. 653 (Annex 25)	Ucayali Agricultural Sector Regional Directorate / PETT	Ganadera Campo Verde SA
Nameless Property	Public Deed 66 Contract for the Purchase and Sale of Ceja de Selva Lands with Property Reserve (Annex 21)	01/12/2009	D.Leg. 838 (Annex 26)	Ucayali Agricultural Sector Regional Directorate	JCC Inversiones SAC

b) Suitability of project area for conversion to alternative non-forest land use:

The suitability of the area is demonstrated by the ability of the land to be converted to the activities proposed in the project scenario. In this case, the project area is one of the few areas with the presence of continuous forest in the surroundings of the city of Pucallpa, one of the main cities of the Peruvian Amazon. Due to its central location, it is one of the main collection points for river transport, a major trading port, especially for forest products, and it also has an important land connection through the “Federico Basadre” national highway.

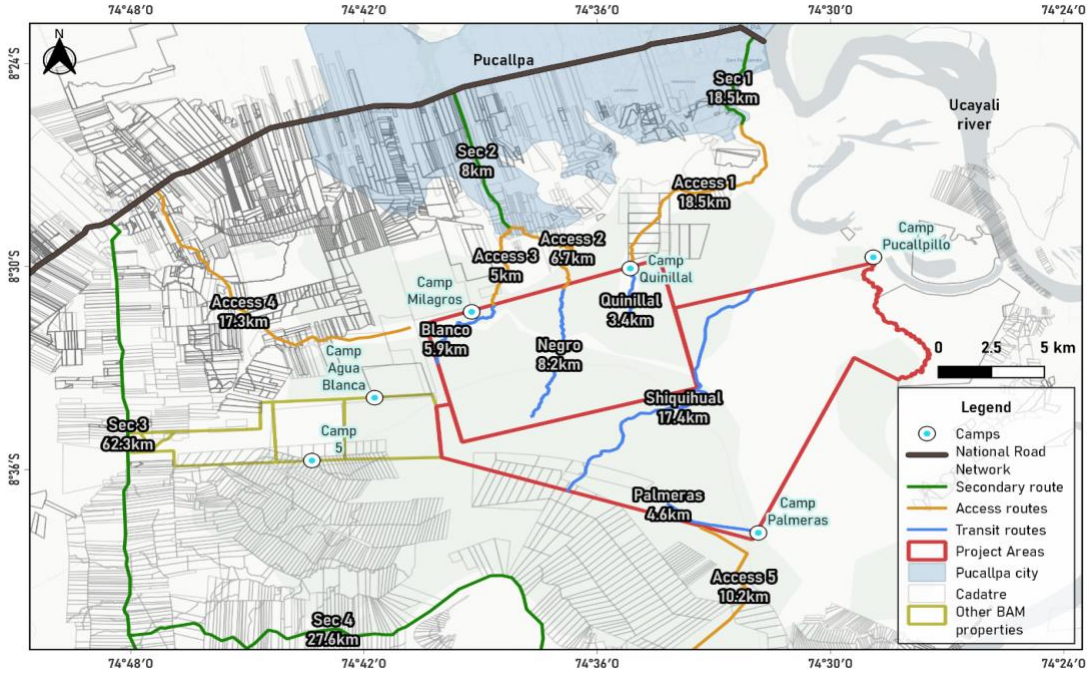

Figure 24. Accessibility map to the project area

The project area is surrounded by rural properties where agriculture and livestock work are intensive (the same activities that are planned to be carried out). At the same time, it has five distinguishable access routes, 3 of them being the entrance to the "Milagros", "Quinillal", and "Palmeras" camps, which are settled trails (except in the rainy season, access to “Quinillal” is carried out by boat since the land is flooded); and access through the "Rio Negro” and “Shiquihual” streams, which are by boat, and restricted to the rainy season. Access, as shown in Figure 3.2, is wide, with great availability of secondary roads, and ease of providing maintenance to existing roads, which will allow a direct flow of transport of goods to the city of Pucallpa, which is a main center of commerce.

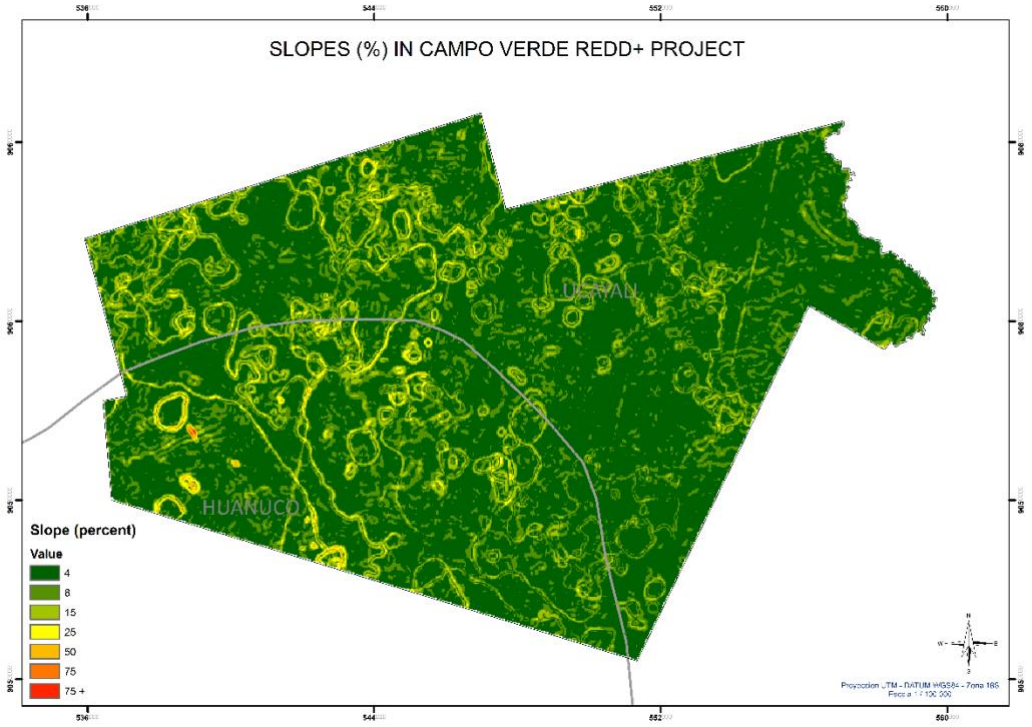

Figure 25. Slope in the project area.

On the other hand, the area does not have steep slopes (Figure 3.3), so the entry of heavy machinery, for the use of intensive agricultural activities, is feasible. Regarding physiographic, geologic, and climatic conditions, these conditions are similar in all the regions surrounding the project area, where this type of activity is already carried out.

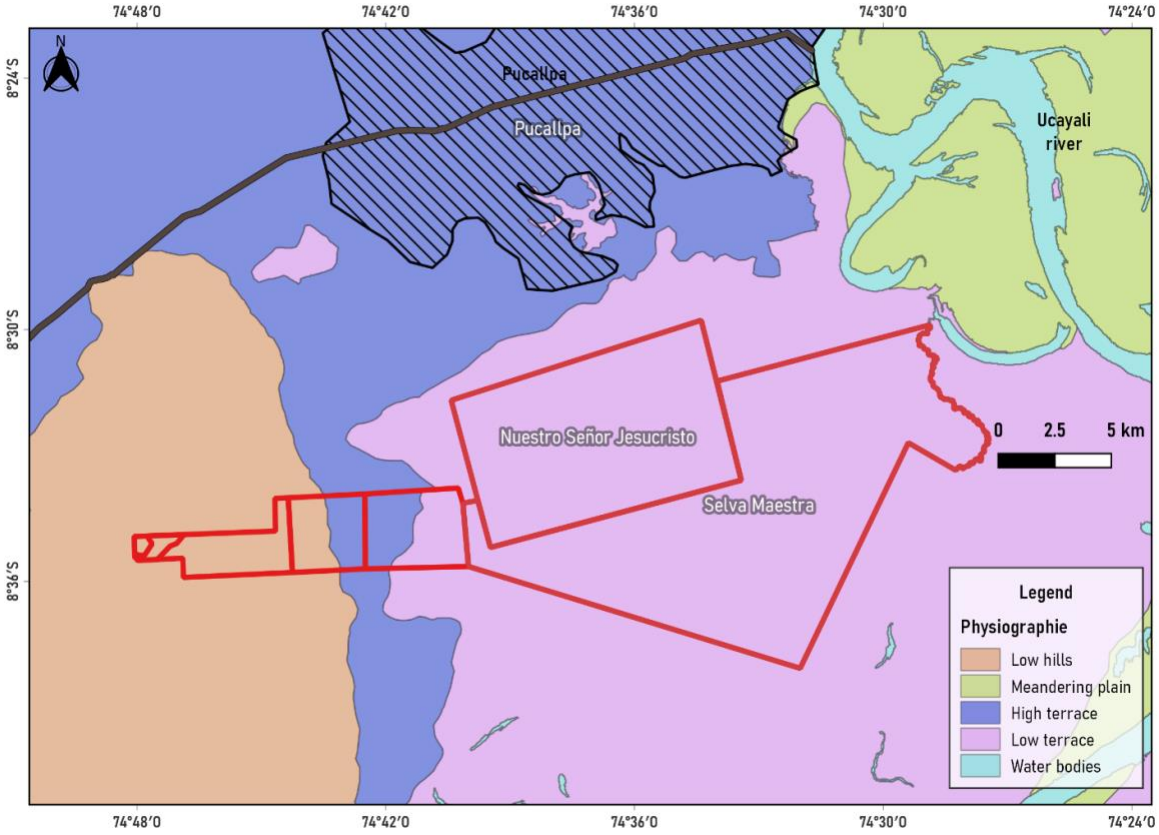

Figure 26. Physiographic characterization

c) Government approval for deforestation to occur:

The intention to deforest within the project area is demonstrated in the same documents that give legal permissibility for deforestation (3.1.4.2.a) in Table 3.5. These documents approve alternative land-use changes such as agricultural activities and/or livestock.

d) Intention to deforest:

The intention to deforest is demonstrated by the existence of a Technical Economic Feasibility Study Agro-industrial Exploitation of the “Nuestro Señor Jesucristo” and the File 7698 of the Special Project for Land Titling and Rural Cadaster of the Regional Agrarian Directorate – Ucayali, of the Ministry of Agriculture for “Selva Maestra”; where the change of land use are indicated to deforest the project area. In the case of “Nuestro Señor Jesucristo”, a land-use change project is detailed, towards the production of permanent crops (Annex 27), while the area of “Selva Maestra" presents a land-use change authorization for the installation of pastures (Annex 28). In the same way, the intention is demonstrated with the productive use given in two zones bordering the project areas, where a land-use change has been generated by the same owner of the project areas in previous years (Table 3.6)

Table 22. Other BAM (Bosque Amazónicos SAC) properties

Nº	Name	Area (ha)	Landowner
1	Mirianita I	1087.6	Bosques Amazónicos

Nº	Name	Area (ha)	Landowner
2	Mirianita II	1205.3	Bosques Amazónicos / Inversiones Campo Verde
3	Campo Verde II	1490.5	Bosques Amazónicos
4	Parcel B	114.6	Bosques Amazónicos / Inversiones Campo Verde

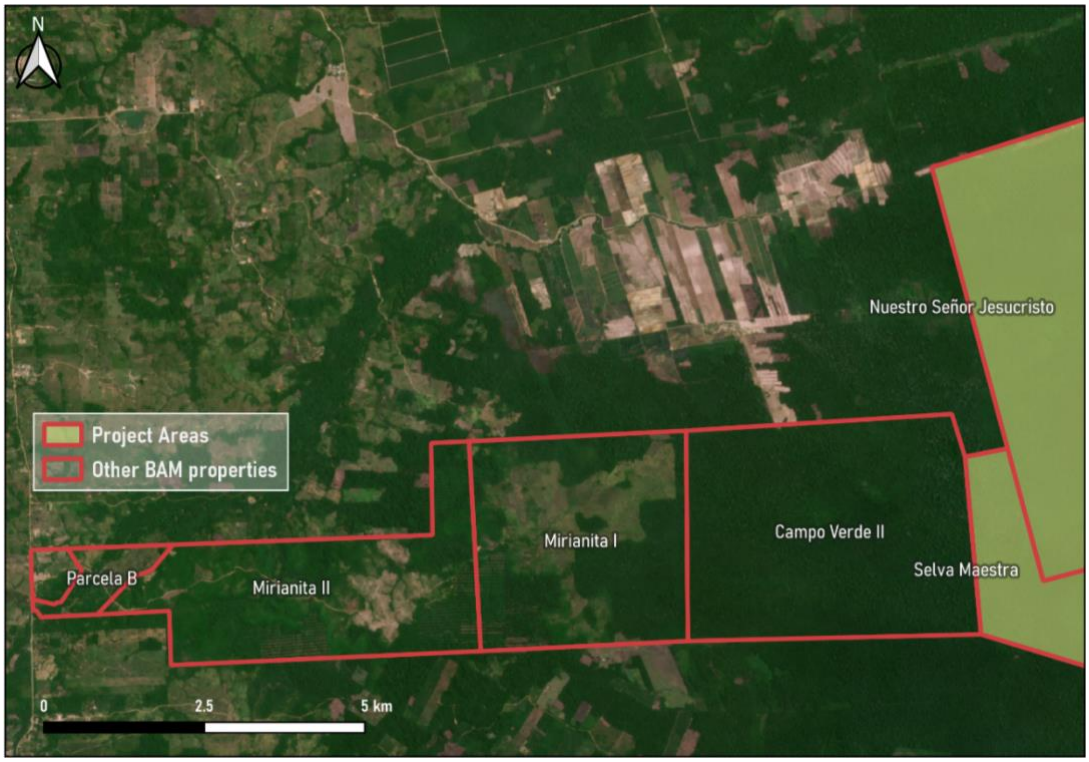

Figure 27. Other properties of the same agent of deforestation

3.1.4.3 Rate of Deforestation

The deforestation rates ($D\%_{planned,i}$) are defined according to valid verifiable plans (Annex 27 and Annex 28). These plans show the area to be deforested in a spatially explicit manner and an associated execution schedule. Table 3.7 presents the planned deforestation rates in each PAI in the baseline scenario, in accordance with the management plans.

Table 23. Description of the planned deforestation area for each PAI

PAI	Name	Planned deforestation area (ha)
1	JCC - Nuestro Señor Jesucristo	8 049 ha, where 5 000 of them represents the conversion from forest to croplands; and the rest (2 507), infrastructure development (including roads).
2	Selva Maestra	7 000 ha destined to be converted to pastures

3.1.4.4 Likelihood of Deforestation

The likelihood of deforestation (L-Di) is set to be 100%, according to the VMD0006, section 1.4 criteria. The private properties under BAM scope are not under government control and are not zoned for deforestation.

3.1.4.5 Risk of Abandonment

The risk of abandonment is considered based on proxy areas by the same class of deforestation agent in a 10-year interval. Information from the "Geobosques" portal, provided by the Ministry of the Environment of Peru, was used, which shows the deforestation produced in the project area on an annualized basis. In this way, the changes produced in the last 10 years, starting in 2011, were observed.

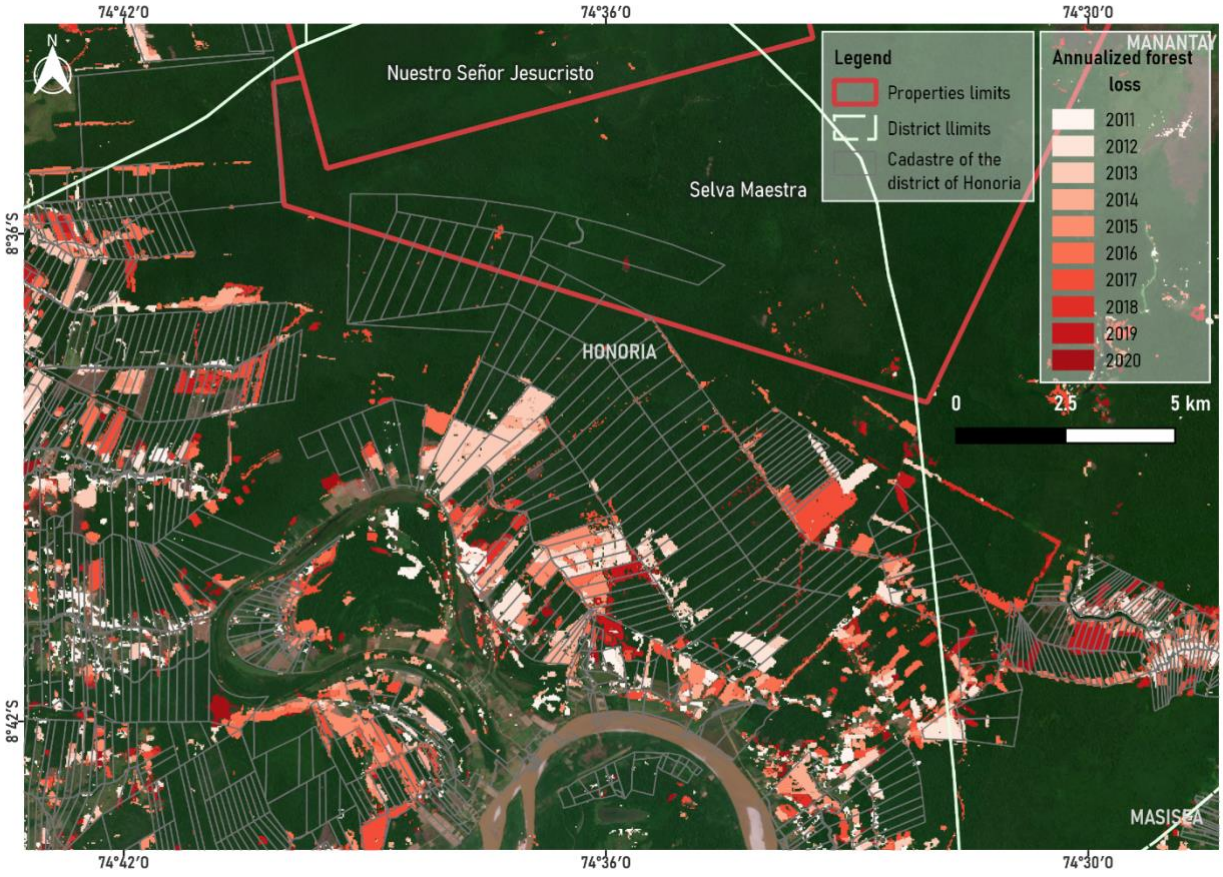

Figure 28. Deforested areas in the last 10 years

Depending on the level of deforestation, the areas indicated in Table 3.8 were chosen, these properties that suffered deforestation were analyzed through a visual evaluation using the temporal tool of Google Earth Pro and at the same time, a base image of November 2021 (provided by the Planet–NICFI service), to verify that the chosen areas are still deforested. The properties selected are visualized in Figure 3.7

Table 24. Properties selected to assess the risk of abandonment

Nº	Property	Area (ha)	Centroid – UTM 18S – E (m)	Centroid – UTM 18S – N (m)	Deforestation years
1	El Garzalito	60.65	540,603	9,044,825	2013
2	Tres Hermanitas	54.24	540,882	9,044,646	2013
3	Fundo Liberia	66.55	541,189	9,044,504	2013
4	Rosalina	83.64	542,350	9,045,677	2013 - 2014
5	Fundo Victoria	48.40	542,218	9,044,980	2013 - 2014
6	Fundo Vencedor	43.17	541,800	9,042,638	2011 - 2018
7	Fundo Silva	37.70	543,663	9,042,991	2015 - 2016
8	Los 2 Hermanitos	48.97	543,754	9,042,749	2013 - 2015
9	Elver	48.34	543,915	9,042,500	2012 - 2016
10	Fundo Paraiso	46.10	544,108	9,042,265	2012 - 2019
11	Los 5 Hermanos	46.28	544,286	9,042,030	2015 - 2019

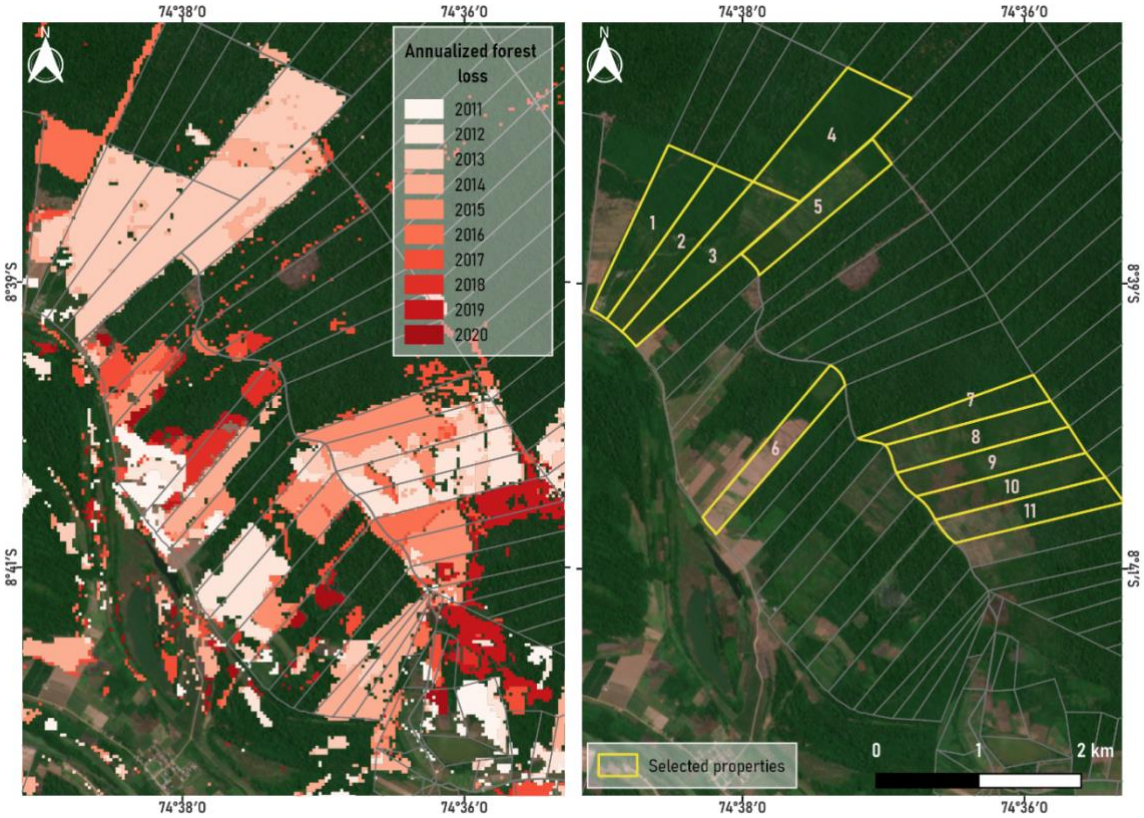

Figure 29. Properties selected with the required criteria**.**

By 2021, the selected properties were still deforested, which can be corroborated with the right image of Figure 3.7 therefore there is no risk of abandonment since the main change in land use is towards agricultural land, which generates high returns due to the proximity to a main city (Pucallpa) and the presence of a road network that facilitates the movement of goods, which can also be seen with the strong anthropic pressure of the adjoining properties (Figure 3.6).

3.1.5 Additionality

To develop this section, we have applied the "tool for the demonstration and assessment of additionality in VCS agriculture, forestry, and other land use (AFOLU) project activities" (VT 0001). Version 3.0 from February 2012, Sectoral Scope 14.

3.1.5.1 Identification of Alternative Land Use Scenarios to the AFOLU Project Activity

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

a) The most credible land use scenarios within the project area, according to the approved tool, are the following:

   i. Continuation of the pre-project land use, which is an area under increasing threat of deforestation and forest degradation, associated to illegal logging, as was confirmed during field assessment and different control and surveillance reports.
   ii. Project activity without being registered as a VCS project, which means, the conservation of the forest area within the boundaries of the project area
   iii. Legal land use change from the current disturbed forest area toward an establishment of the following agroindustry crops and cattle ranching:
      a. Pastures for grazing: 7.000 ha
      b. Palm oil: 2.000 ha
      c. Camu camu: 1.000 ha
      d. Higuerilla: 2.000 ha
      e. Infrastructure: 2.507 ha

   These projected areas for these activities are obtained from official documents that Ministry of Agriculture approved to BAM for legal land use change.

b) Alternative i: This scenario has been occurring in the last decades, not only within the project area but in the surrounding zone. Illegal logging is very frequent. In addition, deforestation rate in the project zone confirms that this scenario is very extended.

Alternative ii: This scenario is credible as the project proponent is committed to protect the existing forests within the project area with the incomes expected to be obtained from the sale of carbon credits.

Alternative iii: This scenario is credible for legal reasons. When the project proponent purchased the lands from the Ministry of Agriculture, it was sold with the condition that part of the area was converted in plantations of oil palm, camu camu, higuerilla and pastures for grazing. 14.507 hectares of forests are authorized to be converted in agrarian lands.

c) Alternative i: Continuation of the pre-project land use (deforestation and forest degradation)
Alternative ii: Project activity without being registered as a VCS project
Alternative iii: Legal land use change toward agroindustry crops and cattle ranching

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

a)

i. Alternative i: is not in compliance with Peruvian legal framework as invasions, illegal logging and other unsustainable activities are not authorized by the Peruvian Government.
Alternative ii: is in compliance with Peruvian legal framework even though the legal framework does not enforce to maintain the forest cover in forest areas classified by its best use capacity as agrarian or pasture lands, it does not forbid to maintain the forest cover in those areas.
Alternative iii: is in compliance as there are official approvals of the Ministry of Agriculture that authorizes to implement the activities that characterize this scenario or alternative, as may be seen in Annex 21.

ii. Even though the Alternative i is not in conformance with legal framework, it has been demonstrated that these practices (deforestation and forest degradation) are widespread in the project zone while the laws designed to protect the forest heritage do not have the needed governance to be enforced.
The project is located in the districts of Campo Verde and Manantay, province of Coronel Portillo, Region Ucayali and in the district of Honoria, province of Puerto Inca, Region Huánuco.
The percentage of deforested area in these three districts is detailed in the following table:

Table 25. Percentage of deforested area in three districts

District	Total Area (in ha)	Non-forest area (in ha)	% of non-forest area

Campo Verde	129,247	104,332	81%
Honoria	94,854	50,175	57%
Manantay	64,444	23,482	45%
TOTAL	288,545	177,989	65%

This represents more than 30%, which is the threshold defined by the methodological tool. It is even more dramatic as around ¼ of the remnant forest are the forest that are currently being protected by this proposed REDD project.

The map below is very illustrative about how the project area is the last barrier for the illegal expansion of agrarian frontier.

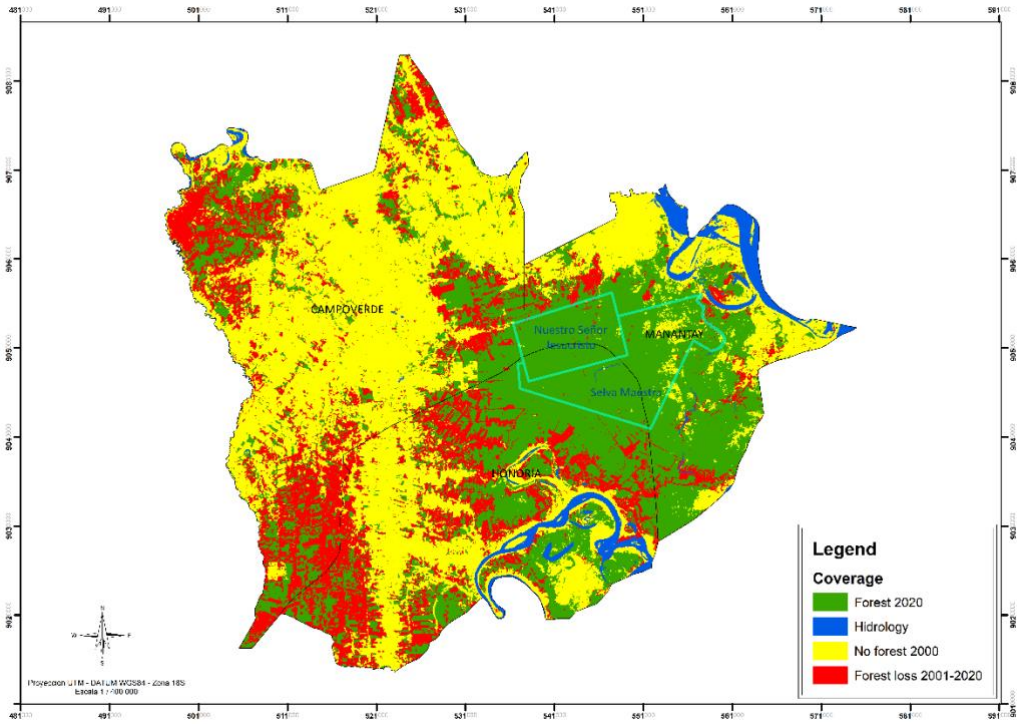

Figure 30. Project area and illegal expansion of agrarian frontier.

Regarding forest degradation, the level of extension is more difficult to measure. According to research[12] from the internationally acknowledged research center CIFOR, 62% of the harvested timber is illegal:

[12] Mejía E, Cano W, de Jong W, Pacheco P, Tapia S y Morocho J. 2015. Actores, aprovechamiento de madera y mercados en la Amazonía peruana. Documentos Ocasionales 145. Bogor, Indonesia: CIFOR

- *"Esta madera es legalizada utilizando varios mecanismos de blanqueo. Según nuestros datos, la madera movilizada de forma totalmente informal alcanza un 62% del total registrado."*

OSINFOR, the official forest supervision entity, estimates in 67% the timber harvested illegally[13] and the previous years, this percentage was very similar: 68% in 2016, 89% in 2015 and 89% in 2014. This clearly ratifies that neither legislation prohibiting deforestation nor prohibiting forest degradation is effectively enforced in the zone.

iii. Based on previous analysis (i and ii), no one of the three alternatives identified need to be removed at this step.

b) Outcome of Sub-step 1b: List of plausible alternative land use scenarios to the VCS AFOLU project activity that are in compliance with mandatory legislation and regulations taking into account their enforcement in the region or country and EB decisions on national and/or sectoral policies and regulations.

Alternative i: Continuation of the pre-project land use (deforestation and forest degradation)

Alternative ii: Project activity without being registered as a VCS project

Alternative iii: Legal land use change toward agroindustry crops and cattle ranching

The list is not empty neither contains only one land use scenario than the proposed VCS AFOLU project activity.

Sub-step 1c. Selection of 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

Sub-step 2a. Determine appropriate analysis method

The project does not expect to generate other incomes different than the carbon sales, as the project pretends to not sell the property to third parties for agroindustry conversion nor they pretend to deforest, as legally authorized, to install agrarian crops (oil palm, higuerilla or camu camu) or large-scale grazing.

In that sense, Option I (simple cost analysis) must be used in Step 2.

Sub-step 2b. – Option I. Apply simple cost analysis

According to the budget of the project, the estimated expenses are 3.3 million dollars, meanwhile, as the project plans to opt for conservation purposes instead of authorized land use change to agrarian

[13] https://elcomercio.pe/peru/60-madera-movilizada-peru-2017-tuvo-origen-ilegal-noticia-558040-noticia/

crops, neither agrarian nor forest incomes are expected to occur as the project proponent does not plan to harvest any forest resource (timber or NTFP).

Only if a VCS project is implemented, carbon incomes could be received.

Table 26. Income Flows

	Total	Year 0	Year 1	Year 2	Year 3
Regular expenses (Overhead)	1,378,308	182,924	397,238	399,073	399,073
Salaries	958,679	149,680	269,666	269,666	269,666
Management Support	419,629	33,245	127,571	129,407	129,407
Non-regular expenses	122,065	0	70,696	47,523	3,846
Office equipment	30,744	0	14,974	11,923	3,846
Vehicles and field equipment	91,321	0	55,721	35,600	0
Project Component Expenses	1,836,877	317,076	432,067	498,404	589,331
Design, implementation and verifications	339,250	143,550	95,700	0	100,000
Climate	491,297	143,674	131,726	107,949	107,949
Strategies definition	5,456	5,456	0	0	0
Land security system	352,944	128,205	74,954	74,892	74,892
Partnerships for prevention and control of threats	738	0	246	246	246
Infrastructure and equipment	124,013	8,174	52,392	31,723	31,723
Platform V&CF and fire control	5,069	1,838	3,108	62	62
Forest Sustainable Management	3,077	0	1,026	1,026	1,026
Biodiversity	419,851	1,067	153,800	129,992	134,992
Restoration and silviculturales activities	61,067	1,067	15,000	20,000	25,000
Characterization, zoning and science program	355,154	0	137,590	108,782	108,782
Partnerships for prevention and control of threats	1,200	0	400	400	400
Training and sensitization on biodiversity conservation	2,431	0	810	810	810
Community	586,478	28,785	50,841	260,463	246,390
Improvement of socioeconomic livelihood of stakeholders	2,354	2,169	62	62	62
Projects of improvement of basic services and infrastructure	456,006	16,108	45,190	204,391	190,318
Capacities development to implement sustainable productive chains	9,813	5,413	1,467	1,467	1,467
Projects of sustainable productive chains	117,221	4,010	4,123	54,544	54,544
Strengthening of communications with the stakeholders	1,085	1,085	0	0	0
TOTAL	3,337,250	500,000	900,000	945,000	992,250

The proposed VCS AFOLU project produces no financial benefits other than VCS related income, then the tool requests to proceed to Step 4 (Common practice analysis).

STEP 4. Common practice analysis

There is no precedent of forest lands authorized to be converted in agrarian lands that voluntarily is decided to keep as forest lands to implement a forest conservation project.

Even more, according to the Peruvian forestry and wildlife law, in private lands with forest cover, 30% of the forest cover must be kept (art. 38 of Law 29763). It means that the project could clear 15.563 ha of forest land, according to the law, which is higher than the planned deforestation area (14.507 ha) of the project, authorized by the Ministry of Agriculture.

For all these considerations, it may be concluded that the project is additional.

3.1.6 Methodology Deviations

No methodology deviations are reported.

3.2 Quantification of GHG Emission Reductions and Removals

3.2.1 Baseline Emissions

The baseline emissions calculated in the project are based on the conversion of forest to croplands (oil palm, *Myrciaria dubia* "Camu camu", and *Ricinus communis* "Higuerilla").

Considering the total area of the two land parcels (20,779 hectares), the permitted and planned conversion area is 14,507 ha. Accordingly, the planned deforestation methodology (APD) is applied to the conversion area. The ex-ante stratification is based on ancillary data as described in VMD0016 (X-STR) v 1.2. The areas of strata delineated prior to allocation of inventory plots using stratified sampling are known exactly and require no accuracy assessment.

The stratification was based on forest inventories conducted in 2006 and 2012 for the two project areas, these inventories worked with multiple representations of ecozones, depending on the vegetation present. However, given that the carbon values to be worked on (Table 3.13) represent the Peruvian lowland forest in general (which includes a large part of the ecozones of the Peruvian Amazon), it was only necessary to highlight two different zones of this large group, the ecozones belonging to characteristic wetlands of the Peruvian jungle, the "aguajales". It was necessary to highlight this class to the detriment of the others, due to its high carbon levels (especially in the SOC compartment), and the dominance of a palm tree (*Mauritia flexuosa*) above the presence of trees. In this way, the ecozones were regrouped according to three defined classes, described in Table 3.9.

Table 27. Ecozone stratification of each Project Area**.**

PAI name	Stratum	Ecozone/stratum description	Area (ha)	Percentage (%)
JCC - Nuestro Señor Jesucristo	1	Lowland Tropical Rainforest	4,718.27	58.61
	2	Palm and Mixed Palm Swamp Forest	703.85	8.74
	3	*Mauritia flexuosa* dominated palm swamp	2,449.99	30.44
	4	Other lands (non-forest)	177.76	2.21
	Total		**8,049.87**	**100.00**

PAI name	Stratum	Ecozone/stratum description	Area (ha)	Percentage (%)
Selva Maestra	1	Lowland Tropical Rainforest	11,862.05	83.68
	2	Palm and Mixed Palm Swamp Forest	985.37	6.95
	3	*Mauritia flexuosa* dominated palm swamp	22.76	0.16
	4	Other lands (non-forest)	1,305.96	9.21
	Total		**14,176.14**	**100.00**

On the 2006/2012 ecozone map, the forest/non-forest map was intersected in order to eliminate the non-forest areas existing in 2020. In this way, the remaining forest area per ecozone can be calculated and shown in Figure 3.8.

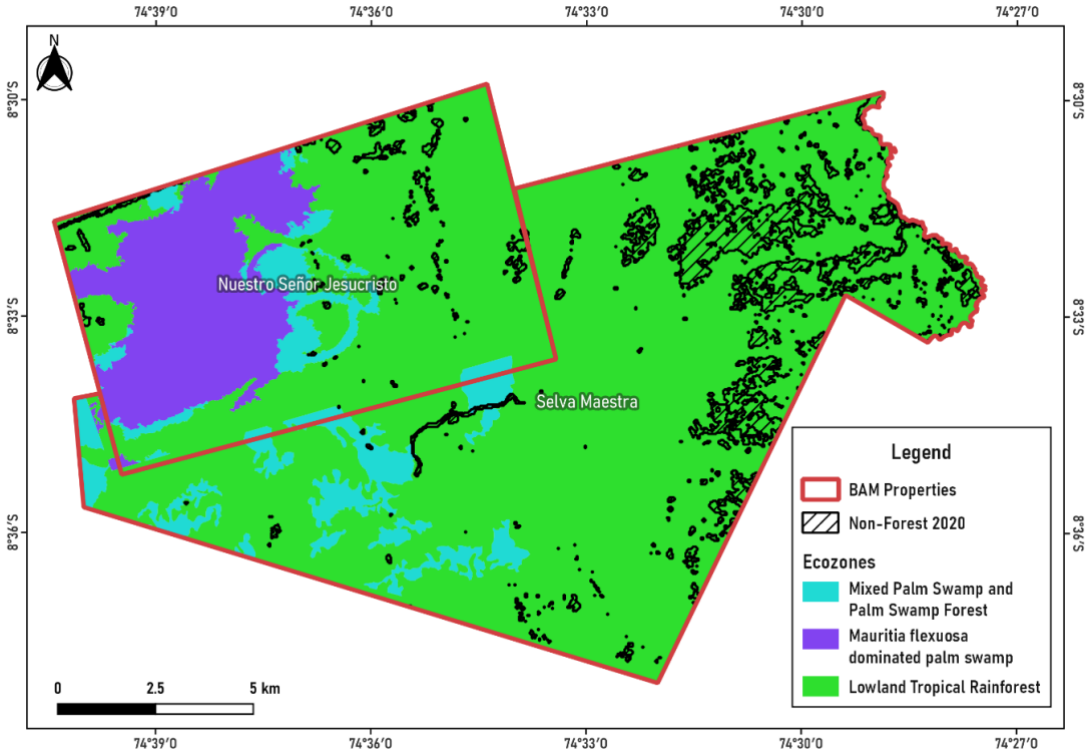

Figure 31. Ecozone stratification and deforested areas by 2020

3.2.1.1 Projected annual proportion of land that will be deforested

The deforestation rate for the baseline scenario of the PA1 and PA2 was calculated based on the values given by the "Technical Economic Feasibility Study Agro-industrial Exploitation" (Annex 27) and "File 7698 of the Special Project for Land Titling and Rural Cadaster" (Annex 28) revised. The annual area of baseline planned deforestation ($AA_{planned,i,t}$) is calculated according to VMD0006 BL-PL v1.3 equation 5

Equation 3.1. Annual area of baseline planned deforestation

$$AA_{planned,i,t} = \left(A_{planned,i} * D\%_{planned,i,t}\right) * L - D_i$$

$AA_{planned,i,t}$	Annual area of baseline planned deforestation for stratum i at time t; ha.
$D\%_{planned,i,t}$	Projected annual proportion of land that will be deforested in stratum i during year t.
$A_{planned,i}$	Total area of planned deforestation over the baseline period for stratum i; ha.
$-D_i$	Likelihood of deforestation for stratum i; %
i	1, 2, 3, … M strata

The total area of planned deforestation over the baseline period ($A_{planned,i,t}$), in each PAI (Table 3.10), is determined according to what is recognized as an immediate site-specific threat of deforestation, which, in its turn, is a function of the legal permissibility for deforestation, the suitability of the project area for conversion to alternative non-forest land use, the government approval for deforestation and a management plan for deforesting the project area. The projected annual proportion of land that will be deforested in stratum i during year t. (D%planned,i,t) is determined according to the provisions of the land title granted by the Ministry of Agriculture for "Selva Maestra" and by the Technical Economic Feasibility Study Agro-industrial Exploitation for "Nuestro Señor Jesucristo" (Annex 21, 27 and 28). These authorizations should be understood as verifiable plans where the actual annual deforestation proportion is known and documented. As only private areas are under this project's scope, L-Di is set to be 100%, according to the VMD0006 v1.3 requirements.

Table 28. Projected areas to be deforested in each PA, per year**.**

PAI	Selva Maestra (ha)	JCC - Nuestro Señor Jesucristo (ha)				
Conversion to:	Pastures	Oil palm	Camu camu	Higuerilla	Infrastructure	Total JCC
Year 1	600	-	-	-	1000	1000
Year 2	600	-	-	-	1000	1000
Year 3	600	-	-	-	507	507
Year 4	600	500	250	500	-	1250
Year 5	600	500	250	500	-	1250
Year 6	600	500	250	500	-	1250
Year 7	600	500	250	500	-	1250
Year 8	600	-	-	-	-	-
Year 9	600	-	-	-	-	-
Year 10	600	-	-	-	-	-
Year 11	600	-	-	-	-	-
Year 12	400	-	-	-	-	-
Total	7,000	2,000	1,000	2,000	2,507	7507

Because the deforestation plans do not detail the distribution of hectares to be deforested by stratum, a conservative solution was chosen to allocate the area to be deforested in proportion to the

percentage of forest per ecozone. In this way, the 600 hectares per year in the Selva Maestra sector were distributed proportionally over the 3 ecozones, until the planned 700 hectares were reached (Table 3.11). The same was done for the "Nuestro Señor Jesucristo" sector, where the 7507 hectares were distributed proportionally by stratum (Table 3.12).

Table 29. Planned area to be deforested by stratum (Selva Maestra)

Year	Selva Maestra			Total
	$AA_{planned,1,t}$ (ha) (Stratum 1)	$AA_{planned,2,t}$ (ha) (Stratum 2)	$AA_{planned,3,t}$ (ha) (Stratum 3)	$AA_{planned,i,t}$ (ha)
Year 1	553.00	45.94	1.06	600.00
Year 2	553.00	45.94	1.06	600.00
Year 3	553.00	45.94	1.06	600.00
Year 4	553.00	45.94	1.06	600.00
Year 5	553.00	45.94	1.06	600.00
Year 6	553.00	45.94	1.06	600.00
Year 7	553.00	45.94	1.06	600.00
Year 8	553.00	45.94	1.06	600.00
Year 9	553.00	45.94	1.06	600.00
Year 10	553.00	45.94	1.06	600.00
Year 11	553.00	45.94	1.06	600.00
Year 12	368.67	30.62	0.71	400.00
Total	6,451.69	535.94	12.38	7,000.00

Table 30. Planned area to be deforested by stratum (Nuestro Señor Jesucristo)

Year	JCC - Nuestro Señor Jesucristo			Total
	$AA_{planned,1,t}$ (ha) (Stratum 1)	$AA_{planned,2,t}$ (ha) (Stratum 2)	$AA_{planned,3,t}$ (ha) (Stratum 3)	$AA_{planned,i,t}$ (ha)
Year 1	599.37	89.41	311.22	1,000.00
Year 2	599.37	89.41	311.22	1,000.00
Year 3	303.88	45.33	157.79	507.00
Year 4	749.21	111.76	389.03	1,250.00
Year 5	749.21	111.76	389.03	1,250.00
Year 6	749.21	111.76	389.03	1,250.00
Year 7	749.21	111.76	389.03	1,250.00
Year 8	-	-	-	-
Year 9	-	-	-	-
Year 10	-	-	-	-

Year 11	-	-	-	-
Year 12	-	-	-	-
Total	4,499.44	671.21	2,336.36	7,507.00

3.2.1.2 Estimation of carbon stocks by carbon pools

To calculate baseline emissions, three carbon pools were considered: aboveground biomass (stems, branches, and foliage - AGB), belowground biomass (roots - BGB), as well as the organic carbon from the soil (SOC). Litter and deadwood pools were conservatively excluded, as allowed by methodology. The harvested wood products pool is not applicable since there are no predicted forest management activities related to logging and wood milling in the project.

Carbon forest values were extracted from literature sources, which involved documents prepared with data at the national level (Forest Reference Emission Levels, FREL), as well as institutional studies carried out for the study area (department of Ucayali), more details in the Forest values of AGB (C_{AB_tree}), BGB, (C_{BB_tree}), and totals ($C_{BSL,i}$) and the corresponding post-deforestation use carbon data ($C_{AB\_post,i}$; $C_{BB\_post,i}$; $C_{SOC\_post,i}$) are shown in Table 3.13.

Although the stratification allowed to recognize areas with peatlands (“aguajales”), it was decided that the SOC deposits should be treated conservatively as "shallow peat strata", and therefore considered as "mineral soil", according to VMD0016 v.1.2, in order to avoid overestimations since the true depth of the peat layers were not available. For the SOC values, point observations of this compartment in similar wetlands for the same zone (Ucayali) as the project area. Only for the case of root biomass (BGC) de *Mauritia flexuosa*, a root-shoot expression was used, coming from the “Pacaya Samiria” National Reserve, also located in the Amazon, but in the department of Loreto.

Table 31. Carbon pools considered for calculation of the baseline scenario (pre-deforestation**)**

Forest: Lowland Tropical Rainforest				
Parameter	**Carbon pool**	**Mean Value ($tCO_2e\ ha^{-1}$)**	**CI (95%)**	**Source**
$C_{AB.\ pre,i}$	Aboveground carbon (AGC)	427.07	15.21	FREL 2021 https://redd.unfccc.int/files/nref_peru_final.pdf
$C_{BB.\ pre,i}$	Belowground biomass (BGC)	195.44	6.39	FREL 2021
$C_{SOC.\ pre,i}$	Soil organic carbon (SOC)	262.03	35.31	Cuellar & Salazar 2016 http://repositorio.inia.gob.pe/handle/20.500.12955/490
Total		884.54	38.97	
Forest: Mixed Palm Swamp and Palm Swamp				

Parameter	Carbon pool	Mean Value ($tCO_2e\ ha^{-1}$)	CI (95%)	Source
$C_{AB.\ pre,i}$	Aboveground carbon (AGC)	188.03	59.73	Garcia, Honorio & Del Castillo 2012 http://revistas.iiap.org.pe/index.php/foliaamazonica/article/view/43/80
$C_{BB.\ pre,i}$	Belowground biomass (BGC)	76.07	6.35	Freitas *et al.* 2006
$C_{SOC.\ pre,i}$	Soil organic carbon (SOC)	725.49	327.51	Garcia, Honorio & Del Castillo 2012
Total		989.59	332.40	
Forest: *Mauritia flexuosa* dominated palm swamp				
Parameter	**Carbon pool**	**Mean Value ($tCO_2e\ ha^{-1}$)**	**CI (95%)**	**Source**
$C_{AB.\ pre,i}$	Aboveground carbon (AGC)	353.21	55.59	Garcia, Honorio & Del Castillo 2012
$C_{BB.\ pre,i}$	Belowground biomass (BGC)	142.90	11.94	Freitas *et al.* 2006
$C_{SOC.\ pre,i}$	Soil organic carbon (SOC)	725.49	327.51	Garcia, Honorio & Del Castillo 2012
Total		1,221.60	332.40	

Table 32. Carbon pools considered for calculation of the post-deforestation use

Pastures				
Parameter	**Carbon pool**	**Mean Value ($tCO_2e\ ha^{-1}$)**	**CI (95%)**	**Source**
$C_{AB.\ post,i}$	Aboveground carbon (AGC)	78.41	75.48	Cuellar & Salazar 2016
$C_{BB.\ post,i}$	Belowground biomass (BGC)	13.04	10.44	Cuellar & Salazar 2016
$C_{SOC.\ post,i}$	Soil organic carbon (SOC)	260.35	55.50	Cuellar & Salazar 2016
Total		95.95	33.38	
Oil palm				
Parameter	**Carbon pool**	**Mean Value ($tCO_2e\ ha^{-1}$)**	**CI (95%)**	**Source**
$C_{AB.\ post,i}$	Aboveground carbon (AGC)	52.74	11.98	Cuellar & Salazar 2016
$C_{BB.\ post,i}$	Belowground biomass (BGC)	17.47	9.45	Cuellar & Salazar 2016
$C_{SOC.\ post,i}$	Soil organic carbon (SOC)	263.53	40.86	Cuellar & Salazar 2016
Total		91.02	11.89	

Croplands: Camu camu				
Parameter	**Carbon pool**	**Mean Value ($tCO_2e\ ha^{-1}$)**	**CI (95%)**	**Source**
$C_{AB.\ post,i}$	Aboveground carbon (AGC)	59.58	25.90	Díaz-Córdova et al. 2015 https://www.researchgate.net/publication/316711165_ALMACENAMIENTO_DE_CARBONO_EN_INDIVIDUOS_DE_CAMU_CAMU_ARBUSTIVO_Myrciaria_dubia_HBK_Mc_Vaugh_PLANTADOS_EN_EL_CENTRO_EXPERIMENTAL_SAN_MIGUEL_IQUITOS_PERU
$C_{BB.\ post,i}$	Belowground biomass (BGC)	9.32	3.29	Díaz-Córdova et al. 2015
$C_{SOC.\ post,i}$	Soil organic carbon (SOC)	261.95	41.12	Cuellar & Salazar 2016
Total		330.85	48.71	
Croplands: Higuerilla				
Parameter	**Carbon pool**	**Mean Value ($tCO_2e\ ha^{-1}$)**	**CI (95%)**	**Source**
$C_{AB.\ post,i}$	Aboveground carbon (AGC)	12.42	5.19	Valdez-Rodriguez et al. 2018 http://cienciasagricolas.inifap.gob.mx/index.php/agricolas/article/view/734/1807
$C_{BB.\ post,i}$	Belowground biomass (BGC)	3.20	1.10	Valdez-Rodriguez et al. 2018
$C_{SOC.\ post,i}$	Soil organic carbon (SOC)	261.95	41.12	Cuellar & Salazar 2016
Total		277.57	41.46	

It was decided to conservatively omit SOC changes in the transitions from lowland forest to crops and infrastructure, because the difference was spurious, only for the cases of conversion of wetlands to other uses was the change considered. For the transition from wetlands to infrastructure, a factor of 0.8 (IPCC 2006) for SOC was used, where the remaining carbon in infrastructure areas was conservatively estimated to be 80% of the Lowland Tropical Rainforest SOC pool (262.03 *0.8 = 209.624).

Table 33. Calculation of the differences between pre and post deforestation uses

Forest: Lowland Tropical Rainforest to Pastures		
Parameter	**Carbon pool**	**Value ($tCO_2e\ ha^{-1}$)**
$\Delta C_{AB.,i} = C_{AB.\ pre,i} - C_{AB.\ post,i}$	Aboveground carbon (AGC)	348.66
$\Delta C_{BB.,i} = C_{BB.\ pre,i} - C_{BB.\ post,i}$	Belowground biomass (BGC)	182.40

$\Delta C_{SOC.,i} = C_{SOC.\ pre,i} - C_{SOC.\ post,i}$	Soil organic carbon (SOC)	Set to 0
Total		531.06
Forest: Mixed Palm Swamp and Palm Swamp to Pastures		
Parameter	**Carbon pool**	**Value ($tCO_2e\ ha^{-1}$)**
$\Delta C_{AB.,i} = C_{AB.\ pre,i} - C_{AB.\ post,i}$	Aboveground carbon (AGC)	109.62
$\Delta C_{BB.,i} = C_{BB.\ pre,i} - C_{BB.\ post,i}$	Belowground biomass (BGC)	63.03
$\Delta C_{SOC.,i} = C_{SOC.\ pre,i} - C_{SOC.\ post,i}$	Soil organic carbon (SOC)	465.14
Total		637.79
Forest: *Mauritia flexuosa* dominated palm swamp to Pastures		
Parameter	**Carbon pool**	**Value ($tCO_2e\ ha^{-1}$)**
$\Delta C_{AB.,i} = C_{AB.\ pre,i} - C_{AB.\ post,i}$	Aboveground carbon (AGC)	274.8
$\Delta C_{BB.,i} = C_{BB.\ pre,i} - C_{BB.\ post,i}$	Belowground biomass (BGC)	129.86
$\Delta C_{SOC.,i} = C_{SOC.\ pre,i} - C_{SOC.\ post,i}$	Soil organic carbon (SOC)	465.14
Total		869.80
Forest: Lowland Tropical Rainforest to Oil Palm		
Parameter	**Carbon pool**	**Value ($tCO_2e\ ha^{-1}$)**
$\Delta C_{AB.,i} = C_{AB.\ pre,i} - C_{AB.\ post,i}$	Aboveground carbon (AGC)	374.33
$\Delta C_{BB.,i} = C_{BB.\ pre,i} - C_{BB.\ post,i}$	Belowground biomass (BGC)	177.97
$\Delta C_{SOC.,i} = C_{SOC.\ pre,i} - C_{SOC.\ post,i}$	Soil organic carbon (SOC)	Set to 0
Total		522.30
Forest: Mixed Palm Swamp and Palm Swamp to Oil Palm		
Parameter	**Carbon pool**	**Value ($tCO_2e\ ha^{-1}$)**
$\Delta C_{AB.,i} = C_{AB.\ pre,i} - C_{AB.\ post,i}$	Aboveground carbon (AGC)	135.29
$\Delta C_{BB.,i} = C_{BB.\ pre,i} - C_{BB.\ post,i}$	Belowground biomass (BGC)	58.6
$\Delta C_{SOC.,i} = C_{SOC.\ pre,i} - C_{SOC.\ post,i}$	Soil organic carbon (SOC)	461.96
Total		655.85
Forest: *Mauritia flexuosa* dominated palm swamp to Oil Palm		
Parameter	**Carbon pool**	**Value ($tCO_2e\ ha^{-1}$)**
$\Delta C_{AB.,i} = C_{AB.\ pre,i} - C_{AB.\ post,i}$	Aboveground carbon (AGC)	300.47
$\Delta C_{BB.,i} = C_{BB.\ pre,i} - C_{BB.\ post,i}$	Belowground biomass (BGC)	125.43

$\Delta C_{SOC.,i} = C_{SOC.\ pre,i} - C_{SOC.\ post,i}$	Soil organic carbon (SOC)	461.96
Total		887.86
Forest: Lowland Tropical Rainforest to Camu Camu		
Parameter	**Carbon pool**	**Value ($tCO_2e\ ha^{-1}$)**
$\Delta C_{AB.,i} = C_{AB.\ pre,i} - C_{AB.\ post,i}$	Aboveground carbon (AGC)	367.49
$\Delta C_{BB.,i} = C_{BB.\ pre,i} - C_{BB.\ post,i}$	Belowground biomass (BGC)	186.12
$\Delta C_{SOC.,i} = C_{SOC.\ pre,i} - C_{SOC.\ post,i}$	Soil organic carbon (SOC)	Set to 0
Total		553.61
Forest: Mixed Palm Swamp and Palm Swamp to Camu Camu		
Parameter	**Carbon pool**	**Value ($tCO_2e\ ha^{-1}$)**
$\Delta C_{AB.,i} = C_{AB.\ pre,i} - C_{AB.\ post,i}$	Aboveground carbon (AGC)	128.45
$\Delta C_{BB.,i} = C_{BB.\ pre,i} - C_{BB.\ post,i}$	Belowground biomass (BGC)	66.75
$\Delta C_{SOC.,i} = C_{SOC.\ pre,i} - C_{SOC.\ post,i}$	Soil organic carbon (SOC)	463.54
Total		658.74
Forest: *Mauritia flexuosa* dominated palm swamp to Camu Camu		
Parameter	**Carbon pool**	**Value ($tCO_2e\ ha^{-1}$)**
$\Delta C_{AB.,i} = C_{AB.\ pre,i} - C_{AB.\ post,i}$	Aboveground carbon (AGC)	293.63
$\Delta C_{BB.,i} = C_{BB.\ pre,i} - C_{BB.\ post,i}$	Belowground biomass (BGC)	133.58
$\Delta C_{SOC.,i} = C_{SOC.\ pre,i} - C_{SOC.\ post,i}$	Soil organic carbon (SOC)	463.54
Total		890.75
Forest: Lowland Tropical Rainforest to Higuerilla		
Parameter	**Carbon pool**	**Value ($tCO_2e\ ha^{-1}$)**
$\Delta C_{AB.,i} = C_{AB.\ pre,i} - C_{AB.\ post,i}$	Aboveground carbon (AGC)	414.65
$\Delta C_{BB.,i} = C_{BB.\ pre,i} - C_{BB.\ post,i}$	Belowground biomass (BGC)	192.24
$\Delta C_{SOC.,i} = C_{SOC.\ pre,i} - C_{SOC.\ post,i}$	Soil organic carbon (SOC)	Set to 0
Total		606.89
Forest: Mixed Palm Swamp and Palm Swamp to Higuerilla		
Parameter	**Carbon pool**	**Value ($tCO_2e\ ha^{-1}$)**
$\Delta C_{AB.,i} = C_{AB.\ pre,i} - C_{AB.\ post,i}$	Aboveground carbon (AGC)	175.61
$\Delta C_{BB.,i} = C_{BB.\ pre,i} - C_{BB.\ post,i}$	Belowground biomass (BGC)	72.87

$\Delta C_{SOC.,i} = C_{SOC.\ pre,i} - C_{SOC.\ post,i}$	Soil organic carbon (SOC)	463.54
Total		712.02
Forest: *Mauritia flexuosa* dominated palm swamp to Higuerilla		
Parameter	**Carbon pool**	**Value ($tCO_2e\ ha^{-1}$)**
$\Delta C_{AB.,i} = C_{AB.\ pre,i} - C_{AB.\ post,i}$	Aboveground carbon (AGC)	340.79
$\Delta C_{BB.,i} = C_{BB.\ pre,i} - C_{BB.\ post,i}$	Belowground biomass (BGC)	139.7
$\Delta C_{SOC.,i} = C_{SOC.\ pre,i} - C_{SOC.\ post,i}$	Soil organic carbon (SOC)	463.54
Total		944.03
Forest: Lowland Tropical Rainforest to Infrastructure		
Parameter	**Carbon pool**	**Value ($tCO_2e\ ha^{-1}$)**
$\Delta C_{AB.,i} = C_{AB.\ pre,i} - C_{AB.\ post,i}$	Aboveground carbon (AGC)	427.07
$\Delta C_{BB.,i} = C_{BB.\ pre,i} - C_{BB.\ post,i}$	Belowground biomass (BGC)	195.44
$\Delta C_{SOC.,i} = C_{SOC.\ pre,i} - C_{SOC.\ post,i}$	Soil organic carbon (SOC)	Set to 0
Total		622.51
Forest: Mixed Palm Swamp and Palm Swamp to Infrastructure		
Parameter	**Carbon pool**	**Value ($tCO_2e\ ha^{-1}$)**
$\Delta C_{AB.,i} = C_{AB.\ pre,i} - C_{AB.\ post,i}$	Aboveground carbon (AGC)	188.03
$\Delta C_{BB.,i} = C_{BB.\ pre,i} - C_{BB.\ post,i}$	Belowground biomass (BGC)	76.07
$\Delta C_{SOC.,i} = C_{SOC.\ pre,i} - C_{SOC.\ post,i}$	Soil organic carbon (SOC)	518.49
Total		779.97
Forest: *Mauritia flexuosa* dominated palm swamp to Infrastructure		
Parameter	**Carbon pool**	**Value ($tCO_2e\ ha^{-1}$)**
$\Delta C_{AB.,i} = C_{AB.\ pre,i} - C_{AB.\ post,i}$	Aboveground carbon (AGC)	353.21
$\Delta C_{BB.,i} = C_{BB.\ pre,i} - C_{BB.\ post,i}$	Belowground biomass (BGC)	142.9
$\Delta C_{SOC.,i} = C_{SOC.\ pre,i} - C_{SOC.\ post,i}$	Soil organic carbon (SOC)	515.87
Total		1,011.98

3.2.1.3 Estimation of carbon stocks changes and GHG emissions

Equation 3.2 is applied to calculate the carbon stock changes and GHG emissions in the baseline scenario ($\Delta C_{BSL,i,t}$).

Equation 3.2. Equation for estimating carbon stock changes in the baseline scenario:

$$\Delta C_{BSL,i,t} = AA_{planned,i,t} * (\Delta C_{ABtree,i}) + \sum_{t-10}^{t} \left(AA_{planned,i,t} * (\Delta C_{BBtree,i}) * \frac{1}{10}\right) + \sum_{t-20}^{t} (AA_{planned,i,t} * (\Delta C_{SOC,i}) * \frac{1}{20})$$

The first part of Equation 3.2 corresponds to the carbon stock changes of AGC from replacing forest to pasture/crops (baseline). In turn, the second refers to the emissions from root decomposition in a 10-year lifespan. The third refers to emissions from soil organic carbon in a 20-year lifespan. Carbon stock changes, distributed by year and by carbon pool, are presented in Table 3.16.

Table 34. Carbon stock changes, distributed by year and by carbon pool

Year	SELVA MAESTRA				NUESTRO SEÑOR JESUCRISTO				ΔCBSL,i,t
	AGC	BGC	SOC	Subtotal	AGC	BGC	SOC	Subtotal	
Year 1	198,139.43	10,389.99	1,093.04	209,622.46	382,710.28	16,841.53	10,333.69	409,885.51	619,507.97
Year 2	198,139.43	20,779.98	2,186.08	221,105.49	382,710.28	33,683.07	20,667.38	437,060.73	658,166.22
Year 3	198,139.43	31,169.97	3,279.11	232,588.52	194,034.11	42,221.73	25,906.56	262,162.40	494,750.92
Year 4	198,139.43	41,559.96	4,372.15	244,071.54	1,279,237.05	101,628.16	60,687.84	1,441,553.05	1,685,624.59
Year 5	198,139.43	51,949.95	5,465.19	255,554.57	1,279,237.05	161,034.60	95,469.12	1,535,740.76	1,791,295.33
Year 6	198,139.43	62,339.94	6,558.23	267,037.60	1,279,237.05	220,441.03	130,250.39	1,629,928.47	1,896,966.07
Year 7	198,139.43	72,729.93	7,651.27	278,520.63	1,279,237.05	279,847.47	165,031.67	1,724,116.19	2,002,636.81
Year 8	198,139.43	83,119.92	8,744.30	290,003.65		279,847.47	165,031.67	444,879.14	734,882.79
Year 9	198,139.43	93,509.91	9,837.34	301,486.68		279,847.47	165,031.67	444,879.14	746,365.82
Year 10	198,139.43	103,899.90	10,930.38	312,969.71		279,847.47	165,031.67	444,879.14	757,848.85
Year 11	198,139.43	103,899.90	12,023.42	314,062.75		263,005.94	165,031.67	428,037.61	742,100.35
Year 12	132,092.95	100,436.57	12,752.11	245,281.63		246,164.40	165,031.67	411,196.07	656,477.70
Year 13		90,046.58	12,752.11	102,798.69		237,625.74	165,031.67	402,657.41	505,456.10
Year 14		79,656.59	12,752.11	92,408.70		178,219.31	165,031.67	343,250.98	435,659.68
Year 15		69,266.60	12,752.11	82,018.71		118,812.87	165,031.67	283,844.54	365,863.25
Year 16		58,876.61	12,752.11	71,628.72		59,406.44	165,031.67	224,438.11	296,066.83
Year 17		48,486.62	12,752.11	61,238.73			165,031.67	165,031.67	226,270.40
Year 18		38,096.63	12,752.11	50,848.74			165,031.67	165,031.67	215,880.41
Year 19		27,706.64	12,752.11	40,458.75			165,031.67	165,031.67	205,490.42
Year 20		17,316.65	12,752.11	30,068.76			165,031.67	165,031.67	195,100.43
Total	2,311,626.71	1,205,238.84	186,909.50	3,703,775.03	6,076,402.86	2,798,474.70	2,653,758.36	11,528,635.93	15,232,410.94

Furthermore, since fire after deforestation is a common practice, the emissions from biomass burning shall be calculated. Following VMD0006, the Equation 3.3 is applied using parameters and values cited in Table 3.17, and the calculations are displayed in Table 3.18.

Equation 3.3. Equation to estimate emissions from biomass burning in the baseline scenario

$$GHG_{BSL-E,i,t} = E_{BiomassBurn,i,t} = \sum_{g=1}^{G} (((A_{Burn,i,t} * B_{i,t} * COMF_i * G_{g,i}) * 10^{-3}) * GWP_g)$$

$E_{BiomassBurn,i,t}$	Greenhouse emissions due to biomass burning as part of deforestation activities in stratum *i* in year *t*; tCO2e of each GHG (CO2, CH4, N2O);
$A_{Burn,i,t}$	Area burnt for stratum *i* at time *t* (ha);
$B_{i,t}$	Average aboveground biomass stock before burning stratum i, time t; tons d.m. ha-1;
$COMF_i$	Combustion factor for stratum *i*; dimensionless (default value derived from Table 2.6 of IPCC, 2006);
$G_{g,i}$	Emission factor for stratum *i* for gas g; kg t-1 dry matter burnt (default values derived from Table 2.5 of IPCC, 2006);
GWP_g	Global warming potential for gas g; t CO2/t gas *g* (default values from IPCC AR5 – IPCC (2013): CO2 = 1; CH4 = 25; N2O = 298);
g	1, 2, 3 … *g* greenhouse gases;
i	1, 2, 3, … M strata
t	1, 2, 3, … t* years elapsed since the start of the REDD

Table 35. Parameters for estimation of emissions from biomass burning

AGC	Mean Value (tCO_{2e} ha^{-1})	Biomass	$COMF_i$	Gas	$G_{g,i}$	GWP_g
Stratum 1	427.07	247.82	0.5	CO_2	1580	1
Stratum 2	188.03	109.11	0.5	N_2O	0.2	265
Stratum 3	353.21	204.96	0.5	CH_4	6.8	28

Table 36. Emissions calculations from biomass burning

Year	Total $A_{Burn,i,t}$			Emissions N_2O	Emissions CH_4	$E_{Biomassburn}$
	Stratum 1	Stratum 2	Stratum 3			
Year 1	1,152.37	135.35	312.28	9,655.29	34,686.18	44,341.47
Year 2	1,152.37	135.35	312.28	9,655.29	34,686.18	44,341.47
Year 3	856.88	91.27	158.85	6,753.97	24,263.30	31,017.27
Year 4	1,302.21	157.70	390.09	11,126.56	39,971.63	51,098.19
Year 5	1,302.21	157.70	390.09	11,126.56	39,971.63	51,098.19
Year 6	1,302.21	157.70	390.09	11,126.56	39,971.63	51,098.19
Year 7	1,302.21	157.70	390.09	11,126.56	39,971.63	51,098.19
Year 8	553.00	45.94	1.06	3,770.25	13,544.43	17,314.67
Year 9	553.00	45.94	1.06	3,770.25	13,544.43	17,314.67
Year 10	553.00	45.94	1.06	3,770.25	13,544.43	17,314.67
Year 11	553.00	45.94	1.06	3,770.25	13,544.43	17,314.67
Year 12	368.67	30.62	0.71	2,513.52	9,029.69	11,543.21

3.2.1.4 Baseline net GHG emissions for planned deforestation

The calculation of net emissions for planned deforestation is performed with Equation 3.4, which accounts the emissions generated by changes in carbon stocks and emissions from biomass burning.

Equation 3.4. Baseline net GHG emissions for planned deforestation

$$\Delta C_{BSL,planned} = \sum_{t=1}^{t*} \sum_{i=1}^{M} (\Delta C_{BSL,i,t} + \Delta GHG_{BSL-E,i,t})$$

Table 37. Net and accumulated baseline GHG emissions for planned deforestation

Year	$\Delta C_{BSL,i,t}$	GHG_{BSL-E}	$\Delta C_{BSL,planned}$	$\Delta C_{BSL,planned,\ accum}$
Year 1	619,507.97	44,341.14	663,849.11	663,849.11
Year 2	658,166.22	44,341.14	702,507.36	1,366,356.47
Year 3	494,750.92	31,017.02	525,767.94	1,892,124.41
Year 4	1,685,624.59	51,097.82	1,736,722.41	3,628,846.82
Year 5	1,791,295.33	51,097.82	1,842,393.15	5,471,239.97
Year 6	1,896,966.07	51,097.82	1,948,063.89	7,419,303.85
Year 7	2,002,636.81	51,097.82	2,053,734.63	9,473,038.48
Year 8	734,882.79	17,314.51	752,197.31	10,225,235.79
Year 9	746,365.82	17,314.51	763,680.33	10,988,916.12
Year 10	757,848.85	17,314.51	775,163.36	11,764,079.49
Year 11	742,100.35	17,314.51	759,414.87	12,523,494.35
Year 12	656,477.70	11,543.10	668,020.81	13,191,515.16
Year 13	505,456.10	0.00	505,456.10	13,696,971.26
Year 14	435,659.68	0.00	435,659.68	14,132,630.94
Year 15	365,863.25	0.00	365,863.25	14,498,494.19
Year 16	296,066.83	0.00	296,066.83	14,794,561.01
Year 17	226,270.40	0.00	226,270.40	15,020,831.41
Year 18	215,880.41	0.00	215,880.41	15,236,711.82
Year 19	205,490.42	0.00	205,490.42	15,442,202.24
Year 20	195,100.43	0.00	195,100.43	15,637,302.67
Total	15,232,410.94	404,891.72	15,637,302.69	

3.2.2 Project Emissions

Expected project emissions are estimated ex-ante and apply Equation 1 (Equation 3.5 in this document) of module M-REDD (VMD0015, Version 2.2). Values for individual parameters are explained in Table 3.20 and Table 3.21. Ex-ante projections of deforestation in the project case

assume no deforestation, nor forest degradation, will take place since the project proponent has committed to not undertake land clearing and activities or forest degradation on the property.

Equation 3.5. Equation to estimate net GHG emissions in the REDD project scenario:

$$\Delta C_{WPS-REDD} = \sum_{t=1}^{t*} \sum_{i=1}^{M} (\Delta C_{P,DefPA,i,t} + \Delta C_{P,Deg,i,t} + \Delta C_{P,DistPA,i,t} + GHG_{P-E,i,t} - \Delta C_{P,Enh,i,t})$$

Where:

$\Delta C_{WPS-REDD}$	Net GHG emissions in the REDD project scenario up to year t*; tCO2e;
$\Delta C_{P,DefPA,i,t}$	Net carbon stock change as a result of deforestation in the project area in the project case in stratum i within the project area in year t; tCO2e;
$\Delta C_{P,Deg,i,t}$	Net carbon stock change as a result of degradation in the project area in the project case in stratum i within the project area in year t; tCO2e;
$\Delta C_{P,DistPA,i,t}$	Net carbon stock change as a result of natural disturbance in the project area in the project case in stratum i within the project area in year t; tCO2e;
$GHG_{P-E,i,t}$	Greenhouse gas emissions as a result of deforestation and degradation activities within the project area in the project case in stratum i in year t; tCO2e;
$\Delta C_{P,Enh,i,t}$	Net carbon stock change as a result of forest growth and sequestration during the project in areas projected to be deforested in the baseline[2] in stratum i in year t; tCO2e;
i	1, 2, 3, … M strata
t	1, 2, 3, … t* years elapsed since the start of the REDD VCS project activity

Equation 3.6. Equation to estimate GHG emissions in the project scenario:

$$GHG_{P,E,i,t} = E_{FC,i,t} + E_{BiomassBurn,i,t} + N_20_{direct-N,i,t}$$

Where:

$GHG_{P,E,i,t}$	Greenhouse gas emissions as a result of deforestation activities within the project area in the project case in stratum i in year t; t CO2-e
$E_{BiomassBurn,i,t}$	Emission from fossil fuel combustion in stratum i within the project area in year t; t CO2-e
$N_20_{direct-N,i,t}$	Direct NO2 emission as a result of nitrogen application on the alternative land use in stratum i within the project area in year t; t CO2-e
i	1, 2, 3, … M strata
t	1, 2, 3, … t* years elapsed since the start of the REDD VCS project activity

Table 38. Parameters and values used to calculate net GHG emissions in the REDD project scenario

Parameter	Description	Value	Justification
$\Delta C_{WPS-REDD}$	Net GHG emissions in the REDD project scenario; tCO_2e		Calculated below
$\Delta C_{P,DefPA,i,t}$	Net carbon stock changes as a result of deforestation in the	Set to 0	As the agent of deforestation has committed to not deforest

Parameter	Description	Value	Justification
	project area in the project case in stratum i at time t; t CO_2e		
$\Delta C_{P,DegPA,i,t}$	Net carbon stock changes as a result of degradation in the project area in the project case in stratum i at time t; t CO_2e	See 3.2.2.1	Calculated below
$\Delta C_{BSL,i}$	Net carbon stock changes in all pools in baseline stratum i; $tCO_2e\ ha^{-1}$	Calculated in Table 3.19	
$GHG_{LK,E,i,t}$	Greenhouse gas emissions as a result of leakage of avoided deforestation activities in stratum i in year t; t CO_2e	Set to 0	According to Section 3.7.16 of the VCS Methodology Requirements, v4.1 and the VMD0009, "Where the specific deforestation agent can be identified, leakage need not be considered where it can be demonstrated that the management plans and/or land-use designations of the deforestation agent's other lands (which shall be identified by location) have not materially changed as a result of the project (e.g., the deforestation agent has not designated new lands as timber concessions, increased harvest rates in lands already managed for timber, cleared intact forests for agricultural production or increased fertilizer use to enhance agricultural yields). In this sense, the purpose of BAM are projects to prevent deforestation and reforestation projects for the purpose of restoring degraded areas, consequently, they do not have any other property with the purpose of deforestation, the purpose of the company can be seen in the company name and in the Registries of Peru.
LK_{peat}	Net greenhouse gas emissions due to leakage to peatlands as a result of implementation of a planned deforestation project at time t; t CO_2e		

Table 39. Parameters and values used to calculate annual ex-ante GHG emissions

Parameter	Description	Value	Justification

$GHG_{P,E,i,t}$	Greenhouse gas emissions as a result of deforestation activities within the project area in the project case in stratum i in year t; tCO_{2e}	Set to 0	As the agent of deforestation, has committed to not deforest and degrade forest. No biomass burning is expected to take place in the project scenario. No N fertilizers will be applied in the project scenario. GHG emissions from fossil fuel combustion are not significant.
$E_{BiomassBurn,i,t}$	Non-CO_2 emissions due to Biomass burning in stratum *i* in year *t*; tCO_{2e}	Set to 0	As the agent of deforestation has committed to not deforest
$E_{FC,i,t}$	Net carbon stock changes in all pools in baseline stratum i; tCO2e ha-1	Set to 0	GHG emissions from fossil fuel combustion are not significant.
$N_2O_{direct-N,i,t}$	Direct N_2O emission as a result of nitrogen application on the alternative land use in stratum *I* within the project area in year *t*; tCO_{2e}	Set to 0	No N fertilizers will be applied in the project scenario.

3.2.2.1 Degradation through extraction of trees for illegal timber or fuelwood and charcoal

A participatory rural appraisal (PRA) was carried out in the city of Pucallpa in September 2021. As a result, it was observed that the project areas were subject to some potential degradation. Since the PRA concluded that degradation events did occur, a limited inventory to 1% was carried out, following the steps of methodology VMD0015. This survey was carried out in the "Area probably subject to degradation", generated by means of a 1 km wide buffer (on both sides), whose value was obtained during the PRA (maximum distance an individual would be willing to travel from the access point). This buffer was generated considering all access points in the project area.

In the project area there are three large camps ("Milagros", "Quinillal" and ·Palmeras") and five access routes, the "Río Blanco" stream, near the Milagros camp; the "Río Negro" stream, which crosses in half the entire "Nuestro Señor Jesucristo" area; the “Quinillal” camp trail; the “Shiquihual” stream, which crosses the "Selva Maestra" property diagonally; and lastly, an access trail to the "Palmeras" camp. In all cases, the streams had a negligible width (less than 3 meters) and a depth of 1-2 m, in the dry season. Due to the small size, it was necessary to carry out a track survey to define the routes, since geospatial information could not recognize the paths.

Transects 1 km long and 10 meters wide were established, generating an area of 1 ha at each evaluation point. In certain cases, where the kilometer length could not be reached, plots 500 km long and 20 meters wide were established, keeping the minimum evaluation area at 1 ha.

It was possible to fully evaluate the plots defined in the path of the "Río Blanco" stream, the "Quinillal" trail, and the access to the "Palmeras" camp. However, it was not possible to evaluate the plots in “Río Negro”, nor in “Shiquihual”. In the first case there were security problems (threats from local residents) that did not allow the entry of the survey brigade, except for the complete tracking and survey of two incomplete transects (N11 and N12) that was carried out in the first day. In the second case, the low water level in the “Shiquihual” stream, the only access point, did not allow any brigade to travel to the buffer zone defined for that route.

Figure 32. Area probably subject to degradation and transects

Transects were established with a total accumulated area of 25.78 ha. The details of these can be found at Table 3.23. Equation 8 of VMD00015 v.2.2 (here Equation 3.7) is used to calculate the effect of degradation.

Equation 3.7. Net carbon stock changes as a result of degradation

$$\Delta C_{P,DegW,i,t} = A_{DegW,i} * \frac{C_{DegW,i,t}}{AP_i}$$

$\Delta C_{P,DegW,i,t}$	Net carbon stock changes as a result of degradation in stratum *i* in the project area in year *t*; t CO_2e
$A_{DegW,i}$	Area potentially impacted by degradation processes in stratum *i*; ha
$C_{DegW,i,t}$	Biomass carbon of trees cut and removed through degradation process from plots measured in stratum i in year t; t CO_2e
AP_i	Total area of degradation sample plots in stratum i; ha
i	1, 2, 3, … M strata
t	1, 2, 3, … t* years elapsed since the start of the project activity

Given that the carbon values previously used (Table 3.13) were taken from the literature, it was necessary to apply the VMD0001 module in order to calculate the individual carbon of each stump evaluated. Allometric equations described in Table 3.22 were used. The density of the individuals that were identified (at the genus level) was obtained from the Global Wood Density Database of Zanne

et al. (2009). For tree individuals that could not be identified in the field, the density value of the most demanded forest species in the area that was identified in the PRA, the "cumala" (*Virola sp.*), was used.

Table 40. Allometric equations

Compartment	Allometric equation	Variables	DBH	Reference
Trees in tropical rainforest (BA)	$BA=0,0673 \times (\rho \times dap^2 \times H)^{0,976}$	dbh (1,3 m); Total height (m) and density (g/cm^3)	dbh ≥ 5 cm	(Chave et al. 2014)
Amazon Palms (PA)	$PA^{0,25} = 0,55512 \times (0,37 \times dap^2 \times H_{Stipe})^{0,25}$	dbh (1,3 m); Stipe height (m)	dbh ≥ 10 cm	(Goodman et al. 2013)
Root biomass (BR)	$BR = \exp[-1,0587 + 0,8836 \times \ln(TAB)]$	Total Aboveground biomass (TAB) (Tn/ha)	-	(Cairns et al. 1997)

*dbh: Diameter at breast height (cm)

Table 41. Evaluated transects and compartment separation (AGC and BGC)

Transect	AP_i (ha)	$AGC_{DegW,i,t}$ (tCO_2e)	$BGC_{DegW,i,t}$ (tCO_2e)	$C_{DegW,i,t}$ (tCO_2e)
P1_1	1.000	-	-	-
P1_2	1.000	-	-	-
P1_3	1.000	0.58	0.10	0.68
P1_4	1.000	-	-	-
P1_5	1.000	26.41	3.84	30.26
P1_6	1.000	3.05	0.50	3.55
P2_1	1.000	0.75	0.14	0.88
P2_2	1.000	-	-	-
P2_3	1.000	-	-	-
Q1	1.000	33.71	5.91	39.61
Q2	1.000	6.22	0.93	7.15
Q3	1.000	20.33	3.81	24.14
Q4	1.000	15.94	2.14	18.08
Q5	1.000	38.32	5.42	43.73
B1	1.000	36.90	21.93	58.83
B2	1.000	22.44	10.87	33.32
B3	1.000	9.59	5.65	15.24
B4	1.000	12.51	9.20	21.71
B5	1.000	4.32	2.98	7.30

Transect	AP_i (ha)	$AGC_{DegW,i,t}$ (tCO_2e)	$BGC_{DegW,i,t}$ (tCO_2e)	$C_{DegW,i,t}$ (tCO_2e)
B5*	1.000	6.28	10.29	16.56
B6	1.000	5.88	2.57	8.44
B6b	1.000	2.58	0.49	3.07
B7	1.000	7.87	2.39	10.26
B8	1.000	-	-	-
B9	1.000	12.37	24.77	37.15
N11	0.350	15.14	2.31	17.45
N12	0.425	9.70	1.38	11.08
Total	**25.775**	**290.88**	**117.61**	**408.49**
Mean (tCO_2e *ha^{-1})		**11.29**	**4.56**	**15.85**

Table 42. Evaluation of significance of emissions due to degradation, using T-SIG tool

Sector	$A_{DegW,i}$ (ha)	$\Delta AGC_{P,DegW,i,t}$ (tCO_2e)	$\Delta BGC_{P,DegW,i,t}$ (tCO_2e)	$\Delta C_{P,DegW,i,t}$ (tCO_2e)
Blanco	785.15	8,860.56	3,582.71	12,443.27
Negro	1,667.36	18,816.53	7,608.35	26,424.88
Palmeras	730.44	8,243.19	3,333.08	11,576.27
Quinillal	752.92	8,496.86	3,435.65	11,932.51
Shiquihual	3,180.17	35,888.99	14,511.49	50,400.48
Total	**7,116.02**	**80,306.13**	**32,471.28**	**112,777.41**
$\Delta C_{BSL,i,t}$		**8,388,029.57**	**4,010,640.16**	**12,398,669.73**
<5% (Non-significant Emissions)		**0.96%**	**0.81%**	**0.91%**

Based on the results of the table, it is observed that in no compartment, nor in the total sum, do the carbon emissions due to degradation exceed 5% of the emissions due to changes in the carbon stock, in this way, these emissions are considered insignificant, and the value is conservatively set to zero.

3.2.3 Leakage

Leakage emissions from displacement of planned deforestation are estimated in compliance with the VCS REDD methodology VM0007, specifically the LK-ASP.

3.2.3.1 Estimation of Activity Shifting Leakage

Activity shifting leakage due to displacement of planned deforestation was assessed using a series of equations outline in LK-ASP tool. The primary equation is listed as Equation 3.8. Other equations applied are Equation 3.9 and Equation 3.10. The parameters, values used, and the justification are given in Table 3.25.

Equation 3.8. Equation to estimate leakage from displacement of planned deforestation:

$$\Delta C_{LK-AS,planned} = \sum_{t=1}^{t*} \sum_{i=1}^{M} \left(\left(LKA_{planned,i,t} * \Delta C_{BSL,i} \right) + GHG_{LK,E,i,t} + LK_{peat} \right)$$

Equation 3.9. Equation to leakage area from displacement of planned deforestation:

$$LKA_{planned,i,t} = A_{defLK,i,t} - NewR_{i,t}$$

Where:

$LKA_{planned,i,t}$	The area of activity shifting leakage in stratum i at time t; ha
$NewR_{i,t}$	New calculated forest clearance by the baseline agent of the planned deforestation in stratum i at time t where no leakage is occurring; ha
$A_{defLK,i,t}$	The total area of deforestation by the baseline agent of the planned deforestation in stratum i at time t; ha
i	1, 2, 3, … M strata
t	1, 2, 3, … t* years elapsed since the start of the REDD project activity

If $iNewR_{i,t}$ exceeds $A_{defLK,I,t}$ then $LKA_{planned,i,t}$ must be set as zero as positive leakage is not considered under the VCS.

Equation 3.10. Emissions as a result of leakage of avoided deforestation

$$GHG_{LK,E,i,t} = E_{BiomassBurn,i,t} + N_2O_{direct-N,i,t}$$

Where:

$GHG_{LK,E,i,t}$	Greenhouse gas emissions as a result of leakage of avoided deforestation activities in stratum *i* in year *t*; t CO_2-e
$E_{BiomassBurn,i,t}$	Non-CO_2 emissions due to biomass burning in stratum i in year t; t CO_2-e
$N_2O_{direct-N,i,t}$	Direct NO_2 emission as a result of nitrogen application on the alternative land use in stratum *i* within the project area in year *t*; t CO_2-e
i	1, 2, 3, … M strata
t	1, 2, 3, … t* years elapsed since the start of the REDD project activity

Table 43. Parameters and values used to estimate activity shifting leakage of the project

Parameter	Description	Value	Justification
$\Delta C_{LK-AS,planned}$	Net greenhouse gas emissions due to activity shifting leakage for projects preventing planned deforestation; tCO_2e	Set to 0	
$LKA_{planned,i,t}$	The area of activity shifting leakage in stratum i at time t; ha	Set to 0	No activity shifting will be caused by the REDD project since no economical/ commercial activity or deforestation/ degradation has been carried out so far in the project area and elsewhere by the agent of deforestation
$\Delta C_{BSL,i}$	Net carbon stock changes in all pools in baseline stratum i; tCO_2e ha-1	Calculated in Table 3.19	
$GHG_{LK,E,i,t}$	Greenhouse gas emissions as a result of leakage of avoided deforestation activities in stratum i in year t; t CO_2	Set to 0	According to Section 3.7.16 of the VCS Methodology Requirements, v4.1 and the VMD0009, "Where the specific deforestation agent can be identified, leakage need not be considered where it can be demonstrated that the management plans and/or land-use designations of the deforestation agent's other lands (which shall be identified by location) have not materially changed as a result of the project (e.g., the deforestation agent has not designated new lands as timber concessions, increased harvest rates in lands already managed for timber, cleared intact forests for agricultural production or increased fertilizer use to enhance agricultural yields). In this sense, the purpose of BAM are projects to prevent deforestation and reforestation projects for the purpose of restoring degraded areas, consequently, they do not have any
LK_{peat}	Net greenhouse gas emissions due to leakage to peatlands as a result of implementation of a planned deforestation project at time t; t CO_2e		

Parameter	Description	Value	Justification
			other property with the purpose of deforestation, the purpose of the company can be seen in the company name and in the Registries of Peru.

No project emissions and leakage are predicted by this project once other activities such as timber harvesting, charcoal/fuelwood collection are not taking place, or are taken as insignificant.

3.2.4 Net GHG Emission Reductions and Removals

Table 44. Ex-Ante Estimated of Net Emission Reduction Credits

Year	Estimated baseline emissions or removals (tCO_2e)	Estimated project emissions or removals (tCO_2e)	Estimated leakage emissions (tCO_2e)	Estimated net GHG emission reductions or removals (tCO_2e)
Year 1	663,849.44	0.00	0.00	663,849.44
Year 2	702,507.69	0.00	0.00	702,507.69
Year 3	525,768.18	0.00	0.00	525,768.18
Year 4	1,736,722.78	0.00	0.00	1,736,722.78
Year 5	1,842,393.52	0.00	0.00	1,842,393.52
Year 6	1,948,064.26	0.00	0.00	1,948,064.26
Year 7	2,053,735.00	0.00	0.00	2,053,735.00
Year 8	752,197.47	0.00	0.00	752,197.47
Year 9	763,680.50	0.00	0.00	763,680.50
Year 10	775,163.52	0.00	0.00	775,163.52
Year 11	759,415.03	0.00	0.00	759,415.03
Year 12	668,020.91	0.00	0.00	668,020.91
Year 13	505,456.10	0.00	0.00	505,456.10
Year 14	435,659.68	0.00	0.00	435,659.68
Year 15	365,863.25	0.00	0.00	365,863.25
Year 16	296,066.83	0.00	0.00	296,066.83
Year 17	226,270.40	0.00	0.00	226,270.40
Year 18	215,880.41	0.00	0.00	215,880.41
Year 19	205,490.42	0.00	0.00	205,490.42
Year 20	195,100.43	0.00	0.00	195,100.43

Year	Estimated baseline emissions or removals (tCO_2e)	Estimated project emissions or removals (tCO_2e)	Estimated leakage emissions (tCO_2e)	Estimated net GHG emission reductions or removals (tCO_2e)
Total	15,637,305.81	0.00	0.00	15,637,305.81
Mean	781,865.29	0.00	0.00	781,865.29

3.2.5 Uncertainty of Emissions and Removals in Project Area in Baseline Scenario

The uncertainty calculated by the combination of the uncertainties of each parameter used in the baseline scenario ($C_{AB-tree}, C_{BB-tree}, C_{SOC}, E_{Biomassburn}$) was obtained. For this, Equation 3.11, Equation 3.12, and Equation 3.14 were applied.

Equation 3.11. Uncertainty in the combined carbon stocks in stratum I, in REDD Baseline

$$U_{REDD-BSL,SS,i} = \frac{\sqrt{\sum_1^n \quad (U_{REDD-BSL,SS,i,pool\#} \; x \; E_{REDD-BSL,SS,i,pool\#})^2}}{\sum_1^n \quad E_{REDD-BSL,SS,i,pool\#}}$$

Where:

$U_{REDD-BSL,SS,i}$	Percentage uncertainty in the combined carbon stocks and greenhouse gas sources in the REDD baseline scenario in stratum i (%)
$U_{REDD-BSL,SS,i,pool\#}$	Percentage uncertainty for carbon stocks and greenhouse gas sources in the REDD baseline scenario in stratum i (%)
$E_{REDD-BSL,SS,i,pool\#}$	Carbon stock or GHG sources in the REDD baseline scenario (t CO_2e)
i	1, 2, 3, … M strata (unitless)

Equation 3.12. Uncertainty across combined strata, in REDD baseline

$$U_{REDD-BSL,SS,} = \frac{\sqrt{\sum_1^n \quad (U_{REDD-BSL,SS,i} \; x \; E_{REDD-BSL,SS,i})^2}}{\sum_1^n \quad E_{REDD-BSL,SS,i}}$$

Where:

$U_{REDD-BSL,SS}$	Total uncertainty in the combined carbon stocks and greenhouse gas sources in the REDD baseline scenario (%)
$U_{REDD-BSL,SS,i}$	Percentage uncertainty in the combined carbon stocks and greenhouse gas sources in stratum i in the REDD baseline scenario (%)
$E_{REDD-BSL,SS,i}$	Sum of combined carbon stocks and GHG sources in the REDD baseline scenario (t CO_2e)
i	1, 2, 3, … M strata (unitless)

Equation 3.13. Total uncertainty in REDD Baseline Scenario

$$U_{REDD-BSL,t*} = \sqrt{U_{REDD-BSL,RATE,t*}{}^2 + U_{REDD-BSL,SS}{}^2}$$

Where:

$U_{REDD-BSL,t*}$	Cumulative uncertainty in REDD baseline scenario up to year t* (%)
$U_{REDD-BSL,RATE,t*}$	Cumulative uncertainty in the baseline rate of deforestation up to year t (%)
$E_{REDD-BSL,SS}$	Total uncertainty in the combined carbon stocks and greenhouse gas sources in the REDD baseline scenario (%)
t	1, 2, 3, …t* time elapsed since the start of the project activity (years)

Equation 3.14. Total error in REDD+ project activity

$$NER_{REDD+ERROR} = \sqrt{(U_{REDD-BSL,t*} \times \Delta C_{BSL-REDD,t*})^2} * (\frac{1}{\Delta C_{BSL-REDD,t*}})$$

Table 45. Uncertainty across combined strata, in REDD baseline

LUC Baseline scenario	$U_{REDD-BSL,SS,I}$ (%)
Lowland Tropical Rainforest	3.61
Palm and Mixed Palm Swamp Forest	33.66
Mauritia flexuosa dominated palm swamp	27.20
Oil Palm	13.07
Camu camu	13.74
Higuerilla	13.54
Pastures	15.01
E Biomassburn	
Lowland Tropical Rainforest	3.56
Palm and Mixed Palm Swamp Forest	31.77
Mauritia flexuosa dominated palm swamp	15.74

Table 3.28 shows the total uncertainty accounts for uncertainty for activity data ($Uncertainty_{BSL,RATE,t*}$ = 0%) and emission factor ($Uncertainty_{REDD\_BSL,SS}$ = 5.03%). Total uncertainty is therefore 5.03%.

Table 46. Total error in REDD+ project activity

Variables	Value
$U_{REDD-BSL,SS}$	5.03%
$U_{REDD-BSL,RATE,t*}$	0.00%
$U_{REDD-BSL,t*}$	5.03%
$\Delta C_{BSL,REDD}$	16,359,240.22

Variables	Value
NER REDD+ERROR	5.03%

As the total uncertainty for the project baseline is below the threshold of 15%, no deduction to the net emission reductions should be operated.

3.2.6 Estimation of VCS buffer

To account for non-permanence risks associated with an AFOLU project, VCS registration requires to set aside in a buffer a fraction of the total carbon stock benefits. According to the VM0007 methodology, leakage emissions do not factor in this calculation. To calculate the buffer, the VCS AFOLU non-permanence risk tool (v3.3) was used. This analysis is presented in Annex 29, obtaining a rating of 14%.

3.2.7 Calculation of Verified Carbon Units

Expected VCUs correspond to the net emission reductions according to the baseline, minus the non-permanence risk buffer (14% in the present case) and minus the uncertainty buffer (0% in the present case). The ex-ante estimation of VCUs to be generated during the first 20 years is presented in Table 3.29.

Table 47. Ex-ante calculation of the expected Verified Carbon Units during the first 20 years of the Project

Year	NER_{REDD}	Buffer (14%)	Deduction due to uncertainties (tCO_2e)	VCU
Year 1	663,849.44	92,938.92	-	570,910.52
Year 2	702,507.69	98,351.08	-	604,156.61
Year 3	525,768.18	73,607.55	-	452,160.64
Year 4	1,736,722.78	243,141.19	-	1,493,581.59
Year 5	1,842,393.52	257,935.09	-	1,584,458.42
Year 6	1,948,064.26	272,729.00	-	1,675,335.26
Year 7	2,053,735.00	287,522.90	-	1,766,212.10
Year 8	752,197.47	105,307.65	-	646,889.82
Year 9	763,680.50	106,915.27	-	656,765.23
Year 10	775,163.52	108,522.89	-	666,640.63
Year 11	759,415.03	106,318.10	-	653,096.92
Year 12	668,020.91	93,522.93	-	574,497.99
Year 13	505,456.10	70,763.85	-	434,692.25
Year 14	435,659.68	60,992.35	-	374,667.32
Year 15	365,863.25	51,220.86	-	314,642.40
Year 16	296,066.83	41,449.36	-	254,617.47

Year	NERREDD	Buffer (14%)	Deduction due to uncertainties (tCO_2e)	VCU
Year 17	226,270.40	31,677.86	-	194,592.54
Year 18	215,880.41	30,223.26	-	185,657.15
Year 19	205,490.42	28,768.66	-	176,721.76
Year 20	195,100.43	27,314.06	-	167,786.37
Total	15,637,305.81	2,189,222.81	-	13,448,083.00
Mean	781,865.29	109,461.14	-	672,404.15

3.3 Monitoring

3.3.1 Data and Parameters Available at Validation

Data / Parameter	AAplanned,i,t
Data unit	ha
Description	Annual area of baseline planned deforestation for stratum i in year t.
Source of data	Calculated based on VMD0006 v1.3 equation 4.
Value applied:	See the values applied in the table 3.11 – 3.12.
Justification of choice of data or description of measurement methods and procedures applied	Estimated based on total area of planned deforestation over the baseline period for stratum I (Aplanned,i), the projected annual proportion of land that will be deforested in stratum i during year t (D%planned,i,t) and the Likelihood of deforestation for stratum I (L-Di) according to VMD0006 v1.3 equation 5.
Purpose of Data	Calculation of baseline emissions.
Comments	-

Data / Parameter	Aplanned,i
Data unit	Ha
Description	Total area of planned deforestation over the fixed baseline period for stratum i.

Source of data	Remote Sensing data.
Value applied:	See the values applied in the table 3.10
Justification of choice of data or description of measurement methods and procedures applied	Determined according to what is recognized as an immediate site- specific threat of deforestation, which, in its turn, is a function of the legal permissibility for deforestation, the suitability of the project area for conversion to alternative non-forest land use, the government approval for deforestation and a management plan for deforesting the project area. See section 3.2.1.1 for a complete description of measurement methods and procedures applied.
Purpose of Data	Calculation of baseline emissions.
Comments	-

Data / Parameter	D%planned,i,t
Data unit	% year-1
Description	Projected annual proportion of land that will be deforested in stratum i at year t.
Source of data	-
Value applied:	There is no fixed proportion, but fixed annual areas (see table 3.10)
Justification of choice of data or description of measurement methods and procedures applied	Where a valid verifiable plan exists for rate at which deforestation is projected to occur, this rate must be used, according to VMD0006 v1.3, section 1.3 criteria.
Purpose of Data	Determination of baseline scenario.
Comments	-

Data / Parameter	L-Di
Data unit	%
Description	Likelihood of deforestation in stratum i.

Source of data	Analysis of Land Tenure.
Value applied:	100%
Justification of choice of data or description of measurement methods and procedures applied	L-Di is equal to 100% for all planned deforestation areas that are not both under Government control and zoned for deforestation, according to VMD0006 v1.3, section 1.4.
Purpose of Data	Determination of baseline scenario.
Comments	-

Data / Parameter	ΔCAB_tree,i
Data unit	t CO2e.ha^{-1}
Description	Baseline carbon stock change in aboveground tree biomass in stratum i; t CO2-e ha^{-1}.
Source of data	Calculated based on VMD0006 v1.3 equation 6.
Value applied:	See the values applied in the tables 3.15.
Justification of choice of data or description of measurement methods and procedures applied	Estimated based on the forest carbon stock in aboveground tree biomass in stratum I (CAB_tree,bsl,i) and the post-deforestation carbon stock in aboveground tree biomass in stratum I (CAB_tree,post,i), according to VMD0006 v1.3 equation 6.
Purpose of Data	Calculation of baseline emissions.
Comments	-

Data / Parameter	ΔCBB_tree,i
Data unit	t CO2e.ha^{-1}
Description	Baseline carbon stock change in belowground tree biomass in stratum i.
Source of data	Calculated based on VMD0006 v1.3 equation 8.
Value applied:	See the values applied in the tables 3.15.

Justification of choice of data or description of measurement methods and procedures applied	Estimated based on the forest carbon stock in aboveground tree biomass in stratum I (CAB_tree,bsl,i) and the post-deforestation carbon stock in aboveground tree biomass in stratum I (CAB_tree,post,i); according to VMD0006 v1.3 equation 8.
Purpose of Data	Calculation of baseline emissions.
Comments	-

Data / Parameter	ΔCSOC,i
Data unit	t CO2e.ha^{-1}
Description	Baseline carbon stock change in soil organic carbon in stratum i.
Source of data	Calculated based on VMD0006 v1.3 equation 12.
Value applied:	See the values applied in the tables 3.15.
Justification of choice of data or description of measurement methods and procedures applied	Estimated based on forest carbon stock in soil organic carbon in stratum (CSOC,bsl,i) and post-deforestation carbon stock in soil organic carbon in stratum i (CSOC,PD-BSL,i), according to VMD0006 v1.3 equation 12.
Purpose of Data	Calculation of baseline emissions.
Comments	-

Data / Parameter	CAB_tree,i
Data unit	t CO2e.ha^{-1}
Description	Carbon stock in aboveground biomass in trees in the baseline in stratum i
Source of data	FREL 2021[14] - Lowland Tropical Rainforest Garcia, Honorio & Del Castillo 2012[15] - Mixed Palm Swamp and Palm Swamp - Mauritia flexuosa dominated palm swamp

[14] https://redd.unfccc.int/files/nref_peru_final.pdf
[15] https://revistas.iiap.org.pe/index.php/foliaamazonica/article/view/43/80

Value applied:	See the values applied in the tables 3.13 - 3.14.
Justification of choice of data or description of measurement methods and procedures applied	The selected sources meet the criteria VMD0001 v1.1
Purpose of Data	Calculation of baseline emissions.
Comments	-

Data / Parameter	CBB_tree,i
Data unit	t CO2e.ha^{-1}
Description	Carbon stock in belowground biomass in trees in the baseline in stratum i
Source of data	FREL 2021 - Lowland Tropical Rainforest Freitas et al. 2006[16] - Mixed Palm Swamp and Palm Swamp - Mauritia flexuosa dominated palm swamp
Value applied:	See the values applied in the tables 3.13 - 3.14.
Justification of choice of data or description of measurement methods and procedures applied	The selected sources meet the criteria VMD0001 v1.1
Purpose of Data	Calculation of baseline emissions.
Comments	-

Data / Parameter	R
Data unit	Dimensionless
Description	Root to shoot ratio appropriate to forest type.
Source of data	Freitas et al. 2006

[16] https://repositorio.iiap.gob.pe/bitstream/20.500.12921/228/2/Freitas_documentotecnico_2006.pdf

Value applied:	Pure and mixed aguajal = 0.40
Justification of choice of data or description of measurement methods and procedures applied	BGC of pure and mixed aguajal.
Purpose of Data	Calculation of baseline emissions.
Comments	-

Data / Parameter	CSOC,i
Data unit	t $CO_2e.ha^{-1}$
Description	Mean carbon stock in soil organic carbon in the baseline in stratum i.
Source of data	Cuellar & Salazar 2016[17] and Garcia, Honorio & Del Castillo 2012[18]
Value applied:	See the values applied in the tables 3.13 - 3.14.
Justification of choice of data or description of measurement methods and procedures applied	The selected sources meet the criteria VMD0004 v1.0.
Purpose of Data	Calculation of baseline emissions.
Comments	-

Data / Parameter	CF
Data unit	Dimensionless
Description	Carbon fraction
Source of data	IPCC 2006
Value applied:	0.47

[17] http://repositorio.inia.gob.pe/handle/20.500.12955/490
[18] https://revistas.iiap.org.pe/index.php/foliaamazonica/article/view/43/80

Justification of choice of data or description of measurement methods and procedures applied	The reference level of forest emissions due to gross deforestation of Peru in the Amazon biome works with the carbon fraction proposed by the IPCC (2006)
Purpose of Data	Calculation of baseline emissions.
Comments	-

Data / Parameter	CAB_tree,post,i
Data unit	t CO2e.ha^{-1}
Description	Post-deforestation carbon stock in aboveground tree biomass in stratum i.
Source of data	FREL 2021[19] - Lowland Tropical Rainforest Garcia, Honorio & Del Castillo 2012[20] - Mixed Palm Swamp and Palm Swamp - Mauritia flexuosa dominated palm swamp
Value applied:	See the values applied in the tables 3.13 - 3.14.
Justification of choice of data or description of measurement methods and procedures applied	-
Purpose of Data	Calculation of baseline emissions.
Comments	-

Data / Parameter	CSOC, PD-BSL,i
Data unit	t CO2-e ha-1
Description	Mean post-deforestation stock in soil organic carbon in the post deforestation stratum i
Source of data	Cuellar & Salazar 2016 and Garcia, Honorio & Del Castillo 2012
Value applied:	See the values applied in the tables 3.13 - 3.14.

[19] https://redd.unfccc.int/files/nref_peru_final.pdf
[20] https://revistas.iiap.org.pe/index.php/foliaamazonica/article/view/43/80

Justification of choice of data or description of measurement methods and procedures applied	Based on referenced literature values.
Purpose of Data	Calculation of baseline emissions.
Comments	-

Data / Parameter	GHGBSL-E,i,t
Data unit	t CO2e.yr-1
Description	Greenhouse gas emissions as a result of deforestation activities within the project boundary in the baseline stratum i in year t.
Source of data	Calculated based on VMD0006 v1.3 equation 15.
Value applied:	See the values applied in the table 3.18.
Justification of choice of data or description of measurement methods and procedures applied	Calculated based on the non-CO2 emissions due to biomass burning in stratum i in year t (EBiomassBurn,i,t), according to VMD0006 v1.3 equation 15.
Purpose of Data	Calculation of baseline emissions.
Comments	Net CO2e emission from fossil fuel combustion in stratum i in year t (EFC,i,t) and direct N2O emission as a result of nitrogen application on the alternative land use within the project boundary in stratum i in year t (N2Odirect-N,i,t) are conservatvelly excluded from the project scope and the calculation of the baseline estimates following VM0007 v1.6 section 5.4 criteria.

Data / Parameter	EBiomassBurn,i,t
Data unit	t CO2e
Description	Greenhouse gas emissions due to biomass burning in stratum i in year t of each GHG (CO2, CH4, N2O).
Source of data	Calculated based on VMD0013 v1.3 equation 1.
Value applied:	See the values applied in the table 3.18.

Justification of choice of data or description of measurement methods and procedures applied	Calculated based on area burnt for stratum i in year t (Aburn,i,t), average aboveground biomass stock before burning stratum i, in year t (Bi,t), combustion factor for stratum i (unitless) (COMFi), emission factor for stratum i for gas g (Gg,i) and the Global warming potential for gas g (GWPg), according to VMD0013 v1.3 equation 1.
Purpose of Data	Calculation of baseline emissions.
Comments	-

Data / Parameter	Aburn,i,t
Data unit	Ha
Description	Area burnt for stratum i in year t.
Source of data	Equal to AAplanned,i,t in the baseline case.
Value applied:	See the values applied in the table 3.18.
Justification of choice of data or description of measurement methods and procedures applied	For the calculation of baseline emissions, the burned area is considered equivalent to the annual deforested area, assuming that all deforestation is preceded by a fire to clear the land in the baseline case.
Purpose of Data	Calculation of baseline emissions.
Comments	-

Data / Parameter	Bi,t
Data unit	tonnes d.m. ha^{-1}
Description	Average aboveground biomass stock before burning for stratum i, year t.
Source of data	Calculated based on VMD0013 v1.3 equation 2.
Value applied:	See the values applied in the table 3.17.

Justification of choice of data or description of measurement methods and procedures applied	Calculated based on carbon stock in aboveground biomass in trees in stratum i in year t (CAB_tree,i,t), Carbon stock in dead wood for stratum i in year t (CDWi,t), Carbon stock in litter for stratum i in year t (CLI,i,t) and Carbon fraction of biomass (CF), according to VMD0013 v1.3 equation 2.
Purpose of Data	Calculation of baseline emissions.
Comments	-

Data / Parameter	COMFi
Data unit	Dimensionless
Description	Combustion factor for stratum i.
Source of data	IPCC 2006
Value applied:	0.5
Justification of choice of data or description of measurement methods and procedures applied	Default values in Table 2.6 of IPCC, 2006 - Appendix 2.
Purpose of Data	Calculation of baseline emissions.
Comments	The combustion factor is a measure of the proportion of the fuel that is actually combusted, which varies as a function of the size and architecture of the fuel load (i.e., a smaller proportion of large, coarse fuel such as tree stems will be burnt compared to fine fuels, such as grass leaves), the moisture content of the fuel and the type of fire (i.e., intensity and rate of spread).

Data / Parameter	Gg,i
Data unit	kg t^{-1} d.m. burnt
Description	Emission factor for stratum i for gas g
Source of data	IPCC (2006)
Value applied:	CH4=6.8; N2O=0.2

Justification of choice of data or description of measurement methods and procedures applied	Default values in Table 2.6 of IPCC, 2006 - Appendix 2.
Purpose of Data	Calculation of baseline emissions.
Comments	Defaults can be found in Volume 4, Chapter 2, of the IPCC 2006 Inventory Guidelines in table 2.5 (see Appendix 2: emission factors for various types of burning for CH4 and N2O).

Data / Parameter	GWPg
Data unit	Dimensionless
Description	Global warming potential for gas g.
Source of data	Fifth Assessment Report (AR5) IPCC (2006)
Value applied:	CH4=28; N2O=265
Justification of choice of data or description of measurement methods and procedures applied	Default factor from the latest IPCC Assessment Report.
Purpose of Data	Calculation of baseline emissions.
Comments	-

Data / Parameter	ΔCBSL,i,t
Data unit	t CO2e
Description	Net carbon stock changes in all pools in the baseline stratum i in year t.
Source of data	Calculated based on VMD0006 v1.3 equation 4.
Value applied:	See the values applied in the table 3.19.
Justification of choice of data or description	Estimated based on the annual area of baseline planned

of measurement methods and procedures applied	deforestation for stratum i in year t (AAplanned,i,t), the baseline carbon stock change in aboveground tree biomass in stratum I (ΔCAB_tree,i), the baseline carbon stock change in belowground tree biomass in stratum I (ΔCBB_tree,i), the baseline carbon stock change in aboveground non-tree biomass in stratum (ΔCAB_non-tree,i), the baseline carbon stock change in belowground non-tree biomass in stratum I (ΔCBB_non-tree,i), the baseline carbon stock change in wood products in stratum I (ΔCWP,i), the baseline carbon stock change in dead wood in stratum I (ΔCDW,i), the baseline carbon stock change in litter in stratum I (ΔCLI,i) and the baseline carbon stock change in soil organic carbon in stratum I, according to VMD0006 v1.3 equation 4.
Purpose of Data	Calculation of baseline emissions.
Comments	-

Data / Parameter	ΔCBSL,planned
Data unit	t CO2e
Description	Net greenhouse gas emissions in the baseline from planned deforestation.
Source of data	Calculated based on VMD0006 v1.3 equation 1.
Value applied:	See the values applied in the table 3.19.
Justification of choice of data or description of measurement methods and procedures applied	Estimated based on the net carbon stock changes in all pools in the baseline (ΔCBSL,i,t) and GHG emissions as a result of deforestation activities within the project boundary in the baseline stratum i in year t (GHGBSL-E,i,t), according to equation 1 from VMD0006 v1.3.
Purpose of Data	Calculation of baseline emissions.
Comments	-

3.3.2 Data and Parameters Monitored

Data / Parameter	ADefPA,i,u,t
Data unit	ha

Description	Area of recorded deforestation in the project area in stratum I converted to land use u in year t.
Source of data	Remote sensing imagery
Description of measurement methods and procedures applied	Annual deforestation is measured in GIS using remote sensing techniques and reported with spatial explicit data by raster and shapefile. evidence.
Frequency of monitoring/recording	Annual
Value applied:	0
Monitoring equipment	Planet
QA/QC procedures applied	GIS measurement using remote sensing techniques and field evaluations.
Purpose of data	Calculation of project emissions
Calculation method	Monitoring will be carried out with the country's official tool GEOBOSQUES.
Comments	-

Data / Parameter	CP,post,u,i
Data unit	t CO2-e
Description	Carbon stock in all pools in post-deforestation land use u in stratum i.
Source of data	Calculated according to VMD0015 v2.2, equation 06
Description of measurement methods and procedures applied	Calculated based on carbon stock in aboveground tree biomass in stratum I (CAB_tree,i), carbon stock in belowground tree biomass in stratum I (CBB_tree,i), carbon stock in aboveground non-tree vegetation in stratum (CAB_non-tree,i), carbon stock in belowground non-tree vegetation in stratum I (CBB_non-tree,i), carbon stock in dead wood in stratum I (CDW,i), carbon stock in litter in stratum I (CLI,i), mean post-deforestation stock in soil organic carbon in the post deforestation stratum I (CSOC,PD-BSL,i), according to VMD0015 v2.2, equation 06.
Frequency of monitoring/recording	10 years (in each baseline revalidation)

Value applied:	See the values applied in the table 3.14.
Monitoring equipment	N/A
QA/QC procedures applied	-
Purpose of data	Calculation of project emissions
Calculation method	See VMD0015 v2.2, equation 05.
Comments	-

Data / Parameter	ΔCpools,Def,u,i,t
Data unit	t CO2-e
Description	Net carbon stock changes in all pools as a result of deforestation in the project case in land use u in stratum i at time t.
Source of data	Calculated according to VMD0015 v2.2, equation 05.
Description of measurement methods and procedures applied	Calculated based on carbon stock in all pools in the baseline case in stratum I (CBSL,i), carbon stock in all pools in post-deforestation land use u in stratum I (CP,post,u,i) and carbon stock sequestered in wood products from harvests in stratum I (CWP,i), according to VMD0015 v2.2, equation 05.
Frequency of monitoring/recording	10 years (in each baseline revalidation)
Value applied:	See the values applied in the table 3.14.
Monitoring equipment	N/A
QA/QC procedures applied	-
Purpose of data	Calculation of project emissions
Calculation method	See VMD0015 v2.2, equation 05.
Comments	-

Data / Parameter	ΔCP,DefPA,i,t
Data unit	t CO2-e

Description	Net carbon stock change as a result of deforestation in the project case in the project area in stratum i at time t.
Source of data	Calculated according to VMD0015 v2.2, equation 03
Description of measurement methods and procedures applied	Calculated based on the area of recorded deforestation in the project area stratum i converted to land use u at time t (ADefPA,u,i,t) and the net carbon stock changes in all pools in the project case in land use u in stratum i at time t (ΔCpools,Def,u,i,t), according to VMD0015 v2.2, equation 03.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value applied:	0
Monitoring equipment	-
QA/QC procedures applied	-
Purpose of data	Calculation of project emissions
Calculation method	See VMD0015 v2.2, equation 03.
Comments	-

Data / Parameter	ADegW,i
Data unit	ha
Description	Area potentially impacted by degradation processes in stratum i
Source of data	Measured
Description of measurement methods and procedures applied	The area subject to degradation is delineated based on an access buffer from all access points, such as roads and rivers or previously cleared areas, to the project area, with a width equal to the distance of degradation penetration.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value applied:	See the values applied in the table 3.23 – 3.24.
Monitoring equipment	GPS and Compass.
QA/QC procedures applied	Each brigade has a brigade chief in charge of supervising the collection of information. All the information collected will be checked again in the cabinet.

Purpose of data	Calculation of project emissions
Calculation method	See VMD0015 v2.2, equation 08.
Comments	Ex-ante estimates of net carbon stock changes as a result of degradation in stratum i in the project area in year t (ΔCP,DegW,i,t) were made based on participatory rural appraisals (PRA) and field evaluations.

Data / Parameter	CDegW,i,t
Data unit	t CO_2e ha-1
Description	Biomass carbon of trees cut and removed through degradation process from plots measured in stratum i in year t.
Source of data	Estimated through diameter of stumps directly measured in the field.
Description of measurement methods and procedures applied	The diameter of all tree stumps is measured and conservatively assumed to be the same as the DBH. The above and below ground carbon stock of each harvested tree are estimated using the same allometric regression equation and root to shoot ratio used for estimating the carbon pool in trees in the baseline scenario
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value applied:	See the values applied in the table 3.23 – 3.24.
Monitoring equipment	Diameter tape.
QA/QC procedures applied	Field measurement quality control.
Purpose of data	Calculation of project emissions.
Calculation method	Calculated through allometric equation used for estimating the carbon pool in trees in the baseline scenario.
Comments	Ex-ante estimates were made based on PRAs, which considered the amount of wood used for firewood, construction of houses and boats per family.

Data / Parameter	APi

Data unit	ha
Description	Total area of degradation sample plots in stratum i.
Source of data	Ground measurement.
Description of measurement methods and procedures applied	Sampling plots covering 1% of AdegWi
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value applied:	25.775 ha
Monitoring equipment	Tape measure, GPS.
QA/QC procedures applied	Remote evaluation.
Purpose of data	Calculation of project emissions.
Calculation method	Fixed area plots covering 1% of the ADegW,I in the monitoring period.
Comments	-

Data / Parameter	ΔCP,DegW,i,t
Data unit	t CO2-e
Description	Net carbon stock changes as a result of degradation in stratum i in the project area in year t.
Source of data	Calculated according to VMD0015 v2.2, equation 08.
Description of measurement methods and procedures applied	Calculated based on area potentially impacted by degradation processes in stratum I (ADegW,i) and biomass carbon of trees cut and removed through degradation process from plots measured in stratum i in year t (CDegW,i,t) and total area of degradation sample plots in stratum I (APi), according to VMD0015 v2.2, equation 08.
Frequency of monitoring/recording	Annual
Value applied:	See the values applied in the table 3.23 – 3.24.

Monitoring equipment	N/A
QA/QC procedures applied	-
Purpose of data	Calculation of project emissions
Calculation method	See VMD0015 v2.2, equation 08.
Comments	-

Data / Parameter	ΔCP,SelLog,i,t
Data unit	t CO2-e
Description	Net carbon stock change as a result of degradation through selective logging of FSC certified forest management areas in the project area in the project case in stratum i in year t.
Source of data	Calculated according to VMD0015 v2.2, equation 09.
Description of measurement methods and procedures applied	Calculated based on actual net project emissions arising in the logging gap in stratum i in year t (CLG,i,t), actual net project emissions arising from logging infrastructure in stratum i in year t (CLR,i,t) and the carbon stock in wood products pool from stratum i, in year t (CWPi,t), according to VMD0015 v2.2, equation 09.
Frequency of monitoring/recording	-
Value applied:	0
Monitoring equipment	N/A
QA/QC procedures applied	-
Purpose of data	Calculation of project emissions
Calculation method	-
Comments	-

Data / Parameter	Aburn,i,t

Data unit	ha
Description	Area burnt for stratum i in year t.
Source of data	Equal to ADistPA,q,i,t + ADefPA,i,u,t in the project case.
Description of measurement methods and procedures applied	For the calculation of project emissions, the burned area is considered equivalent to burn scars monitored plus annual deforested area monitored, assuming that all deforestation is preceded by a fire to clear the land in the project case.
Frequency of monitoring/recording	Annual.
Value applied:	See the values applied in the table 3.18.
Monitoring equipment	-
QA/QC procedures applied	Remote monitoring and surveillance system.
Purpose of data	Calculation of project emissions
Calculation method	-
Comments	-

Data / Parameter	GHGP,E,i,t
Data unit	t CO2e.yr-1
Description	Greenhouse gas emissions as a result of deforestation activities within the within the project area in the project case stratum i in year t.
Source of data	Calculated based on VMD0006 v1.3 equation 30.
Description of measurement methods and procedures applied	Calculated based on the non-CO2 emissions due to biomass burning in stratum i in year t (EBiomassBurn,i,t), according to VMD0006 v1.3 equation 15.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value applied:	See the values applied in the table 3.18.
Monitoring equipment	-
QA/QC procedures applied	-
Purpose of data	Calculation of project emissions.

Calculation method	Calculated based on VMD0006 v1.3 equation 30.
Comments	Net CO2e emission from fossil fuel combustion in stratum i in year t (EFC,i,t) and direct N2O emission as a result of nitrogen application on the alternative land use within the project boundary in stratum i in year t (N2Odirect-N,i,t) are conservatively excluded from the project scope and the calculation of the baseline estimates following VM0007 v1.6 section 5.4 criteria.

Data / Parameter	EBiomassBurn,i,t
Data unit	t CO2e
Description	Greenhouse gas emissions due to biomass burning in stratum i in year t of each GHG (CO2, CH4, N2O)
Source of data	Calculated based on VMD0013 v1.3 equation 1.
Description of measurement methods and procedures applied	Calculated based on area burnt for stratum i in year t (Aburn,i,t), average aboveground biomass stock before burning stratum i, in year t (Bi,t), combustion factor for stratum i (unitless) (COMFi), emission factor for stratum i for gas g (Gg,i) and the Global warming potential for gas g (GWPg), according to VMD0013 v1.3 equation 1.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value applied:	See the values applied in the table 3.18.
Monitoring equipment	-
QA/QC procedures applied	-
Purpose of data	Calculation of project emissions.
Calculation method	Calculated based on VMD0013 v1.3 equation 1.
Comments	-

Data / Parameter	ΔCWPS-REDD
Data unit	t CO2-e
Description	Net GHG emissions in the REDD project scenario up to year t.
Source of data	Calculated according to VMD0015 v2.2, equation 01.

Description of measurement methods and procedures applied	Calculated based on net carbon stock change as a result of deforestation in the project area in the project case in stratum i in year t (ΔCP,DefPA,i,t), Net carbon stock change as a result of degradation in the project area in the project case in stratum i in year t (ΔCP,Deg,i,t), Net carbon stock change as a result of natural disturbance in the project area in the project case in stratum i in year t (ΔCP,DistPA,i,t) and Greenhouse gas emissions as a result of deforestation and degradation activities within the project area in the project case in stratum i in year t (GHGP-E,i,t), according to VMD0015 v2.2, equation 01.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value applied:	0
Monitoring equipment	N/A
QA/QC procedures applied	GHG information system and controls associated with the project and its monitoring. This information system rules the process for obtaining, recording, compiling and analyzing data and information important for quantifying and reporting GHG emissions and removals relevant for the project (including leakage) and baseline scenario.
Purpose of data	Calculation of project emissions
Calculation method	See VMD0015 v2.2, equation 01.
Comments	-

Data / Parameter	ΔCLK-AS,planned
Data unit	t CO2e
Description	Net GHG emissions due to activity shifting leakage for projects preventing planned deforestation up to year t*
Source of data	Calculated according to VMD0009 v1.3, equation 01.
Description of measurement methods and procedures applied	Calculated based on the area of activity shifting leakage in stratum i in year t (LKAplanned,i,t), the net carbon stock changes in all pre-deforestation pools in baseline stratum I, (ΔCBSL,i) and the Greenhouse gas emissions as a result of leakage of avoiding deforestation activities in stratum i in year t (GHGLK,E,i,t), according to VMD0009 v1.3, equation 01.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value applied:	0

Monitoring equipment	-
QA/QC procedures applied	-
Purpose of data	Calculation of leakage.
Calculation method	Calculated according to VMD0009 v1.3, equation 01.
Comments	-

Data / Parameter	NER_{REDD}
Data unit	t CO2e
Description	Total net GHG emission reductions of the REDD project activity up to year t (t CO2e).
Source of data	Calculated according to VM0007 v1.6 equation 2.
Description of measurement methods and procedures applied	Calculated based on the net GHG emissions in the REDD baseline scenario up to year t (ΔCBSL-REDD), the net GHG emissions in the REDD project scenario up to year t (ΔCWPS-REDD) and the net GHG emissions due to leakage from the REDD project activity up to year t (ΔCLK-REDD), according to VM0007 v1.6 equation 2.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value applied:	See the values applied in Table 3.26
Monitoring equipment	-
QA/QC procedures applied	-
Purpose of data	Calculation of VCUs
Calculation method	According to VM0007 v1.6 equation 2.
Comments	-

Data / Parameter	BufferPlanned
Data unit	t CO2e
Description	Buffer withholding for avoiding planned deforestation project activities
Source of data	Calculated according to VM0007 v1.6 equation 8.

Description of measurement methods and procedures applied	Calculated based on the net greenhouse gas emissions in the baseline from planned deforestation up to year t (ΔCBSL,planned) and the buffer withholding percentage (Buffer%), according to VM0007 v1.6 equation 8.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value applied:	14 % (see section 3.2.6)
Monitoring equipment	-
QA/QC procedures applied	-
Purpose of data	Calculation of VCUs
Calculation method	Calculated according to VM0007 v1.6 equation 8.
Comments	-

Data / Parameter	UncertaintyREDD-BSL,SS
Data unit	%
Description	Total uncertainty in the combined carbon stocks and greenhouse gas sources in the REDD baseline scenario
Source of data	Calculated according to VMD0017 v2.2 equation 5.
Description of measurement methods and procedures applied	Calculated based on the percentage uncertainty in the combined carbon stocks and greenhouse gas sources in stratum i in the REDD baseline scenario (UREDD-BSL,SS,i), and the sum of combined carbon stocks and GHG sources in the REDD baseline scenario (EREDD- BSL,SS,t,i),according to VMD0017 v2.2 equation 5.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value applied:	See the values applied in Table 3.28
Monitoring equipment	-
QA/QC procedures applied	-
Purpose of data	Calculation of VCUs
Calculation method	Calculated according to VMD0017 v2.2 equation 5.

Comments	Uncertainty in baseline rate of deforestation is set as zero (UncertaintyREDD-BSL,RATE = 0), as the deforestation rates are based on actual deforestation plans, following VMD0017 v2.2, section 5.1.1 criteria. In this sense UncertaintyREDD-BSL,SS equals to cumulative uncertainty in REDD baseline scenario up to year t (UncertaintyREDD-BSL,t*).

Data / Parameter	UncertaintyREDD-WPS
Data unit	%
Description	Total uncertainty in the REDD project scenario
Source of data	Calculated according to VMD0017 v2.2 equation 13.
Description of measurement methods and procedures applied	Calculated according to the percentage uncertainty in the combined carbon stocks and greenhouse gas sources in stratum i in the REDD project scenario (UREDD-WPS,SS,i) and the sum of combined carbon stocks and GHG sources multiplied by the area of stratum i (Ai) in the REDD project scenario (EREDD-WPS,SS,t,i), according to VMD0017 v2.2 equation 13.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value applied:	See the values applied in Table 3.28
Monitoring equipment	-
QA/QC procedures applied	-
Purpose of data	Calculation of VCUs.
Calculation method	Calculated according to VMD0017 v2.2 equation 13.
Comments	-

Data / Parameter	NER REDD+ERROR
Data unit	%
Description	Cumulative uncertainty for the REDD+ project activities up to year t
Source of data	Calculated according to VMD0017 v2.2 equation 21

Description of measurement methods and procedures applied	Calculated based on Cumulative uncertainty in REDD baseline scenario up to year t (UncertaintyREDD_BSL,t), the total uncertainty in the REDD project scenario (UncertaintyREDD_WPS), the Net GHG emissions in the REDD baseline scenario up to year t (ΔCBSL-REDD,t), and the Net GHG emissions in the REDD project scenario up to year t (ΔCWPS-REDD,t), according to VMD0017 v2.2 equation 21
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value applied:	See the values applied in Table 3.28
Monitoring equipment	-
QA/QC procedures applied	-
Purpose of data	Calculation of VCUs
Calculation method	Calculated according to VMD0017 v2.2 equation 21
Comments	-

Data / Parameter	Adjusted_NERREDD+
Data unit	%
Description	Total net GHG emission reductions of the REDD+ project activities up to year t* adjusted to account for uncertainty
Source of data	Calculated according to VMD0017 v2.2 equation 21
Description of measurement methods and procedures applied	Calculated based on the total net GHG emission reductions of the REDD project activity up to year t (NERREDD), and the cumulative uncertainty for the REDD+ project activities up to year t (NERREDD+_ERROR).
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value applied:	Equals the value of NERREDD
Monitoring equipment	-
QA/QC procedures applied	-
Purpose of data	Calculation of VCUs.
Calculation method	Calculated according to VMD0017 v2.2 equation 21.
Comments	No deduction should result for uncertainty given that the value

	(5.03%) is below the threshold (15%)

Data / Parameter	VCUt
Data unit	VCU
Description	Number of Verified Carbon Units at year t* or t2 - t1
Source of data	Calculated according to VMD0017 v2.2 equation 19.
Description of measurement methods and procedures applied	Calculated based on the total net GHG emission reductions of the REDD+ project activity up adjusted to account for uncertainty (Adjusted_NERREDD+), and the total permanence risk buffer withholding (BufferPlanned), according to VMD0017 v2.2 equation 19.
Frequency of monitoring/recording	Before every verification event with a minimum frequency of 05 years.
Value applied:	See the values applied in Table 3.29
Monitoring equipment	-
QA/QC procedures applied	-
Purpose of data	Calculation of VCUs
Calculation method	Calculated according to VMD0017 v2.2 equation19.
Comments	-

3.3.3 Monitoring Plan

The objective of the Monitoring Plan is to provide tools that allow the verification of the data related to deforestation within the project area and its leakage belt across time, and it is fundamental to periodically update the emission estimates as well as the generation of information. In addition, it is important to monitor the results of the activities implemented by The Last Habitat REDD Project BAM and make the necessary adjustments in the activities to comply with the project objectives.

Organization structure

The Project is implemented by *BAM SAC*, a company with almost two decades of experience in the sustainable management of natural tropical forests in order to obtain ecosystem benefits from the sustainable management of the landscape. *BAM SAC* has a trained and experienced technical team for the implementation of the project, capacities that also extend to monitoring tasks.

A multidisciplinary team oversees the development of the Monitoring Plan, led by a general project coordinator, a territorial security specialist, and a community relations coordinator allowing a comprehensive approach to the different components of the plan. Its implementation is in charge of the head of the General project coordinator, who must articulate it with the technical field staff, the latter is the one who performs the measurements on the ground and corroborates the information in the office. It has specialized SIG specialist with extensive experience who provide support in the calculations of emissions, as well as support in GIS for the analysis and interpretation of satellite images necessary for the calculation of deforestation.

The flowchart of the information of the monitoring system and the organizational structure of the project monitoring system is depicted below (See Figure 3.10)

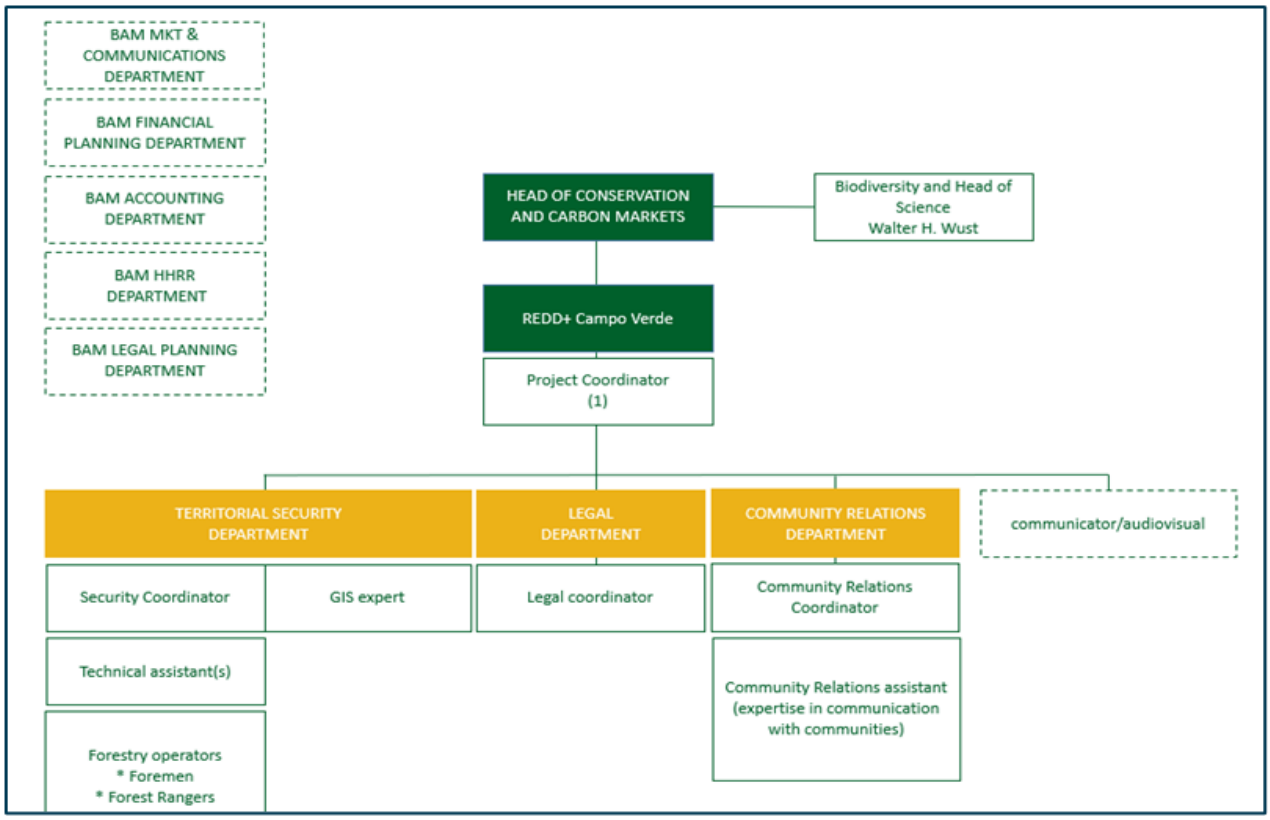

Figure 33. Flowchart of the organizational structure advocated to monitoring the project.

The functions that each member of the team is in charge is presented in the following table:

Table 48. Functions of each BAM team member

Position	Role	Functions
Carbon Markets and	Ensure proper project direction and planning.	Plan project activities, defining objectives and indicators according to the company's global strategic plan.

Conservation Manager		Ensure the correct execution of the project, ensure compliance with the goals, and make the necessary structural changes if required.
		Ensure the availability of resources for the proper implementation of activities for the project.
		Manage/monitor the risks included in the contingency plans during the execution of the project.
		Report on the steps taken and progress made on the project to the General Manager.
		Facilitate and manage the verifications and audits required for certifications (VCS, CCB or others)
General Coordinator of The Last Habitat REDD+ Project	Ensure the correct execution of activities defined and approved by management, ensuring compliance with the budget and deadlines defined. Be the representative of BAM in the project to interest groups such as competent authorities, collaborative organizations, community, among others. Report execution to Conservation and Carbon Markets Management.	Lead REDD+ team in the implementation of key activities established by management.
		To carry out and monitor, in coordination with the Financial Planning Area of BAM and the Management of C&MC, the efficient execution of the budget allocated to the project.
		Monitor the requirement of project funds as planned and at the same time as the budget execution of these funds
		Provide and generate the necessary information on The Last Habitat REDD+ project for the different auditors, evaluators or verifications to be carried out for the project
		Facilitate and manage the work of the different consultants and/or organizations that are hired to carry out studies or services for the REDD+ Project
		Identify possible conflicts that could be generated or are being generated around the REDD+ project in the field with third parties, neighbors, detractors, etc.
		To represent BAM before authorities, organizations, and interest groups in general, seeking to conclude cooperation agreements and joint actions in pursuit of the project's goals.
Territorial Security Coordinator	Ensure the security of the territory, avoiding deforestation, degradation, and any environmental crime or threat to the forests included in the project area. Identify, control, and monitor any threat or conflict that may occur in the project	Formulate the comprehensive work plan for the Territorial Security area of BAM, which includes, among other points, a complete mapping of possible/types of threats, needs, strategic actions, budget and action schedule.
		Determine, in conjunction with the general coordinator of the project, the protocols for prevention and action against threats in the area such as opening roads, farms, or pastures of the surrounding farmers or possible invaders, as well as illegal logging

	area that impedes or harms the fulfillment of the goals of the Project.	Ensure the proper functioning of the remote or satellite sounding system warning of deforestation or heat sources through satellite images (GEOBSOQUES, NASA or others) or other tools to identify potential threats in the project area on time.
		Lead the technical field team, ensuring surveillance of the Project area and reporting any threat situation within it.
		Implement monitoring field actions immediately to corroborate and identify possible deforestation alerts arising from satellite monitoring, monitoring efforts, community information(s), or any other reports.
		Monitor the collection of information from affected areas.
		Review, and processing of pictures taken by the Drone, among others.
		To accompany the visits of the authorities to establish the crime occurred when necessary, in order to provide technical support
		Database management and database of occurrences of environmental crime and/or deforestation may be happening.
		Supervise cases submitted to the legal area, ensuring work with the competent authorities in order to curb threats within the project area.
		Direct training to stakeholders on the identification and control of threats of deforestation, degradation, or environmental crime in the project area.
Technical Assistant of Territorial Security	Provide field support for the execution of the security activities programmed by the project coordinator and territorial security	Support in the schedule meeting to interest groups (authorities, populations, and people, etc.) for scheduled meetings and training events. Carry out field inspections, verifications, and activities with the respective actors. Ensure the proper functioning of the territorial security camps
Field Operators	Provide field support for the execution of the security activities programmed by the project coordinator and territorial security	Implement planned activities to ensure territorial security. Prepare respective management reports. Field support to all those responsible for the proper management of the project.
GIS expert	Perform a spatial analysis of the project area in order to identify early warnings of deforestation/ degradation or any environmental crime within the scope of the project	Perform a spatial analysis of the area using satellite platforms such as GEOBOSQUES, NASA, among others to identify and report possible threats in the area
Legal Coordinator	Carry out legal management of environmental crimes that	Provide legal support to the technical team to follow up on the possible environmental crimes identified until the respective complaint.

	may be happening in the project area and, in particular, manage complaints and procedures for deforestation, degradation, or other environmental crimes that harm the fulfillment of the objectives of the project.	Follow up on the processing of complaints or legal actions on complaints of crimes that threaten the project; for this purpose, it should encourage the conduct of proceedings both in fiscal, judicial, and administrative headquarters.
Community Relations Coordinator	Ensure the continuous strengthening of the relationship between BAM and its stakeholders, specifically with the communities and hamlets surrounding the project area, ensuring smooth bilateral communication, a close and reciprocal relationship that enables the objectives of the project to be achieved and to improve the living situation of the persons directly or indirectly involved in the project. Represent BAM to communities and opinion leaders.	Formulate the comprehensive work plan for BAM's Community Relations area, including, among other points, a complete mapping of actors, needs, strategic actions, budget and action schedule.
		Execute, monitor and report the community relations plan to the REDD+ Project General Coordinator
		To lead, supervise and report on the work carried out by the community relations team in relation to the strategic activities to be implemented in relation to community development (infrastructure, production chains, etc.)
		Supervise the execution of projects developed with different communities (infrastructure, production chains, etc).
		Manage the coordination of integrated efforts with institutions and organizations (BAM interest groups) in Ucayali.
		Dissemination strategies: define the strategy and means to disseminate project actions among interest groups, in order to communicate the progress, benefits, and impact of the project
		Dissemination, convocation, organization, development and moderation of meetings and workshops related to the REDD+ project that involve different communities.
Community Relations Assistant	Execute the programmed activities of the area	To be the executive support of the activities of the RRCC area. Promote meetings with the different stakeholders of the goals. Be responsible for the supporting documentation of the activities carried out. Ensure the correct flow of information between businesses and communities.
Audio-visual communicator / assistant	Record and archive the events, activities, testimonies, etc. made by the project and around it in videos, photos, reports, or other communication tools that allow to share and record its progress	Record and share the progress of the different activities implemented by the project by audiovisual means and ensure that these are shared among stakeholders.

Leader of the biodiversity science and conservation program	Lead scientific studies to permanently evaluate the ecological wealth within the project's area of influence. Ensure the integrity of biodiversity by implementing strategies to prevent and curb environmental crimes on the flora and fauna that host the project's forests.	Carry out a continuous inventory of biological diversity with an emphasis on the most valuable species and natural communities in ecological terms (threatened or endangered species, restricted species, new species for science and others).
		Carry out a continuous inventory of biological diversity with an emphasis on the most valuable species and natural communities in ecological terms (threatened or endangered species, restricted species, new species for science and others). Carry out an ecological characterization of the natural communities of the property (primary, secondary, bajial forests, intervened areas) which will allow zoning for conservation and eventual sustainable use.
		Establish alliances with top-level scientific institutions that ensure the impact of efforts as well as international prestige and recognition of the information generated.
		Restore, to the extent possible, the most valuable natural environments of the property with a view to promoting the return of wildlife species and encouraging natural processes such as pollination, restoration of ecosystem balance, ecotourism, among others.
		Lead training on the importance of biodiversity conservation and the prevention and control of environmental crimes against biodiversity to different stakeholders

The information collected in the field by the technical staff is reviewed and systematized by the technical assistance of the Territorial Security Department. At the end of the period (annually) will present the corresponding monitoring reports to the Security Coordinator for their review and validation. The relevant information is incorporated to review the management tools and the preparation of the new Operational Plan for the project. The flow chart of the data management is presented below:

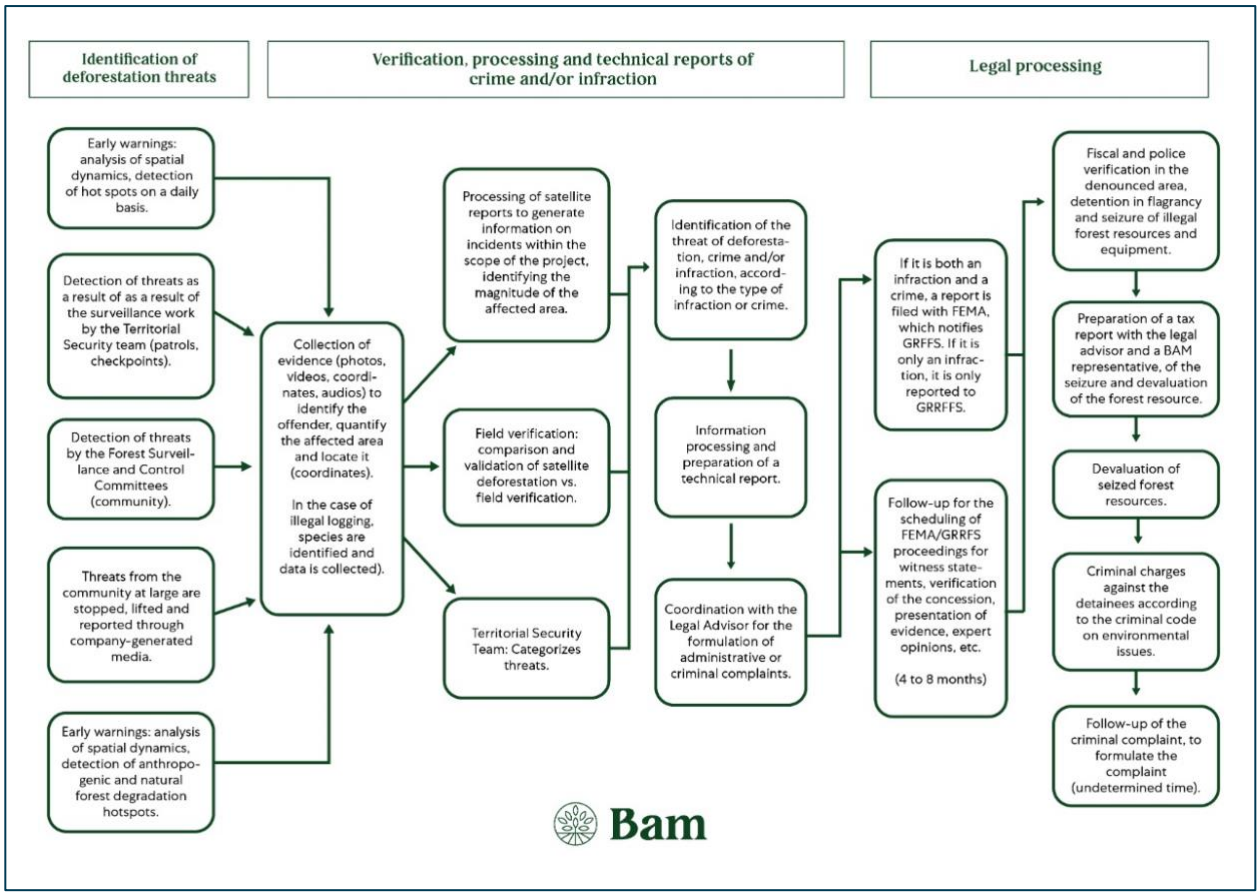

Figure 34. Flow chart of the reviewing process of information

Figure 34 shows a clear structure of how the data is managed by the team. First, the initial procedures aim to identify deforestation threats where the Territorial Security Team actively works. Then, In the verification, processing, and technical reports of the crime take place by the Territorial Security Team. Finally, with all the information gathered in the field, the team proceed to initiate legal actions against the perpetrators. The physical files are stored in the project's administrative office located in the town of Pucallpa, while the digital files are stored in an electronic folder called "THE LAST HABITAT REDD PROJECT - BAM" located on the BAM server, which is managed by the Forestry Specialist. These files will be kept throughout the life of the project and for at least two years after the end of their crediting period.

ANALYSIS OF DEFORESTATION

For this monitoring component, information management comprises the following steps or processes:

Step 1: Selecting and analyzing the source of land use change

1.1. For the fifth-year monitoring period, the following actions will be taken:

a) The data collected and analyzed should cover the entire project area. The data must correspond to the year in which the verification occurs.

b) For the calculation of each category of land use change:

• The area of each category will be calculated within the project area and, when necessary, within the leakage belt.

• The reference forest cover maps for the project area will be updated.

• The remaining forest area within the project area will be updated.

1.2. For the tenth-year monitoring period, a review of the baseline corresponds:

a) Use of medium resolution images (30 mx 30 m or less, if available) at the end of the period in which the baseline will be renewed.

b) The data collected and analyzed must cover:

• Entire reference region: data available for the baseline renewal year or no less than one year earlier.

• For the processing of Land Use Capacity, geometric corrections will be georeferenced and made, as well as cloud and shadow detection.

• The area of each category will be calculated within the reference region, the project area and, when necessary, within the leakage belt.

• The forest cover maps will be updated for the reference region, the project area and the leakage belt.

• The total deforested areas will be estimated during the first 10 years to adjust the baseline and the deforestation rate if necessary.

Note: The indications of the corresponding Module of the REDD Methodology Modules regarding clouds will be taken into account for the determination of maps. A classification accuracy of 90% or more will be sought.

Step 2: interpretation and analysis

2.1 Monitoring deforestation

a) Deforested area within the Project Area (PA) by stratum.

In this case, it must be specified to which type of Land Use (LU) the deforested areas have been changed. For the recalculation of the baseline, it must be established or indicated whether the percentages of change in land use remain the same as in the initial baseline.

c) Carbon stocks in carbon pools:

• The carbon stock is maintained in each stratum defined in the baseline. It will be re-evaluated for the baseline review (in 10 years).

• The carbon stock of each land use is maintained. It will be re-evaluated for the baseline review (in 10 years).

e) Deforested area within the Reference Region (for baseline review).

QUALITY ASSURANCE

Review processes will be carried out in order to ensure the quality of the project information, minimizing the risks of error; thus, obtaining reliable data as the basis of a solid monitoring system. It includes the following steps:

1. Training

Training will be provided to staff in general in the different roles that they must play in the framework of the project, activities, and the methodologies to be followed, as well as the care they must take in those critical points of information management in its different stages: collection of field data, fingering, processing.

2. On-site verification

It basically consists of the monitoring in the field that the Security Coordinator must carry out on the work of the technical team, always taking care that the procedures established in the methodological guidelines of the guides and manuals are implemented and that have been disseminated to the staff in the process. training.

An error in the implementation of the procedures must be corrected in the field during the execution of the samplings or evaluations.

4. Review of data collected before and after digitization

• Field data collection: form header review, complete fields, data consistency (values within parameters).

• Typing: once 100% of the information contained in the form has been entered into the database, an indication of "typing" must be entered in the corresponding form and once the consistency of the fingering has been checked, it must be entered an indicative of "revised".

• Processing: is the responsibility of the Security Coordinator. They should take into consideration the methodological guidelines defined in the monitoring guides or manuals developed by the project.

If any inconsistency of information is identified at the field form level, this information must be verified in the field. If the inconsistency is found in the digitized information, it must be corroborated in the field forms and if the inconsistency persists, it must be corroborated in the field.

5. Review of monitoring reports before publication.

The monitoring reports should be reviewed before publication to confirm that the calculations, analysis, and conclusions are correct and if they have been obtained following the corresponding guidelines. This work is in charge of the Forestry Specialist.

If there are non-conformities during the internal or external audit processes, the data should be reviewed, and the non-conformities addressed.

INTERNAL AUDIT PROCEDURES

For the internal Audit Procedures, the project will follow the flowchart depicted in Figure 3.12. With this procedure, the project will validate the appropriate usage of satellite imagery to identify areas of deforestation because it indicates the steps to follow in case of any threat of the area within the project. In addition, this procedure contemplates a comparison between satellite imagery monitoring and field verification.

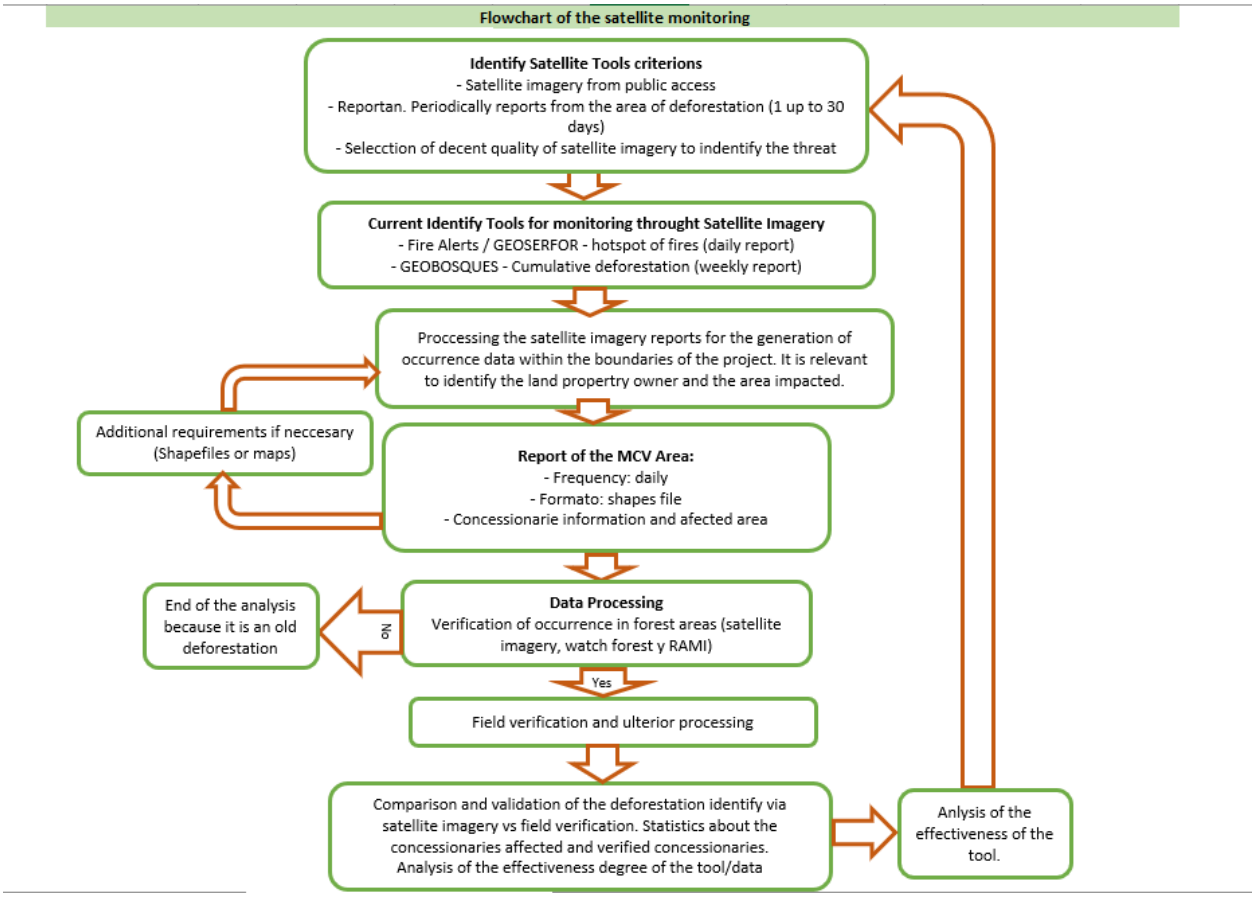

Figure 35. Flowchart of the internal procedure to analyze the satellite monitoring.

Finally, the flowchart presented above in Figure 35 also serves as a internal audit procedure because shows how the data gathered from the field should be conducted by following a series of steps in charge of the competent team member.

Figure 36. Flujograma XX

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

The Last Habitat REDD+ reports and progress (regarding monitoring of the area, activities carried out, biodiversity studies and reports, community projects, agreements, among others) will be communicated to the various communities surrounding the project and other key stakeholders such as local authorities and BAM staff. Within the offline channels, easy-to-read information brochures, maps and monthly bulletins will be generated. These will include the company's telephone number and contact email (info@bosques-amazonicos.com) to maintain direct communication with the team. In addition, public meetings and workshops will be held on dates and at locations mutually agreed upon with the communities and hamlets.

Similarly, regarding online channels, there is the Facebook page: Bosques Amazónicos - BAM (https://www.facebook.com/bam.Bosquesamazónicos), where the brochures and bulletins mentioned above will be shared, as well as photos, videos, and testimonials, also shared on the YouTube channel: BAM - Bosques Amazónicos (https://www.youtube.com/channel/UCKrJZHTukUr6gwwHS1_wMBA). Lastly, relevant news and articles will be published in the Blog section of the Bam website (www. Bosques-amazonicos.com)

More detail is presented in the Communications Plan of The Last Habitat REDD+ project in the document attached (Annex 8).

3.4 Optional Criterion: Climate Change Adaptation Benefits

Not applicable.

3.4.1 Regional Climate Change Scenarios (GL1.1)

Not applicable.

3.4.2 Climate Change Impacts (GL1.2)

Not applicable.

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

Not applicable.

4 COMMUNITY

4.1 Without-Project Community Scenario

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

The Project area includes two geographic regions that are Ucayali and Huánuco. In both regions we find different characteristics:

Ucayali:
The Ucayali region is located in the central-eastern zone of the Peruvian territory. It covers an area of 102,410.18 km² (representing 7.97% of the national territory and around a seventh of the Peruvian Amazon jungle). It has four provinces (Coronel Portillo, Padre Abad, Atalaya and Purús). It was inhabited from the beginning by the Pano ethnic group (Shipibos); After the conquest, it experienced evangelization and a process of miscegenation that intensified with the rubber boom, causing demand in the international market that promoted the presence of the western population in the Amazon region.

Huanuco:
Huánuco is located in the central part of the country, contains the three mountain ranges of the northern Andes of Peru and extends to the Ucayali River. It includes Andean territory, jungle border, high jungle and low jungle. It covers an area of 37,266 km2, which represents 2.9 percent of the national territory. It has two natural regions, the sierra with 22,150 km2 and the area bordering the jungle and jungle, with 15,116 km2. The department is bathed by the Pachitea, Marañón and Huallaga rivers, and its altitude ranges between 160 meters above sea level and 3,850 meters above sea level, with the district of Honoria, in the province of Puerto Inca, having the lowest altitude (168 meters above sea level) and the district of Queropalca, in the province of Lauricocha, the one with the highest altitude (3,831 masl).

Project area:
In the Ucayali region, the project area includes the province of Coronel Portillo where the districts of Manatay, Masisea and Campo Verde are located. In the Huánuco region it includes a part of the province of Puerto Inca where the district of Honoria is located.

The area of influence: Understood as the geographical space, where the project activities will be carried out, it is shown below

Indirect area of influence of the project will be the areas around the perimeter of the project that includes communities, hamlets and sectors as indicated in the following map:

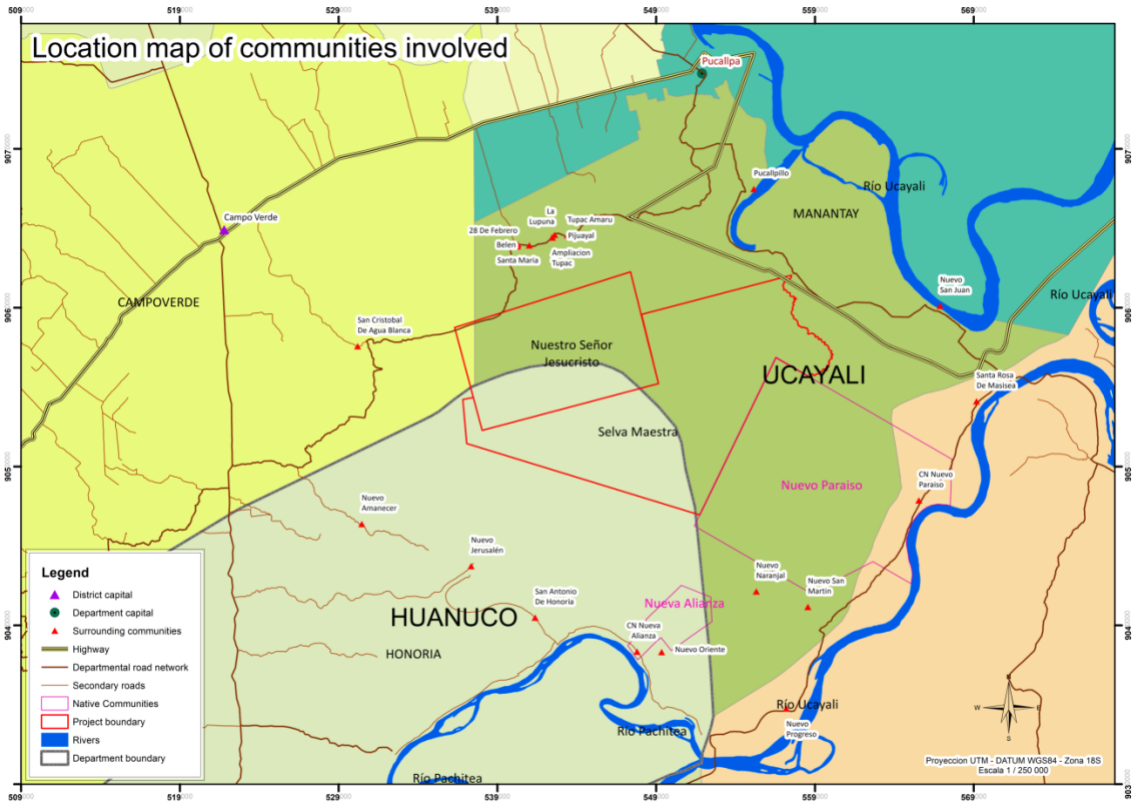

Figure 37. Indirect area of influence of the project

In the table the communities that make up this area:

The project area corresponds to two private areas belong to Bosques Amazónicos SAC (Selva Maestra sector and Nuestro Señor Jesucristo sector). To carry out the social characterization of the environment, the following study was carried out on the following communities associated with the two sectors, as shown in the table:

Table 49. Comunidades seleccionadas para realizar la caracterización social

	Predio Nuestro Señor Jesucristo	**Predio Sector Selva Maestra**
Communities	Agua Dulce	Caserío José Olaya
	Manco Capac	CCNN Nuevo Paraíso
	Agua Blanca	CCNN Nueva Alianza
	Tierra Roja	
	Caserío Ampliación Tupac Amaru	
	AA. HH 28 de Febrero	
	Nueva Esperanza	

For the analysis and connection between communities and the private area of the BAM company, access (communication channels), relationships and interests, and distance are studied.

Social diagnosis in the project area

According to the results obtained in the social diagnosis prepared in August 2021 to update the status and characteristics of the communities around the project area, the following characteristics were:

Table 50. Social diagnosis results

N°	Sectors/ Communities	Interviewed families	Total number of families	Random representative sample%	# of interviews based on sampling
1	Agua Dulce	8	35	5%	**4**
2	José Olaya	8	40	5%	**5**
3	Tupac Amaru Limón	11	40	5%	**5**
4	Nuevo Paraiso	28	250	32%	**28**
5	AA. HH 28 de Febrero	12	70	9%	**8**
6	Caserío Nva Esperanza	14	100	13%	**11**
7	Agua Blanca	15	50	6%	**6**
8	Soledad	10	45	6%	**5**
9	Manco Capac	9	35	5%	**4**
10	Nueva Alianza	28	80	10%	**9**
11	Tierra Roja	5	30	4%	**3**
	Total	**148**	**775**	**100%**	**88**

Chart: Social diagnosis. Study based on a representative probabilistic statistical sample

1. Population Characteristics

In the context of the project, the following results were found based on the social characteristics of the population.

General characteristics of the population:

In the field work carried out and the representative sample collected, we are presented with an equal number of interviews between men and women.

"The population can be classified in various ways, for example, according to age and sex (demographic), by where they live (by area)".

Table 51. Interview according to gender:

		Frequency	Percentage	Valid percentage	Accumulated percentage
Valid	Masculine	44	50,0	50,0	50,0
	Feminine	44	50,0	50,0	100,0
	Total	88	100,0	100,0	

Table 52. Age range of the interviewees:

Age of the interviewee (Group)

		Frequency	Percentage	Valid percentage	Accumulated percentage
Valid	<= 17	1	1,1	1,1	1,1
	18 - 29	20	22,7	22,7	23,9
	30 - 42	32	36,4	36,4	60,2
	43 - 54	16	18,2	18,2	78,4
	55 - 67	14	15,9	15,9	94,3
	68+	5	5,7	5,7	100,0

	Total	88	100,0	100,0	

As we can see in table 3, the age range is between 18 and 42 years old, representing 60% of the total number of interviewees.
In turn, in the following table (table n°4) we appreciate that the vast majority, represents a head of family and has a significant family burden, with 50% of the population interviewed having a family of more than 2 children.

Table 53. Number of children

		Frequency	Percentage	Valid percentage	Accumulated percentage
Valid	0	4	4,5	4,6	4,6
	1	9	10,2	10,3	14,9
	2	26	29,5	29,9	44,8
	3	11	12,5	12,6	57,5
	4	12	13,6	13,8	71,3
	5	9	10,2	10,3	81,6
	6	6	6,8	6,9	88,5
	7	5	5,7	5,7	94,3
	8	2	2,3	2,3	96,6
	9	1	1,1	1,1	97,7
	10	1	1,1	1,1	98,9
	11	1	1,1	1,1	100,0
	Total	87	98,9	100,0	
		1	1,1		
Total		88	100,0		

2. Migration

Internal migration is the component of demographic dynamics that reacts most quickly in response to variations in the socioeconomic situation that occur in a country or in certain areas or regions. Under this perspective, one of the purposes is to highlight some of the changes that have occurred in their behavior as an expression of the transformations in the economic and social structure. Within the framework of the project, we appreciate generational changes of belonging and roots in the territory that have been strengthened in the following way:

Table 54. ¿Are you born in this community?

		Frequency	Percentage	Valid percentage	Accumulated percentage
Valid	No	63	71,6	71,6	71,6
	Yes	25	28,4	28,4	100,0
	Total	88	100,0	100,0	

As can be seen, almost 30% are from the sectors of origin, with more than 60% of families who have left their place of origin in search of economic opportunities to improve living conditions in places little explored or visited from an institutional and formal analysis of the economy.

3. **Education**

The field of education has had its place in the different economic development agendas. In the SDGs (Sustainable Development Goals) one of the main objectives is to ensure inclusive and equitable quality education by 2030, as well as promote learning opportunities for all (ONU 2015). This interest is due to the recognition of education as a relevant factor in aspects such as social mobility, increased productivity and economic growth (CAF 2007); as proposed by the theory of human capital initially developed by Schultz (1961), Becker (1964) and Mincer (1974).

Under this approach, the following can be seen:
In the case of the interviewed families, more than 50% have less than a complete secondary education. What it indicates is that they would be in limited conditions to be able to get paid and permanent jobs in half of the families.

4. **Access and use of basic services: Basic needs**
Unsatisfied Basic Needs (UBN) is a direct method to identify critical deficiencies in a population and characterize poverty.

In the study carried out, the analysis of the following indicators was made.
- Type of cuisine for food
- Access and characteristics of water consumption
- Type of hygienic services
- Access and characteristics of electrical energy

4.1 Type of kitchen for food:
70% maintain the use of firewood as the main source of energy for the use of their kitchen, being, according to their words, the current wood that they use for firewood, only 30% indicate that they use gas for energy in their kitchens.

4.2 Access and characteristics of water consumption:
65% of families have limited access to water service (outside the home and without proven or safe water treatment).

4.3 Hygienic services:
Very limited conditions for access to drainage in these sectors and with 90% of families having alternative services for managing their waste, this is a real public health problem.

4.4 Electric power:
Although 90% of the families confirmed that they had access to electricity, the conditions in several sectors are through a generator and by the hour (30% of the total number of families).

Resume:
Table 55: Acceso a energía

Indicator	**Unsatisfied**	**Satisfied**
Type of kitchen	30%	70%
Access to electricity	30%	70%
Drinking water	65%	35%
Hygienic services	90%	10%

5. Economic – productive

86% of the families identify themselves as small farmers and 60% identify that the income they generate is not enough income for their economic needs.

The income range of the families is presented below:
Family income
Table 56. Range of family monthly income:

		Frequency	Percentage	Valid percentage	Accumulated percentage
Valid	Less than 350 soles	35	39,8	42,2	42,2
	Between 350 to 500 soles	11	12,5	13,3	55,4
	Between 500 to 930 soles	16	18,2	19,3	74,7
	930 soles	14	15,9	16,9	91,6
	Between 930 to 1500 soles	7	8,0	8,4	100,0
	Total	83	94,3	100,0	
	NS/NP	5	5,7		
Total		88	100,0		

As we can see, 70% of the income of the families located in the area of the project is located in an interval between less than 350 soles per month to 930 soles per month and taking an average, it could be said that they would be registering an annual income of approximately 5,000 to 8000 thousand soles, that is, a monthly income less than the current minimum salary of the Peruvian government (Minimum Vital Remuneration established by the Peruvian government is 930 soles).

According to the National Institute of Statistics of Peru in 2020 it indicated that, "the Poverty Line is the monetary equivalent to the cost of a basic consumption basket of food and not food, which for 2020 amounts to S / 360 per month per inhabitant, the person whose monthly expenditure is less than S / 360 is considered poor; for a family of four the cost of a basic consumption basket is S /. 1,440 per month". In this context, we have that many of the families (70%) are in a situation of vulnerability (monetary poverty).

Note:
The project analyzed the importance of being able to include more communities at the beginning of the project, especially those that are currently beginning to build a relationship with the company from a territorial perspective. These sectors are:

Table 57. Communities that will strengthen their relationships with BAM

N°	Communities	Diagnosis 1st year
1	Tupac Amaru	Yes
2	Lupuna de Manantay	Yes
3	Pijuayal	Yes
4	Santa María	Yes
5	Nuevo Jerusalem	Yes
6	San Antonio de Honoria	Yes
7	Nuevo Naranjal	No
8	Nuevo San Martín	No
9	Nuevo Horizonte	No
10	Nuevo Amanecer	No

For this characterization diagnosis, these communities have not been included, which will be built during the beginning of the project (year 1) with the objective of strengthening and generating positive impacts from the analysis of the context and territorial development expected from the project. Corresponding to specific objective from de logical framework of the project (O.E 3): Strengthen the socio-economic situation of the interest groups, specifically of the hamlets and communities neighboring the project area.

Also in the activity 3.1: Identify interest groups, specifically villages and communities surrounding the project area, making a complete analysis of the context, socio-demographic characteristics of the population, general and specific needs, production chains, commercial activities, among others.

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

The project area is located in a place with a social environment of great sensitivity and natural value such as the Amazon rainforest, populated by local communities, with social structures and ways of life that could be directly or indirectly affected by project activities.

In this context, Bosques Amazónicos SAC assumes as a commitment to try to maintain the social and cultural conditions previously existing in the work areas, in order not to alter the ways of life of these populations, showing respect for their own organizations and the decisions that can be made in the face of these projects. In this way, the company is building to a relationship to co-working with the populations that inhabit the boundary areas where it will carry out the activities of the project.

The implementation of these principles is based on conducting previous studies that allow having sufficient information on the physical, biological and social reality to develop environmental management plans and community relations, tools that allow coping with the various demands as well as achieving high control over technical and security aspects.

In the current context of the social environment of the project there are no formal agreements between the associations of different producer unions. However, there are several informal agreements between different productive sectors and the relationships vary depending on the economic sector. We find private properties in the area that work individually with their own objectives and management of the territory.

Included within the project activity is the improvement and strengthening of relations between the different groups in the community. Additionally, measures will be included to ensure that the project does not have negative repercussions on interactions between groups in the community as a result of the unequal distribution of benefits or the exclusion of people from participation in project activities by the union to which they belong or they are affiliated.

From de logical-frame we have these activities to make the action to support the interactions between communities around the area of the project.

In these activities:

Efficient strategies to improve the socio-economic situation of interest groups (hamlet and communities):

Table 58. Strategies to improve the socio-economic situation of interest groups (hamlet and communities):

AE 3.1.1	Identify interest groups, specifically villages and communities surrounding the project area, making a complete analysis of the context, socio-demographic characteristics of the population, general and specific needs, production chains, commercial activities, among others.
AE 3.1.2	Make a prioritization of the interest groups and define intervention strategies for each of them based on the previous analysis (organizational, technical, productive strategies); define the budget and schedule for its correct execution.
AE 3.1.3	Celebrate cooperation and joint work agreements with interest groups (hamlets, communities)
A.E 3.5	Design and implement a Community Communication Plan to strengthen the company with stakeholders, ensuring an adequate flow of bilateral communication
A.E 3.5.1	Prepare the Community Communication plan

A.E 3.5.2	Implement the communication and consultation program with local communities
A.E 3.5.3	Carry out the procedures for registering and dealing with complaints and claims (bilateral communication)

4.1.3 High Conservation Values (CM1.2)

Table 59. Identification of the area of high conservation value in The Last Habitat REDD Project

High Conservation Value	Tropical Forests
Qualifying Attribute	**Community Benefits:** The loss of biodiversity has a direct impact on the food security of the beneficiary population because a change modifies the ecosystem and would also affect the Forest. Also, development opportunity with activities such as reforestation would be greatly affected.
Focal Area	The area is located in the forests of the project area
High Conservation Value	Water bodies
Qualifying Attribute	Bodies of water are complex ecosystems that harbor habitats for countless species. The continuous contamination of water as a consequence of insufficient or uncontrolled unsustainable activities impacts hydrobiological processes, triggering the reduction of biodiversity and the resilience capacity of ecosystems. **Community Benefits:** The loss of biodiversity has a direct impact on the food security of the beneficiary population because a change modifies the ecosystem and would also affect the Forest.
Focal Area	Water bodies and lakes located in the project area.

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

For a description of the characteristics of the communities in the scenario without a project, see Sections 4.1.1.

Also, we can say, it is observed the existence of continuity (linear of time) dealer with economic income that does not increase or improve to provide a better quality of life in the current conditions of production and sale. In the study carried out in August 2021, the productive activity of the forest was indicated by themselves, as an insufficient economic activity to cover their basic needs (more than 60%).

Also, in access to basic need there are a big problem with water quality and principal source of potable water (we can see the results in 4.1.1).

They are populations with extensive needs that seek and need new development opportunities that the project offers them one more alternative to be able to improve and have an increase in their quality of life (better water access and develop production chains)

4.2 Net Positive Community Impacts

4.2.1 Expected Community Impacts (CM2.1)

The community impacts of the project have been estimated based on ongoing consultations and coordinated. As a result of this dissemination and consultation work, the following impacts have been identified:

Table 60. Description of impacts according to logical framework of the project

Reduce greenhouse gas emissions caused by degradation and/or deforestation in the project area.

Community group	*Communities associated to the project (see section 4.1.1 list of the communities)*
Impacts	*Impacts Increase in the capacity of local territorial governance and sustainable and sustainable management of natural resources*
Type of benefit, cost or risk	*Direct benefit on the project area and buffers. What are expected to be obtained from the transfer of information and the promotion of technical knowledge for the maintenance and management of forests through the development of theoretical-practical workshops and the implementation of awareness campaigns.*
Change in well-being	*Change in well-being Positive impact that will contribute to:* *• Permanence of activities to reduce deforestation.* *• Permanence of activities for the conservation of biodiversity.*

SO02: Protect the integrity of biological diversity and ecological processes in the project area.

Community group	*Communities associated to the project (see section 4.1.1 list of the communities)*
Impacts	*Tropical forest maintenance*
Type of benefit, cost or risk	*Direct benefit on the project area and buffers.* *Main economic resource protected and taken care of.*
Change in well-being	*Change in well-being Positive impact that will contribute to:* *• Permanence of activities to reduce deforestation.* *• Permanence of activities for the conservation of biodiversity.*

SO3: Strengthen the socioeconomic situation of the interest groups, specifically of the villages and communities neighboring the project area

Community group	*Communities associated to the project (see section 4.1.1 list of the communities)*
Impacts	*Economic empowerment of community groups*
Type of benefit, cost or risk	*Economic development alternatives and social benefit (access to basic services).*

Change in well-being	*Change in well-being Positive impact that will contribute to:* *• Permanence of activities to reduce deforestation.* *• Permanence of activities for the conservation of biodiversity.* *• Development community: water access and develop production chains*

4.2.2 Negative Community Impact Mitigation (CM2.2)

The negative impacts of the project have been analyzed based on field work. For each impact identified, the project has a mitigation strategy associated with the very nature of the project and the activities proposed for its implementation in the area.

Table 61. Negative impacts of The Last Habitat REDD Project

Negative impacts	Mitigation strategy
Institutional problems and conflicts between communities or associations	<u>Mechanism for dealing with complaints and requests</u> Within the mechanism, the project will be responsible for receiving all requests related to problems and/or conflicts between institutions, community associations or the population in general associated with the project or impacted by it and will have an average of 30 days to respond and determine a strategic for the mitigation or resolution of the conflict and communicate to the applicant(s) the actions to be carried out.
Lack of activity planning	Lack of activity planning Strategic plan, strategic lines and implementation schedule for project activities The project will have a clear schedule for the implementation of the activities, which will be socialized and validated with authorities and representatives of each sector and/or community for their information. The project has always developed, and will continue to develop, briefings prior to the implementation of the activities in order to ensure their proper execution. Additionally, through the mechanism for attention to requests and complaints, the project will also receive requests regarding planning and coordination of activities in the territory. You will have 15 business days
Collective work generates division and/or organizational problems among project participants	The realization of each project activity will begin with an initial training with which the proposal of the activity and its characteristics will be announced, so that each sector and community chooses its participation and that of its members. Once the participants have been defined, it will begin with specific training by activity.
Ineffective socialization processes and communication channels	The project has analyzed the need to improve and expand communication channels with the sectors and communities involved in the following way: Socialization meetings and workshops to guarantee access to information for all community groups associated with the project.

Negative impacts	Mitigation strategy
	The project has specific communication channels for each audience and they will be adapted according to the dynamics of the project, the communities and the needs created in the initial phase of implementation of the activities.

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

The current context of the area shows a political-institutional fragility and a lack of implementation of the available instruments for the management of ecosystems and natural resources due to the lack of knowledge of the policies, plans and programs related to their protection and use, due to the strong institutional and financial barriers that prevail in the area, from the different levels (local, regional and national). Likewise, the distance or segregation between private areas of companies, small areas of farmers and native communities in the territory present a diverse and complex territory management context.

In the sectors there is still little information and knowledge about the nature of environmental problems, their management and solutions, and a lack of public awareness about the problems of the area and its participation mechanisms; conditions that put at risk the permanence of the initiatives that are expected to be implemented, especially in the sectors of unorganized groups (there are differences between the 2 native communities that would work with the Nuevo Paraíso project and the Nueva Alianza Shipibo ethnic group, who have other organizational characteristics and their governance itself). }

Starting from a complex context and institutional absence, the opportunity to participate in a project that strengthens relations, governance and land use planning is pertinent as a medium and long-term vision of development. In the case of the two native communities, reduce deforestation in the area, avoid invasions by third parties and promote the permanence of conservation activities historically developed by the community, through programming of activities and that are directly articulated with the strategies of management of natural resources and land use planning that your community proposes will be very pertinent. In the case of families of small farmers with such low incomes and limited living conditions, receiving development opportunities opens up great opportunities that allow promoting and improving subsistence agriculture for a more technical one that has repercussions in the medium term for new and better productive alternatives.

Finally, in a scenario without a project, the community relations improvement component could not be developed and activities that could affect the project area could not be efficiently controlled and monitored.

4.2.4 High Conservation Values Protected (CM2.4)

None of the HCVs related to community well-being (Section 4.1.3) will be negatively affected by the project. In contrast, the project activities considered in Section 2.1.11 have conservation as their main objective.

4.3 Other Stakeholder Impacts

4.3.1 Impacts on Other Stakeholders (CM3.1)

The project, according to its results and proposed activities, does not present negative impacts within its area of direct influence and in turn on other groups that live and coexist in territorial management, neither does it present negative impacts. Positive impacts are expected from changes in quality of life (access to basic services such as water for human consumption).

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

No net negative impacts expected on other stakeholders.

Displacement of activities that cause deforestation or leakage. This is a probable direct effect of the control and monitoring activities of areas that occurs when deforestation agents (invaders, illegal loggers, informal miners and other agents), unable to affect the project area, move to other areas or territories. that are not within the project area (with the intention of carrying out the same deforestation activities).

4.3.3 Net Impacts on Other Stakeholders (CM3.3)

Based on 4.3.1 and 4.3.2, the project expects to produce positive net impacts on other stakeholders as no negative impacts are expected.

4.4 Community Impact Monitoring

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

The designed monitoring plan identifies the communities, community groups and other actors that should be monitored, the variables that need to be monitored, the types of measurements and sampling methods, and the frequency of monitoring and reporting of each type and method. Monitoring and indicator activities are developed by the project's strategic lines (see Section 2.1.11).

The Project, for the community component, has the objective of generating positive impacts on the social well-being of the groups involved in the project.
These actions (and their impacts) require a system to review, collect, analyze, evaluate and propose adjustments (if necessary) and systematize the progress, results and achievements of the planned objectives.

Forest protection activities, technical assistance and legal advice protocols, and agreements with forest authorities will benefit all project proponent. This is the strategy to mitigate the risk of leaks.

This monitoring plan presents, defines, and details the indicators, methodologies, techniques, and data collection schedules.

Table 62. Monitoring plan: indicators, methodologies, techniques, and data collection schedules

Specific objective 1: Reduce greenhouse gas emissions caused by degradation and/or deforestation in the project area.

Indicator	Indicator type	Method	Data	Who measures	When
N° Committees formed and/or strengthened to forest monitoring and control	N° of minutes of agreement/ 30% of communities with minutes of agreements associated with territorial management and activity programming	Minutes of workshops or meetings held to reach agreements	No	BAM coordinates with the authorities of each sector	2 per year

Protect the integrity of biological diversity and ecological processes in the project area.

Indicator	Indicator type	Method	Data	Who measures	When
Local communities with knowledge identification and conservation of biodiversity.	01 workshop and 2 campaigns of conscientization (workshops and internships carried out)	Attendance lists of workshops.	No	BAM coordinates with the authorities of each sector	2 per year

Strengthen the socio-economic situation of the interest groups, specifically of the villages and communities neighboring the project area.

Indicator	Indicator type	Method	Data	Who measures	When
Local communities with technical capacities to strengthen production chains, applying sustainable agricultural and/or forestry practices	30% of families trained (workshops and internships carried out)	Attendance lists of workshops and demonstrative plots in operation (minimum 1 per sector)	No	BAM coordinates with the authorities of each sector	1 per year
Local communities with strengthened organizational capacities for community development management	50% Local communities organized in committees and other strategies linked to the management of the territory.	Number of local communities that have benefited from at least 1 support initiative for local development Number of collective actions developed for landscape management (organized and recognized committees)	No	BAM coordinates with the authorities of each sector	2 per year

4.4.2 Monitoring Plan Dissemination (CM4.3)

The dissemination of the monitoring plan for community benefits will take into account what is described in Sections 2.3.2 and 3.3.4 on dissemination of the project summary documents and dissemination of the climate monitoring plan.

The development of the community impact monitoring plan is based on the analysis of the situation that it is desired to modify with the implementation of project activities.

The success of the monitoring plan will reside in the participatory and coordinated work.

4.5 Optional Criterion: Exceptional Community Benefits

The project does not plan to get the Gold Community Level.

4.5.1 Exceptional Community Criteria (GL2.1)

The project does not plan to get the Gold Community Level.

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

The project does not plan to get the Gold Community Level.

4.5.3 Community Participation Risks (GL2.3)

The project does not plan to get the Gold Community Level.

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

The project does not plan to get the Gold Community Level.

4.5.5 Net Impacts on Women (GL2.5)

The project does not plan to get the Gold Community Level.

4.5.6 Benefit Sharing Mechanisms (GL2.6)

The project does not plan to get the Gold Community Level.

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

The project does not plan to get the Gold Community Level.

4.5.8 Governance and Implementation Structures (GL2.8)

The project does not plan to get the Gold Community Level.

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

The project does not plan to get the Gold Community Level.

5 BIODIVERSITY

5.1 Without-Project Biodiversity Scenario

5.1.1 Existing Conditions (B1.1)

For the evaluation of the existing conditions within the project area, primary and secondary sources of information were reviewed. The methodology for the development of the biological baseline was a Rapid Assessment (RAP) proposed by Conservation International and carried out in the dry season in the month of October 2021 in three areas of the forests of the private lands of the BAM company located in the Campo Verde and Manantay districts of the Coronel Portillo province of the Ucayali region.

The three evaluated zones correspond to the Quinillal camp (zone 1), Milagros camp (zone 2) and Palmeras camp (zone 3), using a total sampling effort of ten effective days of evaluation with 201 hours and 112.3 kilometers, the groups were evaluated taxonomic that represent the diversity of species and at the same time respond to the objectives of the project.

The taxa were selected considering their ecological importance, ease of sampling, performance in biodiversity assessments, sensitivity to habitat alterations, taxonomic knowledge, and frequent use in the baseline, biological monitoring, and environmental impact studies. The groups evaluated were larger, non-flying and flying mammals, ornithofauna, amphibians and reptiles.

The National Forestry and Wildlife Service (SERFOR), prepares the list of endangered species of wildlife in Peru, taking into account each of the threat factors and prioritizing the species according to the level of conservation of their wild populations. Peruvian national legislation has adopted three threat categories: Critically Endangered (CR), Endangered (EN) and Vulnerable (VU); in addition to two preventive categories: Near Threatened (NT) and Not Enough Data (DD).

For Peruvian legislation, wild fauna resources are non-domesticated animal species that live freely and specimens of domesticated species that due to abandonment or other causes are assimilated in their habits to wildlife, except for species other than amphibians that are born in marine and continental waters that are governed by their own laws (Forestry and Wildlife Law 27308), however, the biological definition has a broader meaning.

In this context, work was done on the systematization of the list of threatened species and included in national protection lists (DS N°004-2014-MINAGRI), which approves the updating of the list of classification and categorization of threatened species. of legally protected wild fauna, approved by means of (DS N° 034-2004-AG).

In the international context, the International Union for Conservation of Nature (IUCN), considers various categories for the classification of species based on criteria that determine their conservation status. They are: Extinct (EX), Extinct in the Wild (EW), Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT), Least Concern (LC), Data Deficient, (DD) and Not Evaluated (NE). Species listed in the CR, EN and VU categories are considered “endangered”.

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) includes in its appendices those species that have suffered some change or drastic decrease in their populations due to excessive hunting or trade in their derived products. CITES is an international agreement between governments, which aims to ensure that international trade in specimens of wild animals and plants does not constitute a threat to their survival.

Appendix I. Includes all endangered species that are or may be affected by trade. Trade in specimens of these species must be subject to particularly strict regulations so as not to further jeopardize their survival and will be authorized only under exceptional circumstances.

Appendix II. Take into consideration the following:

a) Includes all species that, while not currently in danger of extinction, could become so unless trade in specimens of those species is subject to strict regulation to prevent use incompatible with their survival.

b) Those other species not affected by trade, which must also be subject to regulation to allow effective control of trade in the species referred to in subparagraph a).

Appendix III. It contains those species proposed by any of the member countries for a special regulation because they are in a situation of danger or threatened within their jurisdiction. Cooperation between the States parties is necessary to protect these species and achieve adequate control of their trade. So far, Peru has not requested the CITES Secretariat to include any species of wildlife in Appendix III.

5.1.1.1 Key ecosystems

Peru is one of the seventeen megadiverse countries in the world, which together have 70% of the planet's biodiversity. The country's biodiversity is represented by a great variety of ecosystems, species of flora and fauna, and genetic diversity, which have been contributing to global development and sustainability (MINAM, 2014b). The department of Ucayali contributes significantly to the country's biodiversity, since it has around 9,262,764 ha of forests, which are home to a great diversity of flora and fauna species. Research carried out has determined up to 1,600 species of flora found in the Sierra del Divisor National Park, with more than 377 species of fish, 402 amphibians, 82 species of reptiles, 782 species of birds and 257 species of mammals (DRBD-GOREU, 2017).

The loss of forest cover due to deforestation, the felling of trees in the native forest without planned forest management, overgrazing and increasingly frequent forest fires have caused degradation, loss of biodiversity and impoverishment of the soil in the area of the Project. The removal of forests and the consequent destruction of the habitat has affected most of the fauna species, which generally live in low densities in the forests of the region.

According to the definition established in numeral 11 of Annex 02 of the National Forestry and Wildlife Policy, approved by Supreme Decree No. 009-2013-MINAGRI, fragile ecosystems are those ecosystems with unique characteristics or resources with low resilience (capacity for return to its original conditions), and unstable in the face of shocking events of an anthropogenic (human) nature, which produces a profound alteration in its structure and composition. The condition of fragility is inherent to the ecosystem and only manifests itself under disturbance conditions. It is established that, the greater the fragility, the greater the need to protect the ecosystem.

SERFOR, in coordination with the regional forestry and wildlife authorities (ARFFS), approves the list of fragile ecosystems in accordance with Law No. 28611, General Environmental Law, based on technical studies and available scientific information, in the scope of its powers, it also states that said

list will be updated every five years. In Peru, in June 2020, a Resolution was issued by the executive directorate of SERFOR, in which 18 ecosystems were established in the Peruvian Amazon, corresponding to the Huánuco region, including the so-called Honoria Norte in the district of Honoria, province of Puerto Inca, department of Huánuco, in the flooded alluvial forest ecosystem, which is located within the project area, which corresponds to the Selva Maestra property.

5.1.1.2 Fauna

A) Mammalogy

Mammalian species protected by National Legislation

✓ As a result of the evaluation carried out on mammals, the presence of two (02) species in a Near Threatened (NT) situation was determined: otorongo (*Panthera onca*) and tapir or sachavaca (*Tapirus terrestris*).

Species of mammals in some category of Conservation International

✓ In the international context, the International Union for Conservation of Nature (IUCN), considers various categories for the classification of species based on criteria that determine their conservation status. They are: Extinct (EX), Extinct in the Wild (EW), Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT), Least Concern (LC), Data Deficient, (DD) and Not Evaluated (NE). Species listed in the CR, EN and VU categories are considered "endangered".

✓ As a result of the biological evaluation in the three Study Areas, the presence of two (02) species was determined in the list of endangered species of Peru in the category of threatened (VU), which are in the following situation:

✓ **Vulnerable (VU)**: One (01) specie were found: sachavaca (*Tapirus terrestris*).

✓ **Near threatened (NT)**: Two species were found (02): nutria de río (*Lontra longicaudis)* y otorongo (*Panthera onca*).

✓ **Less concern (LC):** Seven species were found (07): mono fraile (*Saimiri sciureus*), mono fraile boliviano (*Saimiri boliviensis*), mono musmuqui negro (*Aotus nigriceps*), mono coto (*Alouatta seniculus*), tigrillo (Leopardus pardalis) sajino (*Pecari tajacu*) y perezoso de tres dedos (*Bradypus variegatus*)

CITES

Likewise, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), includes in its appendices those species that have suffered some change or drastic decrease in their populations due to excessive hunting or trade in their derivative products.

As a result of the evaluation, it was found that eleven (11) species are included in the appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES):

✓ Appendix I: Three (03) species: otorongo (*Panthera onca),* tigrillo *Leopardus pardalis* y nutria *(Lontra longicaudis*).

- ✓ Appendix II: Eight (08) species: mono pichico (*Saguinus fuscicollis*), mono fraile (*Saimiri sciureus*), mono fraile boliviano (*Saimiri boliviensis*), Mono musmuqui negro (*Aotus nigriceps*), mono coto (*Alouatta seniculus*), sachavaca (*Tapirus terrestris*), sajino (*Pecari tajacu*) y perezoso de Tres Dedos (*Bradypus variegatus*).

Table 63. List of species of mammals registered in the three study areas, according to their category of threat or national and international protection.

N°	LIST OF VULNERABLE (VU), NEAR THREATENED (NT) AND LESS CONCERN (LC) SPECIES				
	Especies	**Nombre común**	**DS N° 004-2014**	**CITES**	**UICN**
1	*Saguinus fuscicollis*	Mono Pichico		II	
2	*Saimiri sciureus*	Mono Fraile		II	LC
3	*Saimiri boliviensis*	Mono Fraile boliviano		II	LC
4	*Aotus nigriceps*	Mono Musmuqui Negro		II	LC
5	*Alouatta seniculus*	Mono coto		II	LC
6	*Panthera onca*	Otorongo	NT	I	NT
7	*Leopardus pardalis*	Tigrillo		I	LC
8	*Lontra longicaudis*	Nutria		I	NT
9	*Tapirus terrestris*	Sachavaca	NT	II	VU
10	*Pecari tajacu*	Sajino		II	LC
11	*Bradypus variegatus*	Perezoso de tres dedos		II	LC

Leyend: I= CITES Appendix I (towards extinction), II= CITES Appendix II, III= CITES Appendix III, VU= Species in a Vulnerable situation, Near Threatened (NT), EN= Endangered, LC= Concern lower, LR= Low Risk.

B) Ornithofauna

According to the bird inventory in the three sampling areas, a total of 112 species, 35 families and 18 orders were recorded. The most representative families were: Thamnophilidae, Tyrannidae and Thraupidae with 14,12 and 10 species respectively. In the case of orders, almost 52% corresponds to the Passeriformes category.

According to the Simpson index, the Palmeras sampling zone presents the most diverse area with a value of 0.9657 compared to the Quinillal and Milagros zones. (Table No.….). Likewise, the Margalef index indicates a high richness of bird species in the study area.

Table 64. Species diversity and richness index in the three study areas

INDEX	QUINILLAL	MILAGROS	PALMERAS
Simpson_1-D	0.9386	0.9514	0.9657
Specific richness (Ind, de Margalef)	13.24	13.28	12.56

Regarding the beta diversity in birds, the Jaccard Index showed a high degree of similarity in the following sampled areas: Between Quinillal - Milagros an index of 20, between Quinillal and Palmeras 22.28 and finally between Milagros and Palmeras 21.83.

The most frequent species in the study areas were *Brotogeris cyanoptera, Akletos melanoceps, Ramphocelus carbo, Pheugopedius genibarbis, Amazona farinosa, Cantorchilus leucotis, Aratinga weddellii, Orthopsittaca manilatus, Cacicus cela,* and *Trogon melanurus*.

According to national legislation and the International Union for Conservation of Nature (IUCN), 274 species representing 96% of recorded species are not globally threatened with extinction, however, the populations of 141 of these birds are decreasing.

The study reported 5 species of birds with a threat category according to the IUCN and the supreme decree D.S.004-2014 MINAGRI: *Jabiru mycteria* and *Falco peregrinus* classified as least concern for the IUCN and Nearly Threatened in Peru, *Myrmoborus melan*urus is Vulnerable for the IUCN and nearly threatened in Peru; *Setophaga striata* is classified as Vulnerable by the IUCN and has not been categorized in Peru, and *Conothraupis speculigera* is Near Threatened by the IUCN and has not been categorized in Peru.

Likewise, according to the Field Report on the rapid evaluation of biodiversity carried out by CORBIDI in March 2020 in the "quinillal" sector of the JCC property (Report attached in Annex 3), it is reported that 36 species of birds are included in CITES Appendices of which 34 are in Appendix II and only *Jabiru mycteria* and *Falco peregrinus* are included in Appendix I, which generally includes the species that are most endangered, but which means that their trade is heavily regulated.

Jabiru mycteria: bird notorious for its size, not very common in Peru and associated with bodies of water in the Amazon. Only as vagrant in coast and mountains. It was recorded as uncommon in water bodies from the boat entering the study area and occasionally flying over it. This species has an extremely large distribution and therefore does not approach the thresholds for Vulnerable based on the distribution size criteria (BirdLife International; IUCN. 2020). In Peru it is Near Threatened. When assessed in 2014, it does not apply to the criteria for Critically Endangered, Endangered, or Vulnerable, but is close to meeting the criteria, or possibly meeting them, in the near future.

Falco peregrinus: a migratory falcon, but with some resident populations. The resident subspecies (cassini) is uncommon in the western Andes. The boreal migrant subspecies (tundrius) is common in the western lowlands and Amazonia, where it inhabits mainly along large rivers. An individual was recorded from the boat during the trip to the study area (sector “quinillal” in JCC). This species has an extremely large distribution and therefore does not approach the thresholds for Vulnerable based on the distribution size criteria (BirdLife International; IUCN. 2020). In Peru it is Near Threatened. When assessed in 2014, it does not apply to the criteria for Critically Endangered, Endangered, or Vulnerable, but is close to meeting the criteria, or possibly meeting them in the near future.

C) Herpetofauna

The study area presented a total of 57 herpetozoan species, of these, 28 belong to the Amphibia class, distributed in 7 families, and 29 to the Reptilia class, distributed in 15 families.

The study area presented a relative abundance of 428 individuals between amphibians and reptiles, with an effort of 67 man-hours and 8 days of trapping, with the methodology of Search for Visual Encounters and Fall Traps, *Leptodactylus petersii* were registered. and *Boana fasciata* as the most abundant species with 77 and 46 individuals, respectively.

The most frequent species per Sampling Unit are *Boana fasciata* and *Anolis scypheus*, present in 27 (40.30%) and 20 (29.85%) in the 67 sampling units.

The study area presented a Margalef index of 8.10 and Fisher's Alpha index of 14.7; This represents a high diversity, which reinforces the importance of conservation in the area.

During the sampling, 3 species were found: *Allobates femoralis, Epicrates cenchria and Caiman crocodilus* (see table No. ….), included in the list of species of Wild Fauna CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora), contained in Appendix II (Vulnerable or potentially threatened), which includes species that are not necessarily threatened with extinction but that could become so unless their trade is strictly controlled (MINAM, 2018).

49 species were found that are categorized by the IUCN as in the Low Risk (LC) category, considered to have a wide range of distribution and with a good state of their populations. In addition, 3 species with Deficient Data (DD) were recorded*: Allobates conspicuus, Dendropsophus joannae* and *Pristimantis delius* and 4 in the category not evaluated (NE): *Bothrops atrox, Chelus fimbriata, Phrynonay polylepis and Varzea altamazonica*. It should be noted that no categorized species included in Supreme Decree No. 004-2014-MINAGRI were found.

In relation to endemism, a comparison of the species recorded in the inventory with the list published by Aguilar et al. 2010, no endemic species were reported from Peru.

Table 65. Conservation status of the Amphibia class according to D.S.004-2014, CITES y IUCN.

N°	ESPECIES	STATE OF CONSERVATION		
		D.S.004 -2014	CITES	IUCN
1	*Allobates femoralis*	-	II	LC
2	*Caiman crocodilus*	-	II	LC
3	*Epicrates cenchria*	-	II	LC

5.1.1.3 Flora

From the evaluation carried out on the floristic component in the 3 sample areas: Quinillal, Milagros and Palmeras, the three correspond to the type of low terrace forest in the province of Coronel Portillo, district of Callería.

In the floristic inventory it was possible to register a total of 201 Individuals distributed as follows: 53 in Quinillal, 82 in Milagros and 66 in Lago Palmeras, in the same way 62 Species, 30 Genera, and 25 Families were found (Table No. ….)

Table66. Number of families and individuals in the study áreas and their respective rates.

Zonas	Quinillal	Milagros	Palmeras
Familias	14	21	19
Individuos	53	82	66
Índice de Margalef	5.289	8.623	7.638
Índice de Fisher_alpha	14.11	29.11	26.26

Table No. ___shows a greater diversity in the number of families in the Milagros sampling area, with 21 families out of the 25 registered in the 3 sampling zones. Among the most representative families we have the Fabaceae (24.87%), Myristicacea (13.43%), Arecaceae (8.46%), Euphorbiaceae (6.96%), Malvaceae (5.97%), Lauraceae (4.97%) and Lecythidaceae (4.48%) families.

Regarding the Margalef index, which estimates the biodiversity in a community based on the distribution of the individuals of the different species analyzed, it was determined that since all of them are greater than 5, this shows that they are areas with a high diversity of species, corroborating which are local where anthropogenic activities have not affected the richness in this type of forest.

In reference to the Fisher index, which also establishes the richness in a given area by the number of individuals sampled, it was found that the Milagros area has the highest richness with a value of 29.12, followed by Palmeras with 26.26 and Quinillal with 14.11.

In the Quinillal area, it was possible to show that the five most representative forest species based on the Importance Value Index (IVI) are the *Virola calophylla* Werb. with 11.38%, *Hura crepitans* L. 10.32, *Virola Pavonis* (A.DC) A.C. Smith 10.09%, *Ceiba pentandra* (L.) Gaertn 9.30% and *Garcinia brasiliensis* C. Mart 6.05%.

In the Milagros area, the five most representative forest species based on the IVI are *Sapium marmieri* Huber 7.15%, *Yryanthera laevis* Markgr. 6.37%, *Pourouma minor* Benoist 5.56%, *Apeiba membranácea* Spruce ex Bentham 5.25% and *Terminalia amazônica* (J.F. Gmel) Exell 4.69%.

In the case of the Palmeras area, the five most representative forest species based on the IVI are *Eschweilera coriacea* (DC.) S.A. Mori 9.78%, *Hura crepitans* L. 9.69%, *Inga pezizifera* Benth 8.96%, *Inga alba* (Sw.) Willd 6.78% and *Triplaris americana* L. 4.83%.

Regarding the horizontal structure for the three sampling zones, values ranging from 10 cm to 120 cm in diameter at breast height (DBH) have been found, with an average of 65 cm DBH (figure No. ….). Being that the diameter classes with a greater number of registered individuals are found in the 10 – 19.9 cm classes with 135 trees, which is equivalent to 67.16%, and the 20 – 29.9 cm class with 32 trees (15.92%), both add up to 83.08%. of the total evaluated.

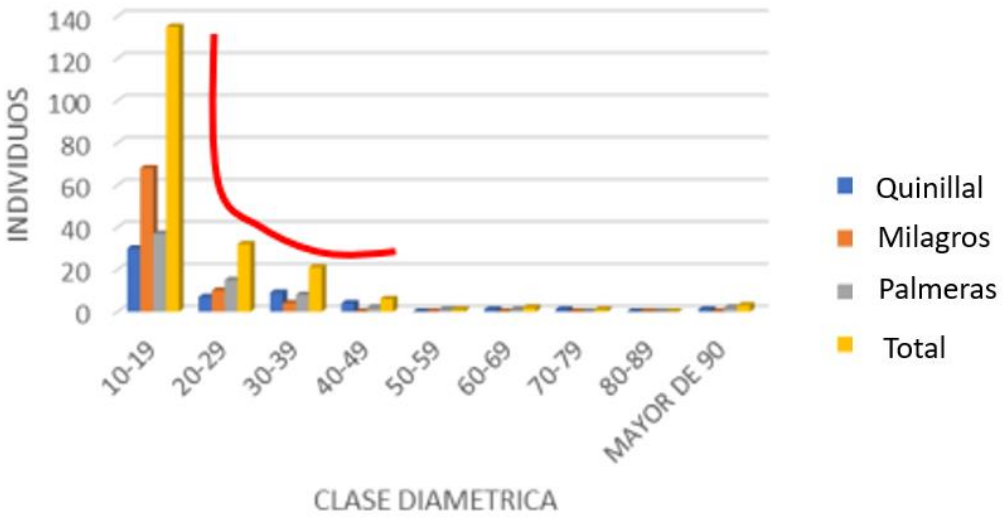

Figure 38. Histogram of diameter distribution in the 3 sampling areas

It should be noted that the forests evaluated present an inverted "J" shaped distribution (figure N°...), characteristic of the behavior of the broadleaf forest species of the tropical humid forest in which a greater number of individuals in smaller diameter classes is observed, allowing a good natural regeneration of the species and guaranteeing the sustainability of the forest resource.

According to information from the forest inventory for the three sampling areas, the most abundant species are Inga pezizifera Benth and *Dialium guianense* (Aubl.) Sandwith.

The conservation status of 11 forest species is in the Low Risk (LC) category, according to the IUCN, and the forest species *Manilkara bidentata* (A. DC.) A. Chev. is in the Vulnerable conservation category (VU), according to D.S. No. 043-2006-AG.

5.1.1.4 Threats to biodiversity

According to the Concerted Regional Development Plan for the Ucayali region 2011-2021, it is estimated that 95% of the economic activities in the department revolve around the extraction of wood, with the region being the main supplier of semi-processed wood in a national and export level, the national production of sawn wood has remained under the period 1904 - 2003, from 2004 the volume of extraction has been increasing, of every 100 M3 of sawn wood, 75% is from the Ucayali region.

The loss of forests in the Peruvian Amazon generates the fragmentation of ecosystems, affecting their structure and functioning, which can lead to habitat loss and cause the extinction of flora and fauna species (Aguila & Martinez, 2000); as well as the loss of the ecosystem services they provide. Currently, the main cause of forest loss in the region is the change in land use due to anthropic activity, mainly migratory slash-and-burn agriculture. According to the information provided by MINAM through the GEOBOSQUES platform, between 2001 and 2020, 2,636,585 ha have been lost, with the departments of Loreto, San Martín, Ucayali, Junín, Madre de Dios and Amazonas concentrating the most 77% of forest loss in the last year.

According to the MINAM GEOBOSQUES portal, the surface of the Ucayali region is covered by 9.2 million hectares of forest, that is, 90% of the surface of the region, which has 10.2 million hectares.

Between the years 2001 and 2020, an accumulated deforestation of 470,118 ha was recorded, as shown in figure 39 Although the percentage of accumulated deforested area in Ucayali is relatively low (4.66% of the area as of 2020), it is important to note that between 2001 and 2020 deforestation increased considerably if we compare it with the historical deforestation since the year 2000. with the national deforestation rate.

In 2001, the loss of forest was 11,588 hectares and in 2020, Ucayali registered a loss of forest cover of 47,267 ha, presenting an increase of 8,890 ha, the annual loss between 2001 - 2020, is 24,886 ha, but in the last three years it has been 37,211 ha/year.

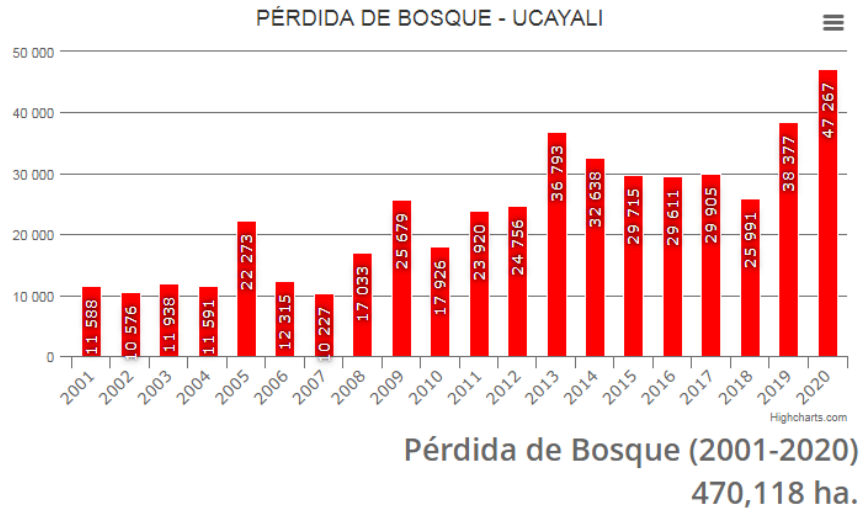

Figure 39. Loss of forest cover from 2001 to 2020 according to GEOBOSQUES reports (MINAM, 2021)

5.1.2 High Conservation Values (B1.2)

The methodology applied was detection of High Conservation Values (HCV), or 'screening', in English. HCV detection is a desk exercise that uses the six definitions of species diversity, landscape level ecosystem or mosaics, ecosystems and habitats, system services, community need and cultural values of HCVs to characterize the environmental and social aspects of HCVs. a landscape or jurisdiction. Screening considers the likelihood of HCV presence, identifies threats to those HCVs, and indicates which values most urgently need to be addressed through discussions and follow-up actions.

Table 67. Identification of the area of high conservation value in The Last Habitat REDD Project

High Conservation Value	Aguajales

Qualifying Attribute	The project area has a surface of 3,481 ha of the flooded alluvial forest ecosystem (MINAM, 2019) where palm trees of the Aracaceae family predominate. The main species of palm trees that were recorded in the forest inventory carried out in 2012 in the study area recorded: *Mauritia flexuosa* (aguaje), *Socratea exorrhiza* (cashapona), *Iriartea deltoidea* (huacrapona), *Euterpe precatoria* (huasai), *Astrocaryum murumuru* (huicungo), *Attalea maripa* (Inayuga) *Iriartea* sp. (pona) *Iriartella stenocarpa* (ponilla), *Attalea phalerata* (shapaja), *Attalea butyracea* (shebón), *Oenocarpus mapora* (sinamillo) y *Oenocarpus bataua* (ungurahui). Therefore, it represents a high potential for non-timber resources in the area.
Focal Area	The aguajales are within the area of influence of the project.

High Conservation Value	Tropical Forests
Qualifying Attribute	The protected areas in this forest ecosystem form a biodiversity corridor that maintains a remarkable biological and cultural diversity. Among these complexes are private areas of the Bosques Amazónicos (BAM) company, which are located on intact land or on land highly devastated by human activities. In 2012, an assessment of the types of forests in the project area was carried out using high-resolution satellite images (Rapid Eye), with this information the areas of forests, agricultural crops, deforested areas, and bodies of water were determined. All this verified with an in-situ forest inventory in which trees were measured from 10 centimeters DBH, natural regeneration of poles and seedlings to validate the information. As most important results, two most representative types of forest were determined in the area: low terrace forest 48.60% and aguajales 43.30% of a total forest of 8,049.62 ha. Therefore, both types of forests can be considered as HCVs due to their current ecological importance and in the future, with sustainable management of the resource, economic and social benefits could be generated.
Focal Area	The area is located in the Los Bosques project zone

High Conservation Value	Fragile ecosystems
Qualifying Attribute	According to the definition established in numeral 11 of Annex 02 of the National Forestry and Wildlife Policy, approved by Supreme Decree No. 009-2013-MINAGRI, fragile ecosystems are those ecosystems with unique characteristics or resources with low resilience (capacity for return to its original conditions), and unstable in the face of shocking events of an anthropogenic (human) nature, which produces a profound

	alteration in its structure and composition. The condition of fragility is inherent to the ecosystem and only manifests itself under disturbance conditions. It is established that, the greater the fragility, the greater the need to protect the ecosystem. SERFOR, in coordination with the regional forestry and wildlife authorities (ARFFS), approves the list of fragile ecosystems in accordance with Law No. 28611, General Environmental Law, based on technical studies and available scientific information, in the scope of its powers, it also states that said list will be updated every five years. In Peru, in the Huánuco region, 18 ecosystems have been established in the Peruvian Amazon, among them the so-called Honoria Norte in the district of Honoria, province of Puerto Inca, department of Huánuco, in the flooded alluvial forest ecosystem, which is located within the project area.
Focal Area	The area of fragile ecosystems is located in the project area

High Conservation Value	Bodies of water
Qualifying Attribute	Bodies of water are complex ecosystems that harbor habitats for countless species. The continuous contamination of water because of insufficient or uncontrolled unsustainable activities impacts hydrobiological processes, triggering the reduction of biodiversity and the resilience capacity of ecosystems. In this sense, the monitoring of indirect indicators was carried out through the analysis of the Herpetofauna, with the presence / absence of species, leading the food chain the Boa constrictor (boa) both in this evaluation and in the previous evaluation carried out in 2013, Eunectes murinus (anaconda), Boa constrictor (boa) and Lachesis muta (shushupe), large species that head the food chain in Amazonian forests, were also recorded. The presence of Pteronura brasiliensis (otter) in the sampling area is also highlighted, due to the tours carried out in the streams, its presence indicates that the quality of the water in these streams is favorable and that there are sufficient aquatic resources in the streams for their feeding. The information from the biodiversity inventory shows the good state of conservation of the sites evaluated for the three zones.
Focal Area	Broken water bodies and lakes located in the project area.

High Conservation Value	Tropical Forests
Qualifying Attribute	The protected areas in this forest ecosystem form a biodiversity corridor that maintains a remarkable biological and cultural diversity. Among these complexes are BAM's private lands, which are located on intact land or on land that has been severely devastated by human activities.
Focal Area	The area is located in the Los Bosques project zone

High Conservation Value	Bodies of water
Qualifying Attribute	Bodies of water are complex ecosystems that harbor habitats for countless species. The continuous contamination of water because of insufficient or uncontrolled unsustainable activities impacts hydrobiological processes, triggering the reduction of biodiversity and the resilience capacity of ecosystems. In this sense, the monitoring of indirect indicators will be carried out through the analysis of the Herpetofauna, with the presence / absence of species that lead the food chain such as Boa constrictor (boa) in this evaluation and in the previous evaluation in 2013, recorded Eunectes murinus (anaconda), Boa constrictor (boa) and Lachesis muta (shushupe) large species that head the food chain in Amazonian forests, determining the good state of conservation of the sites evaluated. Also noteworthy is the presence of Pteronura brasiliensis in the sampling area, which are traversed by streams large enough to house the species, and their presence indicates that the quality of the water in these streams is favorable and that there are sufficient aquatic resources in the streams to their feeding.
Focal Area	Broken water bodies and lakes located in the project area.

5.1.3 Areas to be Managed to maintain or improve HCV.

Table 68. Areas to be Managed to maintain or improve HCV

High Conservation Value	Tropical Forests
Qualifying Attribute	The protected areas in this forest ecosystem form a biodiversity corridor that maintains a remarkable biological and cultural diversity. Among these complexes are BAM's private lands. The project activities will allow the conservation of the different types of forests, especially the type of low terrace forest, as it is one of the most representative.
Focal Area	The area is located in the forests of the project area

High Conservation Value	Fragile ecosystems
Qualifying Attribute	Flooded forests constitute the category of wetlands because they store large amounts of water and, together with terraced forests, regulate

	evapotranspiration, thus contributing to the balance of the hydrological cycle. There is much interest in conserving wetlands in the province of Puerto Inca, which is why the creation of the fragile ecosystem called Honoria Norte (RDE N° 00004-2020-MINAGRI-SERFOR-DE) with an area of 4,596.18 ha found in the area of influence of the project, in which endangered species of flora and fauna have been found. Among them Red Howler Monkey (Alouatta seniculus), Woolly Monkey (Lagothrix lagotricha), Red Deer (Mazama americana), Otorongo (Panthera onca), Sachavaca (Tapirusterrestrial). These areas are considered of high ecological value, with zones formed by subgrowing and ancient fluvial accumulation, which include threatened and endemic species, both of plants and animals. It presents a biological corridor of the Panthera onca. SERFOR prepared the Technical Sheet of the State of Conservation in the department of Huánuco, evidencing a high richness, among them 43 species of flora, 39 species of birds, 15 species of mammals and 03 species of amphibians. In the case of endemic plant species, Ormosia schunkei was found.
Focal Area	The area of fragile ecosystems is located in the project area, within the area of the Selva Maestra property.

High Conservation Value	Aguajales
Qualifying Attribute	The project seeks to generate a productive activity around the sustainable use of palm tree fruits through a general forest management plan, ensuring benefits for local residents and the company. In the same way, this type of humid ecosystems presents a source of carbon storage both in the aerial and underground part (CIFOR, 2017), contributing to the storage of greenhouse gases and mitigating climate change (CIFOR, 2015).
Focal Area	The aguajales are within the area of influence of the project.

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

According to statistics, deforestation has remained the same and has even increased in some areas of the Peruvian Amazon, as a result of the expansion of coca crops and agro-industrial products.

Regarding coca cultivation, the statistics are incomplete, and the eradication figures barely reach 7% of the crops. On the other hand, cultivation is expanding more and more towards the low Peruvian jungle, presenting a persistent dynamic of invasion in the native communities of the Shipibo ethnic group, in the Ucayali River, mainly by settlers from Tingo María, the central Huallaga and Junín.

It is easy to imagine what activity they will engage in on the lands usurped from native communities and the consequences of environmental deterioration, as well as the social relations that the activity will entail in the future.

The cultivated area at the national level is distributed in 14 coca-growing zones, which cover 13 departments of the country. At the coca-growing zone level, in 2020, 68.8% of the cultivated area is concentrated in the VRAEM zone (45.3%), in the Inambari Tambopata zone (12.5%), and in the La Convención-Lares zone (11.0%). For the same year, the rest of the 11 coca-growing areas together represent 32% of the cultivated area at the national level.

5.2 Net Positive Biodiversity Impacts

5.2.1 Expected Biodiversity Changes (B2.1)

The biodiversity inventories carried out in the project area have made it possible to identify species of flora and fauna that are in threat categories by national legislation, CITES and IUCN. In this scenario, the project seeks to protect threatened and vulnerable species to maintain the ecological system and the ecosystem's food chain, avoiding the loss of species.

An important indicator of the positive impact of the project is the care and maintenance of water bodies and HCVs, so that wildlife continues to use these spaces and fulfill its ecological role. Among the species sighted we have the Lontra longicaudis, Panthera onca, Caiman crocodilus and Tapirus terrestrials as priorities due to their threat status.

The species Ara arauna, Harpia harpyja, Sarcoramphus papa, Lophostrix cristata and Herpetotheres cachinans, which have been recorded in the bird inventory, also demonstrate the good state of conservation of the areas, so regular monitoring will continue to prevent the loss of these species so important for local ecological processes (mainly seed dispersers).

The project hopes to promote activities for the sustainable production of non-timber resources based on the use and management of aguaje palm trees, in order to preserve primary forests and generate economic, social and environmental benefits.

The project has identified the importance of carrying out research studies prioritizing the potential of forest resources and local biodiversity, including the establishment of monitoring plots in the two most representative types of forests (low terrace and aguajales) to learn about the dynamics of the main forest species and their carbon storage; Having identified the main threatened species, conservation and monitoring studies will be carried out, in the same way in deforested areas within the project, the establishment of plantations with native species will be promoted to recover the forest, serving as carbon storage in the future and contributing to the reduction of GHG emissions.

Table 69. Description of expected changes to biodiversity for the The Last Habitat REDD Project

Biodiversity Element	Flora
Estimated Change	Identified Changes

Justification of Change	Carry out periodic monitoring and establish permanent plots in the two most important types of forests in the study area. Establish agreements with local universities to carry out studies on the dynamics and conservation of forest and forest species within the project area, in this way knowledge will be generated that contributes to the academy and to providing solutions to the company on more precise data in the carbon measurements or on the main species of flora and fauna identified in the project.

Biodiversity Element	Fauna
Estimated Change	Identified Changes
Justification of Change	Establish trap cameras to monitor local fauna at strategic points and thereby establish conservation criteria for the main species of fauna within the project area.

5.2.2 Mitigation Measures (B2.3)

The project will not generate negative impacts on biodiversity. The activities described above in section 5.2.1, under the premise of managing and conserving the forest biological diversity and wildlife of the ecosystem, seek to establish conditions to reduce the threats that generate risks in the project area.

To this end, monitoring and surveillance will be implemented to reduce deforestation and forest degradation, strengthening inter-institutional alliances with control entities and local surveillance committees.

The project will establish campaigns to educate the local population on the threat of biodiversity loss on the species that are most vulnerable, explaining to them that if their pressure continues, the species could disappear and, in the future, they will no longer be able to feed on them. Hunting activities should be restricted only for local consumption and not for commercial activities that promote the extinction of the species and generate an ecological problem from the point of view of the trophic system.

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

The project seeks to maintain fauna populations in their natural conditions, avoiding the loss of species.

The project will strengthen the capacities and generation of knowledge of the importance of biological diversity in flora and fauna to local residents and neighbors to strengthen control and surveillance of the project area, against coca growers, illegal loggers and agents that have been causing the loss of forest cover and consequently loss of biodiversity.

The project will implement studies to evaluate the flora and fauna and determine their conservation status, thereby obtaining real evidence to inform forest actors (regional, local government) to invest with funds that help promote sustainable projects in the region.

5.2.4 High Conservation Values Protected (B2.4)

No HCV Forest will be affected by the project. Once the most representative forests (low terrace and aguajales) and water bodies within the project area have been identified, periodic monitoring of these areas will begin, implementing a surveillance committee and articulating efforts with local committees. In this way, the maintenance of the HCVs will be guaranteed and disturbances that could alter the wild fauna of the area will be avoided.

5.2.5 Species Used (B2.5)

The project will not introduce exotic species in the established area.

Once the deforested areas are identified through satellite images and the loss of forest cover is verified, the project will promote the recovery of the areas with the installation of forest plantations with native species of ecological and economic interest, in order to rehabilitate the soils and integrate the biological corridors for the fauna, due to the fragmentation of the forest caused by the openings.

According to the inventory carried out in 2012 to value the forests in the project area, the following high-value commercial species were identified, among them: Cedro (*Cedrela odorata*), Estoraque (*Myroxylon balsamun*), Ishpingo (*Amburana cearensis*), Shihuahuaco (*Dipteryx odorata*) and Tahuarí (*Tabebuia serratifolia*). Those of medium commercial value we can mention: Huayo sugar (*Hymenaea oblongifolia*), Cachimbo (*Cariniana decandra*), Capirona (*Calycophyllum spruceanum*), Copaiba (*Copaifera officinalis*), Huayruro (*Ormosia amazónica*), among others. These two groups could be prioritized in afforestation and reforestation campaigns in deforested areas.

5.2.6 Invasive Species (B2.5)

Does not apply to the project. No exotic species will be used.

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

Does not apply

5.2.8 GMO Exclusion (B2.7)

GMO species will not be used to reduce GHG emissions.

5.2.9 Inputs Justification (B2.8)

Does not apply

5.2.10 Waste Products (B2.9)

The project will implement the REDD mechanism (avoided planned deforestation and degradation - APD) of the AFOLU sector and in a complementary manner will develop other activities related to afforestation, reforestation and revegetation (RVV) and improved forest management (MFI) generating low negative impacts.

In the activities of inventory, monitoring and surveillance of the area, the following recommendations will be taken, the project will implement a protocol in which all containers, wrapping or waste must be removed from the project area, in the tours by the residents and the specialists of the project, all waste or residues (batteries, plastics, cans, paper, etc.) will be collected and placed in public or private collection centers for treatment or, if necessary, be taken to the city.

Likewise, the burning of inorganic waste will be prohibited, and silos will be built for sanitation and organic waste services.

At the end of the activities in the camp, the staff will close the silos and collect all the waste to later be deposited in the collection centers.

It is totally forbidden to dump organic or inorganic waste into watercourses so as not to alter the chemical conditions of the water and may affect hydrobiological resources and fauna in general.

5.3 Offsite Biodiversity Impacts

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

No negative impacts on biodiversity are expected outside the Project area.

5.3.2 Net Offsite Biodiversity Benefits (B3.3)

Table 70. Net Offsite Biodiversity Benefits

Benefits	In Project zone	Outside Project zone
Wildlife refuge area	Forest conservation activities will not generate negative impacts within the project area, local residents will be trained in forest management of timber and non-timber forest resources (aguaje) as a measure for biodiversity conservation.	The control and monitoring activities in the project area will cause the displacement of deforestation and degradation agents to spaces outside the project, which is why the conservation of primary and aguajal forests in the area of influence will also be promoted, promoting an ecological connectivity that allows the balance of the ecosystem through indicator species that present a good state of conservation

Connectivity	Monitoring and vigilance will allow the conservation of primary forests and aguajal, since they are ecosystems that house a large number of wildlife species and are of great importance in the local ecosystem.	The protection and conservation of primary and aguajal forests in the project area allows the maintenance of large areas of standing forest outside the project, where threatened species that inhabit these premises are also home. Among the species we can mention: Nutria (*Lontra longicaudis*), Otorongo (*Panthera onca*), Cocodrilo (*Caiman crocodilus)* and Sachavaca (*Tapirus terrestres*).

5.4 Biodiversity Impact Monitoring

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

Table 71. Biodiversity Monitoring Plan for The Last Habitat REDD Project

Biodiversity variables	Sampling method	Method description	Areas to monitor	Indicators	Monitoring frequency
Forests	Forest monitoring/ forest loss	Remote sensing tool using satellite images with high spatial and spectral resolution.	The entire project area.	Deforestation/loss of forest. Forest. Land use changes.	Annual
	Flora and carbon inventories	The Gentry plot method consists of taking a census, in an area of 0.1 ha, all the trees whose bole has a diameter at breast height (DBH) greater than or equal to 0.10 m. For this, 10 transects of 50 m were made. x 2m for each zone.	Forests	Presence/absence Relative abundance Biodiversity index Umbrella species Endangered Species	Annual flora inventories / Carbon inventory monitoring should be 5 years
Threatened large mammals/ umbrella species	Transects	Line transects records with indirect records (including fresh tracks, feces, hair, burrows, burrowing, and partially consumed fruits/seeds,) and complementary methods such as the use of camera traps, mist nets, and traps	Forests	Presence/absence Relative abundance Biodiversity index Umbrella species Endangered Species	biannual
Threatened birds	Counting point	The observer remains at a fixed point for 10 minutes where he recorded all birds seen and heard within and outside the 30-meter radius. The points were systematically established at 200 meters between points	Forests	Presence/absence Relative abundance Biodiversity index Umbrella species Endangered Species	biannual
Bodies of water	Evaluation of herpetofauna using fixed band transects	Transects per sampling area of 50 m long by 4 m wide, separated from each other by approximately 100 m, each one was evaluated for an average time of 30 minutes in order to standardize the sampling effort, as a	Bodies of water	Presence/absence Relative abundance Biodiversity index Umbrella species Endangered Species	biannual

		complementary method record will be used opportune.			

5.4.2 Biodiversity Monitoring Plan Dissemination (B4.3)

The diffusion will be carried out through periodic information campaigns (annually) on the results of the biological monitoring plan in the project area, with the participation of the majority of the local inhabitants and surrounding native communities and recorded in signed minutes to record of the activities carried out.

The workshops will be aimed at explaining the importance of conserving HCVs, bodies of water and wetlands as priority spaces, using a methodology that is easy to understand and very didactic (mainly based on photos and images), accompanied by primers and/or newsletters. diffusion.

Dissemination through BAM website will also be considered, where photos and images of the main species of flora and fauna that are being conserved within the project area and their importance in the local ecosystem will be shown.

5.5 Optional Criterion: Exceptional Biodiversity Benefits

5.5.1 High Biodiversity Conservation Priority Status (GL3.1)

To date, there have been registered species of mammals that are under some category of threat according to national legislation under the supreme decree D.S.004-2014 MINAGRI and international as the International Union for Conservation of Nature (IUCN). Under national legislation, the presence of two (02) species in a Near Threatened (NT) situation was determined: Otorongo (Panthera onca) and Sachavaca (terrestrial Tapirus). In some category of international conservation, the presence of two (02) species was determined in the list of endangered species of Peru, which are in a Vulnerable situation; Preserve monkey (Alouatta seniculus) and River Otter (Lontra longicaudis).

According to national legislation and the International Union for Conservation of Nature (IUCN), 274 species representing 96% of recorded species are not globally threatened with extinction, however, the populations of 112 of these birds are decreasing. Five species of birds with threat category according to IUCN and the supreme decree D.S.004-2014 MINAGRI are reported: Jabiru mycteria and Falco peregrinus classified as Minor Concern for IUCN and Nearly threatened in Peru. Myrmoborus melanurus is Vulnerable for the IUCN and Near Threatened in Peru. Setophaga striata is classified as Vulnerable according to the IUCN and has not been categorized in Peru; Conothraupis speculigera is Near Threatened by the IUCN and has not been categorized in Peru.

5.5.2 Trigger Species Population Trends (GL3.2, GL3.3)

Table 72. Identification and description of the trigger species

Trigger Species	*Mauritia flexuosa* “Aguaje”

Population Trend at Start of Project	The project area presents a surface of 3,481 ha of the flooded alluvial forest ecosystem (MINAM, 2019) where palm trees of the Aracaceae family predominate, which represented, in the floristic evaluation carried out in 2021, 8.46% of the most representative families in the sampled areas. The main species of palm trees that were recorded in the forest inventory carried out in 2012 in the study area were: *Mauritia flexuosa* ("aguaje"), *Socratea exorrhiza* ("cashapona"), *Iriartea deltoidea* ("huacrapona"), *Euterpe precatoria* ("huasai"), *Astrocaryum murumuru* ("huicungo"), among other species of palm trees. The local populations surrounding the project area use the fruit of this species for consumption and sale in large quantities, accessing (without the consent of the owner) the project area where these ecosystems are found, to take advantage of the fruit without applying sustainable practices, which which results in a decrease in the population of individuals and their ability to reproduce, by cutting down the "female" palm trees, which are the ones that produce the fruits.
Without-project Scenario	If the populations surrounding the project area or groups of organized stakeholders continue to enter these wetlands, without the permission of the owner, carrying out an exploitation without planning and adequate silvicultural techniques, it would be expected that these ecosystems will disappear, considering that the species is a dioecious plant with the consequent affectation to the biological diversity that this ecosystem harbors, keys in the diverse ecological processes. Under these conditions, the situations that would be expected regarding the state of impact on biodiversity are related to the following: In a study on the wetlands of Madre de Dios (Janovec, John, et. al. 2013 Evaluation of current impacts and imminent threats in wetlands and lakes of Madre de Dios, Peru. WWF, Lima, Peru), 36 aquatic fungal species presumed to have high endemism and high wetland specificity. They are key in wetlands, as they are responsible for the decomposition of dead plant matter, assuming a very important role in aquatic and trophic food webs. The aguajales represent the exclusive habitat of the blue-yellow macaws (*Ara ararauna)*, reported in the project area, because they are the main spaces for reproduction, nesting and feeding. This species is particularly characterized by nesting in the dead trunks of the "aguaje" and for having the fruit of the "aguaje" as its main source of food. Mammalian species use wetlands (cochas and aguales) as important areas for their feeding, growth, reproduction and refuge, the most representative species reported in the project area being the "sachavaca" (Tapirus terrestris), and the peccary (*Tayassu peccary*), not to mention the otter (*Lontra longicaudis*), in addition to the presence of numerous species of bats, small rodents and marsupials. The humidity that characterizes these ecosystems, present throughout the year, is key to camouflage, rest, food and reproduction of most Amazonian amphibians and reptiles. In general, this species of palm maintains the balance of the ecological system, so its disappearance due to improper handling and use of the fruit could alter the ecosystem
With-project Scenario	The main threat to the aguajales is the exploitation of their fruits by cutting and felling palm trees, which is resulting in a decrease in their population, biodiversity and the area of these wetlands. To address these threats, the following measures have been designed to be addressed in the different activities to be developed with the REDD project:

	1. Actions aimed at conserving the species, through forestry intervention and restoration of the ecosystem to maintain the status of the population and the biodiversity it houses. 2. Carry out a micro-zoning where a protection zone and another for use are identified, in order to prepare and implement a Forest Management Plan for the sustained use of the aguaje fruit, making the surrounding local populations that depend on the resource, options sustainable production companies, under a strategic commercial alliance with the company BAM. 3. Forest control and surveillance actions, designed in a participatory manner with beneficiaries and the local population in the area of the project to prevent unauthorized entry into the area where this ecosystem is located. 4. Develop capacities in concessionaires and producers in silvicultural techniques for the management of the “aguaje”.

- **APPENDICES**

- **Appendix 4: Additional Information**

  Use appendices for supporting information. Delete this appendix (title and instructions) where no appendix is required.

List of appendices

1. Significance analysis – T-SIG
2. Decreto Legislativo N° 653 (1992)
3. Contrato Compra venta de Tierras de Ceja de Selva No. 126666-AG-PETT
4. Decreto Legislativo N° 838 (1996)
5. Escritura Pública 66 Contrato de Compra Venta de Tierras de Ceja de Selva Con Reserva de Propiedad.
6. Estudio de Factibilidad Técnico Económico Explotación Agroindustrial del Fundo “Nuestro Señor Jesucristo”
7. Permiso (DOC expediente selva maestra) #7698
8. NFREL 2021: chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/viewer.html?pdfurl=https%3A%2F%2Fredd.unfccc.int%2Ffiles%2Fnref_peru_final.pdf&clen=6359755&chunk=true
9. Cuellar & Salazar (2016): chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/viewer.html?pdfurl=http%3A%2F%2Frepositorio.inia.gob.pe%2Fbitstream%2F20.500.12955%2F363%2F3%2FCuellar-dinamica_del_carbono_suelos.pdf&clen=838633
10. Garcia, Honorio & Del Castillo 2012: http://revistas.iiap.org.pe/index.php/foliaamazonica/article/view/43/80
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12. Valdez-Rodriguez et al. 2018: http://cienciasagricolas.inifap.gob.mx/index.php/agricolas/article/view/734/1807
13. VCS AFOLU non-permanence risk tool