


	<p align="center">Project Design Document CRIMA Predio Putumayo y Andoque de Aduche REDD+ Project</p>
Project Information	
<p align="center">Project Title</p>	<p>CRIMA Predio Putumayo y Andoque de Aduche REDD+ Project</p>
<p align="center">Version</p>	<p>5</p>
<p align="center">Project Location</p>	<p>Country: Colombia Department: Caquetá Municipality: Solano Department: Amazonas Municipality: Puerto Alegría, La Chorrera and Puerto Santander</p>
<p align="center">Project Proponent and representative</p>	<p>CRIMA (REGIONAL INDIGENOUS COUNCIL OF THE MIDDLE AMAZON) Levy Andoke Andoke</p> <p>ANDOQUE DE ADUCHE INDIGENOUS RESERVE Jesús Miguel Andoque Andoque</p> <p>GREAT PREDIO PUTUMAYO INDIGENOUS RESERVE Belén Community Harol Dixon Matías</p> <p>GREAT PREDIO PUTUMAYO INDIGENOUS RESERVE Las Delicias Settlement Wilfer Ruiz Monokudo</p> <p>GREAT PREDIO PUTUMAYO INDIGENOUS RESERVE Nazareth Community Miller Didson Kuyoteka Zafiekudo</p> <p>GREAT PREDIO PUTUMAYO INDIGENOUS</p>

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Validation Body	AENOR
Project Lifetime	05-January-2018 to 04-January-2058; 40-year period
GHG Accounting Period	05-January-2018 to 04-January-2058; 40-year period
Methodology	<p>BioCarbon Registry Methodological document for AFOLU sector Quantification of GHG Emission Reductions or Removals from REDD+ Projects Version 3.0 16-february-2022</p>
Estimated GHG Emission Reduction	<p>Deforestation: 1,147,750 tCO_{2e}/year 45,910,034 tCO_{2e} (total 40-year crediting period)</p>



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	<p>Total project: 1,147,750 tCO₂e/year 45,910,034 tCO₂e (total 40-year crediting period)</p>
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1. Project Description

1.1. Project summary

The CRIMA Predio Putumayo y Andoque de Aduche REDD+ Project seeks the conservation of forests located in the indigenous territories of Andoque de Aduche Indigenous Reserve, in the municipality of Solano in the department of Caquetá; and in the areas of the indigenous communities from Puerto Zábalo to Belén, and Chukik+ to Guaimaraya zone that are part of the Great Predio Putumayo Indigenous Reserve in the municipalities of Puerto Santander, Puerto Alegría and La Chorrera in the department of Amazonas. The Andoque de Aduche Indigenous Reserve and the portion of the Predio Putumayo Great Indigenous Reserve that participate in the project have a total area of 1,018,661.6 ha. The project area (eligible area) has a total area of 1,003,130.84 ha in January 2018 and its monitoring extends until January 2058. The project aims to contribute to mitigate the effects caused by climate change by reducing 45,910,034 tCO_{2e} emissions derived from deforestation and forest degradation during the 40-year quantification period, which is equivalent to an average emission reduction of 1,147,750 tCO_{2e}/year.

The main activities during the Project lifetime are develop productive activities compatible with community well-being and nature conservation, provide food security, improve social investment, strength land use planning and self-government structure, and forest conservation. These activities aim to control and reduce the incidence of deforestation drivers such as wood extraction, mining and illegal productive activities.

The area is characterized by its high biodiversity along with social unrest and deforestation. Among the activities carried out by the promoters of deforestation are moving the border of farming activities (especially subsistence agriculture and livestock), mining, logging for commercial and community use, and crops for illicit use. The social problems are triggered by the absence of the government, lack of sanitation infrastructure, education, health programs and shortage of technological guidance for sustainable development.

This project focuses on the AFOLU (Agriculture, Forestry and Other Land Uses) sectors. Inside the category for Reducing emissions from deforestation and forest degradation in developing countries (REDD+). Its goal is to mitigate the effects caused by climate change through reduction of CO₂ emissions from deforestation and forest degradation, and development of activities to promote the community well-being.

1.2. Project Objectives

The Project's climate, community, and biodiversity goals are:

- **Climate goal** is to mitigate climate change through steps that address the causes of deforestation and forest degradation reducing loss of forest land. Expected results are among others reduction of illegal felling, recovery of degraded forest, reduction of forest conversion and improvement of forest carbon pools over time.
- **The community goals** are developed together with the community to improve live conditions in order that the communities can protect forests and strengthen control of the territory and cultural adherence, as well as overcome new economic challenges that emerge after voluntarily give up activities that compromise forest stability in the indigenous reserves.
- **Regarding biodiversity conservation**, the project develops long term activities for the protection of the forest and forest connectivity, as well as its structural, functional, and high conservation values attributes.

In addition, the actions that are developed within the framework of the project are aligned with the Sustainable Development Goals - SDG as presented below:

Table 1 Sustainable Development Goals with which the project activities are aligned.

Category	Measurement Unit	SDG
GHG emissions reductions	Estimated net emission reductions in the project area.	SDG 13 – Climate Action
Forest cover	Forest area that is conserved in indigenous territories.	SDG 13 – Climate Action SDG 15 – Life on Land
Land use	Forest area with improved management practices.	SDG 11 – Sustainable cities and communities SDG 13 – Climate Action SDG 15 – Life on Land
	Agricultural systems area with improved management practices.	SDG 2 – Zero hunger SDG 11 – Sustainable cities and communities SDG 13 – Climate Action SDG 15 – Life on Land
Capacity building	People who benefit from training and education in management of productive systems, biodiversity monitoring strategies and territorial governance mechanisms.	SDG 1 – No poverty SDG 2 – Zero hunger SDG 8 – Decent work and economic growth SDG 10 – Reduced inequalities SDG 11 – Sustainable cities and communities SDG 12 – Responsible consumption and production SDG 13 – Climate Action SDG 15 – Life on Land

Category	Measurement Unit	SDG
	Women who benefit from training and education in productive systems management, biodiversity monitoring strategies and territorial governance mechanisms.	SDG 1 – No poverty SDG 2 – Zero hunger SDG 5 – Gender equality SDG 8 – Decent work and economic growth SDG 10 – Reduced inequalities SDG 11 – Sustainable cities and communities SDG 12 – Responsible consumption and production SDG 13 – Climate Action SDG 15 – Life on Land
Employment	People who are employed or that receive economic incentives within the framework of the project activities.	SDG 1 – No poverty SDG 2 – Zero hunger SDG 8 – Decent work and economic growth SDG 10 – Reduced inequalities SDG 11 – Sustainable cities and communities
	Women who are employed or receive financial incentives within the framework of project activities.	SDG 1 – No poverty SDG 2 – Zero hunger SDG 5 – Gender equality SDG 8 – Decent work and economic growth SDG 10 – Reduced inequalities SDG 11 – Sustainable cities and communities
Livelihoods	People who improve their livelihoods or economic income as a result of project activities.	SDG 1 – No poverty SDG 2 – Zero hunger SDG 8 – Decent work and economic growth SDG 10 – Reduced inequalities SDG 11 – Sustainable cities and communities
	Women who improve their livelihoods or economic income as a result of project activities.	SDG 1 – No poverty SDG 2 – Zero hunger SDG 5 – Gender equality SDG 8 – Decent work and economic growth SDG 10 – Reduced inequalities SDG 11 – Sustainable cities and communities
Health	People who obtain or improve access to health services as a result of project activities.	SDG 3 – Good health and well-being SDG 11 – Sustainable cities and communities
	Women who obtain or improve access to health services as a result of project activities.	SDG 3 – Good health and well-being SDG 5 – Gender equality SDG 11 – Sustainable cities and communities
Education	People who gain access to or improvements in the quality of education services as a result of project activities.	SDG 4 – Quality Education SDG 10 – Reduced inequalities SDG 11 – Sustainable cities and communities
	Women who gain access to or improvements in the quality of	SDG 4 – Quality Education SDG 5 – Gender equality SDG 10 – Reduced inequalities

Category	Measurement Unit	SDG
	education services as a result of project activities.	SDG 11 – Sustainable cities and communities
Water and basic sanitation	People who gain access to drinking water or improve the quality of the water they consume as a result of project activities.	SDG 1 – No poverty SDG 2 – Zero hunger SDG 3 – Good health and well-being SDG 6 – Clean water and sanitation SDG 11 – Sustainable cities and communities
	Women who gain access to drinking water or improve the quality of the water they consume as a result of project activities.	SDG 1 – No poverty SDG 2 – Zero hunger SDG 3 – Good health and well-being SDG 5 – Gender equality SDG 6 – Clean water and sanitation SDG 11 – Sustainable cities and communities
Well-being	People whose well-being improves as a result of project activities.	SDG 3 – Good health and well-being SDG 7 – Affordable and clean energy SDG 11 – Sustainable cities and communities
	Women whose well-being improves as a result of project activities.	SDG 3 – Good health and well-being SDG 5 – Gender equality SDG 7 – Affordable and clean energy SDG 11 – Sustainable cities and communities
Biodiversity Conservation	Intervention area in which management measures are implemented for the conservation of biodiversity.	SDG 11 – Sustainable cities and communities SDG 15 – Life on Land
	Species in some category of risk of extinction that are protected within the framework of the project activities.	SDG 11 – Sustainable cities and communities SDG 15 – Life on Land

1.3. Project location

The project is located in the indigenous territories of Andoque de Aduche Indigenous Reserve, in the municipality of Solano in the department of Caquetá; and in the control and surveillance zones of Puerto Zábalo y Los Monos, and Monochoa, which are part of the Great Predio Putumayo Indigenous Reserve in the municipalities of Puerto Santander, Puerto Alegría and La Chorrera in the department of Amazonas. The area of the Andoque de Aduche Indigenous Reserve corresponds to 188,466 ha and the area of the control and surveillance zones that are within the Predio Putumayo Great Indigenous Reserve has 830,195.6 ha. The sum of this territory covers a total area of 1,018,661.6 ha.

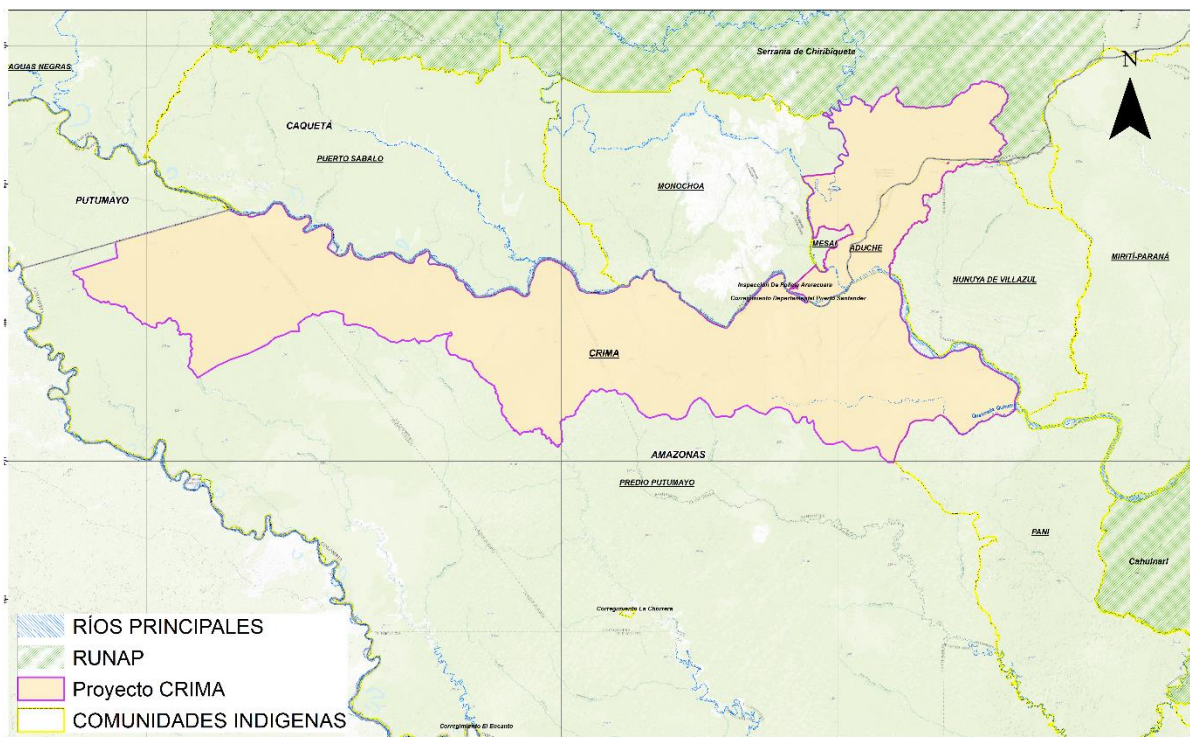
The project area is bordered to the north by the Monochoa Indigenous Reservation, the Puerto Zábalo and Los Monos Indigenous Reservation, and the Serranía del Chiribiquete National Natural Park; to the east it limits with territory of the PANI (*Piine Ayveju Niimu'e Iaachimu'a: Miraña* and

Bora ethnicities of the Amazon department) indigenous territory that is within the same Great Predio Putumayo Indigenous Reserve, near to the limit of the Natural National Park of Cahuinari; and to the west it limits with the territory of the communities that conform the Association of Traditional Authorities and Cabildos of the Indigenous People Murui, Muinane, Coreguaje and Nasa (ACILAPP) that life inside the Great Predio Putumayo Indigenous Reserve, in the municipalities of Puerto Leguizamo and Puerto Asís in the department of Putumayo.

The project is in the great biome of the wet tropical forest, specifically in the ecoregion of the Amazonas jungle. The indigenous reservations located in Puerto Santander, Puerto Alegría, La Chorrera and Solano are territories of high cultural and environmental value due to its location in the heart of the Colombian Amazonas.

Map 1 Project location.

Localización General
Proyecto CRIMA - Resguardo Indígena Predio Putumayo
Amazonas - Colombia



The Indigenous Reserve of RI Andoque de Aduche was established through INCORA Resolution 033 of 1988. The Great Indigenous Reserve of Predio Putumayo was created by INCORA Resolution 030 of 1988. Considering the extensive area of the Predio Putumayo Indigenous Reservation, the community decided to demarcate several specific management and control areas which would be



run by the communities living there themselves. Therefore, following this community requests the INCORA, today called INCODER, demarcated those areas in 9 sectors, according to the INCORA Plan No. p-198,849 through the resolution 057, 4th of September of 1989, as follows (Ministerio de Ambiente, 2006):

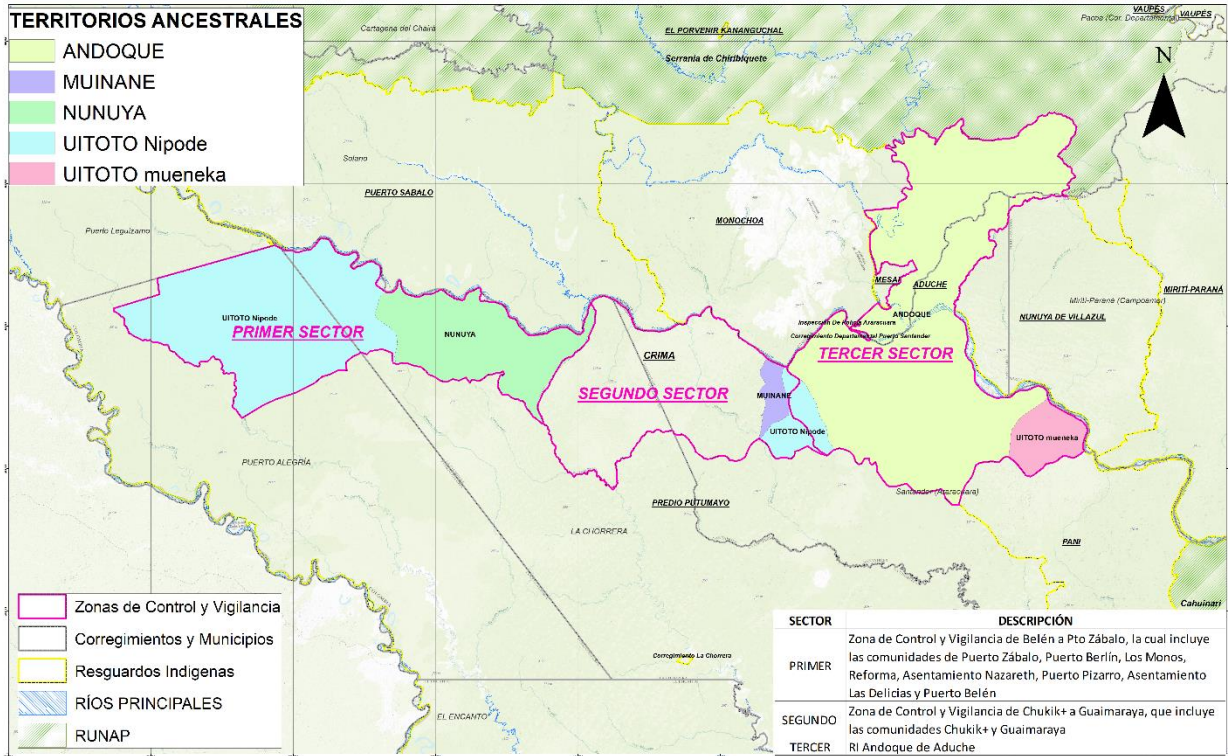
- Sector Puerto Nariño y Puerto Alegría Area: 444,969 Hectares
- Los Monos, Kuemaní, Puerto Sábalo, Los estrechos, Belén, Jerusalén and Berlín Area: 467,097 Hectares
- Sector El Encanto Area: 710,026 Hectares
- Sector La Chorrera Area: 1,115,258 Hectares
- Sector Monochoa Area: 221,282 Hectares
- Sector Andoke Aduche. Area: 211,180 Hectares
- Sector Villa Azul Area: 731,192 Hectares
- Sector Arica Area: 1,443,142 Hectares
- Cahuinarí National Natural Park Area: 480,566 Hectares

CRIMA is a legal association of the indigenous authorities that hold title to the project eligible areas. The CRIMA Predio Putumayo y Andoque de Aduche REDD+ Project seeks the conservation of forests located in the indigenous territories of Andoque de Aduche Indigenous Reserve, municipality of Solano, in the department of Caquetá and of the Control and Surveillance Zones of Puerto Zábalo y Los Monos and Monochoa that are part of the vast Great Predio Putumayo Indigenous Reserve and are in Puerto Alegría, La Chorrera and Puerto Santander municipalities, in the department of Amazonas. The forest area has a total extension of 1,003,130,85 ha at the beginning of the project.

The communities in the project zone are in three areas that have different government structures. In the administration scheme that has been defined for the project (found in folder *Esquema de Administración*, document *Esquema Administración REDD+_CRIMA Putumayo Andoque_v2.pdf*), the different government areas have been recognized and are differentiated. The first zone has a total extension of 330,741.3 ha and corresponds to the area of Control and Surveillance of Belén to Puerto Zábalo, which includes the communities of Puerto Zábalo, Puerto Berlín, Los Monos, La Reforma, Asentamiento Nazareth, Puerto Pizarro, Asentamiento Delicias y Puerto Belén. The second zone corresponds to Control and Surveillance area of Chukik+ and Guaimaraya and has an area of 239,270.1 ha. The third zone corresponds to the communities of Andoque de Aduche Ingenuos Reserve and is made up of approximately 448,650.1 ha (see Map 2).

Map 2 Administration zones of the project. 1) Control and Surveillance of Puerto Zábalo y Los Monos, 2) Control and Surveillance area of Monochoa, 3) Communities of Andoque de Aduche Ingenuos Reserve.

Resguardos Indígenas, Territorios Ancestrales y Zonas de Control y Vigilancia
Proyecto CRIMA - Resguardo Indígena Predio Putumayo
Amazonas - Colombia



1.4. Project duration

The start date of the project corresponds to 05-January-2018 and extends for a period of 40 years, which indicates that the project will end on 04-January-2058.

1.5. Quantification period

The accreditation period corresponds to the period between 05-January-2018 and 04-January-2058, for a 40-year period.

1.6. Initiative Holder

The owners of the project (proponents) correspond to the Andoque communities of the Aduche Indigenous Reserve, communities of the Control and Surveillance Zones, legally represented by the



Indigenous Association of Traditional Indigenous Authorities CRIMA, CARBO Sostenible S.A.S., Terra Commodities S.A.S., Yauto S.A.S. and VISSO Consultores S.A.S. The proponents are responsible for the formulation, implementation, monitoring, and registration of the initiative.

Below is the information for each proponent:

Organization name	CONSEJO REGIONAL INDIGENA DEL MEDIO AMAZONAS (REGIONAL INDIGENOUS COUNCIL OF THE MIDDLE AMAZON) – CRIMA
Contact person	Levy Andoke Andoke
Title	Legal Representative
Address	Andoque de Aduche Indigenous Reservation
Telephone	+57 312 332 5138
Email	Pooioho2016@gmail.com
Role	Legal representation of indigenous communities

Below are the participating communities and beneficiaries of the project, according to the Control and Surveillance Zones (ZCV) and the Andoque de Aduche Indigenous Reservation.

ZCV 1 – Belén to Pto Zábalo

Organization name	GRAN RESGUARDO PREDIO PUTUMAYO Belén Community
Contact person	Harol Dixon Matías
Title	Governor Belen Community
Address	Predio Putumayo Indigenous Reserve, Puerto Zábalo y Los Monos and Monochoa sectors
Telephone	3228288059
Email	matiasharol@yahoo.com
Role	Participative Project Development Project Implementation

Organization name	GRAN RESGUARDO PREDIO PUTUMAYO Las Delicias Settlement
Contact person	Wilfer Ruiz Monokudo

Title	Governor Las Delicias Settlement
Address	Predio Putumayo Indigenous Reserve, Puerto Zábalo y Los Monos and Monochoa sectors
Telephone	3212593277
Email	NA
Role	Participative Project Development Project Implementation

Organization name	GRAN RESGUARDO PREDIO PUTUMAYO Nazareth Community
Contact person	Miller Didson Kuyoteka Zafiekudo Jaider Kuyoteka
Title	Governor Nazareth Community
Address	Predio Putumayo Indigenous Reserve, Puerto Zábalo y Los Monos and Monochoa sectors
Telephone	3103453414
Email	Cabildonazareth2020@gmail.com
Role	Participative Project Development Project Implementation

Organization name	GRAN RESGUARDO PREDIO PUTUMAYO Los Monos Community
Contact person	Jose Falla Fuisiamena
Title	Governor Los Monos Community
Address	Predio Putumayo Indigenous Reserve, Puerto Zábalo y Los Monos and Monochoa sectors
Telephone	3103225734
Email	Fallajose1962@gmail.com
Role	Participative Project Development Project Implementation

Organization name	GRAN RESGUARDO PREDIO PUTUMAYO Puerto Pizarro Community
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Contact person	Rominyer Choa Gómez
Title	Governor Puerto Pizarro Community
Address	Predio Putumayo Indigenous Reserve, Puerto Zábalo y Los Monos and Monochoa sectors
Telephone	NA
Email	Rominchoa2015@gmail.com
Role	Participative Project Development Project Implementation

Organization name	GRAN RESGUARDO PREDIO PUTUMAYO La Reforma Community
Contact person	Didi Monaityama Fusiamena
Title	Governor La Reforma Community
Address	Predio Putumayo Indigenous Reserve, Puerto Zábalo y Los Monos and Monochoa sectors
Telephone	NA
Email	NA
Role	Participative Project Development Project Implementation
Organization name	GRAN RESGUARDO PREDIO PUTUMAYO Puerto Berlín Community
Contact person	Alexis Armando Kirianteque
Title	Governor Puerto Berlín Community
Address	Predio Putumayo Indigenous Reserve, Puerto Zábalo y Los Monos and Monochoa sectors
Telephone	NA
Email	NA
Role	Participative Project Development Project Implementation

Organization name	GRAN RESGUARDO PREDIO PUTUMAYO Puerto Zábalo Community
Contact person	Omar Mendoza Ortiz

Title	Governor Puerto Zábalo Community
Address	Predio Putumayo Indigenous Reserve, Puerto Zábalo y Los Monos and Monochoa sectors
Telephone	NA
Email	NA
Role	Participative Project Development Project Implementation

ZCV 2 - Guaimaraya to Chukik+

Organization name	GRAN RESGUARDO PREDIO PUTUMAYO Chukik+ Community
Contact person	Esequiel Mukutuy Valencia
Title	Governor Chukiki Community
Address	Predio Putumayo Indigenous Reserve, Puerto Zábalo y Los Monos and Monochoa sectors
Telephone	NA
Email	NA
Role	Participative Project Development Project Implementation

Organization name	GRAN RESGUARDO PREDIO PUTUMAYO Guaimaraya Community
Contact person	Eriberto Rodríguez
Title	Governor Guaimaraya Community
Address	Predio Putumayo Indigenous Reserve, Puerto Zábalo y Los Monos and Monochoa sectors
Telephone	NA
Email	NA
Role	Participative Project Development Project Implementation

ZCV 3 - Communities of Andoque de Aduche Ingenuos Reserve

Organization name	Aduche Indigenous Reservation
Contact person	Jesús Miguel Andoque Andoque Nelson Andoque Muinane
Title	Governor Andoke de Araracuara Aduche Community Governor Andoque de Aduche Amazonas Community
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Email	NA
Role	Participative Project Development Project Implementation

Project Developers:

Organization name	Carbo Sostenible SAS
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Role	Project Development Project Implementation Project Financing Carbon credit commercialization

Organization name	Terra Commodities SAS
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Role	Project Development Project Implementation Project Financing Carbon credit commercialization

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Role	Project Development Project Implementation Project Financing Indigenous affairs and field coordination

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Role	Project Development Project Financing

1.7. Land Tenure

A portion of the land belongs to the Great Predio Putumayo Indigenous Reserve in the Department of Amazonas (Colombia), which, like the other reserves in the department, is a special legal and socio-political entity made up of indigenous communities that hold collective property titles and manage the territory in accordance with an indigenous jurisdiction organization, cultural guidelines and traditions. In this way, the Great Predio Putumayo Indigenous Reserve constitutes the materialization and fulfilment of the provisions of article 14 of Law 21 of 1991, which recognizes the right of indigenous peoples to own and possess the lands they traditionally occupy.

The Great Predio Putumayo Reserve was established on April 5, 1988, by the Colombian Institute of Agrarian Reform (INCORA), now the Colombian Institute of Rural Development (INCODER). It currently has a total extension of 5,819,505 ha, of which 830,195.6 ha are included as part of this

REDD+ project. The resolutions that account for the land tenure and use rights of the territory of the Great Predio Putumayo Indigenous Reserve are the following:

- Foundation: Resolution 030 of April 6th, 1988
- Clarification: Resolution 057 of September 4th, 1989
- Enlargement: Resolution 0105 of March 28th, 2007
- Certification: Resolution 1947 of September 29th, 2006

The other part of the territory includes the total area of the Andoque de Aduche indigenous reserve. This reserve has a total extension of 448,650.1 ha. The resolutions and agreements that account for the land tenure and use rights of the territory of the Andoque de Aduche Indigenous Reserve are the following:

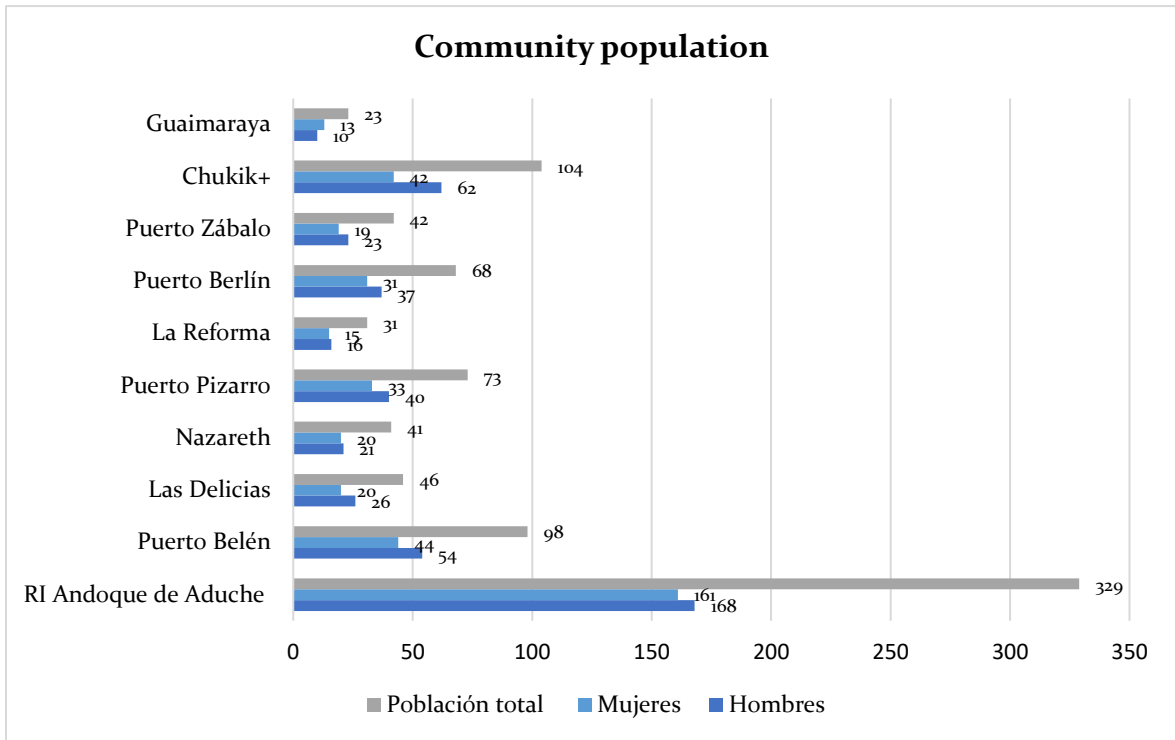
- Foundation: Resolution 033 of April 6th, 1988
- Enlargement: Agreement 030 of December 15th, 2004
- Certification: Resolution 677 of April 17th, 2006
- Enlargement: Agreement 140 of December 04th, 2020

1.8. Conditions prior to the project implementation

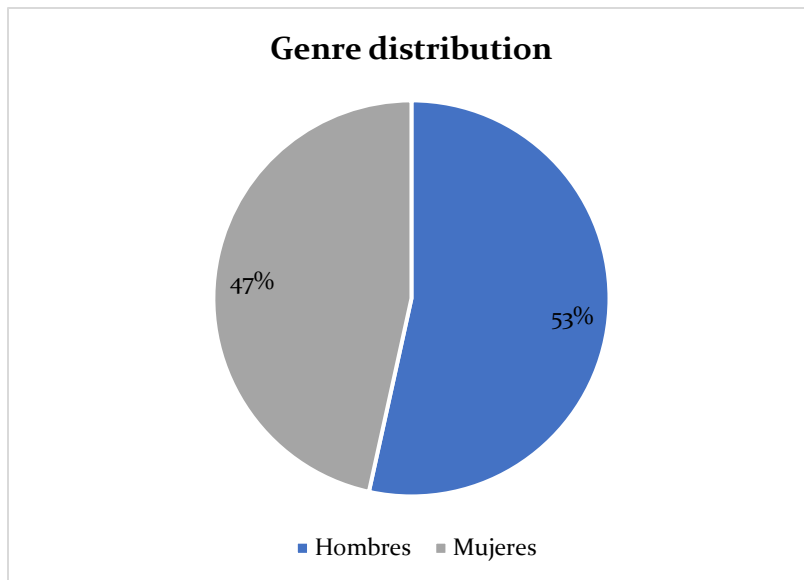
1.8.1. Community

The community belonging to the Great Indigenous Reserve Predio Putumayo, and Andoque de Aduche Indigenous Reserve corresponds to ethnic population living within the biggest indigenous reservation of the country. It is constituted by different ethnic groups, mainly Andoke, Uitoto and Muinane, which are organized in different communities or clans and articulated around the Association of Traditional Authorities Regional Council of the Middle Amazon - CRIMA.

The communities found in the territory of the Great Predio Putumayo Indigenous Reserve make up a population of 526 people, of which 55% corresponds to the male population and 45% to the female population, according to the population censuses carried out by each community since the year 2020. For its part, the Andoque de Aduche Indigenous Reserve has a population of 329 people, according to the 2021 population census, of which 51% are men and 48% women (see folder *Censos comunitarios*).



Graph 1. Community Population.



Graph 2. Population distribution by gender of the project.

There are power groups within each clan, responsible for making decisions, defending the group from physical and shamanistic aggressions, organizing work, and fulfilling territorial defense functions, a power that is held by the Maloquero, the Shamans, the Singers, the Dancers, and Hunters, mainly (Ministry of the Environment, 2006).

The characteristic indigenous dwelling of this area is the Maloca, a large communal house, made up entirely of natural elements. It is also a traditional social unit, a type of housing whose symbolism represents for the Amazonian communities a synthesis of the universe. The maloca is considered as a divine archetype, the womb of mother earth, the house of the sun and the moon, or the receptacle of the celestial ray (GAIA AMAZONAS). On the outside, around the Maloca, the chagras managed mainly by women are located, and then the forest extends, which remains under the protection of the various spiritual guardians.

Besides the malocas, other single-family dwellings in a rectangular array are found on platforms, gabled roof covered with zinc or palm woven caraná and plank walls. The kitchen is usually located outside the housing, in a small shed. Another type of housing that was observed there are those built on materials such as block and cement, some use zinc, and others; the palm is used for the roof; the floors can be in cement or mud. In other cases, the houses are made on wooden pylons, resistant to moisture, the deck or roof is built with light wood. they have one or two rooms, a separate kitchen, and a latrine.

Current conditions of the community reflect the historical absence of the State in the amazon region. The community lack of social infrastructure, sanitation systems, education, and health facilities. Some of the problems presented include:

- Lack of electricity service due to the absence of an economical, clean, and autonomous power generation system
- Incipient communication networks
- Lack of sanitation and waste management
- Lack of access to drinking water for human consumption
- Poor health system coverage, lack of medical centers (communities rely on traditional medicine)
- Difficulties in transporting goods produced within the territory
- Lack of social investment and government presence

Despite of being located within a natural area rich in biodiversity Predio Putumayo and Andoque de Aduche communities have environmental issues related to:

- Vulnerability to climate related events
- Water pollution, including mercury contamination from mining activities
- Lack of knowledge of proper environmental management (especially regarding solid and liquid wastes)
- Loss of fauna and flora

These issues are related to the principal economic activities carried out in the territory such as artisanal and mechanized gold and platinum mining, illicit crops, subsistence crops (Chagras), hunting, fishing, and forestry.

Currently the communities are willing to recover their tradition and cultural values that have been lost due to economic and social conditions.

1.8.2. Biodiversity

The diversity of physical units of environment, the complexity of vegetation and animal species, makes the Amazon a strategic region for the current and potential value of its biological diversity and because of the interrelation between this diversity and the diversity of culture.

The area of the middle Caquetá River, specifically the Araracuara sector and the reservations belonging to the CRIMA, have been the object of study thanks to the appearance of several actors interested in knowing the flora and fauna of the region. Among these actors is recognized the Colombian Corporation for the Amazon (COA) today the SINCHI Institute, the Amazon Conservation Team, the Dutch cooperation, through NGOs such as TROPEMBOS and the University of Amsterdam, and different undergraduate and graduate thesis from national universities (CRIMA, 2013).

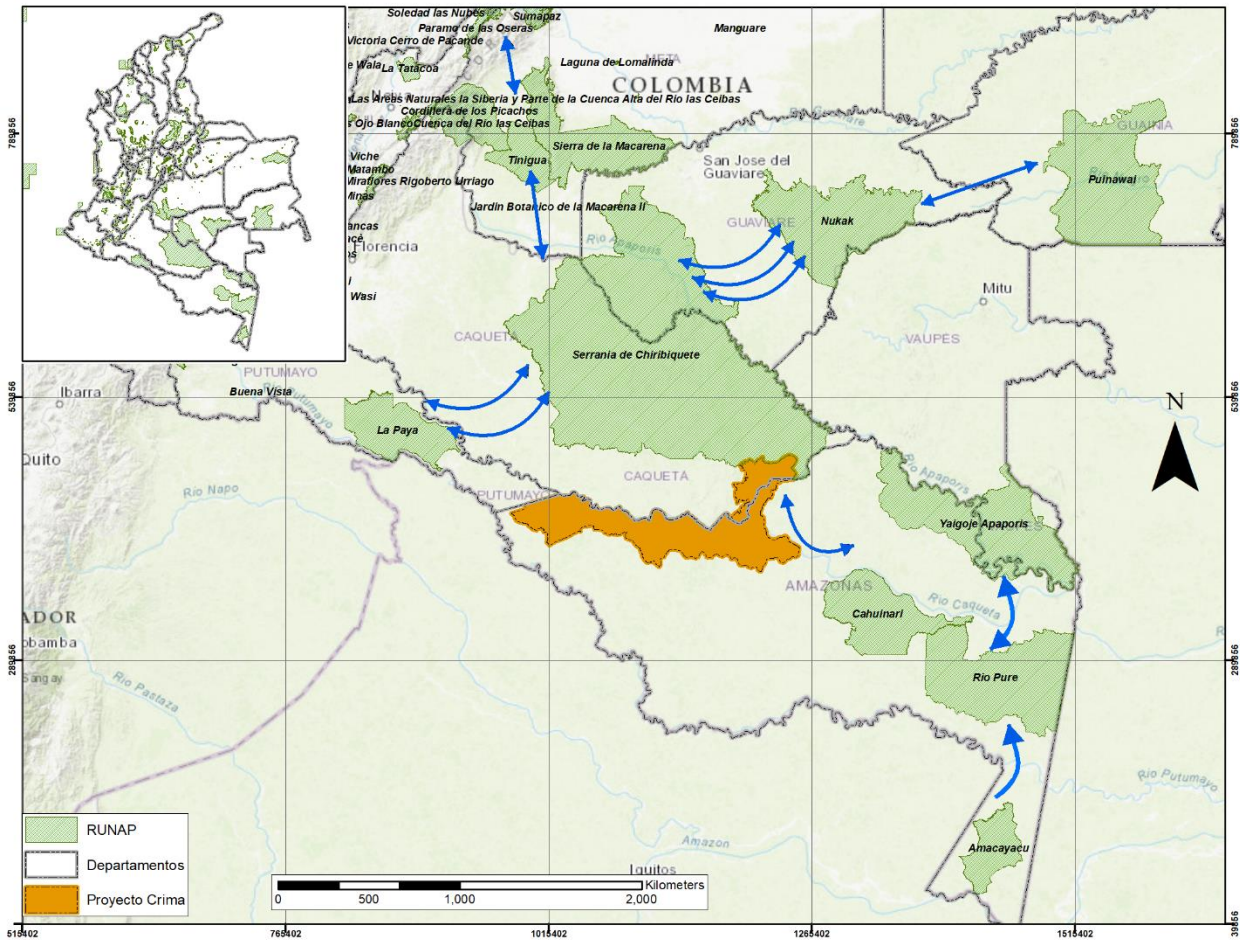
The area of the middle Caquetá River in the Amazon department has been considered one of the areas with the greatest richness of plant species, comparable worldwide with the most diverse areas reported in the literature (Sánchez 1995). However, the diversity of these species is not found uniformly in the area which is largely influenced by the physiographic position, and the physicochemical characteristics of its soils. Generally, the natural forests with greater wealth are those that are found in well-drained areas of the mainland which cover the largest surface of the area, forests with poorly drained soils present the least richness, while Well-drained soils of alluvial zones of rivers and podzolized soils of the mainland present an intermediate richness (CRIMA, 2013).



The amazon region where the Great Indigenous Reserve of Predio Putumayo and the Andoque de Aduche Indigenous Reserve are located have a high diversity of birds, amphibians, reptiles, mammals, and plants. More than 1,429 species have been identified in the area, of which 44 are endemic. Some of these species are in a vulnerable, endangered and critically endangered status, according to the classification defined by the International Union for Conservation of Nature (IUCN). For these indigenous communities, fauna and flora rely on a religious base, as each of the elements has a spirit considered owner and to whom should be asked permission to extract them.

The zone where the project is located is considered an important ecological and conservation corridor amongst the amazon region and the nearby National Natural Parks (Serranía de Chibiriquete National Natural Park, Cahuinari National Natural Park). Accordingly, to a technical concept, the reservation complies with the four aspects (i) biodiversity and ecosystems, (ii) Territory and autonomy, (iii) Traditional knowledge, actual use, and productive systems, and (iv) territorial arrangements, that legitimates its ecological function for the region and the country (Ministerio de Ambiente, Vivienda y Desarrollo Territorial, 2006).

Map 3 Biological corridors between Natural protected areas in the Project zone.



Flora

The region is characterized by the presence of abundant arboreal vegetation in woody legumes. Cesalpinoaceae are presented, from the genera *Dimorphandra*, *Peltogyne*, *Eperua* and *Elizabetha*. These genera are rich in endemic species such as *Doryna*, *Macrolobium*, and *Swartzia*. In fruit trees, *Sapotáceas*, *Rapatáceas*, *Myristicaceae*, *Malpigiáceas* and *Rutáceas* stand out. *Leopoldina pissaba* and *Mauritia vinifera* abound in palms. Other important species include, *Carapa Guianensis*, *Cedrela adorate*, *Cariniana micrantha*, *Peltogyne* spp and *Mimusops huberi*. (CORPOAMAZONIA, s.f.).

The five most used and important wood species for the region belong mainly to the Lauracea botanical family and are recognized in the region as Amarillo, Comino, Medio Comino, Comino Cuerinegro and Itauva (ASOCIACION DE AUTORIDADES TRADICIONALES CONSEJO

REGIONAL INDIGENA DEL MEDIO AMAZONAS CRIMA, 2013). Other Woody species include the Achapo or Guamo Blanco or Guamo Cerindo, the Perillo, Cedro, Sangretoro, Carrecillo, Bilibil, Guamo Diablo, Ahumado, Andiroba Marfil or Papelillo, Canelo, Chocho, Cachicamo, Caoba, Caracoli, Flor Morado, Milpo, Granadillo, Palisangre, Tara and Voladora (ASOCIACION DE AUTORIDADES TRADICIONALES CONSEJO REGIONAL INDIGENA DEL MEDIO AMAZONAS CRIMA, 2013).

Amongst the most representative flora species of the amazon the *Mimosaceae*, *Arecaceae*, *Caesalpinaceae*, *Monimiaceae*, *Cecropiaceae*, *Ulmaceae*, *Violaceae*, *Bombacaceae*, *Clusiaceae*, *Piperaceae*, *Flacourticeae*, *Fabaceae*, *Myrtaceae*, *Nyctaginaceae*, *Apocynaceae*, stand out. (CORPOAMAZONIA, s.f.).

The following are species within the project area listed in the red book of plants of Colombia red book of plants of Colombia (Calderón-Sáenz, 2006; Cárdenas L. & Salinas, 2007).

Plants		
Epiphytic orchid	<i>Coryanthes bruchmuelleri</i>	Almost threatened
Epiphytic orchid	<i>Coryanthes leucocorys</i>	Almost threatened
Lily	<i>Cattleya schroederiae</i>	Vulnerable
Cedar	<i>Cedrela odorata L.</i>	Endangered

Fauna

Regarding fauna, the inventories carried out by local managers account for the high diversity of animals in the area, which in general present a good state of their populations and facilitate the activity of hunting for food security and their ecological functions such as dispersers, consumers and controllers in the territory. Each community knows the places of hunting and fishing, the places of spawning of the fish and reproduction of terrestrial animals, therefore, they know the places where they should and should not hunt.

Terrestrial animals are from high lands, likewise it was identified that most animals correspond to mammals, followed by birds and lastly some reptiles and amphibians that are located mainly in the bottom lands. Among the fish identified in the CRIMA territory, the highest percentage corresponds to creek fish, followed by river fish (Caquetá) and lastly, lake fish. According to the categories of use, the vast majority of species are used for human food.

Next, the species identified in the red book of reptiles of Colombia (Morales-Betancourt, Lasso, Páez, & Bock, 2015), red book of freshwater fish of (Mojica, Usma Oviedo, Álvarez León, & Lasso, 2012), red book of birds of Colombia (Renjifo, Amaya-Villarreal, Burbano-Girón, & Velásquez-

Tibatá, 2016), red book of amphibians of Colombia (RUEDA-ALMONACID, LYNCH, & AMÉZQUITA, 2004)., that are of interest in the project area:

Common Name	Scientific Name	Classification
Reptiles		
Tortuga Charapa	<i>Podocnemis expansa</i>	Critically endangered
Tortuga Terecay	<i>Podocnemis unifilis</i>	Endangered
Tortuga Morrocoy	<i>Chelonoidis carbonarius</i>	Vulnerable
Caimán negro	<i>Melanosuchus niger</i>	Vulnerable
Amphibians		
Rana de lluvia gargantimanchada	<i>Eleutherodactylus fallax</i>	Vulnerable
Rana Venenosa de Inger	<i>Epipedobates ingeri</i>	Vulnerable
Rana cornuda de Johnson	<i>Hemiphractus johnsoni</i>	Vulnerable
Freshwater fish		
Pirarucú	<i>Arapaima gigas</i>	Vulnerable
Plumita o Lechero	<i>Brachyplatystoma filamentosum</i>	Vulnerable
Rayado	<i>Brachyplatystoma juruense</i>	Vulnerable
Bagre rayado	<i>Pseudoplatystoma punctifer</i>	Vulnerable
Bagre rayado	<i>Pseudoplatystoma tigrinum</i>	Vulnerable
Flemoso o Saliboro	<i>Brachyplatystoma platynemum</i>	Vulnerable
Dorado	<i>Brachyplatystoma rousseauxii</i>	Vulnerable
Pirabutón o capaz	<i>Brachyplatystoma vaillantii</i>	Vulnerable
Arawana o arahuana o aroana.	<i>Osteoglossum bicirrhosum</i>	Vulnerable
Gambitana	<i>Colossoma macropomum</i>	Almost threatened
Pico de pato o Charuto	<i>Sorubim lima</i>	Almost threatened
mango de hacha	<i>Sorubimichthys planiceps</i>	Almost threatened
Birds		
Pato negro	<i>Netta erythrophthalma</i>	Critically endangered
pavón moquirrojo	<i>crax globulosa</i>	Vulnerable
Águila moñuda	<i>Morphnus guianensis</i>	Almost threatened

The following list of species present in the project area are within the Endangered, Vulnerable or Near Threatened categories, according to the International Unit for Conservation of Nature (IUCN) in the project area (IUCN, 2022).

Category: Endangered			
Animalia	Mammalia	Giant Otter	<i>Pteronura brasiliensis</i>
Animalia	Mammalia	Tucuxi	<i>Sotalia fluviatilis</i>
Animalia	Mammalia	Amazon or Pink dolphin	<i>Inia geoffrensis</i>
Animalia	Mammalia	Common spider monkey	<i>Ateles belzebuth</i>

Animalia	Aves	Paujil Moquirrojo	<i>Crax Globulosa</i>
Category: Vulnerable			
Animalia	Mammalia	Tapir	<i>Tapirus terrestres</i>
Animalia	Mammalia	Humboldt monkey, choyo monkey or gray woolly monkey	<i>Lagothrix lagothricha</i>
Animalia	Mammalia	Giant Armadillo	<i>Priodontes maximus</i>
Animalia	Mammalia	Tiger leopard	<i>Leopardus tigrinus</i>
Animalia	Mammalia	Giant anteater	<i>Myrmecophaga tridactyla</i>
Animalia	Mammalia	White-bearded peccary	<i>Tayassu pecari</i>
Animalia	Mammalia	Calimico	<i>Callimico goeldii</i>
Animalia	Mammalia	Pygmy marmoset	<i>Cebuella pygmaea</i>
Animalia	Mammalia	Sword nosed bat	<i>Lonchorhina marinkellei</i>
Animalia	Mammalia	Primate	<i>Pithecia milleri</i>
Animalia	Mammalia	Black-handed marmoset	<i>cheracebus medemi</i>
Animalia	Aves	Yellow furrowed toucan	<i>Ramphastos culminatus</i>
Animalia	Aves	Wine pigeon	<i>Patagioenas subvinacea</i>
Animalia	Aves	Paujil culiblanco o pavín guayanés	<i>Crax alector</i>
Animalia	Aves	Gara agamí	<i>Agamia agami</i>
Animalia	Aves	Red-headed parrot	<i>Touit huetii</i>
Animalia	Aves	Prickly Swift or Chimney Swift	<i>Chaetura pelagica</i>
Category: Almost Threatened			
Animalia	Mammalia	Short eared fox	<i>Atelocynus microtis</i>
Animalia	Mammalia	Margay or cat tiger	<i>Leopardus wiedii</i>
Animalia	Mammalia	Bush dog	<i>Speothos venaticus</i>
Animalia	Mammalia	Jaguar	<i>Panthera onca</i>
Animalia	Mammalia	Spectral bat	<i>Vampyrum spectrum</i>
Animalia	Mammalia	River wolf or water dog	<i>Lontra longicaudis</i>
Animalia	Aves	Harpy eagle	<i>Harpia harpyja</i>
Animalia	Aves	Azor ventrigrís	<i>Accipiter poliogaster</i>
Animalia	Aves	Pibí oreál or colicorto	<i>Contopus cooperi</i>
Animalia	Aves	Common Corcovado or Red-faced Quail	<i>Odontophorus gujanensis</i>
Animalia	Aves	Crested eagle	<i>Morphnus guianensis</i>
Animalia	Aves	Paujil culicolorado	<i>Mitu tomentosum</i>
Animalia	Aves	Striated warbler or sparrow warbler	<i>Setophaga striata</i>
Animalia	Aves	Zebra heron or dwarf avetigre	<i>Zebrius undulatus</i>
Animalia	Aves	Orinoco ganzo or carriage duck	<i>Neochen jubata</i>
Animalia	Aves	Orange Parrot	<i>Pyrilia barrabandi</i>
Animalia	Aves	Royal crested eagle	<i>Spizaetus ornatus</i>
Animalia	Aves	Correlimos canelo	<i>Calidris subruficollis</i>
Animalia	Aves	Big Tinamú or tinamú oliváceo	<i>Tinamus major</i>

Animalia	Aves	Green parrot	<i>Amazona farinosa</i>
Animalia	Aves	Inambú gallina or tinamú gorgiblanco	<i>Tinamus guttatus</i>
Animalia	Reptilia	Gray soil serpent	<i>atractus occipitoalbus</i>

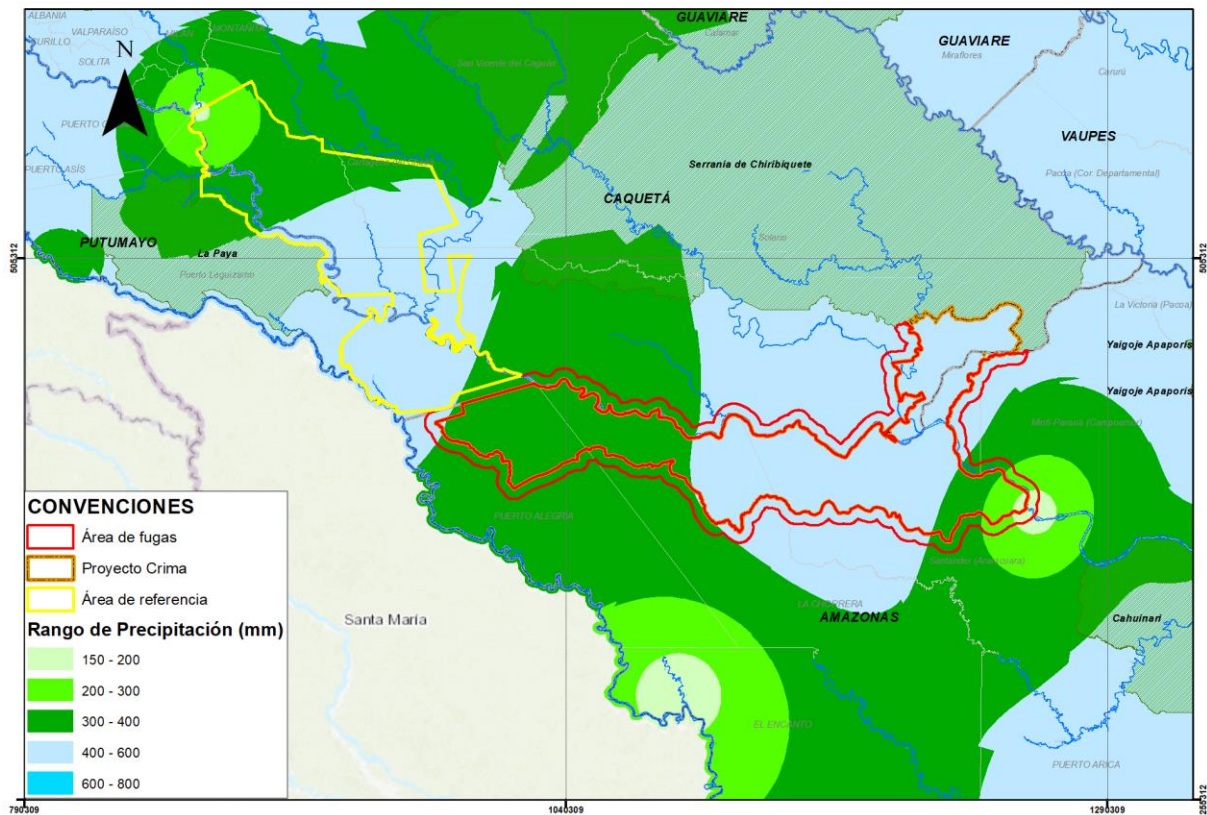
1.8.3. Biophysical Characteristics

1.8.3.1. Weather

The Colombian Amazon Region is influenced by three major systems of Atmospheric circulation, due to its location on the equatorial strip: the Tropical Strip of the Northeast Alder, the Southeast Alders, and the Equatorial Strip of convergence between two hemispheres. The macroclimate with the highest incidence in the region is characterized from January to June, at times that coincide with the rising and falling of the river. In general, rainfall is greater than 3,000 mm per year.

Map 4 Weather in the project area, reference region and leakage belt.

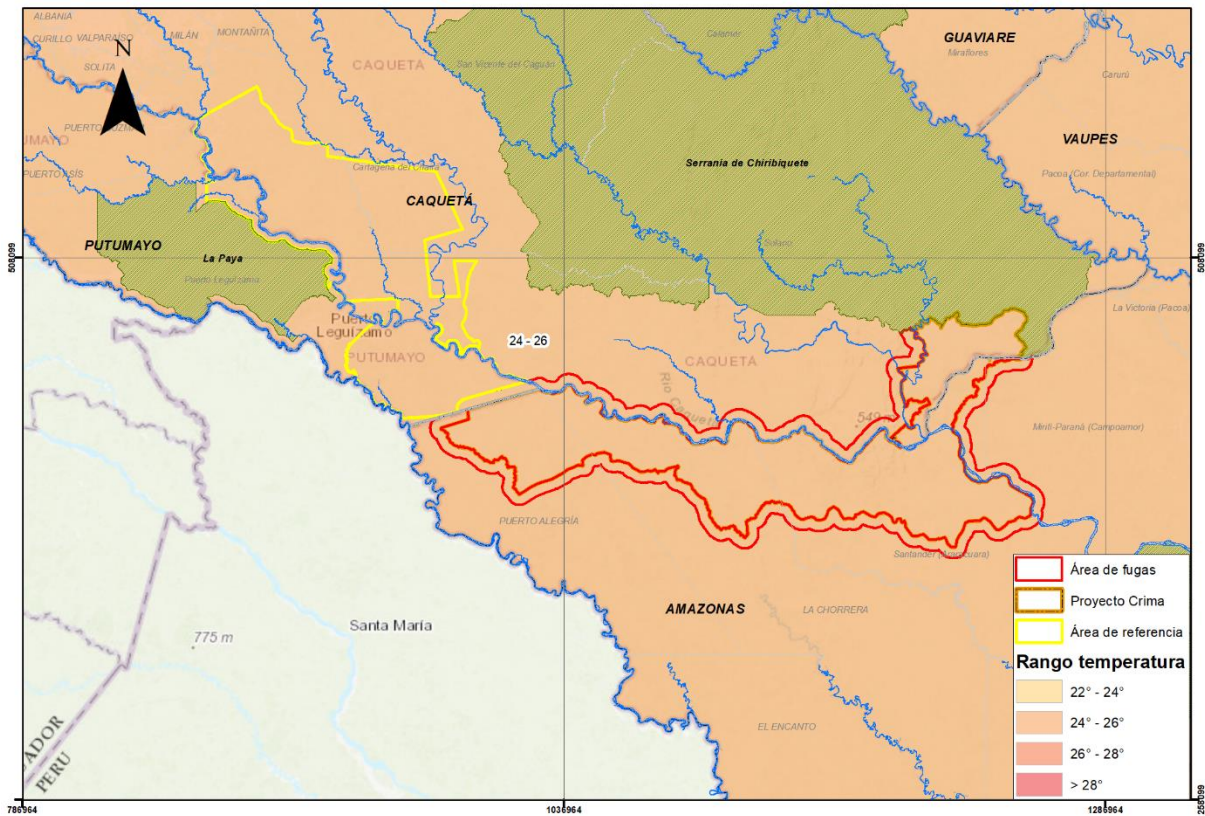
Precipitación
Proyecto Resguardo Indígena Predio Putumayo
Amazonas - Colombia



The temperature in the region presents average values between 24 and 28 Celsius degrees, as with rainfall, a cold period can occur between June and August and a warm period happens from November to March. Relative humidity is higher than 80% and the Life Zone, according to Holdridge, corresponds to Humid Forest (Bh-t). The passage of the Intertropical Confluence Zone (ITCZ) defines the behavior of annual precipitation in the study area. The southernmost position is occupied during the months of January and February, producing at this time the maximum rains in Leticia (Ministry of the Environment, 2006).

Map 5 Temperature in the project area, reference region and leakage belt.

Temperatura
Proyecto Resguardo Indígena Predio Putumayo
Amazonas - Colombia



1.8.3.2. Soils

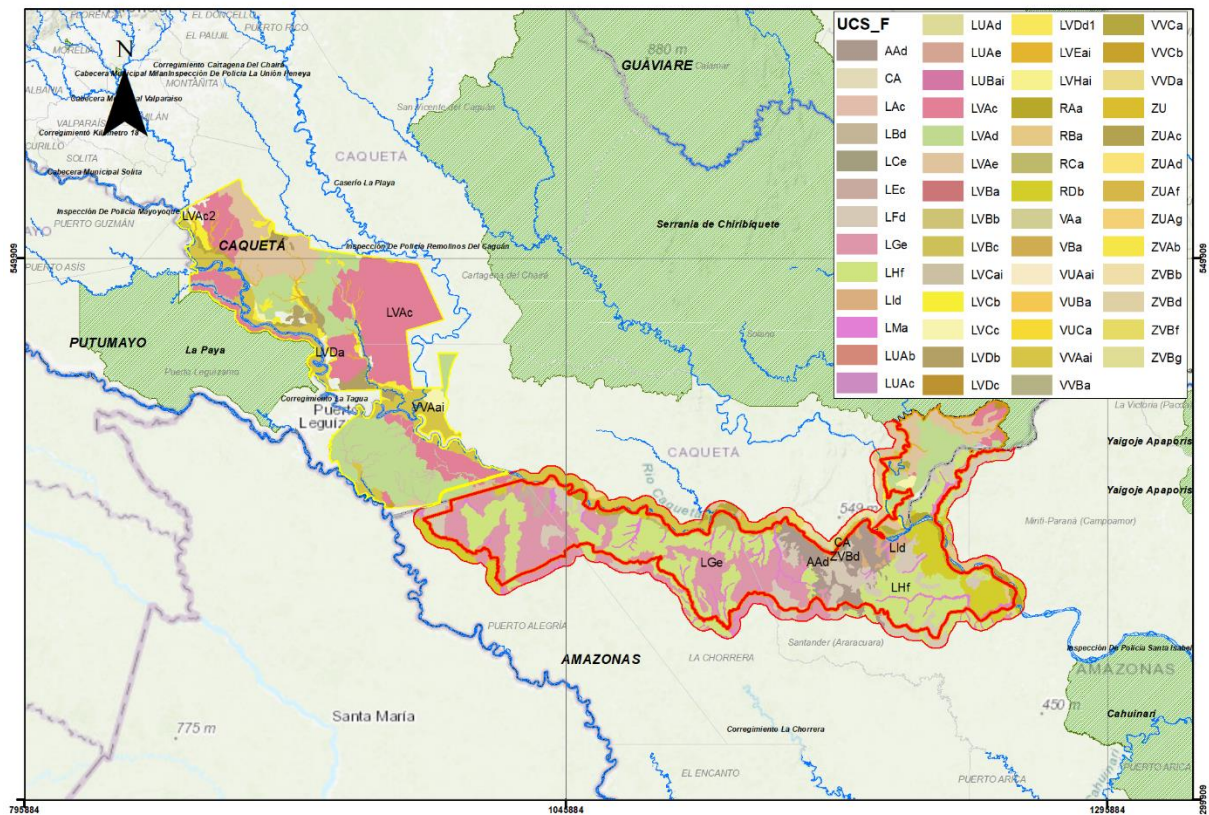
The Amazonian soils are known for its low deposition of minerals. According to the PRORADAM 1979 program, in the region there are soils formed by alluvial deposits such as :1) those associated to the Andean rivers as the Amazonas, the Caquetá and Putumayo, considered to be the best for agricultural activities due to its high content of chemical elements (although superficial, poorly

drained and constantly flooded); 2) Soils from rivers as the Yari not so suitable for agricultural activities.; 3) Soils of minor valleys with alluvial influence ; 4) Soils and terraces

Furthermore, there are soils originated from the denudation of the tertiary sedimentary environment, covering the biggest extension of the region and being acidic or strongly acidic, with a high proportion of aluminum which made them toxics and with a low nutritious value all this limiting the development of agricultural activities for long periods of time, this being the reason why new management practices were introduced such as the chagras (CRIMA, 2013).

Map 6 Soils in the project area, reference region and leakage belt.

Suelos
Proyecto Resguardo Indígena Predio Putumayo
Amazonas - Colombia



1.8.3.3. Hydrography

The Amazonian region presents a natural slope in the east, therefore the fluvial currents that cross this region go in this direction. The Caquetá River is the north border of the Predio Putumayo and is also the south border of the Aduche Indigenous Reservations. The Caquetá River, which is part

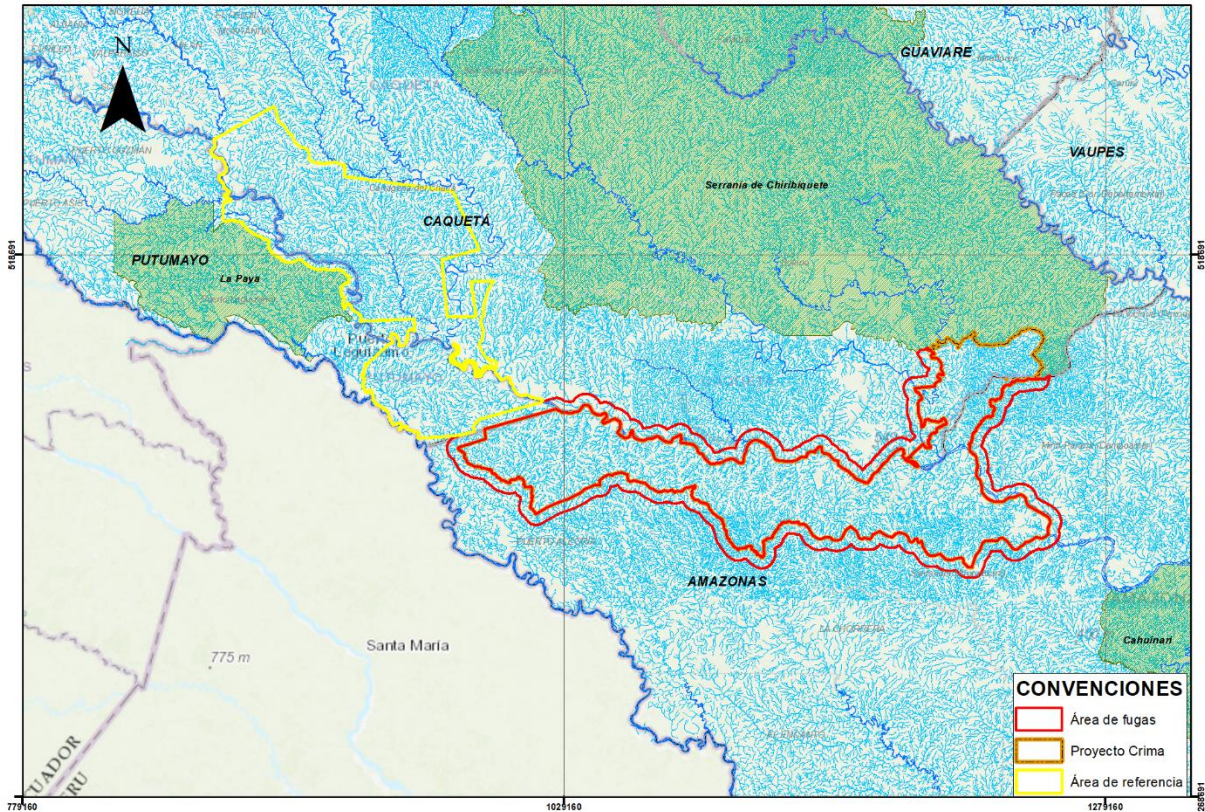
of the mighty Amazonian rivers, has the following tributaries: El Cahinarí, Caucayá, Sabaloyacú, Buri-Buri, south border of Puerto Santander River Igaraparaná (INCORA, 1988).

In the Amazon rainforest, there are 3 kinds of rivers, which are distinguished by their physical chemistry features: 1) white waters rivers, which come from drainage emerging from the Andes and due to its high proportion of nutrients, they generate a suitable environment for fishes and the periodic renovation of crops of La Vega (rivers Caquetá, Putumayo, Amazonas, Orteguzza, Caguán and Fragua, among others); 2) back water rivers which come from drainage that are born in the great central Amazonian batea, are quite transparent and have low productivity (rivers Caucayá, Mirití-Paraná, Cara-Paraná and Igara-Paraná); and 3) the clear water rivers that come from drainages coming from the peaks in the meridional and septentrional peripheral Amazon rainforest, characterized by its low fertility (rivers Ajajú, San Jorge, Mesay, Tauraré, and others). Some authors consider another additional category known as mixed waters formed by the merging of white waters and any other type, as a result these kinds of rivers have an optimum environment for productivity (CRIMA, 2013). The Caquetá River is a body of water with features which receives all the colors of waters from other tributaries, for this reason it is not classified into any of the categories mentioned above (CRIMA, 2013)

The hydrography benefits animal species diversity and wildlife. The fauna of the Amazon features twelve types of ecosystems suitable for animal species. The aquatic environment is composed of all the diversity present in any body of water (INCORA, 1988). Locally, the CRIMA communities have a wide and profound knowledge and relationship with the water. It is a key element for native people, valueless and essential part of their lives, water is the foundation of man and woman, it's at the heart of everything that exists in the world.

Map 7 Hydrography in the project area, reference region and leakage belt.

Hidrología
Proyecto Resguardo Indígena Predio Putumayo
Amazonas - Colombia

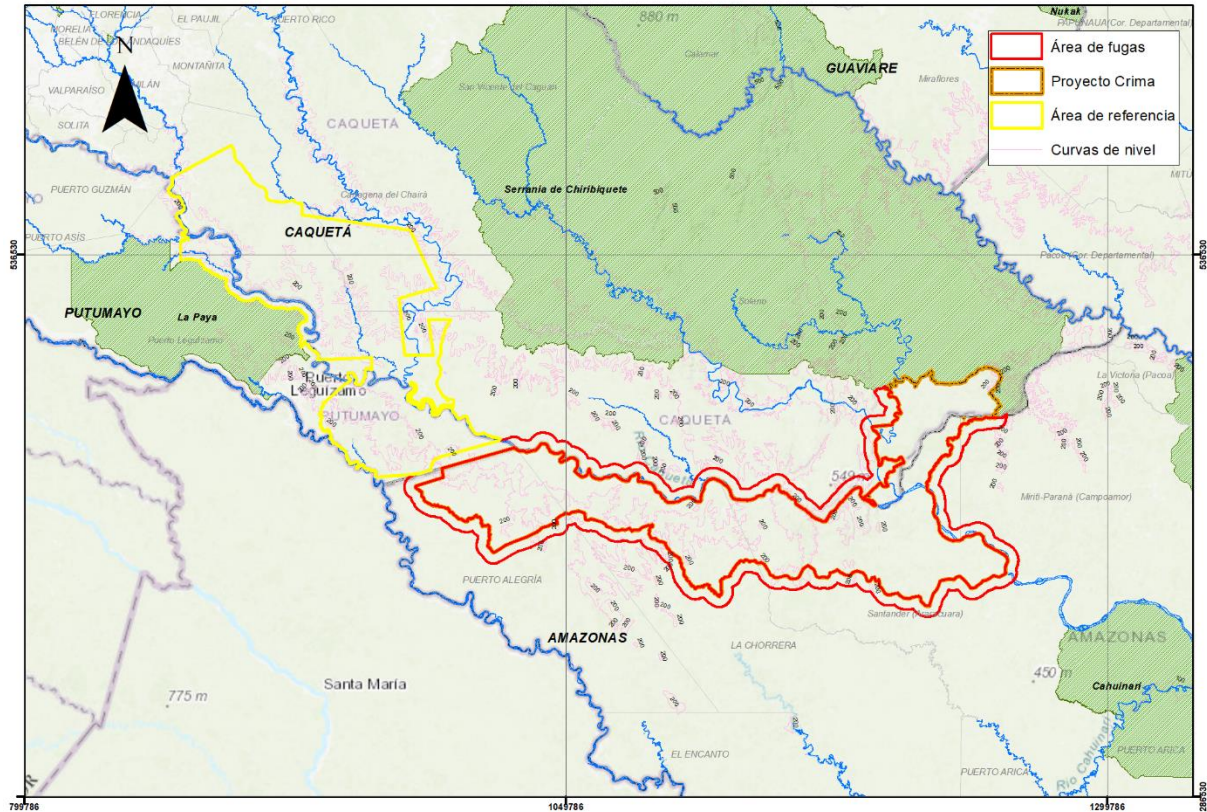


1.8.3.4. Topography

The reserves are located in the wide Amazonas plain, characterized by a flat and slightly undulating surface, formed by a system of low, medium and high-level terraces. Over the northwestern sector there is a extend of uniform high-level terraces, medium and low hills that are interrupted by modern alluvial deposits (intercollege valleys) deposited by secondary rivers (CRIMA, 2013).

Map 8 Topography in the project area, reference region and leakage belt.

Topografía
Proyecto Resguardo Indígena Predio Putumayo
Amazonas - Colombia



1.8.3.5. *Vegetation and land covers*

Most of the area is covered with tropical forests and areas that experience flooding, with annual heavy precipitations (see Table 2). Vegetation in the Amazonian region is composed by primary forest with trees as high as 40 m and diameters of more than 40 cm with abundant parasites and epiphytes, that offer high forest, zoological and hydrological wealth, aiming for research conducted towards a rational use of the natural resources (INCORA, 1988).

There is low or insignificant fragmentation in contrast to other regions of the country, the main matrix of the area is forest with some spots that are the chagras crops and stovers surrounding human settlements. It's important noticing that the stover is considered a vegetation cover by the natives, and it's used to promote the renovation of the forests (CRIMA, 2013).

Natives call these three ecosystems white sands, savannah, or forest with rocks. Those ecosystems are located mainly in the Monochoa Indigenous Reservation area, in the Department of Caquetá and the control and surveillance area of the Predio Putumayo which oversees the reserve. This kind of forests are also found to the west of the control and surveillance area of the Andoque de Aduche Indigenous Reservation (CRIMA, 2013). In addition, traditional rotation systems appear to be the only ones maintaining the ecological dynamics of the Amazon jungle (Sanchez, 2005). This traditional system is found around actual human settlements.

Table 2. Land cover change in the project zone between 2007 and 2017.

Land cover	Area 2007 (ha)	%	Area 2017 (ha)	%
Dense tall terra firme forest	932,531.5	91.54	917,892.3	90.11
High dense forest Flooded Heterogeneous	57,802.3	5.67	70,385.2	6.91
Dense lowland forest on terra firme	6,894.5	0.68	6,805.3	0.67
Secondary vegetation or in transition	6,133.5	0.60	5,732.5	0.56
Rivers (50m)	3,650.1	0.36	3,621.5	0.36
Fragmented forest with secondary vegetation	3,071.6	0.30	3,749.1	0.37
Palm groves	2,733.7	0.27	3,059.8	0.30
Open rocky grassland	2,625.8	0.26	2,793.6	0.27
Mosaic of pastures with natural spaces	1,489.4	0.15	787.9	0.08
Fragmented forest with pastures and crops	752.3	0.07	391.0	0.04
Dense bushland	261.5	0.03	391.3	0.04
Dense grassland flooded with trees	223.5	0.02	283.8	0.03
Lagoons, lakes and natural swamps	117.8	0.01		0.00
Clean pastures	87.2	0.01	62.1	0.01
Mosaic of crops, pastures and natural spaces	81.9	0.01	1,335.9	0.13
Dense non-wooded terra firma grassland	60.2	0.01		0.00
Dense terra firma grassland with shrubs	50.8	0.00	50.8	0.00
Discontinuous urban fabric	37.4	0.00	43.3	0.00
Natural sandy areas	31.4	0.00	139.1	0.01
weedy grasses	25.2	0.00		0.00
Low dense flooded forest	lad	0.00	1,080.6	0.11
Swampy Areas		0.00	25.4	0.00
Burned areas		0.00	31.1	0.00
Total	1018661.6	100.00	1.018.661,6	100.00

Three vegetation covers, la chagra, stover and hill are found at actual human settlements (CRIMA, 2013). Chagra is a traditional transitory farming based on horticulture, felling and burn of the land. It's abandoned every 2 and 4 years letting the natural regeneration of the forest take place. It is defined by Velez & Velez (1992) as an agroforestry dynamic system that is different to the western approach since it's not only a productive unit but also a diversified and sustainable productive system where although there is not a defined set of laws, all its components are interlinked (PRONATTA). Altogether, hill, chagra and stover systems are revitalized continually each other and have been successfully managed by the community with a high degree of genetic selection and



promotion of diversity. Plants found in chagra are mainly used as food, and it's also used as a cultural element in ceremonies, fish and hunting and healing.

Stover's are vegetation covers highly rich in species where regeneration of the areas previously used for agriculture is promoted. The classification of stovers can go from temporal stovers to young, middle-aged, and old stovers. There is also a kind of stover known as fruit tree stovers, which are managed in a certain way that successfully provide the community with high amounts of food (CRIMA, 2013).

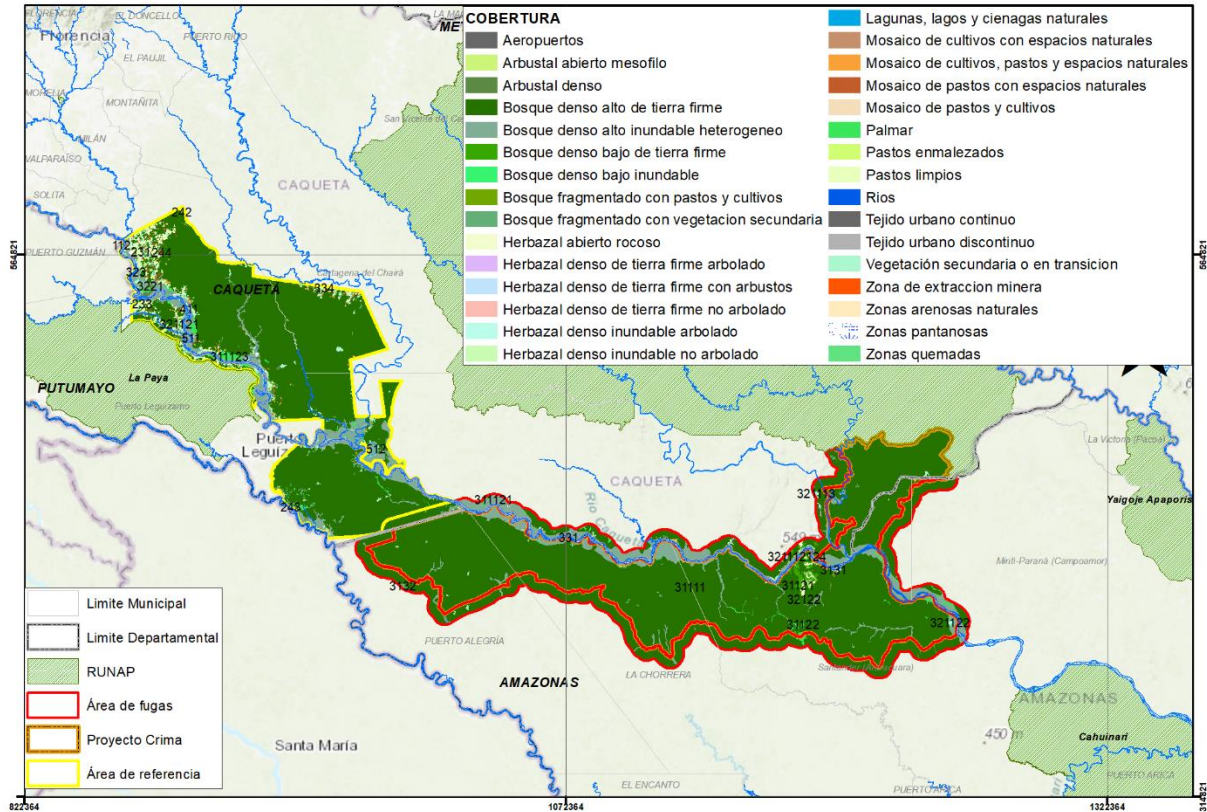
Forests themselves are one of the most important productive systems for natives. Communities settled in the project area obtain products and animals for hunting in the non-intervened areas in stovers of different ages. This foodstuff is classified as follows, according to Sánchez & Miraña (1992): human food, hunting and fishing, wood and fibers for construction, domestic tools, medicinal herbs, and fuels (CRIMA, 2013).

Regarding vegetation covers in the project area, thick jungles in the sedimentary surfaces, savannahs and bushy vegetation of the mountain range are found. These classifications were proposed by PRORADAM (1979) in nine different phytogeographical units (Etter 1992), Southern thick jungles, northern thick jungles, Caatinga and savannahs from residual surfaces in Escudo Guayanes, low forests, shrubs and disperse formations in Araracuara y Mitú, jungle and alluvial vegetation from Várzeas in the Caquetá River banks (TRADITIONAL AUTHORITY ASSOCIATION, INDIGENOUS REGIONAL COUNCIL OF THE AMAZONAS - CRIMA, 2013)

The general plan of ecosystems in the Amazonas Department elaborated by Alexander von Humboldt (IAVH) shows typical ecosystems of the wet tropical forests especially in La Chorrera municipality where high thick forest prevails as well as small spots of middle forest and savannahs in Guayanesa mountain range. At scale of 1:3'000.000 intervened rural areas are not found which is evidence of the traditional activities carried out by natives inside the reserve (Ministerio de Ambiente, 2006).

Map 9 Vegetation and land covers in the project area, reference region and leakage belt.

Coberturas de la tierra
Proyecto Resguardo Indígena Predio Putumayo
Amazonas - Colombia



1.8.3.6. *Ecosystems*

Based on the map of Ecosystems of Colombia developed by IDEAM, in the project area and in the reference region, terrestrial ecosystems (forests and rocky complexes of mountain ranges) and continental aquatic ecosystems can be found, as indicated below:

Table 3 Ecosystems present in the project area and in the reference region (Gobernación de Caquetá, 2013)

Biome Type	Characteristics	Ecosystem/ geological unit
Tropical Humid Zonobiome of the amazonía - Orinoquía	Zonal biome delimited by climatic conditions with a certain type of vegetation	-Fluviogravitational and structural erosional hills -alluvial plains
Peinobiome of the Amazonía - Orinoquía	Slow soil formation. Rock outcrops may occur	- Structural erosional plateau - alluvial plain - Alluvial and colluvio- alluvial foothills
Helobiome of the Amazonía	Poor drainage, permanent waterlogging or prolonged period of flooding	- alluvial plain - alluvial valley
Lithobiome of the Amazonía - Orinoquía	Incipient soil on hard rock	- Flattening surfaces

1.9. High Conservation Values

For the definition of High Conservation Values in the project area, the biological, ecological, social, and cultural attributes that stand out for the goods and services they provide were identified. The project zone is located within habitats of ecological and cultural importance for the country and for local communities and traditional cultures. This region is characterized for the presence of ancestral practices regarding biodiversity (management and conservation).

1.9.1. Community

Traditional medicine: As part of the cultural richness of the indigenous communities of the reservation, there is traditional medicine based on the relationship between man and his natural environment. Protecting this knowledge of traditional doctors and guiding the younger generations in the procedures and identification of medicinal plants for ethnocultural healing is essential to preserve the identity and knowledge of ethnic communities. However, this knowledge is continually threatened by interaction with other cultures, by the lack of a good internal health service and the increase in vices, drug addiction and alcoholism amongst the young population of the communities.

Traditional production practices (Chagras): Historical occupation over the territory has led to the establishment of traditional production practices, which have allowed the community to develop their own project of life and cultural identity. It corresponds to a traditional system of agricultural production of the communities that lives in the indigenous reservation. The communities of the Predio Putumayo Indigenous Reservation and Andoque de Aduche Indigenous

Reservations have traditionally dedicated themselves to hunting, fishing, and gathering forest resources, they carry out rotary cultivation of slash and burn (chagra).

Amazonian soils contain few nutrients and the minerals from the ash, scattered before the rainy season, improve their conditions for crops. In addition, they have a reforestation system with fruit trees together with the natural recovery of the forest cover in the stubble area. Given its cultural and importance due to food security, the project aims to preserve and contribute to the continuity in the development of these production systems.

Mambe and Ambil: The mambe and ambil represent important cultural identity elements for the communities. They are part of the traditional dances where humans enter in communion with their spiritual guides. Specifically in dance, agreements regarding the use of the territory are produced. These elements are key in the management principles that are represented in the four main dances that serve as symbolic pillars that support the maloca.

Traditional language: The Indigenous Reservations belong to the Uitoto, Muinane, and Andoke people, where the majority preserve their mother tongue. This language is taught in the educational institutions of the reservation. The educational level reflects that contact with the majority non-indigenous society has increased, which could generate ruptures with their cultural patterns and general relationships and traditional language loss.

1.9.2. Biodiversity

Jaguar (*Panthera onca*): This important species serves as a quality indicator of the ecosystem health and is an emblem for tropical forest conservation initiatives. As the biggest cat present in South America and the continuous habitat destruction that threatens its population around its distribution range, its protection is a key element for ensuring feasible populations and protect many other species that live in the same type of ecosystem.

The jaguar is an umbrella species and any efforts regarding its protection will benefit many others and requires vast areas of forest where endangered species are present.

Tapir (*Tapirus terrestris*): Tapirs are known as architects or engineers of ecosystems. This species is in the areas of the indigenous reservations and is an indicator of the good state of conservation that the territory presents, since this species feeds on plants and fruits, and they are important seed dispersers. As they walk, their feces compost, allowing trees and plants to grow in different places. The tapir is also a food source of special importance for the indigenous people. For these reasons, the project activities promote the protection of this species and actions will be developed for its conservation.

Boruga (*Agouti paca*): This species is in the areas of the indigenous reservations and is an indicator of the good state of conservation that the territory presents, since this species easily adapt to a wide variety of diets. The Boruga is also an important protein food source. For these reasons, the project activities promote the protection of this species and actions will be developed for its conservation.

1.10. Climate change adaptation

The project links mitigation and adaptation to climate change, aiming to reduce GHG emission reduction and increase resilience to current and future impacts associated to climate change and climate variability. For this, the project:

- Considers the National Climate Change Policies, under the following strategic lines:
 - i) Territorial Strategies
 - Action line 1: Promote production systems more adapted to high temperatures, droughts or floods, to improve competitiveness, income and food security, especially in vulnerable areas.
 - Action line 2: Promote comprehensive actions in the chagras or communities that help the efficient use of the soil, and where the conservation of the existing natural covers on the farms, the implementation of agroforestry systems, family farming, reduction of deforestation, and technical assistance or agricultural technology transfer that increases competitiveness and reduces vulnerability to climate change.
 - Action line 4: Within the post-conflict scenario, provide productive alternatives in areas with processes of occupation of vacant lots, illegal mining, illicit crops or occupation of forest reserves, which promote the maintenance or the increase in forest carbon stocks, the closure of the agricultural frontier, and the use of climate-resilient agricultural and forestry production systems consistent with the vocation and agroecological conditions of the mentioned areas.
 - Action line 6: Promote climate-resilient and low-carbon development and management of non-agricultural sectors, in the rural context, such as in the energy sectors through alternative energies.
 - ii) Management and conservation of ecosystems and their ecosystem services for low-carbon and climate-resilient development
 - Action line 3: Incorporate management and conservation actions for ecosystems and their services in territorial planning, considering their role in reducing emissions and increasing territorial adaptation.
 - Action line 4: Strengthen Forest governance to prevent deforestation and forest degradation.

- Improves the conditions for conservation of biodiversity and its ecosystemic services considering that allows the conservation of natural forest covers and, therefore, the biological corridors in a highly biodiverse zone.
- Integrates actions focused on land use planning improvement, aiming to conserve the existing natural covers.
- Implements sustainable and low-carbon activities such as conversion of pastures for livestock feed to crops.
- Diversification of production systems in case there is a risk of losing any harvest. In the same way, this measure allows to diversify the sources of income.

2. Methodology Application

The methodology used to design the project correspond to the BCR002 (Quantification of GHG Emission Reductions, REDD+ Projects), Version 3.0, issued by BIOCARBON REGISTRY on 16-February-2022.

The applicability conditions of the BCR002 methodology are presented in the table below:

Table 4 Conditions of applicability of the methodology and its fulfillment.

Applicability Condition	Compliance
a) The areas in the project boundaries correspond to the forest category, at the start of the project activities and ten years before the project start date	Comply. According to the cartographic analysis carried out, it can be determined that the area in the project boundaries corresponds to forest that was present ten years before the project start date and at the start of the project activities.
b) The identified causes of deforestation may include, among others, expansion of the agricultural frontier, mining, timber extraction, and infrastructural expansion	Comply. The expansion of the agricultural frontier (including crops for illicit use), mining and the extraction of wood for self-consumption and sale were identified as causes of deforestation in the project area.
c) The causes of forest degradation identified may include selective logging, fuelwood extraction, forest fires, forest grazing, and expansion of the agricultural frontier – illicit crops	Comply. In the project area, selective logging and the expansion of the agricultural frontier – crops for illicit were identified as causes of forest degradation
d) No reduction in deforestation or degradation is expected to occur in the absence of the project.	Comply. The trend of deforestation and degradation has been maintained historically and may continue in the absence of the project.

Applicability Condition	Compliance
e) The carbon stocks in the organic matter of soil, litter and dead wood in project boundary may decrease or remain stable.	Comply. In deforested areas carbon stocks in soil organic matter, litter and dead wood decrease.
f) The quantification of GHG other than CO ₂ should be included in the quantification of emissions caused by forest fires (if applicable) during the monitoring period.	Comply. During the monitoring period, if forest fires are detected, GHG emissions will be quantified and included in the estimates of emissions associated with the project.

3. Normative references

The project proponents are committed to complying with all applicable laws, statutes, property rights and other regulatory frameworks. The extensive stakeholder consultation process and implementation of the project will ensure that compliance is achieved. Listed below are the Colombian laws, and sections of laws and regulations, relevant to the project. Also, a matrix describing how the project complies in each case, can be found in folder *Cumplimiento Legal*.

Resolution 030 and Resolution 033 of 1988: issued by INCODER and awards the entire project area to the indigenous communities of Chukiki, Guaimaraya, Berlín, Puerto Zábalo, Los Monos, Nazareth, Belén, Las Delicias, Puerto Pizarro, and La Reforma that are part of Puerto Santander, Puerto Alegría and La Chorrera in the Predio Putumayo Great Indigenous Reserve and de community of Andoque in the Andoque de Aduche Indigenous Reserve, respectively.

Law 1819 of 2016: By means of which the structural tax reform is adopted, the mechanisms for the fight against tax evasion and avoidance are strengthened, and by means of which the National Carbon Tax is created in response to the need for country to have economic instruments to encourage compliance with greenhouse gas (GHG) mitigation goals at the national level.

Decree 926 of 2017: Establishes the procedure for the Non-causation of the National Carbon Tax. The purpose of this is to stimulate the formulation and implementation of mitigation initiatives that generate emission reductions or GHG removals in exchange for not accruing the tax.

Resolution 1447 of 2018: issued by the Ministry of Environment and Sustainable Development (MADS), regulates the system for monitoring, reporting and verification of mitigation actions at the national level that article 175 of Law 1753 of 2015 deals with.

Law 1931 of 2018: issued by the national government, which establishes the guidelines for the management of climate change in the country.



Resolution 831 of 2020: issued by the Ministry of Environment and Sustainable Development (MADS), which modifies Resolution 1447 of 2018, and establishes the registration requirements in RENARE and the validity of projects to report and cancel in RENARE. Establishes guidelines to save and demonstrate the methodological consistency of the baselines of sectoral projects.

Resolution 471 of 2020: issued by the Agustín Codazzi Geographic Institute (IGAC), indicates the minimum technical specifications that the official basic cartography products of Colombia must have, as well as their scope of application, scope, among others.

Law 2169 of 2021: Through which national low-carbon development is promoted through the establishment of goals and minimum measures for carbon neutrality and climate resilience and other provisions are directed.

Resolution 370 of 2021: issued by the Agustín Codazzi Geographical Institute (IGAC), through which the official cartographic projection system for Colombia is established.

BCR Standard: Certification and Registration Program for GHG Mitigation Initiatives and other Greenhouse Gas Projects, corresponding to the latest published version.

Methodological Document AFOLU Sector, Quantification of GHG Emission Reductions, REDD+ Projects: correspond to the guide defined by BIOCARBON REGISTRY in the framework of projects in the AFOLU sector, specifically for the GHG emission reduction estimation for REDD+ projects.

According to the methodology, other relevant regulation includes:

- Decree 2811 of 1974 (Renewable Natural Resources Code), article 42 establishes that the renewable natural resources belong to the nation. Art 44 sets principles for managing the natural resources to promote a balance between economic development and environmental protection, and for the efficient use of resources.
- Article 14 of Law 21 of 1991 are known as “Recognition of the Right of Indigenous People to Own and Occupy their Ancestral Lands” and address land ownership. Specifically, communal lands of ethnic groups are “inalienable, imprescriptible and unseizable”.
- Article 76 of Law 99 of 1993, “General Environmental Law of Colombia,” states that “The exploitation of natural resources should be done without detriment to the cultural, social and economic characteristics of Indigenous and Afro-Colombian communities according to

Law 70 of 1993 and Article 330 of the National Constitution and the decisions on the matter shall be made after consultation with representatives of such communities".

- Law 164 of 1994 ratifies United Nations Framework Convention on Climate Change (UNFCCC). Decision 1/CP.16 requests, according to national circumstances, those parties adopt measures to reduce emissions from deforestation and forest degradation, set aside forest reserves, and sustainably manage forests.
- Law 52 of 1994 regulates article 342 of the 1991 Constitution and defines the procedures for the elaboration, preparation, approval, and implementation of development plans. It represents the law that most affects the structuring and implementation of sustainable development in the country. Departmental and municipal authorities are called on to harmonize their programs, plans and projects for local investment.
- Forest Policy (1996). The forest law dates to 1959 and was updated in 1974 and 1996. The country's forestry policy was adopted in 1996 through document 2.834 of the National Council for Economic and Social Planning and has the general objective of achieving sustainable use of forests to conserve them, consolidate the incorporation of the forestry sector into the national economy and improve the population's standard of living. *Forest Reserves Act (Law 2 of 1959) is separate from the National Parks system and doesn't represent property rights of the state but establishes a classification and management regime for the lands that fall under its purview including public lands, Indigenous Reservations and Afro-Colombian lands.*
- Decree 3570 of 2011 sets functions for the Ministry of Environment and its dependencies and ascribed institutions. It establishes that the Directorate on Forests, Biodiversity and Ecosystem Services, is responsible for developing and coordinating the implementation of the National Forestry Development Plan.

In addition to the above-mentioned national laws and regulations, Colombia has adopted the following international legislation:

- Convention for the Protection of the World Cultural and Natural Heritage. Paris, 1972.
- Convention on International Trade in Endangered Species: wild fauna and flora. Washington, 1973.

- Convention on Biological Diversity. Rio de Janeiro, 1992. Convention on Wetlands of International Importance especially as Waterfowl

Other relevant national laws and regulations include:

- Decree 1076 of 2015: Unique environmental regulatory framework.
- National Development Plan – PND 2018-2022.
- Comprehensive Strategy to Control Deforestation and Forest Management: approved in 2020 (CONPES Document 4021), its main objective is to reduce deforestation and forest degradation, to the extent that forest management is promoted in Colombia, under a comprehensive sustainable rural development.
- National REDD+ Strategy: defines the REDD + policies and measures that will reduce GHG emissions associated with the forestry sector. It draws up the "roadmap" that establishes the activities that can be carried out, how they can be carried out and the financial resources required. It is part of the actions on Climate Change contemplated in the National Development Plan 2018-2022.
- National Interpretation of Social and Environmental Safeguards for REDD+ in Colombia: provides guidelines regarding social and environmental safeguards, which must be taken into consideration to ensure respect for the rights of communities and the mitigation of social and environmental risks.
- Conceptual and methodological guidelines for the characterization of causes and agents of deforestation in Colombia: issued in 2018, it presents a methodological and conceptual guide to adequately characterize the causes and agents of deforestation, so that the information is comparable and interoperable, at different scales. spatial and temporal.
- Proposal for a reference level of forest emissions from deforestation in the Colombian Amazon Biome for REDD+ payment for results under the 2019 UNFCCC: presents the reference values to evaluate Colombia's performance in the execution of REDD+ activities. The proposal presents the reference levels by biome (Amazon, Andes, Caribbean, Orinoquia and Pacific).

- Estimation of forest degradation in Colombia through a fragmentation analysis: prepared in 2018, it presents the results of one of the methodologies prioritized by the Forest and Carbon Monitoring System (SMBYC), to estimate forest degradation in Colombia.
- The guidelines established by the IPCC in 2006 and 2019 for national greenhouse gas inventories – Volume 4. Agriculture, forestry and other land uses: define the guidelines to estimate and declare GHG emissions and removals, incorporating good practices and uncertainty management in national GHG inventories.
- Nationally Determined Contribution: Colombia signed and ratified the commitment acquired by the Paris Agreement in 2015 to strengthen its efforts to regulate its emissions to prevent the increase in global temperature. Within the framework of this agreement, Colombia signed in its Nationally Determined Contribution (NDC) an initial goal of reducing its emissions by 20% with respect to a trend scenario by 2030. In 2020, Colombia updated its NDC, acquiring a commitment to 51% emissions reduction by 2030 with a clear focus on reducing emissions from deforestation and forest degradation.
- ISO 14064- 2:2019: Greenhouse Gases — Specification with guidance, at the project level, for the quantification, monitoring, and reporting of emission reductions or removal enhancements of greenhouse gases.
- ISO 14064 – 3:2019: specifies principles and requirements and provides guidance for verifying and validating greenhouse gas (GHG) statements.
- ISO 14065:2013: Greenhouse gases - Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition.

4. Carbon pools and GHG sources

4.1. Carbon pools

The carbon reserves included in the project are:

Table 5 Carbon deposits

Carbon pool	Selected	Justification/Explanation
Aboveground biomass Arboreal vegetation	Yes	It represents the largest carbon pool derived from the implementation of project activities.

Carbon pool	Selected	Justification/Explanation
Aboveground biomass Non-arboreal vegetation	No	This deposit is not included, considering that it is planned to develop productive activities, based on semi-annual and annual agricultural species.
Belowground biomass	Yes	It is a representative carbon pool derived from the implementation of project activities.
Dead wood and litter	No	This deposit is conservatively excluded, as it is not expected to increase in the post-deforestation scenario.
Soil organic carbon	Yes	It is a reservoir whose carbon content is expected to change in the project scenario.

4.2. GHG Sources

The emission sources and GHG associated with the project activities are presented below:

Table 6 GHG Sources

Source	GHG	Included?	Justification
Burning of woody biomass	CO ₂	No	No project activities involving the burning of biomass are generated.
	CH ₄	No	In case that forest fires occur during the activity monitoring period, methane emissions will be estimated and included in the emissions for the corresponding period.
	N ₂ O	No	If forest fires occur during the activity monitoring period, nitrogen dioxide emissions will be estimated and included in the emissions for the corresponding period.

5. Spatial and temporal limits

5.1. Eligible areas for the REDD+ Project

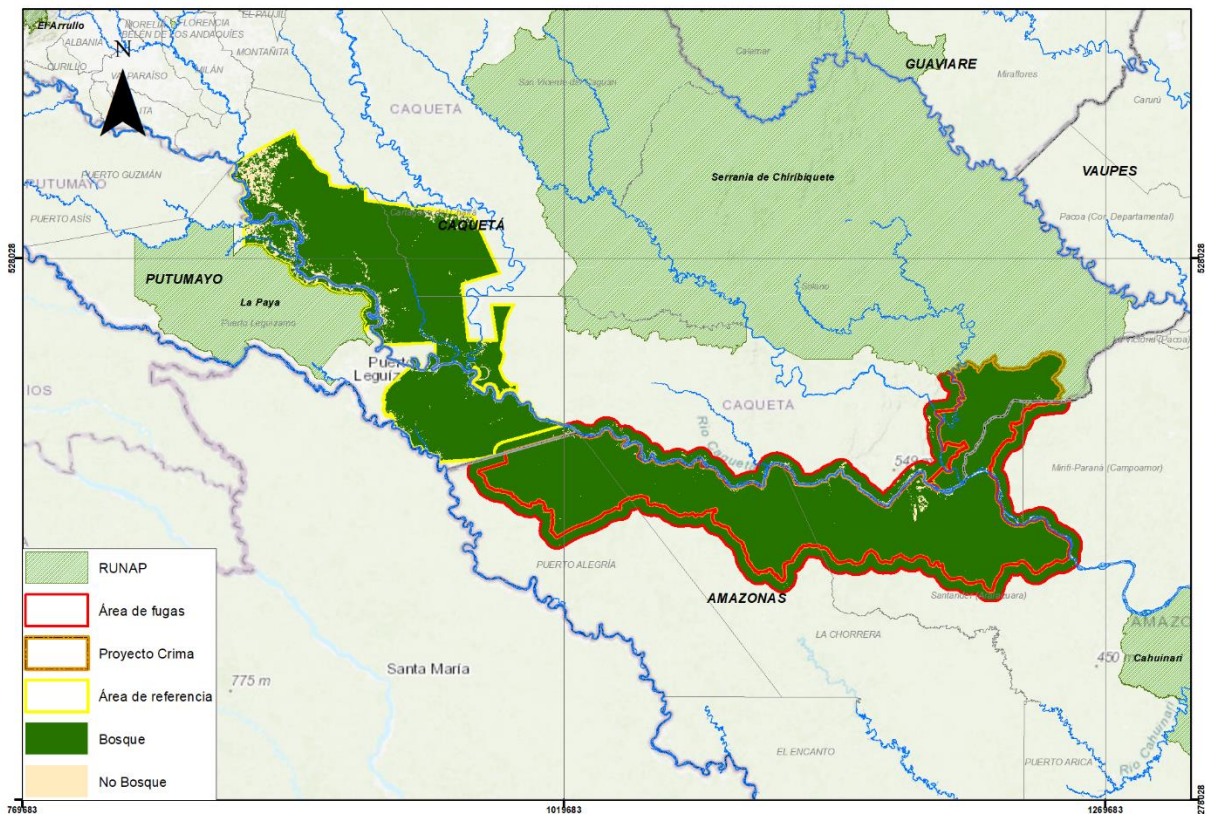
The Project is developed within the territories of the Great Predio Putumayo Indigenous Reserve and the Andoque de Aduche Indigenous Reserve, which have a total extension of 1,018,661.6 ha, of which 1,003,130.85 ha is the eligible area that has forest. which has been stable during the period 2007 – 2017.

To identify the eligible forest, the reconstruction of the methodology used by the IDEAM for the definition of the Reference Level of Forest Emissions - NREF (IDEAM, 2019) was carried out. The identified forest meets the definition adopted by Colombia and used by the SMByC, which corresponds to land occupied mainly by trees that may contain shrubs, palms, guaduas, herbs and

lianas, in which tree cover predominates with a minimum crown density of 30%, a minimum crown height in situ of 5 meters at the time of identification and a minimum area of one hectare (IDEAM, 2014a). The process to identify eligible forests within the project boundaries began with the download of the BNB maps prepared by SMyC. With this information, it was possible to determine the forests that have been stable during the last ten years and demonstrate that they meet the eligibility criteria defined by the reference methodology.

Map 10 Eligible area at the project start date.

Bosque No Bosque 2017
Proyecto Resguardo Indígena Predio Putumayo
Amazonas - Colombia



5.2. Reference region for baseline estimation

The project's indigenous reservation areas are located in the municipalities of Solano, Puerto Alegre, Puerto Santander and La Chorrera, which have a forest cover close to 90%, so these natural areas are those that occur in most of the territory. To select the limits of the reference region, the orientation of the REDD+ Methodology v3.0 (Biocarbon Registry, 2022) was followed. The first step consisted of identifying forest areas located in the region adjacent to the reservations that comprise

the Project, considering the definition of forest adopted for Colombia. For this, information on forest cover from the SMByC was used.

A combination of different geospatial data based on physical and social characteristics was used to define the boundaries of the reference region. The neighboring indigenous reservations were identified to include areas with the same land use figure as the project. In this way, it was ensured that similar systems of government, regulations, social structure and customs are present in the reference region and the project area. Subsequently, biophysical characteristics such as slope, elevation, land use, precipitation, and temperature were evaluated to identify areas that were similar in conditions to the Project area (in section 1.8, these variables are described and the maps are presented; in literal g a summary of the analysis of similarity observed between the reference region and the project area is presented). Nearby areas also excluded all areas that have restricted access, such as protected areas (National Natural Parks or similar), as well as areas that have a license to be exploited, such as mining titles.

In terms of deforestation drivers, both the department of Caquetá (municipality of Solano) and the department of Amazonas (municipality of La Chorrera, Puerto Alegría and Puerto Santander) were identified as adjoining areas that have presented forest loss in the last 10 years, especially during 2016, when the deforestation rate increased compared to the historical average. This situation is mainly explained by the national circumstances that occurred during the process and signing of the Peace Agreements, the absence of government control in this region and speculation about the expectation of obtaining land titles, among other aspects.

Considering these conditions, the limits of the reference region were identified, ensuring that all similarity criteria required by the methodology and other complementary criteria were taken into account, especially the following: i) agents and drivers of deforestation, ii) access to the area, iii) identified land tenure, iv) similar post-deforestation land uses, v) current forest and ecosystems, vi) political context and vii) applicable regulations. The similarity found between the reference region and the project area are described below:

- a) **Agents and causes of deforestation/degradation:** The main causes of deforestation in the reference region and the project area are associated with processes of expansion of the agricultural frontier, introduction of illicit crops, wood extraction and mining activities, according to regional reports and primary information provided by the communities (see evidence provided in folder *Talleres*, subfolder *Taller_1_2_3_Predio_Sector_Monochoa_PPSM*, files *Talleres_1_2_3_Motores_PPSM.pdf* and *Talleres_1_2_3_Arboles_Problemas_Soluciones_PPSM.pdf*; subfolder *Taller_1_Predio_Andoke_Aduche*, file *Taller_Andoke_Arbol_Problemas_Soluciones.pdf*; subfolder *Taller_1_Predio_PSLM*, files *Taller_1_Predio_Zabalo_Arbol_Belén.pdf*, and

Taller_1_Predio_Zabalo_Arbol_Problemas_Soluciones.pdf; and subfolder *Taller_2_3_Predio_Putumayo_PSLM*, file *Taller_2_3_PSLM_Motores_Agentes_DyD.pdf*). The main agents of deforestation identified in the reference region and in the project, area are similar, among the following:

- i. Agricultural producers for self-consumption and sale (indigenous community and settlers)
- ii. Livestock producers for self-consumption (indigenous community and settlers)
- iii. Intermittent agricultural producers of crops for illicit use (coca) for sale (External actors/agents).
- iv. Wood extractors for self-consumption (construction, firewood, tools, canoes).
- v. Wood extractors for commercialization (indigenous community and settlers)
- vi. Extractors of mining resources (external actors).

On the other hand, the direct causes of deforestation present in the project area and in the reference, region correspond to:

- i. Livestock production for sale and self-consumption.
 - ii. Subsistence agricultural production (chagras) and surplus generation for sale.
 - iii. Extraction of wood for self-consumption and sale.
 - iv. Mining activity
 - v. Presence of crops for illicit use.
 - vi. Settlements.
- b) Access to the area:** To access both the reference area and the project area, the river transport route is mainly used, making use of the Caquetá River, which completely crosses the two areas of interest. The strategic location of the project area is because it geographically borders Guaviare, Vaupés, Amazonas and Putumayo. There is no means of land transportation that allows the population to move around. In the project area, the mobilization of agricultural and livestock production and the trade of goods is carried out through the waterways. In the reference region there are few tertiary land routes that allow access to the area. In the municipality of Solano there are 2 airports: one located at the Tres Esquinas Base, which, as a military base, is oriented and managed by the Colombian Air Force (FAC). This airport is for strictly military use and the second airport is in the Araracuara Inspection, where the Satena airline offers a public service approximately every week.
- c) Land tenure:** in the reference region there are indigenous reserves that hold the same collective land tenure as the Great Indigenous Reserve of Predio Putumayo and the

Andoque de Aduche Indigenous Reserve. There are also special protection areas that correspond to forest reserves established under the Second Law of 1959. In the case of the project area, Resolutions 030 and 033 of 1988, Resolution 057 of 1989, issued by INCORA, and Resolutions 0105 of 2007 and Resolution 1947 of 2006 issued by INCODER grants the collective property title for the territory of the Great Indigenous Reserve of Predio Putumayo and the territory of the Andoque de Aduche Indigenous Reserve, which was expanded by Agreement 140 of 2020 of the National Land Agency.

- d) **Land uses:** the main land use in the project area and in the reference region correspond to dense forests, fragmented forests, heterogeneous areas, areas with herbaceous and/or shrubby vegetation, croplands and clean grass.

Table 7 Land Cover in Reference Region and Project Area in 2007.

Corine Land Cover in 2007	Reference region	%	CRIMA Project	%
1.1.2. discontinuous urban fabric	30.5	0.00	37.4	0.00
1.2.4. airports	0.4	0.00		-
2.3.1. clean pastures	15077.7	1.68	87.2	0.01
2.3.3. weedy grasses	105.3	0.01	25.2	0.00
2.4.3. Mosaic of crops, pastures and natural spaces	428.0	0.05	81.9	0.01
2.4.4. Mosaic of pastures with natural spaces	15694.4	1.75	1489.4	0.15
3.1.1.1.1. Dense tall terra firme forest	713264.0	79.67	932531.5	91.54
3.1.1.1.2.1. High dense forest Flooded Heterogeneous	76756.9	8.57	57802.3	5.67
3.1.1.1.2.3. palm groves	9125.4	1.02	2733.7	0.27
3.1.1.2.1. Dense lowland forest on terra firme		0.00	6894.5	0.68
3.1.3.1. Fragmented forest with pastures and crops	3790.6	0.42	752.3	0.07
3.1.3.2. Fragmented forest with secondary vegetation	12783.0	1.43	3071.6	0.30
3.2.1.1.1.1. Dense non-wooded terra firma grassland		0.00	60.2	0.01
3.2.1.1.1.3. Dense terra firma grassland with shrubs		0.00	50.8	0.00
3.2.1.1.2.1. Non-wooded dense floodplain grassland	894.4	0.10		-
3.2.1.1.2.2. Dense grassland flooded with trees		0.00	223.5	0.02
3.2.1.2.2. open rocky grassland		0.00	2625.8	0.26
3.2.2.1. dense bushland	6292.7	0.70	261.5	0.03
3.2.3. Secondary vegetation or in transition	18242.8	2.04	6133.5	0.60
3.3.1. Natural sandy areas	2022.6	0.23	31.4	0.00
4.1.1. Swampy Areas	1422.3	0.16		-
5.1.1. Rivers (50m)	18041.5	2.02	3650.1	0.36
5.1.2. Lagoons, lakes and natural swamps	1266.2	0.14	117.8	0.01
Total	895238.7	100.00	1018661.6	100.00

- e) **Present forest and ecosystems:** The forests and ecosystems belong to the following biomes: i) Tropical Humid Forest Zonobiome, ii) Peinobiomes of the Amazon – Orinoquía iii) Helobiomes of the Amazon – Orinoquía, and iv) Lithobiome of the Amazon – Orinoquía.

The forest covering the Amazon is called “Ever Green Wet Tropical Forest”. The forest area covers 90% of its surface, where small sectors covered by stovers, grass and chagra crops due to human presence are found. These areas are located mainly in the banks of the Amazon River, passage from Leticia - Puerto Nariño and other sectors on the road from Leticia to Tarapacá; Animal species diversity in the regions makes it one of the richest in the world (Ministry of the Environment, 2006).

- f) **Political context and required standards:** The project area is located within the administrative limits of the departments of Caquetá and Amazonas. The environmental authority corresponds to the indigenous communities, who are responsible for managing the land in accordance with their traditions, customs, and needs. Outside the indigenous territories, the Corporation for the Sustainable Development of the South of the Amazon - CORPOAMAZONIA is the environmental authority in charge of structuring and implementing policies, plans, programs, and projects that promote the conservation, protection and recovery of the environment.
- g) **Biophysical parameters:** Section 1.8.3.1 describes and presents each of these characteristics graphically.

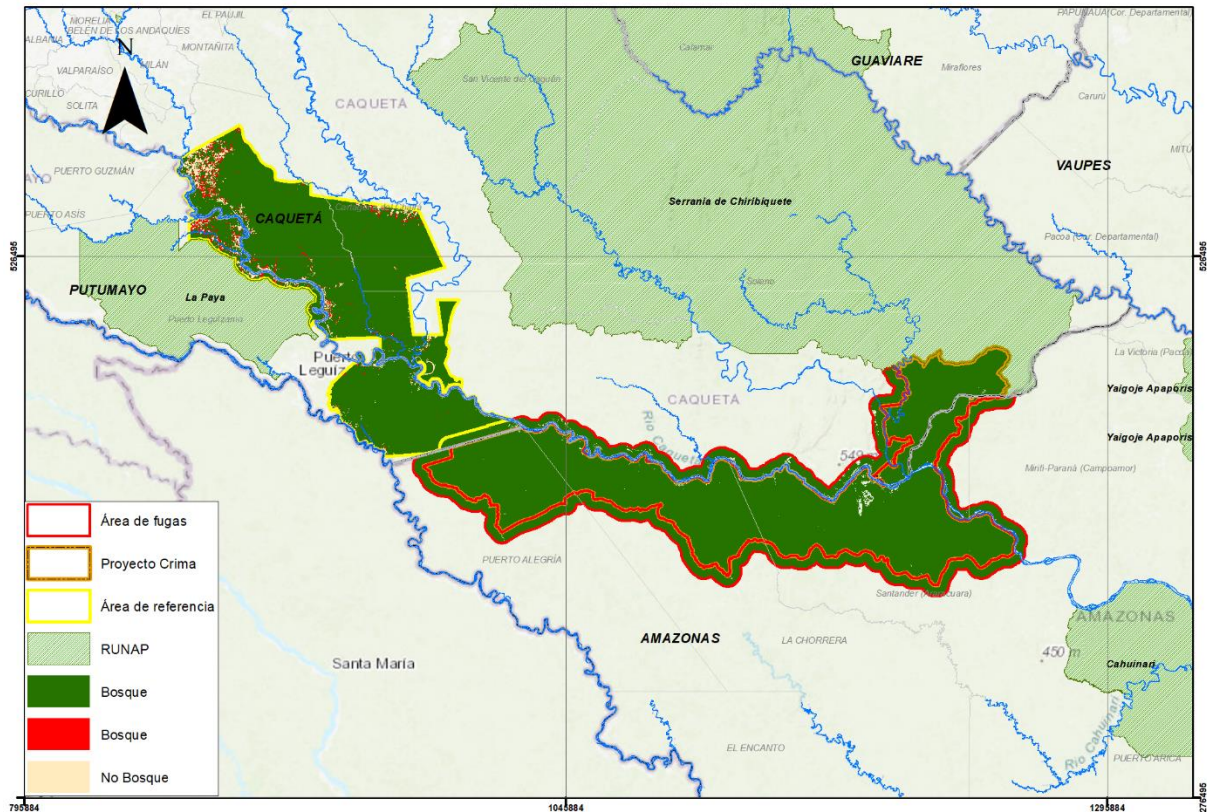
Criterion	Variable analyzed	Unit	Reference Region	Project zone	% similarity
Rain	Annual average rainfall	mm	150-200; 200-300	150-200; 200-300	90-100%
Temperature	Annual average grades	Degrees Celsius	24-26	24-26	90-100%
Hydrography	river density	Km of river/ha	0.00872	0.01058	83%
Forest Cover (SMBYC)	Forest percentage in 2007	Forest area/total area*100	93%	99%	94%
Topography	Average altitude range	m.a.s.l.	100-200	100-200	90-100%
Slope	slope of the land	Percentage	≤15%	≤15%	90-100%

Once the characteristics were analyzed and it was ensured that the limits of the reference region were appropriate, the change in forest cover was analyzed based on the information from the

SMBYC, for 10 years before the project start date. As a result, it was found that the total forest area in 2007 and 2017 was 831,751.07 ha and 807,134.20 ha, respectively. The stable forest during this period and the observed deforestation are presented in the following map.

Map 11 Forest loss during the reference period in the Reference Region, leakage belt and project area.

Perdida de Bosque 2007 -20017
Proyecto Resguardo Indígena Predio Putumayo
Amazonas - Colombia



5.3. Leakage area

Leakage area comprises the forest area to which deforestation and degradation agents and activities may be displaced, but which is outside the project boundaries. The leakage area was defined with the community, considering the mobilization trend of deforestation agents in the territory (see documents presented in folder *Talleres*, subfolder *Taller_1_2_3_Predio_Sector_Monochoa_PPSM*, file *Talleres_1_2_3_Mapa_Fugas_PPSM.pdf*; subfolder *Taller_2_3_Predio_Andoke_Aduche*, file *Taller_2_3_Predio_Andoke_Mapa_Fugas.pdf*; and subfolder *Taller_2_3_Predio_Putumayo_PSLM*, file *Taller_2_3_PSLM_Mapa_Fugas.pdf*), as well as secondary sources of information (see file *Documentos_Interes_Evidencias*, files *Estado del arte Deforestación Caqueta_Tesis 2021.pdf* and

Rodrigo-Botero_Deforestación reciente amazonia 2020.pdf). The agents and activities linked to deforestation and forest degradation are mainly associated with the banks of the rivers at a walking distance that does not usually exceed 5 km. The harvested wood is dragged and taken to the boat located in the river for its subsequent transport to the market. In some areas where trails are created due to regular harvesting, incursions can be made at a greater distance, however, the journey is still carried out on foot, which limits the mobilization of the wood to the walking distance. Small, medium or large logs can be extracted for sale. Traveling by river represents a very high value in fuel, which limits the distance traveled by this route to search for the forest resource and obtain profits by marketing it. Taking into account the most common type of boat used in the area (motors from 3 to 15 HP) and the conversations with the communities, it was estimated that a two-hour journey to the place of exploitation is a real limit of fluvial displacement to look for the woods of interest, which results in a route of approximately 20 km. Based on these limits of land and fluvial displacements and the routes of travel, the zone of potential leaks of the project was defined.

Moreover, to determine the leakage area of the project, the following criteria were also applied:

Table 8 Criteria to define the leak area and its compliance.

Criteria	Compliance
All areas in the forest that are a range of mobility of the agents identified in must be included.	Comply. The total area of forest that is within the mobility range of deforestation agents is included.
Exclude areas of restricted access to deforestation and forest degradation agents.	Comply. Areas such as National Natural Parks of Colombia are excluded.

The leakage area has a total extension of 424,901.5 ha. Within these limits, based on the official information generated by the SMBYC, the forest was identified in 2007 (396,531.55 ha) and the one that remained stable until 2017 (394,823.65 ha). In this way, the average annual forest loss was estimated to determine the baseline.

The management and monitoring of leaks is based on three elements: i) Monitor the forest cover present in the leakage area; ii) Involve community members in the productive activities of the project, to reduce the need to participate in deforestation processes inside and outside the territory and contribute to the appropriation of the project (Activities A-2 and A-3, follow-up to Safeguards 8 and 10, through the SVG-8.1 and SVG-10.1 indicators); and iii) Articulate the exercises of territorial planning, sectoral regulatory framework and carry out control and surveillance actions as appropriate (monitoring through the indicators SVG-11.1, SVG-13.1, SVG-14.1, SVG-15.1).

5.4. Time limits and analysis periods

The time limits of the project are presented below:



5.4.1. Project Start Date

In 2017 the communities associated with CRIMA formulated the project *Fortalecimiento gobierno propio y autoridad ambiental tradicional para la gobernanza y manejo forestal de los resguardos asociados al CRIMA* (see *Fortalecimiento gobierno propio CRIMA Mayo 2017-2018.pdf* in folder *Fecha de Inicio*). The objective was structuring an environmental management plan for CRIMA territory jurisdiction, aligned with national and regional government planning instruments, with special emphasis in strengthening own government and traditional environmental authority for the governance and management of the forest in the indigenous territories associated with CRIMA (see pages 4 and 19 in *Fortalecimiento gobierno propio CRIMA Mayo 2017-2018.pdf*). Within the background considerations to formulate this plan was the possibility to apply to REDD+ mechanism as an income generation opportunity to finance the plan (see page 11). The expected benefits of this project are grouped in three components (see pages 18 and 19 in *Fortalecimiento gobierno propio CRIMA Mayo 2017.pdf*): A. Own Government and Traditional Authority: include activities such as strengthen infrastructure and public financing for environmental operation of CRIMA, increase capacities of indigenous people in management and monitoring of environmental projects, guarantee the protection that grandfathers and grandmothers can deliver as traditional environmental authorities, define the regulation for use and environmental management of the indigenous territories in coordination with indigenous authorities associations (AATI) under the framework of public environmental politics. B. Territory and its management: include activities like concentrating local, regional and national efforts to regulate Indigenous Territorial Entities (ETI) or other administrative figure that grant administration and financial autonomy to CRIMA zone, move forward in economic transfer actions from the National Planning Department (DNP) to execute environmental measures, formulate and manage investment projects to recover damaged infrastructure and develop productive and educational projects. C. Forest Management: include activities like reforestation projects with timber and fruit species in abandoned pastures with the financing and technical cooperation of Corpoamazonia, agroforestry systems in already cleared areas for cattle raising in order to recover degraded soils and mitigated livestock negative environmental impacts, secondary vegetation land enrichment with timber and other useful species, promote recovering and protection of traditional knowledge regarding traditional indigenous system “chagra-secondary vegetation-forest” and enhance capacities of Puerto Zabalo and Berlin communities in regard to forest sustainable management and timber resources with legal commercial purposes to offer appropriate solutions to forest loss, enhance community understanding about advantages and disadvantages of ecosystem services selling and the implementation of REDD+ projects in order to make decisions of the viability and applicability of this type of initiatives in the territory.

As part of this Forest Governance and Management Project, the community decided to sign an intention letter to develop a REDD+ project on January 5, 2018, with the support of Yauto SAS firm (see *Carta de intencion_Aduche.pdf*, folder *Fecha de Inicio*), to obtain the expected economic support to carry on with their conservation and sustainable initiative. After signing this letter of intention, during the 2018 the community conducted rapid inventories of fauna and flora to improve knowledge of the biodiversity within their territories and learn monitoring technics for future studies, which also contributes to build the regional environmental management plan (see *Inf. Monitoreo Fauna_Viaje a las Raices II_ACT y CRIMA_042022.pdf*, folder *Fecha de Inicio*). The community also recognizes that during 2018 activities to protect forest took place as part of their intention to access economic incentives derived from the REDD+ project (see folder *Fecha de Inicio*, files *VID_20220127_171548.mp4*, *VID_20220124_161241.mp4*, *VID_20220128_092233.mp4*, *VID_20220127_171158.mp4*, *VID_20220127_154715.mp4* and *VID_20220127_160844.mp4*). In this sense, the start date of the REDD+ project corresponds to the date on which the community signed the intention letter to develop it (January 5 of 2018), as part of the project Strengthening own government and traditional environmental authority for governance and forest management.

5.4.2. Quantification period

The crediting period goes from 05-January-2018 to 04-January-2058 (40 years).

5.4.3. Monitoring period

The first period corresponds to 05-January-2018 to 31-December-2021. Subsequently, monitoring reports are expected to be made every one to two years.

5.4.4. Historical deforestation period

In accordance with the procedure described in the REDD+ v3.0 methodology, the analysis of the historical average of deforestation in the reference area and the leakage area was carried out between two dates that correspond to the start date and ten years before this date. The changes in forest cover observed during the historical period 2007-2017 were analyzed. The following section presents the emissions associated with the projection of deforestation observed during the historical reference period.

5.4.5. Estimated emissions from the REDD+ project

Table 9 Reduction of GHG Emissions derived from the implementation of the project.

Year	Dates	Deforestation GHG Emission Reduction (tCO _{2e})	Deforestation GHG Accumulative Emission Reductions (tCO _{2e})	Total GHG Emission Reduction (tCO _{2e})
1	05/01/2018 - 31/12/2018	1,517,501	1,517,501	1.517.501
2	01/01/2019 - 31/12/2019	1,591,669	3,109,170	1.591.669
3	01/01/2020 - 31/12/2020	1,656,168	4,765,337	1.656.168
4	01/01/2021 - 31/12/2021	1,709,015	6,474,352	1.709.015
5	01/01/2022 - 31/12/2022	1,748,938	8,223,290	1.748.938
6	01/01/2023 - 31/12/2023	1,132,316	9,355,606	1.132.316
7	1/01/2024 - 31/12/2024	1,128,941	10,484,546	1.128.941
8	01/01/2025 - 31/12/2025	1,125,575	11,610,122	1.125.575
9	01/01/2026 - 31/12/2026	1,122,220	12,732,342	1.122.220
10	01/01/2027 - 31/12/2027	1,118,875	13,851,217	1.118.875
11	01/01/2028 - 31/12/2028	1,115,540	14,966,756	1.115.540
12	01/01/2029 - 31/12/2029	1,112,214	16,078,970	1.112.214
13	01/01/2030 - 31/12/2030	1,108,898	17,187,869	1.108.898
14	01/01/2031 - 31/12/2031	1,105,593	18,293,461	1.105.593
15	01/01/2032 - 31/12/2032	1,102,297	19,395,758	1.102.297
16	01/01/2033 - 31/12/2033	1,099,010	20,494,768	1.099.010
17	01/01/2034 - 31/12/2034	1,095,734	21,590,502	1.095.734
18	01/01/2035 - 31/12/2035	1,092,467	22,682,969	1.092.467
19	01/01/2036 - 31/12/2036	1,089,210	23,772,179	1.089.210
20	01/01/2037 - 31/12/2037	1,085,962	24,858,142	1.085.962
21	01/01/2038 - 31/12/2038	1,082,725	25,940,866	1.082.725
22	01/01/2039 - 31/12/2039	1,079,496	27,020,363	1.079.496
23	01/01/2040 - 31/12/2040	1,076,278	28,096,640	1.076.278
24	01/01/2041 - 31/12/2041	1,073,069	29,169,709	1.073.069
25	01/01/2042 - 31/12/2042	1,069,869	30,239,578	1.069.869
26	01/01/2043 - 31/12/2043	1,066,679	31,306,257	1.066.679
27	01/01/2044 - 31/12/2044	1,063,498	32,369,755	1.063.498
28	01/01/2045 - 31/12/2045	1,060,327	33,430,081	1.060.327
29	01/01/2046 - 31/12/2046	1,057,165	34,487,246	1.057.165
30	01/01/2047 - 31/12/2047	1,054,012	35,541,259	1.054.012
31	01/01/2048 - 31/12/2048	1,050,869	36,592,128	1.050.869
32	01/01/2049 - 31/12/2049	1,047,735	37,639,863	1.047.735
33	01/01/2050 - 31/12/2050	1,044,611	38,684,474	1.044.611
34	01/01/2051 - 31/12/2051	1,041,495	39,725,969	1.041.495
35	01/01/2052 - 31/12/2052	1,038,389	40,764,358	1.038.389

Year	Dates	Deforestation GHG Emission Reduction (tCO _{2e})	Deforestation GHG Accumulative Emission Reductions (tCO _{2e})	Total GHG Emission Reduction (tCO _{2e})
36	01/01/2053 - 31/12/2053	1,035,292	41,799,651	1.035.292
37	01/01/2054 - 31/12/2054	1,032,205	42,831,855	1.032.205
38	01/01/2055 - 31/12/2055	1,029,126	43,860,982	1.029.126
39	01/01/2056 - 31/12/2056	1,026,057	44,887,038	1.026.057
40	01/01/2057 - 04/01/2058	1,022,996	45,910,034	1.022.996
Total GHG Emission Reduction (tCO_{2e})		45.910.034		45,910,034
Accounting period (years)		40 years		40 years
Annual GHG Emission Reduction (tCO_{2e}/year)		1.147.750		1,147,750

6. Baseline scenario and additionality

For the identification of the baseline scenario and demonstrate that the project is additional, the changes in the carbon reserves in the project limits were considered as criteria, establishing the most probable land use at the beginning of the project, following the step-based approach established by the methodological document BCR0002 v3.0 (Quantification of GHG Emission Reductions, REDD+ Projects) issued by BIOCARBON REGISTRY (2022).

Currently, land use has maintained a tendency to increase productive areas and decrease forest cover during the last ten years. The establishment of crops and the use of the natural forest are elements that are observed in the use of the land in the project area (see Table 2 in section 1.8.3.5.). Due to the lack of governmental and community resources, there are no similar development assistance projects or initiatives to reduce deforestation on this scale in the region with the exception of other REDD+ Projects. The main conclusion of the step-by-step approach is the following: The region is predominately comprised of lands titled to Indigenous Territories, where its inhabitants do not have the financial capacity to implement activities like those presented in this project. Therefore, efforts to reduce deforestation through sustainable production systems, improving livelihoods conditions, supporting local governance capacity and land-use planning and monitoring on a community-based scheme are not common a practice in the region. As a result of this analysis, the project is determined to be additional.

Since the project strategy include development of economic alternatives compatible with community well-being and nature conservation, improvement of the living conditions of the communities that live in the Indigenous Reservations (supporting transport and infrastructure,

education, health and basic sanitation related initiatives), strengthening land use planning and mechanisms to guarantee food security, strengthening of capacities to fulfill functions of surveillance over the territory, providing tools that contribute to the improvement of the forest management by the community, and biodiversity protection, it is possible to demonstrate that these social and environmental benefits would not have occurred in the absence of the project.

6.1. Step 0: REDD+ Project Start Date

The project start date is 05-January-2018.

6.2. Step 1: Identification of land use alternatives

This step, and according to the methodology serves to identify alternative land use scenarios to the proposed project activities that could be the baseline scenario.

6.2.1. Step 1.a Identify credible alternative land use scenarios

The following land use scenarios were identified considering the conditions present in the project area:

Scenario 1: Continuation of current land use

According to the results and observations obtained during the workshops (see folder *Talleres*), regional studies and multitemporal analysis in the project limits, as mentioned before, current land uses include mining, logging for commercial purposes, subsistence agriculture, and crops for illicit use (see section 7.6, the post-deforestation matrix).

The communities establish subsistence crops (chagras) as the main mechanism to guarantee food security for the indigenous people and to generate some surplus production that can be commercialized within the region. Illegal activities such as logging, mining without legal title and illicit crops represent significant changes in carbon content. This set of activities have been present historically and may continue in the future.

Moreover, the socioeconomic conditions faced by indigenous communities in their territory make it difficult to effectively control activities that threaten forests and reduce the availability of other natural resources. Likewise, pressure from external actors and behaviors that do not represent cultural practices and tradition have compromised their capacity for governance and management of their territories.

Consequently, the trend of forest loss will continue in the future and the ability of the community to control and manage the territory in a sustainable manner would therefore continue to be undermined by conditions of low governance and few opportunities to generate income and offer welfare to the community population.

Scenario 2: REDD+ project without certification of emission reduction

The community decides to tackle deforestation drivers through initiatives that represent an alternative to common activities that generate deforestation and forest degradation. This involves (i) improving current agricultural practices to intensify production without compromising new forest areas, (ii) halting the advance of the agricultural frontier, (iii) limit mining exploration and exploitation in areas that do not have legal titles, (iv) designing and implementing new productive activities that generate income for the community and encouraging them to avoid an increase in mining activity and illegal cropping establishment, (v) strengthen the control and governance mechanisms of the territory to avoid the entry of external actors and the extraction of natural resources without permission from the community.

Likewise, these activities are articulated with the municipal strategies for the control of deforestation, the environmental determinants, and the municipal development plan. Before the start date of the project, the government was aware of the need to implement programs and projects that contribute to mitigate the pressure on forests in this region. The region is prioritized by the national government to receive investment resources to implement activities that manage to contain the drivers of deforestation.

By not registering the project with the REDD+ mechanism, the members of the indigenous reservation do not have access to economic income associated with the reduction of GHG emissions due to deforestation and degradation of the forests present in their territories.

Scenario 3: Improvement of agricultural systems and increase of the forestry economy (Green businesses and sustainable value chains)

The work plan involves a progressive establishment of productive alternatives that provide an opportunity to migrate from activities that cause deforestation to profitable and sustainable productive models.

The intervention in the communities is expected to be developed progressively, starting in the most critical areas to be taken as a demonstration of successful intervention and to define the viability to extend the initiatives and involve new areas.

Considering the vocation of land use and the most promising activities, there is an interest in promoting an economy based on the use of forests, together with the national forest policy and the national forestry development plan, which seeks to promote the competitiveness of timber and non-timber forest products in the national and international market, based on the sustainable management of natural and planted forests (Alcaldía Municipal de Solano, 2019), green businesses and sustainable value chains (CORPOAMAZONIA, 2020). Although to date the participation of indigenous communities in these initiatives has been incipient, the process can be strengthened if budget restrictions are overcome, and the geographic scope includes the indigenous reservations.

An economy based on sustainable forest products would make it possible to progressively displace activities that result in deforestation in the territory and counteract the economic dependence on these activities; however, it would also increase the establishment and expansion of agricultural activities, which can intensify and accelerate forest loss in the project area. When considering these elements and analyzing the dynamics of forest loss in the project area, the third scenario contemplates a productive development promoted by the national government and limiting the unsustainable use of forests and counteracting the economic dependence that exists of the population towards those activities.

6.2.2. Step 1.b Consistency of credible alternative land use scenarios with enforced mandatory applicable laws and regulations

The scenarios that have been considered can be implemented based on the records and the historical trend of the region. According to the municipal and departmental planning instruments, these territories have a vocation for the conservation of forests, the establishment of agroforestry systems and subsistence production systems. Additionally, the reality of the territory also offers the possibility that activities that involve deforestation and are not approved by national regulations continue, such as deforestation for the expansion of the agricultural frontier and illegal logging, take place.

Although there are laws that regulate the use of natural resources and the change of land use, the limited capacity of the State to apply the regulations that protect natural resources in these areas far from urban centers must be considered. Failure to comply with regulations does not necessarily entail a legal or criminal consequence that discourages those involved from correcting their practices. The scarcity, and in some cases null, presence of government representatives in the area makes it impossible to guarantee compliance with the laws.

Considering that the legal constitution of the reservation grants autonomy to the indigenous communities for the management and development of the territory, the scenarios that have been



proposed are aligned with the possibilities and vocation of the territory and in accordance with national regulations, and therefore can develop without inconvenience within the reservations.

Scenario 1

The community owns its territory and its resources and has administrative autonomy conferred by the national government. The community has the power to decide how natural resources are and must be used if the provisions of the regulations related to the use of these resources are respected. Moreover, they must guarantee the environmental integrity of the territory and the conservation of the natural heritage.

Subsistence productive activities (chagras) are legal practices and respond to the communities' historical production models and are expected to be maintained over time. Mining also takes place in this region and there are areas owning mining titles or legal authorization for the exploitation and usage of these resources. The current scenario also involves activities that are not under national law. Due to the dynamics of armed conflict present in this territory during the last decades and the low presence of the State, activities such as illegal mining, illegal extraction of wood and crops for illicit use, have found conditions that favor their development, causing loss of forest and deterioration of the environmental matrix. Neither the community nor the State have managed to stop the illegal use of natural resources. Communities face a scenario in which the main profitable activities are related to illegal economies and there are no legal and robust alternatives that offer sufficient and constant income for families to satisfy their needs and expectations.

Scenario 2:

The protection of natural resources and cultural heritage it's among the responsibilities that communities have when managing their territory. Ancestral production models and systems to guarantee food security have been lost and a shift in the habits of landowners can be observed, going from producers and cultivators to only cultivators, which has been generated by the inadequate soil use due to informal economic model that do not guarantee the required household income for producers. Illegal economies also promote practices that cause high environmental degradation, and the sustainability of natural resources is threatened. Recognizing this situation, the activities aimed at halting the environmental deterioration of the area and the loss of forests are of interest for the members of the community and are aligned with the norms and development programs that the government has. Strengthening production systems, making the countryside more technical, and promoting production chains are cross-cutting elements that frame development interests for this region.

Scenario 3:

The program led by the national government to promote the sustainable development of this region responds to local needs and circumstances and considers a series of strategies aiming to establish production systems that are framed by applicable laws and contribute to the compliance of the objectives of forest conservation and that result in the improvement of living conditions and cultural strengthening of the communities. The implementation of this program would be aligned with the laws and regulations of the country.

6.3. Step 2: Barrier analysis

The barriers that can prevent the implementation of the REDD+ project, but that do not prevent the implementation of the land use alternatives considered in the scenarios that are proposed, are described below.

6.3.1. Step 2.a. Identification of the barriers that would prevent the implementation of the project

Investment Barriers:

Within the project activities, the productive systems of tobacco, pisciculture and agriculture practices are expected to generate a profitability that allows these activities to be sustained over time. The income received from these activities will be invested in the maintenance of the activities and the payment of salaries.

Even though these initiatives have a favorable economic potential in this region, the members of these communities do not have any facility to access credit mechanisms, nor do they have external investors who provide the resources to develop the initiatives. The establishment of production systems involves significant investments for the community and the lack of financing mechanisms is a limitation that occurs historically in this region.

The establishment or strengthening of these productive activities could only be materialized with investment resources provided by the State or by national or international cooperants. There are no other finance sources available for communities to develop their production plans.

The development of activities that aim to strengthen governance, establish forest monitoring systems and the adjustments of infrastructure and basic sanitation do not generate profits and their implementation depends entirely on financial aid. Likewise, the formulation, validation, and verification of a REDD+ project represent a high cost, which could not be financed in the absence of income from the commercialization of carbon credits.



The only financing mechanism identified to modify production practices with high environmental impact consists of framing the activities in a REDD+ project that allows the commercialization of carbon credits and there is support for the required investments.

Social barriers

Market conditions and current practices represent a limitation for the substitution of practices that have high environmental impact. Historically, agricultural and mining production models followed generate a progressive deterioration of natural spaces.

The general perception of the community regarding these models is that they are the only opportunity to generate income and there is resistance to immediate change because they do not recognize the benefits of other productive alternatives.

In the regional context, there is evidence of the implementation of financing models based on the commercialization of carbon certificates and alternative production systems that have managed to displace previous practices that compromised the stability of ecosystems. This evidence became an example that serve as demonstration of the viability of introducing changes in the productive arrangements of this region and thus modifying the general perception that the community has regarding the possibilities of achieving sustainable development.

Through the commercialization of the carbon credits derived from this project, there will be availability of resources for the development of economic alternatives and the strengthening of governance, which makes it possible to reduce the economic dependence of the population regarding illegal activities.

6.3.2. Step 2.b Barrier analysis regarding the implementation of the identified scenarios

The analysis of barriers identified in step 2a is presented in the following table, regarding each scenario presented in step 1a.

Table 10 Barrier analysis regarding the identified land use scenarios.

Scenario	Investment Barrier	Social Barrier	Analysis and implementation barriers
1	No	No	None of these barriers prevents the continuation of the activities that have been historically developed in the territory

Scenario	Investment Barrier	Social Barrier	Analysis and implementation barriers
2	Yes	No	<p>Investment: Without the availability of investment capital, there is no transition from current productive activities to those that do not affect forest cover and biodiversity.</p> <p>Social: Considering actual informal economic models and the absence of legal alternatives to guarantee sustainability, food security and improvement of living conditions for the communities the development of activities that generate deforestation will continue. If the population does not have a legal financial mechanism, it is very unlikely that economic alternatives will be developed that offer employment opportunities and mitigate those that generate deforestation.</p> <p>Resistance to change has taken root given the unsustainable production model, but it turns out to be the only option available making it difficult to change perception. However, there is a percentage of the population that really wants change and a REDD+ project without registration, although it may have resistance, it can overcome the social barriers with the successful experience of other projects.</p>
3	Yes	No	<p>The implementation of the Program Visión Amazonía depends on politics and government will, though, it depends on international cooperation and national co-financing.</p> <p>Assuming that this program continues, the investment resources directed to Reserves would correspond to a small fraction of the total allocated to the region. This would limit the investment possibilities and the actions that could be implemented in the indigenous territories.</p> <p>Regional and national government have limited investment resources and defined viable action plans.</p> <p>This Program would not be able to impact the entire population and as such it would not be possible to replace current practices that are against sustainable development.</p>



According to the results presented in the previous Table, the most probable and conservative land use alternative to define the baseline of the project (other than the project activity), consists of the continuation of the use that is presented at the time project start moment, which corresponds to Scenario 1.

6.4. Step 3. Impact of project registration

The economic benefits derived from the commercialization of carbon credits are a source of investment resources that allow the implementation of the project activities and economic alternatives, which are necessary to face the practices and factors that represent a threat to the forests and strength those that helps improve the community livelihood. REDD+ activities represent job opportunities and income generation, which reduces the dependency that exists on activities that involve deforestation of the territory.

The region is comprised of lands titled to Indigenous Reserves, who do not have the financial capacity to implement activities similar in scope to those presented here. Therefore, efforts to reduce deforestation and forest degradation through supporting local governance capacity, land-use planning and implementation and local capacity building, are not common practice in the region. For the indigenous authorities, the most common barriers they face to conservation are related to badly formulated projects, difficulty in agreeing with the indigenous authorities on activities, limited available human resource, lack of resources for the operation, and ambiguity or nonexistence in the Life Plans (Office of the Controller General of the Republic of Colombia, 2017).

The resources from the registration of this REDD+ project are set up as working capital available to materialize the interests and opportunities identified by the members of the community, who seek the sustainability of their culture and territory. It is also important to note that REDD+ activities do not offer significant profitability and the focus of the project is aimed at the conservation of the territory and culture. REDD+ project activities can only be sustained and increase their impact if resources are obtained through the sale of carbon credits. The indigenous community does not have access to bank credits or financial support from the government or banking entities, so the resources derived from the sale of carbon credits constitute a unique opportunity to finance REDD+ activities. These resources will also make it possible to strengthen the capacity for territorial management and governance, which results in a cultural strengthening of the communities and an improvement in their quality of life.

By accessing the REDD+ mechanism, the benefits associated with the reduction of GHG emissions translate into direct economic income for the community, which makes it possible to ensure the continuity of the actions that achieve the reduction of deforestation.



Considering the above, the project does not correspond to the baseline scenario, therefore, the project is additional.

7. Deforestation and Degradation drivers and agents

The identification of the drivers and agents of deforestation and forest degradation in the project area is essential to i) design the relevant actions and measures of the REDD+ project to mitigate deforestation and forest degradation, and ii) delimit the reference region. In order to carry out an adequate characterization of the causes and agents of deforestation, all the aspects described in the REDD+ v3.0 methodology (Biocarbon Registry, 2022) were developed, which is based on what the UN-REDD Program suggests.

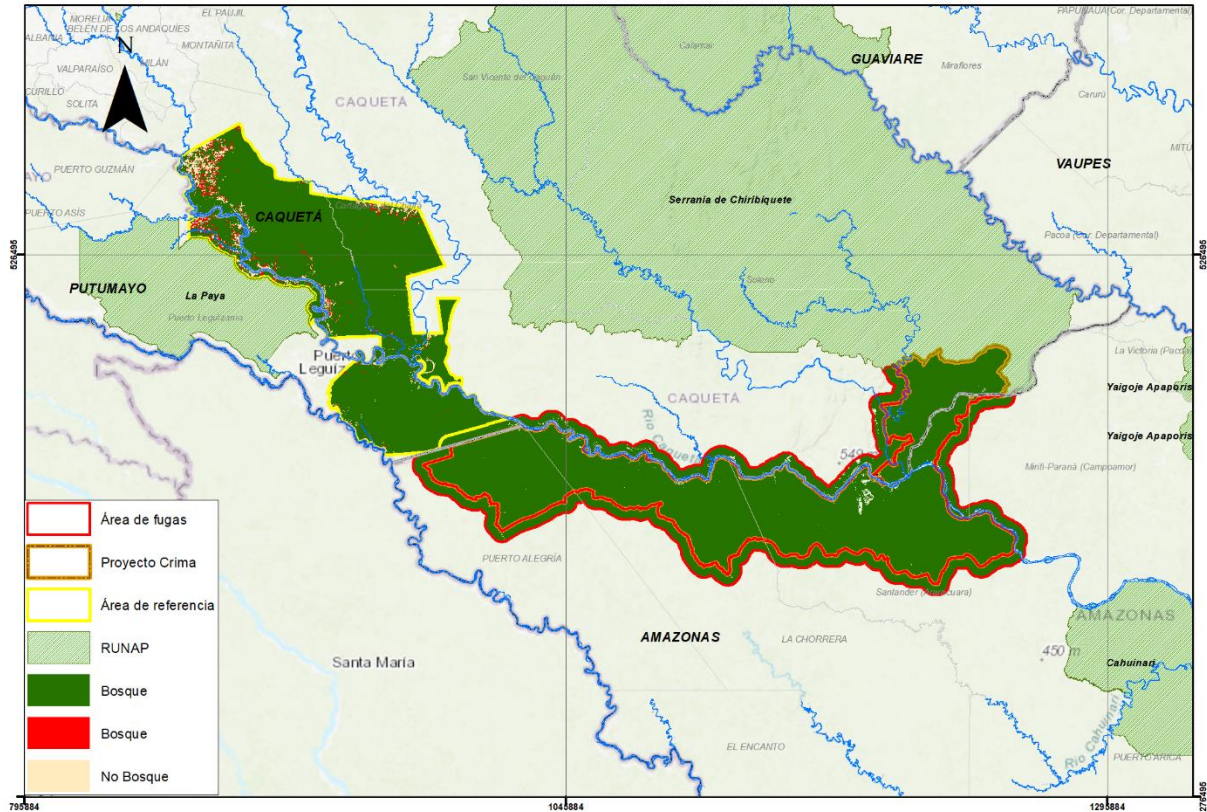
Next, the identification, description and analysis of the causes and agents of deforestation are presented, based on which the measures and actions aimed at mitigating deforestation and the degradation of the forests present in the project area were designed. This identification was carried out based on the workshops held with the communities and the consultation of documentation.

7.1. Spatial and temporal dimensions

The spatial analysis of deforestation agents was carried out based on the Conceptual and Methodological Guidelines for the Characterization of Causes and Agents of Deforestation in Colombia (IDEAM, MADS and UN REDD, 2018). As inputs, the analyzes of deforestation and post-deforestation land use were used, as well as field interviews with people from the community. The deforestation present in the reference region were characterized spatially and temporally. The analysis was also performed for the project area. For this, an analysis period was taken for deforestation between 2007 and 2017.

Map 12 Forest loss in project area and reference region for the period between 2007 and 2017.

Perdida de Bosque 2007 -2017
Proyecto Resguardo Indigena Predio Putumayo
Amazonas - Colombia



7.2. Context

7.2.1. Territorial context

The territories in which the communities belonging to the Reservations are settled have been occupied in an ancestral manner, for which reason it is owned, appropriated, adjudicated and granted from the law of origin, natural law and higher law. These ancestral territories are appropriated by knowledge and practices framed within the cosmology and cosmogony of the ethnic communities, based on their cultural practices, uses and customs (Agencia Nacional de Tierras, 2017).

From 1966, creation of new indigenous reserves was promoted, awarded provisionally and returnable. From 1977 on these reserves started to be lawfully delivered to the natives. The most extensive reserves are in the Amazonas Department, one example is Predio Putumayo, where

several ethnic and linguistic groups are present, some examples are Uitoto, Mirañas, Boras, Andoques, Ocainas, Muinanes, Nonuyas, and additionally Murui-Muinane, Carijona, Yucuna, Cabiari, Inga, Siona, and Letuama, among others (CORPOAMAZONÍA, 2021).

Predio Putumayo is the biggest indigenous reserve in Colombia, with a total area of approximately 6 million hectares. Founded in 1988 through Resolution 030, it was the result of a long struggle of the native elderly with the support of the Indigenous Affairs Division of the Colombian Government and finally a dialogue was carried out and as a result the president of Colombia Virgilio Barco lawfully awarded the territory (4direcciones TV, 2021).

Currently, the biggest threads for the conservation of this territory and the native communities are illegal mining, felling, deforestation caused by coca crops, agriculture, colonization, and extractive economies (4direcciones TV, 2021).

It's important to notice the importance of sacred places among other valuable sites, "Sacred places are the origin of every legend and myths of our culture, and they represent a meeting point for the elderly of every region, where bonds are shared between us and nature". Every clan has its own sacred places and from there they obtain and transfer their ancestral knowledge (CRIMA, 2013).

A maloca is an ancestral long house used by indigenous people of the Amazon, built with natural features. The maloca is shared for several families, it is also a traditional social unit, a symbol representing the synthesis of the universe. In other words, it represents a divine archetype, the uterus of mother earth, house of the sun and moon or the receptacle of the heavenly beam. Although there are different types of maloca, and the design has been modified over time, usually it's a big size dome structure rising through vegetation. Its shape reproduces the worlds forming the cosmos (GAIA AMAZONAS, n.d.).

In his doctoral thesis, *Cosmologie et mythologie Tanimuka, Amazonie colombienne*, Gaia Amazonas founder, Martin von Hildebrand explains that in the highest part of la maloca there is a space formed by 4 central columns, this area represents knowledge and is the center of the universe and a space reserved for man's reflection. The second space is considered the world of music. The space between minor columns and outer space represents the vulture's world. There, there is another area for ceremonies and dances; it's a space for males. There is another space for male-female transition represented with unions, marriages with women of other malocas, other ethnic groups. In this space families would eat, sleep, and are buried under the places where they would place their hammocks. Outside, chagras surround the maloca, which are managed by women, beyond there is the jungle which is protected by several spiritual guardians (GAIA AMAZONAS, n.d.).

7.2.2. Sociocultural context

The community belonging to the Great Indigenous Reserve Predio Putumayo, and Andoque de Aduche Indigenous Reserve corresponds to ethnic population living within the biggest indigenous reservation of the country located in the amazon region. It is constituted by different ethnic groups, mainly Andoke, Uitoto and Muinane, which are organized in different communities or clans and articulated around the Association of Traditional Authorities Regional Council of the Middle Amazon – CRIMA.

Ethnic Group	Clans or communities
Andoke	El Sol, Gavilán, Venado, Cucarrón, Arriera, Multi-étnico
Uitoto	Los Monos, Puerto Zábalo, Puerto Belén (Clan Oigini), Puerto Berlín, Asentamiento las Delicias, Puerto Pizarro, Nazareth, Reforma
Uinane	Monochoa, Chukiki, Guaimaraya, Amanenai

The Indigenous Reservation of Predio Putumayo has an 8,550 population from which 52.2% corresponds to male population and 47.8% to female population (CRIMA, 2012). The Andoque de Aduche Indigenous Reserve has a population of 329 people, according to the population census carried out by the Aduche Indigenous Reserve, from which 51% are men and 49% are women (see folder *Censos Comunitarios*).

There are power groups within each clan, responsible for making decisions, defending the group from physical and shamanistic aggressions, organizing work and fulfilling territorial defense functions, a power that is held by the Maloquero, the Shamans, the Singers, the Dancers and Hunters mainly (Ministry of the Environment, 2006).

The characteristic indigenous dwelling of this area is the Maloca, a large communal house, made up entirely of natural elements. It is also a traditional social unit, a type of housing whose symbolism represents for the Amazonian communities a synthesis of the universe. The maloca is considered as a divine archetype, the womb of mother earth, the house of the sun and the moon, or the receptacle of the celestial ray (GAIA AMAZONAS). On the outside, around the Maloca, the chagras managed mainly by women are located, and then the forest extends, which remains under the protection of the various spiritual guardians.

Besides the malocas, other single-family dwellings in a rectangular array are found on platforms, gabled roof covered with zinc or palm woven caraná and plank walls. The kitchen is usually located outside the housing, in a small shed. Another type of housing that was observed there are those built on materials such as block and cement, some use zinc and others the palm for the roof, the floors can be in cement or mud. In other cases, the houses are made on wooden pylons, resistant

to moisture, the deck or roof is built with light wood. they have one or two rooms, a separate kitchen, and a latrine.

Current conditions of the community reflect the historical absence of the State in the amazon region. The community lack of social infrastructure, sanitation systems, education, and health facilities. Some of the problems presented include:

- Lack of electricity service due to the absence of an economical, clean, and autonomous power generation system
- Incipient communication networks
- Lack of sanitation and waste management
- Lack of access to drinking water for human consumption
- Poor health system coverage, lack of medical centres, they rely on traditional medicine
- Difficulties in transporting goods produced within the territory
- Lack of social investment and government presence

Despite of being located within a natural area rich in biodiversity Predio Putumayo and Andoque de Aduche communities have environmental issues related to:

- Vulnerability to climate related events
- Water pollution, including mercury contamination from mining activities
- Lack of knowledge of proper environmental management (especially regarding solid and liquid wastes)
- Loss of fauna and flora

These issues are related to the principal economic activities carried out in the territory such as artisanal and mechanized gold and platinum mining, illicit crops, subsistence crops (Chagras), hunting, fishing and forestry.

Energy

The lack of an economic, clean, and autonomous energy generation system for the area upholds a high dependency of communities in the township of Puerto Santander, which establishes a power structure there. A large percentage of the economic incomes of these communities are invested in fuel and batteries to supply the basic needs of the families. The problems in accessing electrical energy sources impacts the incipient implementation of communication systems. This isolates those communities, creating economic, political, and social equalities between them.



Solid waste

Some population centers such as Puerto Santander register high levels of pollution produced by bad management of solid waste without any source separation. Evidently, there is a lack of an integral solid waste program as well as the unavailability of signaling and containers to facilitate the waste disposal and its management.

Drinking water

Because of the pollution of important sources such as the aqueduct of Puerto Santander with coliforms, a chemical treatment and pollution prevention for the local consumption are required. Additionally, communities do not perform regular maintenance of rainwater harvesting tanks and their channels.

Health

Every village and culture has their traditional doctors: Shaman, Curaca, Taita, who use medicinal plants and possess specific knowledge about their culture. Also, there are some western culture health agents in some communities as promoters. The existence of western diseases among the indigenous population makes their health systems lose control over them; for this reason, they require government support. Western illnesses were the most critical reason for the disappearance of the indigenous population since the time of the Conquest.

Indigenous health promoters connect traditional health and the western health system. The education of health promoters is the prime response of the official system to confront the health issues affecting indigenous people to introduce patterns, parameters, criteria and practices of western medicine into these communities (Instituto Latinoamericano de Servicios Legales Alternativos - ILSA, 2007)

Education

Within the region, there are two indigenous educational institutions: in Caquetá, Institución Educativa Rural Fortunato Really, whose students belong to the Witoto. In Amazonas, Institución Educativa MANUC, which comprises the ethnic groups Muinane, Andoque, Nonuya, Witoto, Colonos, and other ethnicities in a lesser proportion (CRIMA, 2012).

The Institución Educativa MANUC headquarter is located in Araracuara, inside the indigenous reservation Andoque de Aduche; it has a boarding school called Fray Javier of Barcelona. This institution handles the education of local schools in the Amazonas department. It also has eleven



associated schools; each school is formalised and recognised at the department level as a community school. Some of their teachers were designated by Decree 804/95 as ethno-educators due to the indigenous struggle led by the CRIMA association in the Mesa Permanente de Concertación Interadministrativa (MPCI) in Leticia with the departamental government and the education, culture and sport administrative department – Departamento Administrativo de Educación, Cultura y Deporte (DAECD).

Social organization and government

Traditional social structures are based on power groups within each ethnic group, responsible for making decisions, defending the group from physical and shamanistic attacks, organizing work and carrying out territorial defense functions, power that is mainly exercised by the Maloquero, the Shamans, the Singers, the Dancers and the Hunters. (Ministerio de Ambiente, 2006)

Today’s communities are composed of indigenous people of different ethnic groups or clans, with members of groups that did not used to have relations and were even enemies; this makes the management of authority more complex, because each ethnic group was governed by its rules and different laws. (Ministerio de Ambiente, 2006).

The governance structure is constituted as follows:

Great Predio Putumayo Indigenous Reserve	Andoque de Aduche Indigenous Reserve
<ol style="list-style-type: none"> 1. Associations of Traditional Indigenous Authorities (AATI) 2. Governors of the Communities 3. Secretaries of Communities 4. Communities Treasurers 5. Communities Prosecutors 	<ol style="list-style-type: none"> 1. Associations of Traditional Indigenous Authorities (AATI) 2. Governors of the Indigenous Reserve 3. Captains of the Clans 4. Secretaries of Clans 5. Clans Treasurers 6. Clans Prosecutors

It is also important to mentioned that the project has defined an Administration Scheme that divides the project area in three specific zones which have different community government structures. Each zone has its own Indigenous REDD+ Council (COIREDD+) which oversees the project implementation and has different instances and positions (see file *Esquema Administración REDD+ CRIMA Putumayo Andoque_v2.pdf*, folder *Esquema de Administración*). During the first implementation phase, the communities have appointed the COIREDD+ members (see file *Conformación COIREDD+_CRIMA Predio Putumayo 2022.pdf*, in folder *Evidencias de Monitoreo*). The project administrative zones are as follows:

- Zone 1: Control and Surveillance Zone (ZCV) from Puerto Zábalo to Belén (located in the Great Predio Putumayo Indigenous Reserve), is conformed by the communities of Puerto Zábalo, Puerto Berlín, Los Monos, Reforma, Asentamiento Nazareth, Puerto Pizarro, Asentamiento Delicias y Puerto Belén.
- Zone 2: ZCV from Chukik+ to Guaimaraya (located in the Great Predio Putumayo Indigenous Reserve), is conformed by the communities of Chukiki y Guaymaraya.
- Zone 3: Andoque de Aduche Indigenous Reserve, is conformed by all the communities that live in the indigenous reserve and represented by CRIMA Association.

Clans

The importance of exposing the list of clans lies in the fact that they are a differentiating factor within each people, since they determine cultural meanings that cannot be generalized since the clans have histories of different origins. In the past, clans structured certain hierarchies and social relations in the daily lives of indigenous peoples. Although the fact of being part of a particular clan may now be perceived, it is still a structuring element. Each clan keeps secrets that allow them to position and differentiate themselves from the others and that may often be complementary to the secrets of other clans, yet that only individuals belonging to the clan are able to learn. From Andoke clans, those identified in the region are sol, hormiga arriera, gavilán, venado and cucarrón. (CRIMA, 2012).

7.2.3. Economic context

Most of the community members practice wildcrafting as a livelihood. It's a traditional activity, complemented with the chagra, hunting and fishing. Community members harvest fruits such as caimo, guacure, cacao, barbasco, castaña, etc. Some of these fruits are conserved using element processing techniques (CRIMA, 2012).

Gold extraction is one of the activities that impacts the landscape the most, especially around Puerto Santander, jurisdiction of the Amazonas Department. This activity is often illegally carried out by Colombian and Brazilian miners using dredges. During this process, material is extracted from the riverbed and later mercury is added to separate gold. Mercury waste is then drained directly to the river, causing damage to fishes, water quality, vegetation and eventually to humans (CRIMA, 2012).

A model for the settlement of pastures used widely in the Amazon is causing felling of trees and burning of forests. All this with the intention of creating fields for the cattle activities. Natives and settlers perform this activity alleging that soils are unproductive. Nevertheless, this is part of the

management of their livestock. There is a belief that these lands are gaining value this way. Few areas are used for cattle in the project zona (CRIMA, 2012).

Commerce is limited to basic elements, and it's carried out mainly in Puerto Santander, which is an indicator of foreign products dependency. Prices are significantly high compared to other parts of the country, like the rest of the Amazon region. These products are transported by the Caquetá River in small boats. On their way back they transport back fish and other farming products (CRIMA, 2012).

Fishing is also an important activity with facilities for this purpose in Puerto Santander. Over time traditional rudimentary fishing practices have been used by natives and fishes were extracted for families sustain. However, since the 1970s, new fishing methods are used creating facilities for the commercial purpose, especially big species, like catfish (CRIMA, 2012).

There are mainly two habitats in the Amazon, non-floodable areas, and floodable areas (Varzea). Two main traditional farming approaches are defined, semi-intensive farming is performed in the floodable areas, and it depends on the river floods, corn, yucca, and fruits are harvested. Migratory agriculture, also known as felling and burning is performed in non-floodable areas, it's considered to be the most significant use of the land in these areas (CRIMA, 2012). Chagra is considered a traditional activity characterized for being a small-scale agriculture, in average areas of one hectare. The land is cultivated with roots, grains, tubercle, and fruit trees. Territories are rotated every 2 or 3 years.

There are 3 kinds of chagra in the area: i) chagra dedicated to roots and tubercles, herbaceous and bushes, which is the most common type of chagra; ii) chagras for harvesting yucca, done in old stovers and normally increased for ceremonies; and iii) vegetable gardens which are usually small and located near house, where fruit trees are cultivated, aromatic and medicinal plants. The time of life of this chagra depends on the time people stay in the settlement.

Hunting is an activity highly practiced in the area; it complements indigenous community diet. The most hunted species are *Scarlet ibis*, *Lowland paca*, *Tapirus terrestris*, *Capybara*, *Pavas Pajuil*, *Peccary* and *Tayassu pecari*.

Regarding wood extraction, this activity is practiced by settlers and natives for their personal use or for commercialization.

The absence of the government, the lack of economic opportunities, the presence of settlers and armed groups has facilitated the apparition of illicit crops. This carries on illegal activities and social unrest, family disintegration, drug addiction and cultural weakening.

7.2.4. Historical context

There is hereunder a chronological summary of the background to the creation of the *Predio Putumayo* indigenous reserve, as follows:

- In 1852, the treaty between Peru and Brazil was concluded and the boundaries of the Andean States in the Amazon were set at the Yavarí River and the Tabatinga-Apaporis Line.
- In 1867, the Peruvian authorities of the district of Loreto founded the city of Leticia.
- In 1870, *la Casa Quineras* began operations in the territory of Mocoa and Caquetá, establishing steamboat navigation on the Putumayo River.
- In 1880, the route of Jules Crevaux of French nationality along the Guayabero and Caquetá rivers proved the existence of slave trade by Brazilian adventurers. The *Huitoto*, *Bora* and *Miraña*, who inhabited the Caquetá-Putumayo River since ancient times, keep their independence and autonomy, as well as their traditional culture. Their population was estimated at between 50,000 and 100,000.
- In 1890, the arrival of the first Colombian settlers looking for rubber. Benjamin Larrañaga and Crisóstomo Hernandez made improvements at the top of the Igará-Paraná River with the debt system (Spanish: Sistema de endeudamiento). They founded the *Indiana* colony (nowadays called Chorrera). Years later, settlers coming mostly from Tolima and Huila, among them Calderón and Cuellar families, settled in Putumayo and Caraparaná, subsequently they founded *El Encanto*.
- In 1900, Julio Cesar Arana established an international company called the Peruvian Amazon Rubber Company in 1907, he is accused of having committed an immense indigenous genocide based on denunciations by the Peruvian journalist Benjamin Saldaña Rocca; these accusations were published the same year on the Iquitos newspapers “La Nation”, “La Felpa.” Later, calculations established that under the system of terror led by *la Casa Arana*, nearly 40,000 indigenous people died between 1900 and 1910.
- In 1917, Captain Yarocamena carried out the largest Indian uprising against *la Casa Arana* in the rubber section of Atenas.
- In 1921, the Ministry of Development of Peru granted the Arana family a concession over a large area which included a large part of the Putumayo land.
- In 1922, after negotiating with Colombia, Peru recognized in favor of the country the sovereignty over part of the Amazon region, which is largely compounded by the Putumayo land. This recognition is contained in the Lozano-Solomón Treaty about Boundaries and Free Navigation, signed on March 24, 1922, and ratified in Colombia by Law No. 55 of 1925.
- In 1924, the novel *La Vorágine* by Jose Eustacio Rivera narrated, through Clemente Silva’s story, the cruelties of the Peruvians towards the native population of the Putumayo land.

- In 1928, the foremen of *la Casa Arana* began the forced relocation of large indigenous groups to the Peruvian area of Putumayo, where many died of fever. Today, *Huitoto*, *Okaina* and *Andoke* groups inhabit the Napo, Ampiyacú, Nanay and Putumayo rivers as a result of these events.
- In 1933, the Colombian-Peruvian conflict was finalized, resulting in a definitive border settlement between these two nations.
- In 1938, the Colombian government authorized the *Banco Agrícola Hipotecario* to acquire from the Arana family all the rights they had acquired in Colombian territory prior to the adoption of the treaty, in accordance with Peruvian legislation. The transaction was formalized on May 24, 1939, by public deed No. 574 at Lima's notary public office. The price of sale was 40.000 US and leaving balance outstanding.
- In 1954, the Colombian government, through Decree 1529, instructed the *Caja de Crédito Agrario Industrial y Minero* to liquidate the *Banco Agrícola Hipotecario*.
- In 1959, Colombia's Amazon region was declared a forest reserve by Law No. 2 of 1959.
- On May 9, 1964, the *Caja Agraria* signed Public Deed No. 2880, at Bogota's notary public office No. 5, by which Mr. Victor Israel, representing the Arana family, ratified the sale effected through Public Deed No. 574 of May 24, 1939. Claiming the public instrument had not been registered at the Public Document Registration Office of Colombia, the *Caja Agraria* paid the seller with its own resources the remainder of 160,000 US.
- In 1975, the INCORA through Resolutions 233, 234 and 235 of November 26, 1975, created the indigenous reserves of Monochoa, Puerto Sábalo, Los monos and Aduche, located largely within the area of Putumayo.
- In 1980, by Public Deed No. 120 of February 8, 1980, issued by the Notary No. 5 of Bogota, duly registered at the Public Document Registration Office of Leticia (Amazon) and Mocoa (Putumayo), the *Caja Agraria* declared that, in accomplishing its mandate to liquidate the *Banco Agrícola Hipotecario*, it had fulfilled the obligations of that bank. being constituted as a creditor of the same institution, as recognized by the Liquidator Committee formed for this purpose and that this committee received authorization to buy for \$70,200 a fifth of the domain of the Putumayo land to cover its credit. Pursuant to this decision of the Liquidator Committee of the *Banco Agrícola Hipotecario*, the *Caja de Crédito Agrario, Industrial y Minero* consolidated full control over the property.
- In 1983, the General Manager of the institution (*Caja de Crédito Agrario*), Dr. Mariano Ospina Hernandez visited the region for the first time; the institution began working on the initial development project of the Putumayo land.
- In August, 1985, a delegation of the *Caja Agraria*, led by Dr. Ospina, made a trip to *La Chorrera*, *Puerto Leguizamo*, and *Tagua* having meetings with the native population to explain why the *Caja Agraria* was present.
- In January 1986, the *Caja Agraria* formally began *La Chorrera* project, in which the general objectives were the research, conservation and use of natural resources such as fauna, flora,

water, energy and mineral potential, maintaining and protecting these areas, as well as cooperation with indigenous communities, for which work would be implemented in agronomy programs, seje palm, fish farming, ethnobotany and agro-industry, in collaboration with the native population. It was about an activity center for indigenous people at *Casa Arana* but with a private property regime at the head of the *Caja Agraria*. The first to speak out were the indigenous people, believing that this may lead to the formation of settlements with the displacement of indigenous people. It was issued to INCORA to make the Putumayo piece of land be constituted as an indigenous reserve.

- Around 1987 and 1988, the *Caja Agraria* sold the land to INCORA, reserving an area of 802.5 hectares for the research programs they planned to continue.
- The sale is recorded in Public Deed No. 1987 of April 5, 1988, at Bogota's notary public office No. 9. INCORA, through Resolution 030 of April 6, 1988, constituted the Putumayo Property Reserve, with an area of 5,818,702 hectares, which benefited at that time a population of 2,067 families composed of 10,335 people.
- In 1994, the facilities of *Casa Arana* were given on loan by the *Caja Agraria* to the department of Amazonas for the operation of a high school for the indigenous population.

Moreover, the Andoque de Aduche Indigenous Reserve was initially established as a special reserve by Resolution 235 of November 26, 1975. Subsequently, resolution 033 of 6 April 1986 established it as a *Reservation (Resguardo in Spanish)*.; nevertheless, only the lands to the north of Caquetá were legalized as it, because by another resolution of the same day, No. 030 of April 6, 1988, their lands to the south of Caquetá became part of the Reserve *Predio Putumayo*.

7.3. Key agents, interests, and motivations

The main agents of deforestation identified in the reference region and in the project area are similar, among which are:

- Communities forming the Great Indigenous Reservation Predio Putumayo in the Monochoa, and Puerto Zábalo and Los Monos Sectors, and the Aduche Indigenous Reservation: communities dwelling in the area, and legally owning the land. Current owners and target community of the project. The indigenous communities clear forest areas for the establishment of chagras.
- Farmers that have settled and have agriculture or commercial activities and do not belong to the indigenous community, but who are allowed to remain in the territory.
- Settlers are also actors who clear forest areas for the establishment of subsistence farming systems.

- External agents with economic activities in the project area: exert pressure on the territory (including illegal armed groups).

The establishment of small crops for the generation of surpluses also causes the loss of forest. Both indigenous, settlers and external agents participate in this activity, encouraged mainly by the opportunity to market the product and obtain income for their livelihood.

Table 11 Key Agents, activities, and interest identification

Agents	Scope (deforestation)	Activity	Interest
Communities forming the Great Indigenous Reservation Predio Putumayo in the Monochoa, and Puerto Zábalo and Los Monos Sectos, and the Aduche Indigenous Reservation	Direct and indirect	Agricultural producer with traditional crops for self-consumption.	Economic Self-consumption
	Direct and indirect	Mining activities	Economic
	Direct	Extraction of wood for self-consumption.	Economic Self-consumption
	Direct	New settlements	New housing areas
Farmers - Settlers	Direct and indirect	Agricultural producer with crops (legal and illegal)	Self-consumption Economic accumulation of wealth in unregulated markets.
	Direct and indirect	Mining activities	Economic accumulation of wealth in unregulated markets.
External agents	Direct	Agricultural producer with coca crops (he grows coca crops as his main source of economic income).	Economic accumulation of wealth in unregulated markets.
		Mining activities	Economic accumulation of wealth in

Agents	Scope (deforestation)	Activity	Interest
			unregulated markets.

Regarding the direct causes of deforestation, the following are identified:

- Expansion of the agricultural frontier -Establishment of agricultural crops.
- Mining activities
- Extraction of wood for self-consumption and marketing.
- Settlements

The geographical location of the communities and the characteristics of the access roads represent a limitation to connect the territory with secondary cities and other points of commercialization of goods and services. The distances between these points are wide and the main means of transport require fuel, which implies a high cost for the mobilization of goods. For its part, the high cost of fuel affects productive development and makes most agricultural initiatives in this region unviable. Likewise, the low availability of agricultural incentives (access to loans, low market prices, high cost of inputs, difficulty in accessing technical assistance programs, among others) and the absence of productive linkages limit the opportunity to generate income and promote sustainable development for the reservation communities.

7.4. Economic activities and its importance

Table 12 Economic activities and its importance

Activity	Economic importance	Socio cultural importance	Description
Subsistence agricultural production	Low	High	These systems incorporate products of nutritional relevance and food security for the community.
Agricultural production to generate surplus	Medium	High	The possibility of selling surpluses is Low, but it represents a source of income for the members of the community.
Wood extractors for self-consumption	Low	Medium	This activity is developed for self-consumption and subsistence of the members of the community.
Wood extractors for surplus generation	Medium	Medium	The possibility of selling surpluses is Low, but it represents a source of income for members of the community.

Activity	Economic importance	Socio cultural importance	Description
Mining activities to generate surpluses in unregulated markets	Medium	Low	The possibility of selling surpluses is Low, but it represents a source of income for the members of the community.

7.5. Direct and indirect impact

Table 13 Direct and indirect impact

Cause/ driver	Agent	Type of impact	Impact
Subsistence agricultural production for self-consumption	Agricultural producers with traditional crops for self-consumption	Direct	Low. The establishment of chagras and subsistence agricultural systems represents areas of less than 1 hectare and has periods of use of 3 to 4 years on average.
Agricultural production to generate surplus	Intermittent agricultural producers	Direct and indirect	Medium. The establishment of these crops implies the occupation of areas of <1 to 5 hectares, approximately. The increase in the area occupied by these crops is associated with the search for income by the community.
Extraction of wood for self-consumption	Wood extractors for self-consumption	Direct	Low. The practice of logging is not carried out permanently.
Extraction of wood for surplus generation	Wood extractors for surplus generation	Direct	Medium. The practice of logging is not carried out permanently.
Mining activities to generate surpluses in unregulated markets	External actors	Direct and indirect	Medium. The development of this activity has a negative impact on ecosystems and implies the occupation of areas
Settlements	Community members	Direct	Forest clearance is required for the installation of new settlements and community members

7.6. Relations and synergies

To analyze the deforestation processes in the project area, surveys and workshops were carried out with the communities to identify the problems, causes of the problems, and solutions regarding the loss of the forest (See folder *Talleres*). From satellite images and changes in coverage during the

reference period, it was possible to corroborate the information obtained directly with the community.

The historical trend of changing from forest to another land use is mainly due to secondary vegetation in transition, mosaic of crops, pastures and natural spaces (deforested and abandoned areas). This is consistent with the drivers of forest change identified with the community, which correspond to the expansion of the agricultural frontier, subsistence production systems, crops for illicit use, wood extraction and mining. With this analysis of the uses of the land after deforestation, the reasons associated with the loss of the forest during the reference period can be validated, which is also recorded in the records of the workshops held with the communities (see *Talleres* folder).

Post-deforestation Land Use in RR	% of land use post-deforestation	BA (t/ha)	BA (tCO ₂ /ha)	BA weighted post-deforestation (tCO ₂)	COS (tC/ha)	COS weighted post-deforestation (tC/ha)	COS weighted (tCO ₂ /ha)
Grass and natural spaces mosaic	7.0%	12,7	23,29	1,63	60	4,20	15,40
Low Secondary vegetation	56.2%	7	12,83	40,41	60	33,74	123,71
Cropland, grass and natural spaces mosaic	18.1%	11,5	21,09	3,81	60	10,84	39,74
High Secondary vegetation	0.8%	39,2	71,87	0,10	60	0,49	1,78
Grass and cropland mosaic	0.6%	10,6	19,34	0,11	60	0,33	1,21
Clean grass	11.2%	12,7	23,29	2,60	60	6,71	24,59
Cropland and natural spaces mosaic	0.1%	8,4	15,40	0,02	60	0,06	0,23
Discontinuous Urban areas	0.01%	0,0	0,00	0,00	0	0,00	0,00
Wetland	3.6%	0,0	0,00	0,00	86	3,12	11,44
Natural sand zones	0.1%	0,0	0,00	0,00	60	0,04	0,14
Grass with undergrowth	2.4%	12,7	23,29	0,55	60	1,42	5,21
Total carbon content post-deforestation (tCO ₂ /ha)				49.23			223.4

7.7. Deforestation and degradation chain of events

As established in section 10.7 of the BCR methodology, where it states to include at least three links in the chain, as follows:

- Identify each of the activities that generate loss or degradation of forests. If possible, these should be grouped according to the most common direct causes of deforestation or degradation;
- Identify the agents associated with the actions and direct causes of deforestation or degradation established;
- Identify the underlying causes that promote or facilitate the decisions of the agents to carry out the actions resulting in the loss or degradation of the forest.

Following these guidelines, and in accordance with what is presented throughout chapter 7 of this document, the following table is developed:

Table 14 Deforestation and degradation chain of events

Underlying cause /driver	Involved agent	Direct cause
Communities have historically used subsistence production systems to meet requirements related to food security. Cover removal and burning techniques are used.	Agricultural producers with traditional crops for self-consumption	Subsistence agricultural production for self-consumption
The absence of the state in the territory facilitates the development of irregular activities. There is a market and the possibility of marketing the products and therefore it is attractive to the population of these areas. The limited availability of profitable economic production alternatives limits the possibilities of obtaining income in the Communities.	Intermittent agricultural producers	Agricultural production to generate surplus
Lack of education and conservation policies and adequate management of resources, as well as the lack of sanitation systems and decontamination of soil and water bodies, generate forest degradation.	Community	Lack of education and conservation and management policies
The limited presence of the State in the territory has historically facilitated the presence of external actors that carry out irregular activities such as the extraction of mineral resources. There is a market and the possibility of commercializing these products, which is why it is attractive for external actors and for some members of the indigenous communities given the lack of other profitable economic alternatives.	External actors Community	Mining
The population of the indigenous communities increases and therefore the need for settlements. For this they must clear forest areas to establish homes and livelihoods.	Community	Settlements
The Communities have historically used wood resources for the construction of houses and canoes, as well as for firewood. For this, the forest resource of the territory is used.	Community	Extraction of wood for self-consumption
Indigenous communities, settlers and external agents have historically used timber resources to generate	Community External actors	Extraction of wood for surplus generation

Underlying cause /driver	Involved agent	Direct cause
surpluses in unregulated markets, given the limited profitable productive economic activities that limit the possibility of obtaining income.		

8. REDD+ Activities

8.1. General strategy for intervention

Diverse territorial dynamics cause deforestation and forest degradation in the territory and have effects that are difficult to predict or directly counteract. The REDD+ strategy incorporates territorial management (governance) which is combined with activities that discourage the causes of deforestation. The project activities have been agreed upon with the community (see folder *Talleres*, workshops 1, 2, 3, and 4) and in accordance with the objectives of the project “Strengthening the Own Government and the Institutionality of CRIMA” (see folder *EvidenciasMonitoreo*) developed with Visión Amazonía Program for the community and the guidelines of the Safeguards Plan.

These activities are formulated to provide the community with development alternatives that allow overcoming the problems of the territory, economy, and food sovereignty that they face in the Indigenous Reservations, in accordance with the provisions of the municipal and departmental development plans. As community inputs, the following aspects were worked on identification of ways of life, the problem tree, the solution tree, and community surveys (see folder *Talleres*, files in subfolders *Taller_1_2_3_Predio_Sector_Monochoa_PPSM*, *Taller_1_Predio_Andoke_Aduche*, *Taller_1_Predio_PSLM*, and *Entrevistas*). The problem and solution trees, as well as the community surveys, made it possible to characterize the needs, opportunities, and potential interventions to address the causes of deforestation and improve the quality of life of the communities. The exercise of identification of the means and ways of life allowed to illustrate the relationship and interactions of the communities with the environment. With these inputs, in each community of the reservation, the possible activities and interventions mentioned were grouped into four common thematic components which are territorial governance, sustainable production systems, social investment and monitoring.

The distribution of the benefits in the four components of the Project was carried out in a participatory manner during the community workshops and the record of the agreements that were established were documented in the following files:

- *Talleres_1_2_3_Distribucion_Presupuesto_PPSM.pdf* (see folder *Talleres*, subfolder *Taller_1_2_3_Predio_Sector_Monochoa_PPSM*)

- *Taller_2_3_Predio_Andoke_Acta.pdf* and
Taller_2_3_Predio_Andoke_Distribucion_Presupuesto.pdf (see folder *Talleres*, subfolder *Taller_2_3_Predio_Andoke_Aduche*)
- *Acta_PSLM_Distribucion_Beneficios.pdf* and
Taller_2_3_PSLM_Distribucion_Presupuesto.pdf (see folder *Talleres*, subfolder *Taller_2_3_Predio_Putumayo_PSLM*)

It was agreed to make a pro-individual distribution of the economic benefits resulting from the implementation of the project, so that the REDD+ COUNCIL defines the investments and the use of resources based on the priorities established in the workshops. In this way, the members of the community will be able to participate in the project activities, according to their priorities, needs, and comparative advantages.

8.2. Prioritization of areas for interventions

Informational meetings with communities and local stakeholders are carried out participatively accordingly to the methodology developed by CARBO – TERRA. The on-going planning exercise has also been based upon continuous, informal exchanges on the REDD+ project and the communities. The professionals that have supported the program have provided technical support and oversight to the entire project on REDD+ issues through participative workshops. This group has been responsible for undertaking formal social engagement activities (workshops, work sessions, meetings, etc.).

Workshops with all the representatives of the indigenous were carried out. These workshops aimed to i) identify and analyze deforestation and degradation drivers, ii) identify solutions and strategies to canalize investment resources of the REDD+ project. During these workshops, priorities are ratified (see folder *Talleres*), and sustainable profitable alternatives are identified and reaffirmed (productive system); social investment (health, education and housing); strengthening governance and monitoring of the forest.

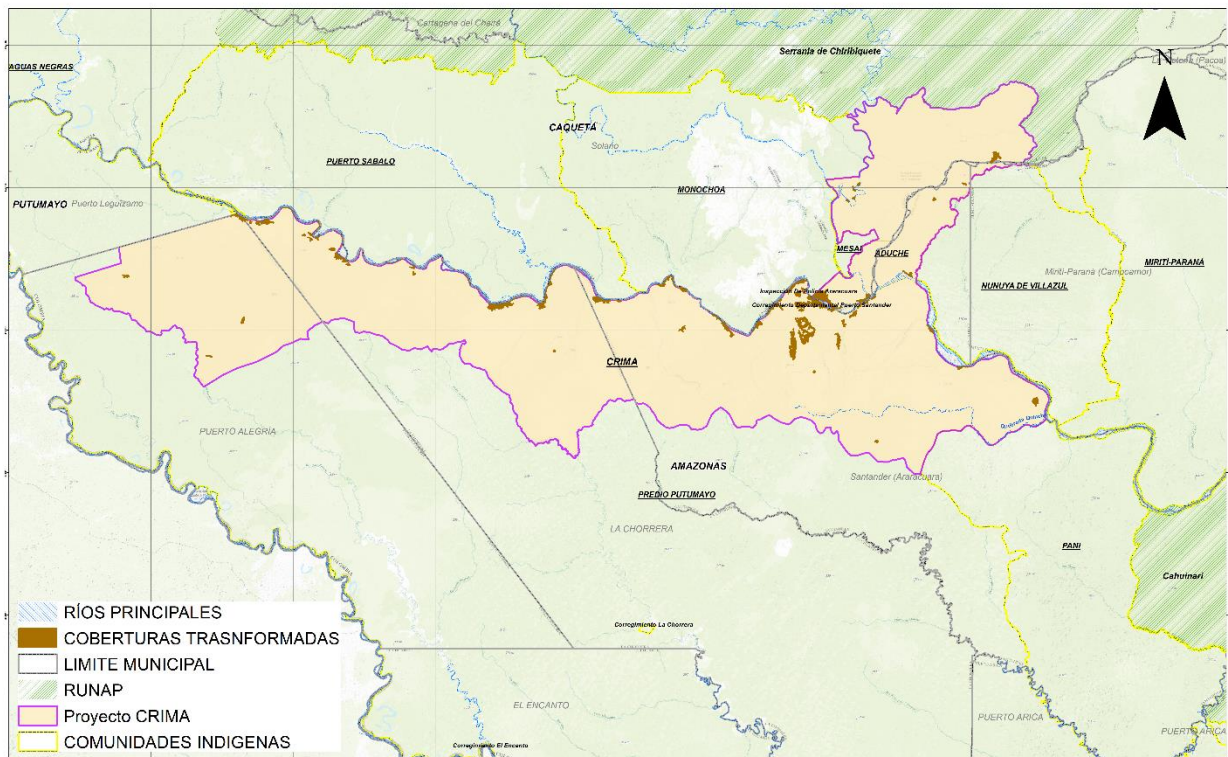
Moreover, it is expected that during the project implementation, budget control will take place to ensure that payments are made according to the project objectives ensuring transparent processes agreed upon with the investor, the communities and individual stakeholders/ community members. They will be in continuous contact with the governing boards of the community.

The project's interventions aimed at establishing production systems are concentrated in areas that show change from forest to other land uses (pastures, crops and fragmented forests). This work scheme is aimed at containing the agricultural frontier or active fronts of deforestation and

recovering forest cover that has recently been lost. The prioritized areas for the establishment or improvement of agricultural production systems are presented in the following map and correspond to the category of transformed spaces.

Map 13 prioritized areas for the establishment or improvement of agricultural production systems.

Coberturas Transformadas
Proyecto CRIMA - Resguardo Indígena Predio Putumayo
Amazonas - Colombia



8.3. Contribution of the REDD+ Project to national climate change goals

Colombian Government has developed a series of strategies that aim to achieve an environmental management of climate change (involving both adaptation and mitigation) and to contribute to the international agenda of sustainable development 2030 (Sustainable Development Goals), and specially SDG 13 - Climate Action.

Colombia has a National Policy of Climate Change as well as other regulatory instruments that allows its implementation including but not limited to: i) National Climate Action Law, ii) Colombian Strategy for Low Carbon Development (ECDBC), iii) National Climate Change Adaptation Plan, iv) National Reducing Emissions from Deforestation and Degradation Strategy



(REDD+), v) National Green Growth Policy, vi) Comprehensive sectoral and territorial climate change management plans, vii) Nationally Appropriate Mitigation Actions (NAMA) and viii) Disaster Financial Protection Strategy. The purpose is to ensure that the country is on a path of climate compatible development.

The project of the Great Indigenous Reserve Predio Putumayo and Andoque de Aduche Indigenous Reserve constitutes an important contribution for this National Policy primarily in the Agriculture, Forestry and Other Land Use (AFOLU) sector, due to the deployment of mitigation measures such as deforestation reduction, development of economic alternatives compatible with community well-being and nature conservation, strengthening land use planning and mechanisms to guarantee food security for the communities and contributing to biodiversity monitoring and conservation. In addition, the project supports the National REDD+ Strategy as it seeks to protect existing natural resources while promoting the regeneration of degraded tropical forests and the reduction of global emissions in a high mega-diverse region of Colombia.

According to the Paris Agreement and considering the principle of common but differentiated responsibilities, Colombia define it's Intended Nationally Determined Contributions (iNDC) as a reduction of 51% of GHG emissions projected by 2030, with high emphasis on tackling deforestation. The national goal to reduce deforestation consists in keeping country forest loss under 155,000 ha/year by 2022, 100,000 ha/year by 2025 and 50,000 ha/year by 2030. Baseline deforestation in the project area is 2.968 ha/year and it is expected to be reduced to 30%, representing a net benefit of 2,078 ha/year.

Due to poverty alleviation and the development of socially and economically sustainable development options for the indigenous communities that inhabit the region in hand with the improvement of environmental management, the project promotes Colombian fulfillment of Sustainable Development Goals (SDG), especially Goal 13 which involves taking urgent measures to mitigate climate change and its impacts, Goal 8 which promotes inclusive and sustainable economic growth, Goal 5 (gender equality), Goal 1 which promotes the end of poverty and SDG 15 (Life of Terrestrial Ecosystems).

Therefore, the implementation of the Project represents a contribution for Colombia to achieve the proposed goals and a low carbon and resilient rural development. Likewise, adaptation to climate change in the project area is also achieved, considering that project activities seek for the resilience of communities, the improvement of the state of natural resources and the well-being of the territory.

8.4. Design of the REDD+ strategy



The REDD + project strategy is based on supplying basic needs of the community in terms of food, health, housing, and education, meeting economic requirements by providing opportunities and alternatives for income generation and significantly contributing to the protection and strengthening of cultural identity. These elements offer a short, medium, and long-term route that contributes to social stability and allows the consolidation of the internal structure of the community, offering a solid environment where regional productive or extractive activities that have been present or may occur in the future will not happen.

The REDD + strategy is based on four main components: sustainable production systems, increase social investment, territorial governance, and establish forest monitoring and protection systems. The causes or drivers of deforestation of the project are essentially of economic origin and illegal activities carried out by local and external agents in the indigenous territories. Local communities are motivated by the need to preserve their culture and ecosystems and to improve somehow their economic status and living conditions. The poor sustainability of the productive activities in the area is largely determined by the lack of technical capacity, distance to markets and the lack of support of the government, which generally favors the maintenance and expansion of illegal activities or the activities that have an impact on the natural covers in the region.

The REDD+ project aims to reduce existing pressures on the forest through the implementation of forest governance activities grouped in four main components of territorial governance, sustainable productive chains, social investment, and monitoring. The identified activities promote the protection of forests and the conservation of biodiversity, contribute to the social and economic development of the region.

The community identified the problem that need to be addressed, that is, the territory has been degraded and the obtained benefits are not long-lasting. The community leaders know about REDD+ initiatives, giving that REDD+ projects have been implemented in the region for the last years. Therefore, they recognize that this type of initiative represents an opportunity that the community was contemplating exploring since 2017 when they formulated the Self-Government Strengthening project. That is why they began to protect their territory and participate in activities that could bring new income opportunities to the community, and to look for a project developer to access the REDD+ mechanism.

8.5. REDD+ Activities Description

The definition of the REDD+ activities was carried out during the development of the participatory workshops. The following tables describe each of the project activities, the schedule, indicators and other relevant information in accordance with the orientation of the reference methodology:

ID Activity	A-1				
Description of the REDD+ activity	Development of Project Document (PDD) to access carbon markets				
Component of the REDD+ strategy	Monitoring				
Activity relationship with direct or underlying cause	Certification is required for the activities carried out by the community to reduce the change in land use through the conversion or degradation of forest cover. The documentary management of GHG emissions reduction will allow the generation of income to generate a virtuous circle in the management of the territory, so that the conservation of the forest can be sustained in the long term, while the development of the community is achieved, and the protection of biodiversity				
Compliance with life plans or ethnic development plans	This activity is aligned with the programs against deforestation that are part of the Action Plan against deforestation of the Municipality of Solano and of the Amazonia, considering that it is oriented to the development of economic, social, and cultural activities suitable for the generation of sustainable income. Likewise, it promotes the conservation of the biological and intellectual heritage associated with the natural resources of the territory.				
Consultation mechanism to define the REDD+ activity	Participatory workshops with members of the reservation Approval in the general assembly.				
Responsibility and role of actors involved in implementation	<ul style="list-style-type: none"> Local communities: implementers Project manager (Yauto) Carbo-Terra: developers and implementers 				
Implementation Schedule	From the second year of the project.				
Indicators to report progress					
Name	ID Indicator	Type	Goal	Measure unit	Measurement Manager
# of people who participate in meetings, surveys or workshops on problem trees and the identification of drivers of deforestation, productive systems and governance	A-1.1	Result	The processes of identification and prioritization of activities are carried out in a participatory manner.	Number of people	Carbo-Terra Yauto
# of women who participate in meetings, surveys or workshops on problem trees and the identification of drivers of deforestation, productive systems and governance	A-1.2	Result	The processes of identification and prioritization of activities are carried out in a participatory manner.	Number of women	Carbo-Terra Yauto
# of legal agreements to support the development and implementation of the project, including the sale of carbon credits	A-1.3	Result	Development and commercialization agreements	Agreements	Carbo-Terra Yauto

ID Activity	A-1				
Project registration in the emission reduction certification program	A-1.4	Result	Project registered	Registration	Carbo-Terra

ID Activity	A-2				
Description of the REDD+ activity	Design and prioritize business plans to implement legal productive systems that contribute to the well-being of the community and the natural environment (i.e., tobacco, pisciculture, farming activities in the “Chagra”, among others).				
Component of the REDD+ strategy	Sustainable productive systems				
Activity relationship with direct or underlying cause	<p>Defining and prioritizing traditional and viable production systems for the community are a basis for achieving adequate nutrition, the economic sustainability of the communities and offering diversification of family income sources and increase of income and maintenance alternatives that allow offsetting the opportunity cost of displacing activities that involve deforestation. Involving the community in this exercise makes it possible to set expectations and increase the commitment of its members to control activities that threaten the forest, since the availability of resources for their development depends on caring for it.</p> <p>It represents employment generation as well as positioning legal alternatives compatible with nature conservation.</p>				
Compliance with life plans or ethnic development plans	This activity is aligned with Lines of Action 1 and 2 of the Plan for the control of deforestation of the Municipality of Solano and will be carried out in accordance with the Management Agreements and the activities program 4 and 5 of land management, production, local economies, nutrition, and food sovereignty established in the CRIMA Environmental ordering Management Plan. Likewise, it is in line with the possible lines of action of the Plan to safeguard the Uitoto people, Araracuara chapter, considering that it is oriented towards access to technical assistance and the development of adequate social and cultural economic activities for the generation of sustainable income and that it generates production alternatives that allow strengthening the food sovereignty of the community of the Indigenous Reservations.				
Consultation mechanism to define the REDD+ activity	Participatory workshops with members of the reservations. Approval in the general assembly.				
Responsibility and role of actors involved in implementation	<ul style="list-style-type: none"> Local communities: implementers Project manager (Yauto) Carbo-Terra: developers and implementers Entities and/or programs 				
Implementation Schedule	From the third year of the project.				
Indicators to report progress					
Name	ID Indicator	Type	Goal	Measure unit	Measurement Manager
# of designed and prioritized business plans	A-2.1	Result	Design and prioritize activities to be carried out in a	Number of Designed and prioritized business plans	Carbo-Terra Yauto Community representative

ID Activity	A-2				
			participatory manner.		Entities and/or programs
# of people attending workshops for identification and prioritization of the required investments in productive system	A-2.2	Result	All the people involved in the development of productive systems participate in workshops	Number of people	Carbo-Terra Yauto Community representative Entities and/or programs
# of women attending workshops for identification and prioritization of the required investments in productive systems	A-2.3	Result	All the women involved in the development of productive systems participate in workshops	Number of women	Carbo-Terra Yauto Community representative Entities and/or programs
# of Ha with prioritized productive systems implemented	A-2.4	Result	Prioritized productive systems in implementation	Hectares with productive systems established	Carbo-Terra Yauto Community representative Entities and/or programs
# of productive activities implemented	A-2.5	Result	Prioritized productive activities under implementation	Number of productive activities under implementation	Carbo-Terra Yauto Community representative Entities and/or programs

ID Activity	A-3
Description of the REDD+ activity	Strengthen the technical capacities of the communities for the management of prioritized production systems.
Component of the REDD+ strategy	Sustainable productive systems
Activity relationship with direct or underlying cause	Defining and prioritizing traditional and viable production systems for the community are a basis for achieving adequate nutrition, the economic sustainability of the communities and offering income and maintenance alternatives that allow offsetting the opportunity cost of displacing activities that involve deforestation. Strengthening the communities' technical capacities will ensure a sustainable management. To the extent that the technical and operational capacities of the community for the management of prioritized productive systems are strengthened, the probability of success and permanence of forest protection actions increases. This strengthens the confidence and capacity of members to fight against the opportunities associated with activities that involve deforestation which contributes to the community empowerment.
Compliance with life plans or ethnic development plans	This activity is aligned with Lines of Action 1 and 2 of the Plan for the control of deforestation of the Municipality of Solano and will be carried out in accordance with the Management Agreements and the activities program 4, 5 and 6 of land management,

ID Activity	A-3				
	production and food security established in the CRIMA Environmental ordering Management Plan. Likewise, it is in line with the possible lines of action of the Plan to safeguard the Uitoto people, Araracuara chapter, considering that it is oriented towards access to technical assistance and the development of adequate social and cultural economic activities for the generation of sustainable income and that it generates production alternatives that allow strengthening the food sovereignty of the community of the Indigenous Reservations.				
Consultation mechanism to define the REDD+ activity	Participatory workshops with members of the reservations. Approval in the general assembly.				
Responsibility and role of actors involved in implementation	<ul style="list-style-type: none"> Local communities: implementers Project manager (Yauto) Carbo-Terra: developers and implementers Entities and/or programs (SENA, local universities, NGO, technical institutes, others) 				
Implementation Schedule	From the fifth year of the project.				
Indicators to report progress					
Name	ID Indicator	Type	Goal	Measure unit	Measurement Manager
# Training sessions carried out for improving management of prioritized production systems	A-3.1	Result	Participation of all community members involved in the project activity in training sessions to strengthen the community's management capacities	Number of training sessions	Carbo-Terra Yauto Community representative Entities and/or programs
# of people attending training sessions	A-3.2	Result	All the people involved in the development of productive systems participate in training sessions.	Number of people	Carbo-Terra Yauto Community representative Entities and/or programs
# of women attending workshops for identification and prioritization of the required investments in productive systems	A-3.3	Result	All the women involved in the development of productive systems participate in training sessions.	Number of women	Carbo-Terra Yauto Community representative Entities and/or programs
ID Activity	A-4				
Description of the REDD+ activity	Maintain, improve, and monitor the productive systems implemented.				

ID Activity	A-4				
Component of the REDD+ strategy	Sustainable productive systems				
Activity relationship with direct or underlying cause	The establishment and improvement of prioritized production systems allows the community to reduce dependence on other activities that may be associated with deforestation and unsustainable use of forests. Carrying out maintenance and monitoring activities promotes the achievement of positive results and continuous improvement of the productive activity. Having successful productive activities contributes to stopping the advance of activities that threaten the forests and displacing the economic dependence that members of the community have on them.				
Compliance with life plans or ethnic development plans	This activity is aligned Lines of action 1, 2 and 4 of the Plan for the control of deforestation of the Municipality of Solano and will be carried out in accordance with the Management Agreements and the activities program 4 and 5 of land management and food sovereignty established in the CRIMA Environmental ordering Management Plan. Likewise, it is in line with the possible lines of action of the Plan to safeguard the Uitoto people, Araracuara chapter, considering that it is oriented towards access to technical assistance and the development of adequate social and cultural economic activities for the generation of sustainable income and that it generates production alternatives that allow strengthening the food sovereignty of the community of the Indigenous Reservation.				
Consultation mechanism to define the REDD+ activity	Participatory workshops with members of the reservations. Approval in the general assembly.				
Responsibility and role of actors involved in implementation	<ul style="list-style-type: none"> • Local communities: implementers • Project manager (Yauto) • Carbo-Terra: developers and implementers • Entities and/or programs (SENA, NGO, technical institutes, others) 				
Implementation Schedule	From the fifth year of the project.				
Indicators to report progress					
Name	ID Indicator	Type	Goal	Measure unit	Measurement Manager
# of hectares with productive systems maintained and monitored	A-4.1	Result	Productive systems maintained and monitored Management measures that favor biodiversity are implemented in production systems.	Number of hectares – Area (ha)	Carbo-Terra Yauto Community representative Entities and/or programs
# of people involved in the project activity	A-4.2	Result	All community members are involved in the project activity. This project activity generates employment opportunities	Number of people	Carbo-Terra Yauto Community representative Entities and/or programs

ID Activity	A-4				
# of women involved in the project activity	A-4.3	Result	All women are involved in the project activity. This project activity generates employment opportunities	Number of women	Carbo-Terra Yauto Community representative Entities and/or programs
# of people who improve their income with production systems	A-4.4	Impact	Project activities allow community members to improve their income.	Number of people	Carbo-Terra Yauto Community representative Entities and/or programs
# of women who improve their income with production systems	A-4.5	Impact	Project activities allow women of the community to improve their income.	Number of women	Carbo-Terra Yauto Community representative Entities and/or programs
# of hectares of productive systems that are improved or established	A-4.6	Result	Production systems are implemented, or existing production systems are improved.	Number of hectares – Area (ha)	Carbo-Terra Yauto Community representative Entities and/or programs
# of activities that generate surpluses implemented	A-4.7	Result	At least one activity that generates surplus is implemented.	Number of activities	Carbo-Terra Yauto Community representative Entities and/or programs
# of records of controls or maintenance performed/# of controls or maintenance expected	A-4.8	Result	The production systems receive the required controls or maintenance.	Percentage (%)	Carbo-Terra Yauto Community representative Entities and/or programs
Total amount of goods or services produced in production systems	A-4.9	Product	Production systems are implemented that offer goods or services measurable for the community	Units	Carbo-Terra Yauto Community representative Entities and/or programs
Balance of income and expenses generated in the production systems.	A-4.10	Product	At least one productive system that presents a	\$ (COP)	Carbo-Terra Yauto

ID Activity	A-4				
			positive balance is implemented.		Community representative Entities and/or programs

ID Activity	A-5				
Description of the REDD+ activity	Identify and prioritize the needs of the communities related to social investment.				
Component of the REDD+ strategy	Social investment				
Activity relationship with direct or underlying cause	Identifying the social investment needs and planning how they will be addressed from the project, allows to increase the degree of appropriation and commitment of the community with the project. Planning clearly defines the expected results and the expectations of the indigenous communities. This helps mitigate the risk of the community seeking additional resources from activities that may involve deforestation, as it would compromise access to elements that are prioritized by all members. Resources are allocated to social investment activities that seek to improve the living conditions of the communities. Greater degree of well-being of the communities, thus reducing the pressure on natural resources. Equitable distribution of the benefits derived from the execution of the project is expected so that the living conditions and well living of the community improves				
Compliance with life plans or ethnic development plans	This activity is in line with meeting the needs of the communities established in the Plan for the Safeguarding of the Uitoto people, Araracuara chapter, and the possible lines of action, as well as with the proposed management to address issues related to health and traditional medicine, food sovereignty, tradition and education proposed in the oral life plan of the Reservation. Likewise, it is in line with programs 3 and 5 established in the CRIMA Environmental ordering Management Plan, considering that these strategies are oriented towards rights over the territory and housing conditions, comprehensive access to education and comprehensive access to health, as well as communities' well-being improvement.				
Consultation mechanism to define the REDD+ activity	Participatory workshops with members of the reservations. Approval in the general assembly.				
Responsibility and role of actors involved in implementation	<ul style="list-style-type: none"> Local communities: implementers Project manager (Yauto) Carbo-Terra: developers and implementers Entities (institutions) and/or programs 				
Implementation Schedule	From the second year of the project.				

Indicators to report progress

Name	ID Indicator	Type	Goal	Measure unit	Measurement Manager
# of people who participate in meetings or workshops on social investment issues	A-5.1	Result	The processes of identification and prioritization of social investment are carried out in a	Number of people	Carbo-Terra Yauto Community representative

ID Activity	A-5				
			participatory manner.		Entities and/or programs
# of women who participate in meetings or workshops on social investment issues	A-5.2	Result	The processes of identification and prioritization of social investment are carried out in a participatory manner.	Number of women	Carbo-Terra Yauto Community representative Entities and/or programs
Social investment needs identified	A-5.3	Product	Identification of social investments needs for the project to consider	Identified social needs	Carbo-Terra Yauto Community representative Entities and/or programs

ID Activity	A-6				
Description of the REDD+ activity	Improve or provide infrastructure and education services in the reservation (including facilities and access to scholarships for community members to access formal education).				
Component of the REDD+ strategy	Social investment				
Activity relationship with direct or underlying cause	The education of the members of the community is essential to raise awareness and build criteria and knowledge that allow continuity in the protection of the territory and of the indigenous culture, which strengthens the social structures and fulfills the function of being a barrier against possible unsustainable extractive activities that may compromise the natural resources of the territory. This respecting and promoting traditional knowledge. Resources are allocated to social investment activities that seek to improve the living conditions of the communities. Adaptation and construction of infrastructure that promotes the strengthening of community well-being.				
Compliance with life plans or ethnic development plans	This activity is aligned with the possible lines of action of the Plan to safeguard the Uitoto people, Araracuara chapter, and the management proposed for tradition and education according to the expectations of the oral life plan of the Reservation, considering that it is oriented towards comprehensive access to education.				
Consultation mechanism to define the REDD+ activity	Participatory workshops with members of the reservations. Approval in the general assembly.				
Responsibility and role of actors involved in implementation	<ul style="list-style-type: none"> • Local communities: implementers • Project manager (Yauto) • Carbo-Terra: developers and implementers • Entities and/or programs • Companies that provide services and goods: technical and commercial support. 				
Implementation Schedule	From the sixth year of the project.				
Indicators to report progress					
Name	ID Indicator	Type	Goal	Measure unit	Measurement Manager

ID Activity	A-6				
# of educational facilities improved/built	A-6.1	Product	Improve or build educational facilities located in the reservations	Number	Carbo-Terra Yauto Community representative Entities and/or programs
Educational facilities in operation	A-6.2	Result	Educational facilities available for the community members	Number	Carbo-Terra Yauto Community representative Entities and/or programs
# of people with access to formal education programs, better quality education or scholarships	A-6.3	Result	Access to formal education and/or Scholarship systems developed and available for community members is improved	Number of people	Carbo-Terra Yauto Community representative Entities and/or programs
# of women with access to formal education programs, better quality education or scholarships	A-6.4	Result	Access to formal education and/or Scholarship systems developed and available for women of community is improved	Number of women	Carbo-Terra Yauto Community representative Entities and/or programs
# of people who participate in meetings or workshops on education matters	A-6.5	Result	The processes of identification and prioritization of social investment in education are carried out in a participatory manner.	Number of people	Carbo-Terra Yauto Community representative Entities and/or programs
# of women who participate in meetings or workshops on education matters	A-6.6	Result	The processes of identification and prioritization of social investment in education are carried out in a participatory manner.	Number of women	Carbo-Terra Yauto Community representative Entities and/or programs

ID Activity	A-7
Description of the REDD+ activity	Improve medical care mechanisms for the inhabitants of the indigenous communities (i.e. health center, have medical supplies in the territory, boat ambulance).
Component of the REDD+ strategy	Social investment

ID Activity	A-7				
Activity relationship with direct or underlying cause	Facilitating access to medical care and health services is essential to protect community members, promote healthy practices and improve care for people who are in stages of life that are more vulnerable than others, such as children and elderly. Having basic health care services contributes to the protection of the population, which increases awareness of the importance of the REDD+ project, which fights against the deterioration of the territory through a comprehensive approach and respecting the knowledge of traditional medicine. Resources are allocated to social investment activities that seek to improve the living conditions and well-being of the communities and that strengthen their ancestral practices.				
Compliance with life plans or ethnic development plans	This activity is aligned with the possible lines of action of the Plan to safeguard the Uitoto people, Araracuara chapter, also with activities of program 5 regarding health matters established in the CRIMA Environmental ordering Management Plan, and the management proposed for health and traditional medicine according to expectations of the oral life plan.				
Consultation mechanism to define the REDD+ activity	Participatory workshops with members of the reservations. Approval in the general assembly.				
Responsibility and role of actors involved in implementation	<ul style="list-style-type: none"> • Local communities: implementers • Project manager (Yauto) • Carbo-Terra: developers and implementers • Institutions and programs • Health providers, Mayor's Office, Governor's Office, NGOs: technical and professional support. 				
Implementation Schedule	From the third year of the project.				
Indicators to report progress					
Name	ID Indicator	Type	Goal	Measure unit	Measurement Manager
# of health facilities improved/built	A-7.1	Product	Improve or build health facilities located in the reservation	Number	Carbo-Terra Yauto Community representative Entities and/or programs
# of health facilities in operation	A-7.2	Result	Health facilities available for the community members	Number	Carbo-Terra Yauto Community representative Entities and/or programs
# of people with access to formal health care	A-7.3	Result	Access to health services for community members is improved.	Number of people	Carbo-Terra Yauto Community representative Entities and/or programs

ID Activity	A-7				
# of women with access to formal health care	A-7.4	Result	Access to health services for women members of the community is improved.	Number of women	Carbo-Terra Yauto Community representative Entities and/or programs
# of people who participate in meetings or workshops on health matters	A-7.5	Result	The processes of identification and prioritization of social investment in education are carried out in a participatory manner.	Number of people	Carbo-Terra Yauto Community representative Entities and/or programs
# of women who participate in meetings or workshops on health matters	A-7.6	Result	The processes of identification and prioritization of social investment in education are carried out in a participatory manner.	Number of women	Carbo-Terra Yauto Community representative Entities and/or programs
# of people trained in traditional and ancestral medicine	A-7.7	Result	The knowledge of traditional and ancestral medicine of the members of the communities is strengthened	Number of people	Carbo-Terra Yauto Community representative Entities and/or programs
# of health models designed	A-7.8	Product	Health models are design to improve the provision of services related to this aspect	Number of health models designed	Carbo-Terra Yauto Community representative Entities and/or programs

ID Activity	A-8
Description of the REDD+ activity	Improve housing conditions including energy, water and basic sanitation access and conditions in the communities that are part of the reservation.
Component of the REDD+ strategy	Social investment
Activity relationship with direct or underlying cause	Resources are allocated to social investment activities that seek to improve the living conditions of the communities. By improving housing conditions and basic sanitation, the living conditions of the members are favored. The difficulties faced by the community and the scarcity of resources to satisfy this type of basic elements are circumstances that facilitate their participation in activities that involve deforestation, since people are willing to do whatever is necessary to improve their living conditions. By addressing these needs with project resources, the risk of adopting practices that result in forest loss is mitigated,

ID Activity	A-8				
	and it is also observed that the communities' interest in participating in project activities increases, which contributes to the permanence of the entire project in the long term.				
Compliance with life plans or ethnic development plans	This activity is aligned with the possible lines of action of the Plan to safeguard the Uitoto people, Araracuara chapter, with the activities of program e of energy, sanitation, and water established in the CRIMA Environmental ordering Management Plan, and the management proposed for housing matters according to expectations of the oral life plan considering that these are oriented to the right to the territory (including housing sites), and to the solution of phytosanitary problems.				
Consultation mechanism to define the REDD+ activity	Participatory workshops with members of the reservations. Approval in the general assembly.				
Responsibility and role of actors involved in implementation	<ul style="list-style-type: none"> Local communities: implementers Project manager (Yauto) Carbo-Terra: developers and implementers Private companies, Mayor's Office, Government, NGOs: suppliers of equipment, technical and professional support. 				
Implementation Schedule	From the fifth year of the project.				
Indicators to report progress					
Name	ID Indicator	Type	Goal	Measure unit	Measurement Manager
# of houses improved/built	A-8.1	Product	The houses of members of the community are improved or built.	Number of houses	Carbo-Terra Yauto Community representative Entities and/or programs
# of houses or infrastructure with access to electricity	A-8.2	Result	Access to electricity in the indigenous reservation is improved.	Number of houses	Carbo-Terra Yauto Community representative Entities and/or programs
# of people with access to safe drinking water or better water quality and basic sanitation	A-8.3	Result	People in the community have access to clean water or better-quality water and basic sanitation.	Number of people	Carbo-Terra Yauto Community representative Entities and/or programs
# of women with access to safe drinking water or better water quality and basic sanitation	A-8.4	Result	Women in the community have access to clean water or better-quality water and basic sanitation.	Number of women	Carbo-Terra Yauto Community representative Entities and/or programs

ID Activity	A-8				
# of actions aimed at strengthening comprehensive waste management	A-8.5	Result	Actions are implemented to carry out adequate waste management in the reservation.	Number of people	Carbo-Terra Yauto Community representative Entities and/or programs
# of people who participate in meetings or workshops on housing matters	A-8.6	Result	The processes of identification and prioritization of social investment in housing are carried out in a participatory manner.	Number of people	Carbo-Terra Yauto Community representative Entities and/or programs
# of women who participate in meetings or workshops on housing matters	A-8.7	Result	The processes of identification and prioritization of social investment in housing are carried out in a participatory manner.	Number of women	Carbo-Terra Yauto Community representative Entities and/or programs

ID Activity	A-9
Description of the REDD+ activity	Strengthen traditional authorities and promote spaces for dialogue between clans.
Component of the REDD+ strategy	Territorial governance
Activity relationship with direct or underlying cause	Strengthening traditional authorities and promoting dialogue between clans that are part of the indigenous reservations seeks for a proper and strong forest management and proper development of the activities to be carried out within the REDD+ project initiative. The uses of the land and the vocation of the area of the indigenous reservations will be effectively respected among the different territories and it will help increase awareness of land use in the territory. Moreover, it will help for the zoning of the territory, identifying areas of conservation, restoration, productive activities, settlements, among others. Forest loss is reduced, and territorial governance is improved. Strengthening relationships will allow communities to develop in harmony with each other and with the territory
Compliance with life plans or ethnic development plans	This activity is aligned with the possible lines of action of the Plan to safeguard the Uitoto people, Aracuara chapter, also with program 1 of governance and environmental authorities established in the CRIMA Environmental ordering Management Plan. Moreover, it responds to the management of the territory according to the expectations of the oral life plan considering that these are oriented to the right to the territory.
Consultation mechanism to define the REDD+ activity	Participatory workshops with members of the reservations. Approval in the general assembly.
Responsibility and role of actors involved in implementation	<ul style="list-style-type: none"> • Local communities: implementers • Project manager (Yauto) • Carbo-Terra: developers and implementers.

ID Activity	A-9				
Implementation Schedule	From the first year of the project.				
Indicators to report progress					
Name	ID Indicator	Type	Goal	Measure unit	Measurement Manager
# of clan leaders and members participating in meetings or workshops	A-9.1	Result	Clan leaders and People in the community participate in spaces that aims to boost traditional authorities, relationships, and governance.	Number of people	Carbo-Terra Yauto Community representative
Collective governance improved	A-9.2	Result	Collective governance will improve by strengthening traditional authorities and relations	Collective governance agreements and/or decisions	Carbo-Terra Yauto Community representative

ID Activity	A-10
Description of the REDD+ activity	Strengthen capacities to maintain, recover and improve ancestral medicine, traditional productive systems, language, knowledge, and other elements that are part of the cultural identity of the indigenous people, including needs and knowledge of the elderly.
Component of the REDD+ strategy	Territorial governance
Activity relationship with direct or underlying cause	By strengthening the capacities of the community in the sustainable management of the territory and its culture, the unsustainable pressure on the forests is reduced. To the extent that the communities have the capacity to protect their cultural identity, knowledge, customs and tradition, the risk of community members participating and having an interest in modifying the traditional use of the forest to take advantage of the different opportunities will be reduced. By addressing the elderly needs traditional knowledge will be preserved and transferred. This activity must make a special emphasis on strengthening the rituals on which the management and use of the territory is supported, representing the indigenous reservations.
Compliance with life plans or ethnic development plans	This activity is aligned with lines of action 1 and 2 of the Plan for the control of deforestation of the Municipality of Solano, considering that it is aimed at strengthening the cultural identity and values that are the object of conservation, such as language, ancestral medicine and rituals.
Consultation mechanism to define the REDD+ activity	Participatory workshops with members of the reservations. Approval in the general assembly.
Responsibility and role of actors involved in implementation	<ul style="list-style-type: none"> Local communities: implementers Project manager (Yauto) Carbo-Terra: developers and implementers. Other indigenous communities with successful experiences: technical support.

ID Activity	A-10				
	<ul style="list-style-type: none"> NGOs, companies and research centers; technical support 				
Implementation Schedule	From the fourth year of the project.				
Indicators to report progress					
Name	ID Indicator	Type	Goal	Measure unit	Measurement Manager
# of people who participate in training, meetings or training days related to language, medicine, traditional productive systems, knowledge and rituals.	A-10.1	Result	Strengthen the capacities of community members to maintain, recover improve and transfer the elements of their culture	Number of people	Carbo-Terra Yauto Community representative Entities and/or programs
# of women who participate in training, meetings or training days related to language, medicine, traditional productive systems, knowledge and rituals.	A-10.2	Result	Strengthen the capacities of women to maintain, recover improve and transfer the elements of their culture	Number of women	Carbo-Terra Yauto Community representative Entities and/or programs
# of programs executed to preserve traditional languages	A-10.3	Product	Promote the conservation of traditional languages	Number of programs	Carbo-Terra Yauto Community representative Entities and/or programs
# of elderly and maloqueros supported	A-10.4	Result	Support the elderly and maloqueros in the traditional and ancestral strengthening	Number of people	Carbo-Terra Yauto Community representative Entities and/or programs
# of Malocas built/improved	A-10.5	Product	Build/improve the malocas to strengthen the traditions and ancestral knowledge	Number of malocas	Carbo-Terra Yauto Community representative Entities and/or programs
# of families with access to traditional productive systems	A-10.6	Result	Strengthen the access of community members to traditional production systems	Number of families	Carbo-Terra Yauto Community representative Entities and/or programs

ID Activity	A-11				
Description of the REDD+ activity	Prepare the document that consolidates and support the implementation of the indigenous life plan				
Component of the REDD+ strategy	Territorial governance				
Activity relationship with direct or underlying cause	<p>The strengthening of the self-government mechanism of the indigenous, regional, traditional and ancestral communities in the reservation, the clans and the community organization so that it is stable, credible and solid from the indigenous traditions and the state policy.</p> <p>The Indigenous Life Plan is an instrument of oral tradition that determines the government and politics of the indigenous communities and represents a navigation chart towards the future. This instrument of oral tradition includes the characterization of the community, its interests, visions, needs, expected changes, among other aspects. The implementation of the Indigenous Life Plan makes it possible to define the approach and measures that will be implemented to improve territorial governance, protection of their culture, among which the mechanisms to control activities that result in deforestation and degradation of natural resources are highlighted. their territories. The life plan can be strengthened if it is articulated with regional territorial initiatives that contribute to achieving its main objectives, including the goals of conservation and protection of the forest.</p>				
Compliance with life plans or ethnic development plans	<p>The communities already have a defined Life Plan, only it is handled orally. The consolidation of the Life Plan document will be built to boost its implementation.</p> <p>It is important to clarify that in the communities of the reservations, the Indigenous Life Plan is an instrument of oral tradition that determines the government and politics of the indigenous communities and represents a navigation chart towards the future. This instrument of oral tradition includes the characterization of the community, its interests, visions, needs, expected changes, among other aspects. The community has stated that they want to translate their Life Plan into a physical document.</p>				
Consultation mechanism to define the REDD+ activity	Participatory workshops with members of the reservations. Approval in the general assembly.				
Responsibility and role of actors involved in implementation	<ul style="list-style-type: none"> • Local communities: implementers • Project manager (Yauto) • Carbo-Terra: developers and implementers. • Ministry of the Interior: technical support • Solano, Puerto Alegría, Puerto Santander and La Chorrera Municipal Mayors Offices: technical support • CORPOAMAZONIA: technical support 				
Implementation Schedule	From the fourth year of the project.				
Indicators to report progress					
Name	ID Indicator	Type	Goal	Measure unit	Measurement Manager
# of people participating in meetings or workshops on	A-11.1	Result	The process of building/updating the Life Plan is	Number of people	Carbo-Terra Yauto

ID Activity	A-11				
governance and planning issues			carried out in a participatory manner.		Community representative Entities and/or programs
# of women participating in meetings or workshops on governance and planning issues	A-11.2	Result	The process of building/updating the Life Plan is carried out in a participatory manner.	Number of women	Carbo-Terra Yauto Community representative Entities and/or programs
# of Life plans developed or updated	A-11.3	Product	At least 1 life plan document is developed	Number of life plans	Carbo-Terra Yauto Community representative Entities and/or programs
# Indigenous life plans under implementation	A-11.4	Result	Actions are implemented that contribute to the fulfillment of community development plans	Number of life plans	Carbo-Terra Yauto Community representative Entities and/or programs

ID Activity	A-12
Description of the REDD+ activity	Built and prepare the document that consolidates the Environmental Management Plan of the Indigenous Reservations and its implementation
Component of the REDD+ strategy	Territorial governance
Activity relationship with direct or underlying cause	The Environmental Management Plan allows identifying and planning land and natural resources uses in the reservation area. Defines the areas within the territory that will be used for conservation, production, settlements, among others as well as the utilization (extraction, use and management) of natural resources and ecosystem services. This instrument strengthens territorial governance and territorial planning and contributes to controlling the activities of exploitation and deterioration of forests.
Compliance with life plans or ethnic development plans	This activity is aligned with the lines of action 1,2, 3 and 5 of the Plan for the control of deforestation of the Municipality of Solano and with and the activities of program 4 and 6 of land and forest management established in the CRIMA Environmental ordering Management Plan, considering that it is oriented towards the conservation and sustainable use of natural resources including the design and implementation of management plans and conservation and use systems that guarantee the permanence of natural resources.
Consultation mechanism to define the REDD+ activity	Participatory workshops with members of the reservations. Approval in the general assembly.

ID Activity	A-12				
Responsibility and role of actors involved in implementation	<ul style="list-style-type: none"> Local communities: implementers Project manager (Yauto) Carbo-Terra: developers and implementers. Government entities (Mayor's Office, Governor's Office, CORPOAMAZONIA, PNN, among others): technical support 				
Implementation Schedule	From the third year of the project.				
Indicators to report progress					
Name	ID Indicator	Type	Goal	Measure unit	Measurement Manager
# of people participating in meetings or workshops on governance and planning issues	A-12.1	Result	The process of building/updating the Environmental Management plan is carried out in a participatory manner.	Number of people	Carbo-Terra Yauto Community representative Entities and/or programs
# of women participating in meetings or workshops on governance and planning issues	A-12.2	Result	The process of building/updating the Environmental Management plan is carried out in a participatory manner.	Number of women	Carbo-Terra Yauto Community representative Entities and/or programs
# of Environmental Management plans developed or updated	A-12.3	Product	At least 1 Environmental Management plan document is developed	Number of plans	Carbo-Terra Yauto Community representative Entities and/or programs
# Environmental Management plans under implementation	A-12.4	Result	Actions are implemented that contribute to the fulfillment of the Environmental Management plans	Number of plans	Carbo-Terra Yauto Community representative Entities and/or programs

ID Activity	A-13
Description of the REDD+ activity	Consolidate the families (forest rangers) that will generate the protection and care of the territory and strengthen the capacities of community members to contribute to the forest monitoring and the control and management of deforestation (including equipment, tools technologies).
Component of the REDD+ strategy	Monitoring

ID Activity	A-13				
Activity relationship with direct or underlying cause	The consolidation of groups of families that protect the forest and the strengthening of the capacities of the members of the community contribute to the control and administration of the indigenous territory, offers the possibility of linking the population in monitoring and follow-up activities of forest and entails a greater appropriation of the protection of the reservations. All this favors the control and prevention of deforestation. This activity will promote an early identification of the events that cause the loss of forest cover and will allow the development of adequate conservation strategies.				
Compliance with life plans or ethnic development plans	This activity is aligned with the lines of action 3 and 4 of the Plan for the control of deforestation of the Municipality of Solano and with and the activities of program 1 and 6 regarding forest management established in the CRIMA Environmental ordering Management Plan, considering that they are oriented to the management of territorial matters and its jurisdiction, as well as the legal security of the territory, including signaling and delimitation of it.				
Consultation mechanism to define the REDD+ activity	Participatory workshops with members of the reservations. Approval in the general assembly.				
Responsibility and role of actors involved in implementation	<ul style="list-style-type: none"> • Local communities: implementers • Project manager (Yauto) • Carbo-Terra: developers and implementers. • Other indigenous communities with successful experiences: technical support. • PNN, CORPOAMAZONIA, NGOs, companies and research centers; technical support 				
Implementation Schedule	From the second year of the project.				
Indicators to report progress					
Name	ID Indicator	Type	Goal	Measure unit	Measurement Manager
# of people participating in meetings and training sessions	A-13.1	Result	Strengthen the capacities of community members to monitor the forest and control deforestation.	Number of people	Carbo-Terra Yauto Community representative Entities and/or programs
# of women participating in meetings and training sessions	A-13.2	Result	Strengthen the capacities of women to monitor the forest and control deforestation.	Number of women	Carbo-Terra Yauto Community representative Entities and/or programs
Document of constitution or formalization of the Group of Families that protect the forest (forest rangers)	A-13.3	Result	Formalize the group of families that protect the forest	Number of documents	Carbo-Terra Yauto Community representative Entities and/or programs

ID Activity	A-13				
# of members that belong to the Group of Families that protect the forest	A-13.4	Result	Link community members in families that protect the forest	Number of members	Carbo-Terra Yauto Community representative Entities and/or programs
Programming of the activities of the Group of families that protect the forest	A-13.5	Product	Implement the programming of the monitoring activities of the group of families that protect the forest.	Number of schedules in implementation	Carbo-Terra Yauto Community representative Entities and/or programs
Routes or expeditions carried out	A-13.6	Product	Conduct tours and/or expeditions to identify and/or monitor biodiversity and the state of forest cover	Number of Routes or expeditions carried out	Carbo-Terra Yauto Community representative Entities and/or programs
Equipment for monitoring purposes acquired	A-13.7	Result	Acquire and deliver to the forest rangers' equipment, tools or technologies to strengthen monitoring purposes	Number of equipment acquired	Carbo-Terra Yauto Community representative Entities and/or programs

ID Activity	A-14
Description of the REDD+ activity	Carry out monitoring of the forest in the indigenous reservations (project area) and the leakage area.
Component of the REDD+ strategy	Monitoring
Activity relationship with direct or underlying cause	The information on the follow-up and monitoring of the forest allows evaluating the impact of REDD+ activities on the protection of forests. This information is the basis for making decisions aimed at controlling deforestation, as well as verifying the results that are obtained as the project is implemented.
Compliance with life plans or ethnic development plans	This activity is aligned with the lines of action 3 and 4 of the Plan for the control of deforestation of the Municipality of Solano and with and the activities of program 1 and 6 of forest and land management and governance established in the CRIMA Environmental ordering Management Plan, considering that they are oriented to territorial rights and access to it and its jurisdiction.
Consultation mechanism to define the REDD+ activity	Participatory workshops with members of the reservations. Approval in the general assembly.
Responsibility and role of actors involved in implementation	<ul style="list-style-type: none"> Local communities: implementers Project manager (Yauto) Carbo-Terra: developers and implementers.

ID Activity	A-14				
	<ul style="list-style-type: none"> NGOs, companies and research centers: technical support 				
Implementation Schedule	From the first year of the project.				
Indicators to report progress					
Name	ID Indicator	Type	Goal	Measure unit	Measurement Manager
# of hectares of standing forest in project area	A-14.1	Impact	Monitor the progress of deforestation and its changes in coverage	Area (Ha)	Carbo-Terra Yauto Community representative Entities and/or programs
# tons of CO ₂ not emitted (avoided)	A-14.2	Impact	Reduce CO ₂ emissions	CO ₂ emissions reduction (t CO ₂ e).	Carbo-Terra
# of people employed for community forest monitoring	A-14.3	Impact	Employ community members in forest monitoring	Number of community members	Carbo-Terra Yauto Community representative Entities and/or programs
# of hectares of standing forest in leakage belt	A-14.4	Impact	Monitor the progress of deforestation and its changes in coverage of the leakage belt	Area (Ha)	Carbo-Terra Yauto Community representative Entities and/or programs
# of meetings with public or private entities to review deforestation trends in project boundaries	A-14.5	Result	Strengthen the processes of regional articulation of the reservations and identify opportunities to improve the exercise of governance based on joint management with private and public entities.	Number of meetings	Carbo-Terra Yauto Community representative Entities and/or programs

ID Activity	A-15
Description of the REDD+ activity	Strengthen the technical capacities of the communities to manage production systems and business plans, including administrative, legal and financial aspects.
Component of the REDD+ strategy	Territorial governance

ID Activity	A-15				
Activity relationship with direct or underlying cause	If families strengthen their capacities in terms of administrative, financial and legal management of profitable productive activities, added to a strengthening of forest governance and the social structure and governance of the territory and the communities, the felling of the forest is stopped, the probability of success and permanence increases. This strengthens the confidence and capacity of members to fight against the opportunities associated with activities that involve deforestation.				
Compliance with life plans or ethnic development plans	This activity is aligned with the lines of action 3 and 4 of the Plan for the control of deforestation of the Municipality of Solano and with and the activities of program 1 and 6 of forest and land management and governance established in the CRIMA Environmental ordering Management Plan, considering that they are oriented to territorial rights and access to it and its jurisdiction.				
Consultation mechanism to define the REDD+ activity	Participatory workshops with members of the reservations. Approval in the general assembly.				
Responsibility and role of actors involved in implementation	<ul style="list-style-type: none"> Local communities: implementers Project manager (Yauto) Carbo-Terra: developers and implementers. NGOs, companies and research centers: technical support 				
Implementation Schedule	From the fifth year of the project.				
Indicators to report progress					
Name	ID Indicator	Type	Goal	Measure unit	Measurement Manager
# of people participating in meetings and training sessions	A-15.1	Result	Strengthen the capacities of community members for managing administrative, legal and financial aspects.	Number of people	Carbo-Terra Yauto Community representative Entities and/or programs
# of women participating in meetings and training sessions	A-15.2	Result	Strengthen the capacities of women for managing administrative, legal and financial aspects.	Number of women	Carbo-Terra Yauto Community representative Entities and/or programs

9. REDD + Safeguards

The REDD+ Safeguards are measures aimed at preventing the affectation of rights of a social, economic or environmental nature, as well as the occurrence of negative impacts due to the design and implementation of REDD+ activities. Additionally, they include the measures that allow improving the obtaining and distribution of the benefits derived from the implementation of REDD+ activities. The monitoring indicators for each safeguard are presented in section 13.3.

As a first element to address the safeguards, an acknowledgment of the government structure of the reserves was carried out. Likewise, it is confirmed that the oral tradition is a characteristic component within the indigenous communities and the internal control mechanisms and impact decisions are defined in the autonomous spaces of the community (meetings and assemblies), these being fully functional and operational in a daily live basis. Bearing in mind that the reservation currently does not have a written internal regulation, within the REDD+ activities the updating of the Life Plan of these communities has been contemplated, and if the communities consider that it is important to record in that document the specific responsibilities and functions that have the self-government roles that govern today in the reservation, then the respective chapter will be included in the Life Plan.

Table 15 REDD+ Safeguards and its compliance

Topic	Cancun Safeguards	National Safeguard	Description	Compliance
Institutional	A. In accordance with national forest programs and international conventions and agreements	1. Correspondence with national legislation	<p>The initiative is developed within the framework of the National Forestry Development Plan, of the international conventions and agreements signed by Colombia on: Forests, Biodiversity and Climate Change, as well as the national policies corresponding to these agreements.</p> <p>All REDD+ Policies, Actions and Measures that are proposed must be in correspondence with:</p> <ul style="list-style-type: none"> •The international agreements signed by Colombia. •National legislation (the Constitution, laws and decrees). • National policies, programs and projects. 	<p>Comply. The initiative complies with the provisions of the National Policy for REDD+ Projects and part of the climate change management strategies and the instruments of forest governance and environmental regulations, as indicated in the Regulatory Framework.</p> <p>In terms of territorial planning, by virtue of Article 330 of the Political Constitution in Colombia, and ILO Convention 169, the Indigenous Reserves have autonomy in terms of territorial planning and constitute a special figure for territorial and environmental planning. However, the project will seek synergies through articulation with regional initiatives at the territory level, which contribute to the project's conservation objectives.</p>
	B. Transparency and effectiveness of forest governance structures	2. Transformation and access to information	<p>The interested parties have transparent, accessible and timely information related to REDD+ actions in the platforms or means of information that are determined.</p>	<p>Comply. Within the framework of the development of the project, participatory workshops have been held with the members of the communities. The workshops have been developed in appropriate language for the</p>

Topic	Cancun Safeguards	National Safeguard	Description	Compliance
			<p>If there are ethnic groups involved, and they do not speak Spanish well, it must be guaranteed that in the consultation and information spaces there are interpreters of their language, as well as adequate material that facilitates their understanding.</p> <p>Be clear in reporting on:</p> <ul style="list-style-type: none"> • Which entity is in charge of formulating and implementing the measure. • What are the benefits to be delivered to the communities in the territory. • The commitments acquired by the parties involved in the implementation of the measures. 	<p>understanding of the participants. Some of the topics that have been addressed correspond to the activities of the project and its implications and responsibilities. Additionally, the corresponding documents have been forwarded, including a project booklet.</p> <p>The attendance lists of the workshops, the photographic record, the minutes of the meetings are stored (physically and digitally) and are available for review (See folder <i>Talleres</i>)</p> <p>There is a letter of intention and exclusivity signed by the authorities of the communities of the Indigenous Reservation to advance with the formulation of the REDD+ project</p>
		3. Accountability	<p>The institutions and actors present reports on their management around REDD+ before the partners involved, the institutions and the public and it include information on the application and respect of the safeguards.</p> <p>Those in charge of the implementation of REDD+ activities must convene accountability spaces where their management reports are presented: what has been done, how, how much has been spent and how the resources have been invested, what results are there.</p> <p>Information on the status of application of the Safeguards to</p>	<p>Comply. It is expected that, during the implementation of the project, the representatives of the community and of the project implementers, present the pertinent reports and documents to carry out an adequate rendering of accounts as appropriate, in accordance with what is established in the project's implementation plan and monitoring. Documents are presented in appropriate language for the communities to appropriate knowledge and have a proper follow up of the project activities.</p>

Topic	Cancun Safeguards	National Safeguard	Description	Compliance
			<p>reduce risks and promote benefits must be included.</p> <p>The actors involved have the commitment to attend these informative spaces.</p> <p>Accountability reports must be public and accessible to the various actors.</p>	
		<p>4. Recognition of forest governance structures</p>	<p>REDD+ actions are developed in accordance with the existing forest governance structures established by the regulations and/or establishing the necessary ones among the actors involved in the process (the strengthening or creation of a new structure can be a governance implementation mechanism).</p> <p>In some cases where various actors are involved, it may be necessary to establish new arrangements or coordination mechanisms for decision-making. These can be forest boards, monitoring committees or enable spaces for dialogue within the framework of community action boards.</p>	<p>Comply. There is an appropriate governance structure that addresses the ethnic particularities, knowledge and traditions of the communities participating in the project, and that is in accordance with the forms of governance and guidelines related to compliance with safeguard 14. Coexistence with the territory and its forests are an intrinsic part of the traditional ethnic forms that characterize the community. Therefore, the forms of land administration apply to the entire reservation, including its forest areas.</p>
		<p>5. Capacity building</p>	<p>The strengthening of the technical, legal and administrative governance capacities of the actors directly involved is guaranteed, so that the parties can make documented, analyzed and informed decisions.</p> <p>It is necessary to have programs that contribute to strengthening the capacities of the actors involved as required in each case:</p>	<p>Comply. In the development of the workshops for structuring and defining the components of the REDD+ Project, the issues of climate change, REDD+, sustainable management, monitoring and sustainable production systems, among others, have been addressed.</p> <p>As part of the project planning exercise after the first sale of carbon certificates, it is planned to strengthen capacities in each</p>

Topic	Cancun Safeguards	National Safeguard	Description	Compliance
			<ul style="list-style-type: none"> • Technical capacities: training in REDD+ issues, climate change, forest governance, sustainable forest management, conservation, monitoring, implementation of sustainable production models, among others. • Legal skills: training in national legislation and international agreements related to these issues. • Administrative skills: training in tools for project monitoring, resource management and accountability. 	<p>of the project components, which correspond to sustainable production systems, social investment, governance and monitoring, which involves administrative and legal issues for the proper implementation of the project (as considered in activity A-15). In this way, it contributes to the goal of achieving the sustainability of the results over time and once the project ends.</p> <p>The attendance lists of the workshops, training sessions, the photographic record, the minutes of the meetings are stored (physically and digitally) and are available for review</p>
Social and cultural	C. Respect for traditional knowledge and rights of communities	6. Free, Prior and Informed Consent	<p>When a measure or action affects or may directly affect one or several ethnic groups, the national provisions regarding consultation and prior, free and informed consent established in the legislation and jurisprudence, as well as the guidelines given by the Ministry of the Interior, must be applied as the competent entity in this matter with the accompaniment of the control organisms.</p>	<p>Comply. The project complies with the provisions of current regulations regarding consultation and relationship with indigenous communities. The REDD+ activities and the theory of change respond to the prioritization of the interventions that the members recognized and confirmed during the structuring sessions that took place in the territory. The project was approved within the framework of a community assembly, this being the highest decision-making body. The attendance lists, the photographic record, the minutes of the meeting are stored.</p>
		7. Respect for traditional knowledge	<p>Traditional knowledge systems and the visions of the territory of ethnic and local peoples and communities are recognized, respected, and promoted, in accordance with the provisions</p>	<p>Comply. The project complies with the regulations of consultation and relationship with indigenous communities.</p>

Topic	Cancun Safeguards	National Safeguard	Description	Compliance
			<p>of national legislation and compliance with international agreements</p> <p>For the development of any initiative to reduce deforestation, the different cultures that inhabit the territories must be considered, respecting their ways of understanding and relating to the environment, so that traditions, uses and customs of the communities are considered.</p>	<p>During the formulation and implementation of the project, the worldview, culture, knowledge, and capacities of the communities participating in the project have been considered.</p> <p>Moreover, project activity A-10 seeks to strengthen capacities to maintain, recover and improve ancestral medicine, language, knowledge</p>
		8. Profit sharing	<p>The fair and equitable participation and distribution of the benefits generated by policies, measures, and actions to reduce deforestation for ethnic and local peoples and communities, and of all those benefits derived from traditional knowledge, innovations and practices, is guaranteed for the conservation and sustainable use of forests, their diversity and ecosystem services.</p>	<p>Comply. There is a scheme for the distribution of the income derived from the project activities that guarantees that it is done in an equitable manner among the project participants, considering the levels of risk and profits of the project.</p> <p>This is formalized in the Mandate Agreement, and in the Participatory Workshops where benefit sharing agreements are clarified and confirmed (See Talleres folder, Agreements folder and management Agreement folder).</p>
		9. Territorial rights	<p>The collective and individual territorial rights of ethnic and local peoples and communities are respected as well as its use and cultural, economic and spiritual significance.</p> <p>For this, it is necessary to know what the forms of land tenure are in the areas in which it is expected to implement REDD+ measures and actions and make decisions accordingly.</p>	<p>Comply. The project is aligned with the regulations for autonomy, consultation, and relationship with indigenous communities.</p> <p>According to Articles 329 and 330 of the 1991 Political Constitution of Colombia, the indigenous authorities are competent and independent to govern their territories and freely manage their natural resources, although their right to use and enjoy forest</p>

Topic	Cancun Safeguards	National Safeguard	Description	Compliance
				<p>resources in the territory is restricted by the obligation to fulfil the ecological function of the property; in other words, they are responsible for the protection and preservation of renewable natural resources in accordance with the uses, customs and culture of the communities.</p> <p>Colombian law recognizes indigenous individuals and communities as collective subjects with fundamental rights, legally and extra-judicially represented by their traditional authorities. These correspond to the members of the communities who exercise, within the structure of the respective culture, a power of organization, government, administration and social control.</p> <p>In the formulation and implementation of project activities, the culture, knowledge and capacities of the communities are taken into account.</p> <p>Additionally, it is recognized that the form of land tenure corresponds to collective property and that the area is titled in favor of the project proponents by Resolutions 030, 033 of 1988, Resolution 057 of 1989, Resolutions 677 and 1947 of 2006, and agreements 030 of 2004 and 140 of 2020 issued by INCODER and the Agencia Nacional de Tierras (See Agreements and legal representation folder).</p>

Topic	Cancun Safeguards	National Safeguard	Description	Compliance
	D. Full and effective participation of relevant stakeholders	10. Participation	<p>The right to full and effective participation of all the actors involved is respected to guarantee governance and adequate decision-making on REDD+.</p> <p>The structures of participation of each interest group, especially of the communities, must be recognized and respected, according to national legislation and the international agreements signed by Colombia.</p>	<p>Comply. All interested community representatives have been involved in the participation process for the formulation of the project, taking into account the applicable regulations and considering the organizational structure of the indigenous reservation. Consultations with stakeholders has been carried out accordingly to the community's ways and reality.</p> <p>Different strategies have been implemented throughout the socialization process, including presentations, documents delivery and voice to voice scenarios. These activities aimed to make emphasis on the development of appropriate community level engagement processes and materials to ensure complex issues are presented in a way that communities can understand. (See Talleres folder).</p>
Environmental and social	E. Conservation of natural forests and biological diversity	11. Conservation of forests and their biodiversity	<p>REDD+ initiatives support the conservation of forests and the implementation of measures established for this purpose.</p> <p>The REDD+ initiatives that are developed in the country must not be detrimental to the conservation of forests and the biodiversity that they harbor.</p>	<p>Comply. The project seeks forest conservation, and for instance it is expected that it will conserve the biodiversity it contains.</p> <p>Within the activities of the project, the development of productive activities contemplates the adoption of management measures in these productive systems that allow the conservation of biodiversity (Activities A2, A3, A4), as well as cultural, environmental and governance strengthening (A9, A10, A11, A12, A13, A14), the technical orientation and criteria for the development of the activities demonstrate that the Project does not have negative impacts on the biodiversity.</p>

Topic	Cancun Safeguards	National Safeguard	Description	Compliance
		12. Provision of environmental goods and services	<p>REDD+ initiatives support the provision of ecosystem services and the enjoyment of them.</p> <p>The implementation of REDD+ initiatives must not directly or indirectly affect the benefits provided by ecosystems, which are known as ecosystem services (supply, support, regulation and cultural), for example: water supply, soil, biodiversity, among others.</p>	<p>Comply. The project is expected to improve the conservation of ecosystem resources, so it does not have a negative impact on them. The project aims to protect the forests present in the territory of the reservation, as well as to implement management actions that contribute to the conservation of ecosystems and the services they provide at the local and regional level. In its planning and execution, the entire Project is focused on the conservation of the territory and aims to improve the quality and quantity of environmental services.</p>
	F. Actions to address the risks of reversals	13. Environmental and territorial planning	<p>REDD+ initiatives support the consolidation of territorial and environmental planning instruments provided for in the legislation, under a conservation and sustainable forest management approach.</p> <p>It is necessary that the REDD+ initiatives carried out in the country recognize, respect, adapt or strengthen the measures and instruments of territorial and environmental planning that are defined by national legislation. Similarly, it is ideal to encourage citizen participation in the formulation and adjustment of these instruments, according to land use.</p> <p>The own forms of territorial ordering of ethnic groups and local communities must also be recognized so that their</p>	<p>Comply. In the design and implementation of the Project, the instruments of territorial and environmental planning of the indigenous community, programs and applicable plans have been considered. Within the framework of strengthening forest governance, the development of an Environmental Management Plan is contemplated (A-12), considering the forms of management defined by the members of the Reservation.</p>

Topic	Cancun Safeguards	National Safeguard	Description	Compliance
			permanence over time can be supported.	
		14. Sector planning	<p>Sector-type REDD+ actions are proposed based on environmental and territorial ordering instruments, as well as legislation related to the conservation of forests and their biodiversity.</p> <p>When a sector defines and implements REDD+ actions, these must be articulated with the national legislation that protects forests, their conservation and the diversity they harbor</p>	<p>The project is articulated with the Municipal Development Plans, with its general approach to address unsatisfied basic needs and meet the Sustainable Development Goals. REDD+ activities contribute to the conservation of forests and their biodiversity.</p> <p>At the departmental level, the project supports the programs and projects against deforestation of the Action Plan to reduce deforestation in the Municipality of Solano, Caquetá.</p> <p>Additionally, it is aligned with the strategic lines of the Departmental Development Plans (Amazonas and Caqueta), related to productivity with a socio-environmental approach and its programs for the conservation of biodiversity and its ecosystem services, land use planning and development, climate change management for low-carbon development. and climate resilient</p> <p>Similarly, with the strategic lines of infrastructure for development in relation to public services and housing; and the line related to governance.</p> <p>Moreover, it is aligned with the CRIMA Environmental ordering and management plan</p>
	G. Actions to reduce displacement of emissions	15. Forest control and surveillance to avoid the	REDD+ initiatives incorporate measures to reduce the displacement of emissions in their design and timely	Comply. One of the objectives of the project is to contribute to the monitoring and conservation of forests and the biodiversity

Topic	Cancun Safeguards	National Safeguard	Description	Compliance
		displacement of emissions	<p>monitoring and control are guaranteed when displacement of emissions occurs.</p> <p>Community monitoring, articulated with deforestation early warning systems, and the activation of protocols that allow timely responses to be generated, can be decisive in ensuring that the problems associated with forest loss and degradation do not spread to other places.</p>	<p>present in the territory through the development of actions aimed at monitoring and controlling the territory.</p> <p>Community has participated actively during the entire process of structuring the project, as well as the definition of REDD+ activities to stop deforestation. The project also defined a leakage area that recognizes the dynamics of mobilization of deforestation agents and monitoring schemes were established for the permanence of the project, as well as for the forest cover associated with the project limits.</p> <p>The project will be building capacities to improve forest monitoring and surveillance, which will also be complemented by the social control exercised by community members (A-13, A-14).</p>

10. SDG Contributions

The project contributes to the fulfillment of the Sustainable Development Goals (SDGs), since it seeks to improve the income of the community and promote sustainable social and economic development alternatives, in addition to strengthening territorial environmental management, as well as adaptation and mitigation. of climate change. The monitoring plan of the SDG contributions is presented in section 13.4. The SDGs to which the project contributes are:

- SDG₁ – No poverty: the project contributes to increase the income of the project's beneficiaries through income sources diversification and implementation of sustainable economic alternatives.

- SDG2 – Zero Hunger: Since the income of the communities improves, it is expected that the food security of the members that comprise them will be strengthened.
- SDG3 – Good health and well-being: part of the social investment is focused on improving the provision of health services for the community.
- SDG4 – Quality education: with the project implementation, access to education is strengthened since it is planned to improve the available infrastructure, develop scholarship programs, training programs, among others.
- SDG5 – Gender equality: the project promotes the participation of women in the activities to be implemented and their participation in decision-making spaces.
- SDG6 – Clean water and sanitation: the project strengthens access to basic sanitation in family homes.
- SDG7 – Affordable and clean energy: the project promotes access to clean energy and electrical interconnection of homes.
- SDG8 – Decent work and economic growth: the project promotes the development of sustainable economic activities that increase the income of families in the community.
- SDG13 – Climate action: the project seeks to reduce GHG emissions from deforestation and forest degradation in the territory of the Indigenous Reserves.
- SDG15 – Life on land: the project seeks to reduce deforestation and degradation of existing forest cover in the territory, thus contributing to the conservation of biodiversity.
- SDG17 – Partnerships to achieve the goal: the project promotes alliances between community organizations and the private sector. Similarly, it has been articulated with the action plans of public institutions present at the local and regional level.

11. Environmental and socioeconomic effects

11.1. Environmental impacts

Element	Flora
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Estimated Change	Positive
Justification	The project consists of avoiding the deforestation, which contributes to the maintenance of the ecological structure and composition of the ecosystems. This will guarantee the availability of ecosystem services and the conservation of species of flora and fauna that are under some degree of threat.

Element	Fauna
Estimated Change	Positive
Justification	The project objectives include the conservation and recovery of forests, which will enable species to be preserved, and recovered under a forest structure.

Element	Ecosystems
Estimated Change	Positive
Justification	The project consists of avoiding the deforestation, which contributes to the maintenance of the ecological structure and composition of the ecosystems.

11.2. Socioeconomic impacts

Impact(s)	Capacity building
Estimated Change	Positive
Justification	Benefit from the implementation of the project as training and capacity building on sustainable productive systems implementation and management as well as in forest management, project management, governance, among others are expected to be carried out.

Impact(s)	Governance strengthening
Estimated Change	Positive
Justification	Benefits from the implementation of the project as capacity and control mechanisms are enforced withing community members.

Impact(s)	Improvement of economic conditions
Estimated Change	Positive
Justification	Benefits from the implementation of the project as sustainable activities are established and the community perceive new sources of income.

Impact(s)	Cultural identity strengthening
Estimated Change	Positive
Justification	Benefit from the implementation of the project as the project expects to provide facilities and scholarships for community members to access formal education (access to higher education, training).

Impact(s)	Education Access
Estimated Change	Positive
Justification	Benefit from the implementation of the project as the project expects to provide facilities and scholarships for community members to access formal education (access to higher education, training).

Impact(s)	Improvement of health services, access and conditions
Estimated Change	Positive
Justification	Benefits from the implementation of the project the project expects to provide facilities and elements to access health services.

Impact(s)	Improvement of housing conditions
Estimated Change	Positive
Justification	Benefits from the implementation of the project the project expects to improve access to clean water, sanitation and energy (housing improvement).

12. GHG emission reduction from REDD+ activities

12.1. Uncertainty management

The uncertainty of the project reduction estimates is related to the activity data and emission factors. The activity data of the CRIMA Predio Putumayo y Andoque de Aduche REDD+ project (deforestation) was calculated using the information from the SMByC, following the methodological approach described in the Digital Image Processing Protocol for the Quantification of Deforestation in Colombia V .2 from IDEAM (Galindo et al 2014). In the same way, the emission factors (carbon contents per deposit) were taken from this study. Therefore, and following the orientation of the BIOCARBON REGISTRY methodology, the uncertainty associated with these sources of information corresponds to the uncertainty of the estimates of reductions made within the framework of CRIMA Predio Putumayo y Andoque de Aduche REDD+ Project. Thus, the uncertainty values reported directly by IDEAM in the NREF document were used, which

correspond to 9% in activity data, 2.1% in aerial biomass and 2% in soil organic carbon (MinAmbiente and IDEAM, 2019). Using the equation for the combination of the uncertainties of various emission sources proposed by the IPCC (2006), the uncertainty of the emission factor was calculated. Using the equation for the combination of uncertainties of the emission source, also proposed by the IPCC (2006), the approximate error of the Project reductions was calculated.

A) Reference equation to combine uncertainties from various emission sources:

$$t = \frac{\sqrt{(A \times a)^2 + (B \times b)^2 + (C \times c)^2}}{T}$$

Where:

t: Total uncertainty; T: Total associated greenhouse gas emissions.

A=category A emissions, a=uncertainty of category A emissions,

B=category B emissions, b=uncertainty of category B emissions,

...N=category N emissions, n=uncertainty of category N emissions.

a) Uncertainty of the Emission Factor:

Amazon area biomass: = 444.8 tCO₂/ha/year

Amazonian soil organic carbon: 14 tCO₂/ha/year

Uncertainty emission factor = Root ((444.8 tCO₂/ha/year * 2.1%)+(14 tCO₂/ha/year))

Uncertainty emission factor = 2.04%

b) Uncertainty of the activity data:

Activity data: 9%

B) Reference equation to combine uncertainties of an emission source

$$U_{total} = \sqrt{U_1^2 + U_2^2 + \dots + U_n^2}$$

where,

Total U: Total uncertainty; U₁ = percentage of uncertainty for each of the sources of uncertainty.

c) Uncertainty of project reductions:

Uncertainty of Project estimates= Root ((2.04)²+(9)²)

Uncertainty of Project estimates = 9.3%

Combining the uncertainties of the activity data and the emission factors, estimates of emission reductions were estimated to have an uncertainty of 9.3%.

12.2. Activity data

12.2.1. Deforestation

12.2.1.1. *Estimating historical rate of deforestation*

To estimate the deforestation rate, an analysis was made of the change in forest to non-forest cover between at least two dates, in this case 2007 and 2017 were taken. Additionally, gross deforestation was taken for its estimation and omitted. forest loss after one or several dates without information in order not to incur in overestimation of rates.

12.2.1.2. *Historical annual deforestation in the reference region*

The following equation estimates annual historical deforestation in the reference region:

$$FSC_{yr} = \left(\frac{1}{t_2 - t_1} \right) \times (A_1 - A_2)$$

$$FSC_{yr} = \left(\frac{1}{2017 - 2007} \right) \times (831,751.07 \text{ ha} - 807,134.2 \text{ ha})$$

$$FSC_{yr} = 2,461.69 \text{ ha}$$

Where:

FSC_{yr} = Annual change in the surface covered by forest in the reference region; ha

t_2 = Final year of the reference period; yr

t_1 = Initial year of the reference period; yr

A_1 = Forest surface in the reference region in the initial moment; ha

A_2 = Forest surface in the reference region in the final moment; ha

12.2.1.3. *Projected annual deforestation in the REDD+ project scenario*

The projected annual deforestation in the REDD+ Project is estimated with the equation

$$FSC_{REDD+project,yr} = FSC_{bl,yr} \times National\ Circumsanses\ Increase \times (1 - \%DD)$$

$$FSC_{REDD+project,yr} = 2,968.91\ ha \times (1 + 31.7\%) \times (1 - 70\%)$$

$$FSC_{REDD+project,yr} = 1,173.64\ ha$$

Where:

$FSC_{REDD+project,yr}$ = Annual change in the surface covered by forest in the project scenario; ha

$FSC_{bl,yr}$ = Annual change in the surface covered by forest in the baseline scenario; ha

%DD = Projected decrease in deforestation due to the implementation of REDD+ activities

12.2.1.4. Annual historical deforestation in the leakage area

The annual historical deforestation in the leakage area is estimated whit the equation

$$FSC_{lk,yr} = \left(\frac{1}{t_2 - t_1} \right) \times (A_{1lk} - A_{2lk})$$

$$FSC_{lk,yr} = \left(\frac{1}{2017 - 2007} \right) * (396,531.55\ ha - 394,823.65\ ha)$$

$$FSC_{lk,yr} = 170.79\ ha$$

Where:

$FSC_{lk,yr}$ = Annual change in the surface covered by forest in the leakage area; ha

t_2 = Final year of the reference period; yr

t_1 = Initial year of the reference period; yr

$A_{1,lk}$ = Forest surface in the leakage area in the initial moment; ha

$A_{2,lk}$ = Forest surface in the leakage area in the final moment; ha

12.2.1.5. *Projected annual deforestation in the leakage area in the project scenario*

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

$$FSC_{REDD+project, lk, yr} = FSC_{lk, bl} \times (1 + \%E_{lk})$$

$$FSC_{REDD+project, lk, yr} = 170.05 \text{ ha} \times (1 + 10\%)$$

$$FSC_{REDD+project, lk, yr} = 187.06 \text{ ha}$$

Where:

$FSC_{REDD+project, yr}$ = Annual change in the surface covered by forest in leakage area in the project scenario; ha

$FSC_{lk, bl}$ = Annual change in the surface covered by forest in leakage area in the baseline scenario; ha

$\%E_{lk}$ = Percentage of emissions increase in the leakage area due to the implementation of REDD+ activities. The use of a default value of 10% is allowed in this Methodology.

12.3. Emission factors

12.3.1. Deforestation

12.3.1.1. *Factor emission of biomass total carbon*

The estimation of CO_{2eq} is done according to the equation:

$$CO_{2eq} = CCB \times \frac{44}{12}$$

$$CO_{2eq} = 544 \frac{tCO_2e}{ha}$$

Where:

CO_{2eq} = Carbon dioxide equivalent content in the total biomass; tCO_{2e} ha⁻¹

TB = Total biomass; t ha⁻¹

$44/12 =$ The molecular ratio constant between carbon (C) and carbon dioxide (CO₂)

12.3.1.2. Soil organic carbon emission factor

The estimation of the equivalent carbon dioxide content in the soil is estimated from the seven equations:

$$SOC_{eq} = \frac{SOC}{20} \times \frac{44}{12}$$

$$SOC_{eq} = 13.6 \frac{tCO_2e}{ha}$$

Where:

SOC_{eq} = Carbon dioxide equivalent in organic soils; tCO₂e ha⁻¹

SOC = Soil organic carbon content; tC ha⁻¹

12.3.1.3. Total carbon emission factor

The estimation of the total carbon emission factor is estimated from the seven equations:

$$TC_{eq} = CBeq + SOC_{eq}$$

$$TC_{eq} = 557.6 \frac{tCO_2e}{ha}$$

Where:

TC_{eq} = Total carbon dioxide equivalent; tCO₂e ha⁻¹

$CBeq$ = Carbon dioxide equivalent contained in total biomass; tCO₂e ha⁻¹

SOC_{eq} = Carbon dioxide equivalent contained in organic soils; tCO₂e ha⁻¹

12.4. GHG emissions in the analysis period

12.4.1. Deforestation

The annual emission due to deforestation in the baseline scenario is estimated with the following equation:

$$AE_{bl,yr} = AD_{bl,yr} \times TCO_{2eq}$$

$$AE_{bl,yr} = 3,912.13 \text{ ha} \times 557.6 \frac{tCO_2e}{ha}$$

$$AE_{bl,yr} = 2.181.405.11 \text{ tCO}_2e$$

Where:

$AE_{bl,yr}$ = Annual emission in the baseline scenario; tCO₂e

$AD_{bl,yr}$ = Historical annual deforestation in the baseline scenario; ha

TCO_{2eq} = Total carbon dioxide equivalent; tCO₂e ha⁻¹

The annual emission due to deforestation in the project scenario is estimated with the following equation:

$$AE_{REDD+project,yr} = AD_{REDD+project} \times TCO_{2eq}$$

$$AE_{REDD+project,yr} = 1,173.64 \times 557.6 \frac{tCO_2e}{ha}$$

$$AE_{REDD+project,yr} = 654,421.53 \text{ tCO}_2e$$

Where:

$AE_{REDD+project,yr}$ = Annual emission in the project scenario; tCO₂ ha⁻¹

$AD_{REDD+project}$ = Projected deforestation with project activities; ha

TCO_{2eq} = Total carbon dioxide equivalent; tCO₂e ha⁻¹

The annual emission due to deforestation in the leakage area is estimated as follow:

$$AE_{lk,yr} = AD_{lk,yr} \times CO_{2eq}$$

$$AE_{lk,yr} = 17.01 \times 557.6 \frac{tCO_2e}{ha}$$

$$AE_{lk,yr} = 9,482.24 \text{ tCO}_2e$$

Where:

$AE_{lk,yr}$ = Annual emission in the leakage area; tCO₂ ha⁻¹

$AD_{lk,yr}$ = Annual projected deforestation in leakage area; ha

TCO_{2eq} = Total carbon dioxide equivalent; tCO₂e ha⁻¹

12.5. Expected GHG emissions reduction in the project scenario

12.5.1. Project reduction emission due to avoided deforestation

The emission reduction due to avoided deforestation is estimated with the following equation:

$$ER_{DEF,REDD+project} = (t_2 - t_1) \times (AE_{DEF,bl,yr} - AE_{DEF,REDD+project,yr} - AE_{DEF,lk,yr})$$

$$ER_{DEF,REDD+project} = 1,147,750 \text{ tCO}_2e$$

Where:

$ER_{DEF,REDD+project}$ = Emission reduction due to avoided deforestation; tCO₂e

t_2 = Final year of the reference period; yr

t_1 = Initial year of the reference period; yr

$AE_{bl,yr}$ = Annual emission by deforestation in the baseline scenario; tCO₂e

$AE_{REDD+project}$ = Annual emission by deforestation in the project scenario; tCO₂ ha⁻¹

$AE_{lk,yr}$ = Annual emission by deforestation in the leakage area; tCO₂ ha⁻¹

12.6. Parameters available in validation

Carbon pool and emission factors	Units	Value
Aerial Biomass	t/ha	258
Underground Biomass	t/ha	57
Total Biomass	t/ha	315
Carbon dioxide equivalent in total biomass	tCO ₂ e/ha	544
Soil organic carbon	tC/ha	74
Organic Carbon in Soil (1/20)	tC/ha	3.7

Equivalent Carbon Dioxide in Soil (1/20)	tCO ₂ e/ha	13.6
Total Emission Factor	tCO ₂ e/ha	557.6

Data/Parameter available for validation	Value	Purpose of the data/parameter
Historical deforestation in the reference area (ha)	24,616.87	Estimation of the historical deforestation rate from the historical average
Reference period (years)	10	Estimation of the historical deforestation rate from the historical average
Annual historical deforestation in the reference area (ha)	2,461.68	Estimate of annual historical deforestation in the reference region
Annual historical deforestation in leak area (ha)	170.79	Estimation of annual historical deforestation in the leakage area
Deforestation rate (annual %)	0.29	Estimated rate of deforestation in annual % in the reference region of the project
Project area (ha)	1,003,130.84	Estimation of emissions in the baseline scenario
Annual forest loss in the project area in the baseline scenario (ha)	Average value: 2,803.82	Estimation of emissions in the baseline scenario and emission reductions
Leakage area covered by forest at the beginning of the project (2018) (ha)	394,823.65	Quantification of GHG discounts generated by forest loss in the leak area
Annual forest loss in leakage area in baseline scenario (ha)	Average value: 168.63	Estimation of emissions in the baseline scenario and of emissions due to leaks
Carbon fraction in biomass	0.47	Estimation of carbon content in aerial and underground biomass.

13. Monitoring Plan

The monitoring plan presents the procedures to adequately monitor project activities, compliance with safeguards, and reduction of GHG emissions within the scope of the project.

The plan provides for the collection of relevant information and data to:

- i. Verify the applicability conditions listed in section 2 Applicability of the methodology.



- ii. Verify changes in carbon stocks of selected pools.
- iii. Verify project emissions and leaks.

The data collected will be archived for at least a period of two years after the last verification process has been completed. The data and parameters monitored, the methods used for their generation, their adequate compilation and filing, and the processes related to sampling models and quality control will be included.

13.1. Monitoring of the project boundary

The monitoring of the project limits will be carried out using Geographic Information Systems (GIS) tools based on the georeferencing of the project area, reference region and project leakage belt, during the development of the project, following the specifications and techniques required for cartographic products.

The monitoring of the reduction of emissions due to deforestation will be carried out for the geographical areas contemplated in the project. Periodic verification of deforestation in the project area will be carried out following the guidelines established in section 12.5 Expected GHG emissions reduction in the project scenario.

13.2. Monitoring of the REDD+ activities implementation

The following is the monitoring plan for project activities, including compliance with the Sustainable Development Goals (SDGs):

Activity ID	A-1
Indicator ID	A-1.1
Indicator name	# of people who participate in meetings, surveys or workshops on problem trees and the identification of drivers of deforestation, productive systems and governance
Type	Result
Goal	The processes of identification and prioritization of activities are carried out in a participatory manner.
SDG compliance	SDG1 (carbon revenues and productive projects), SDG2 (productive projects), SDG8 (productive projects, and governance activities), SDG13 (reduction of emissions), SDG15 (protection of forest habitat),
Measurement unit	Number of people
Monitoring methodology	For the measurement and reporting of this indicator, the number of participants in the meetings, workshops or surveys carried out is quantified.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto

Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for the workshops and meetings convened. Minutes of the meetings and workshops convened. Surveys applied to community members.
Observations	Available documentation should be used

Activity ID	A-1
Indicator ID	A-1.2
Indicator name	# of women who participate in meetings, surveys or workshops on problem trees and the identification of drivers of deforestation, productive systems and governance
Type	Result
Goal	The processes of identification and prioritization of activities are carried out in a participatory manner.
SDG compliance	SDG1 (carbon revenues and productive projects), SDG2 (productive projects), SDG5 (women participation in decision making), SDG8 (productive projects, and governance activities), SDG13 (reduction of emissions), SDG15 (protection of forest habitat),
Measurement unit	Number of women
Monitoring methodology	For the measurement and reporting of this indicator, the number of women participating in the meetings, workshops or surveys carried out is quantified.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto
Result indicator in the reporting period	
Documents to support the information	<ul style="list-style-type: none"> • Photographic record and/or videos. • Attendance lists for the workshops and meetings convened. • Minutes of the meetings and workshops convened. • Surveys applied to community members.
Observations	Available documentation should be used

Activity ID	A-1
Indicator ID	A-1.3
Indicator name	# of legal agreements to support the development and implementation of the project, including the sale of carbon credits
Type	Result
Goal	Development and commercialization agreements
SDG compliance	SDG1 (carbon revenues and productive projects), SDG2 (productive projects), SDG8 (productive projects, and governance activities), SDG13 (reduction of emissions), SDG15 (protection of forest habitat),
Measurement unit	Agreements
Monitoring methodology	For the measurement and reporting of this indicator, the signed agreements and the minutes or reports related to their subscription will be reviewed.

Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto
Result indicator in the reporting period	
Documents to support the information	Agreements. Minutes of the meetings. Reports.
Observations	Available documentation should be used

Activity ID	A-1
Indicator ID	A-1.4
Indicator name	Project registration in the emission reduction certification program
Type	Result
Goal	Project registration
SDG compliance	SDG1 (carbon revenues and productive projects), SDG2 (productive projects), SDG8 (productive projects, and governance activities), SDG13 (reduction of emissions), SDG15 (protection of forest habitat),
Measurement unit	Registration
Monitoring methodology	Registration review on registration platform.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra
Result indicator in the reporting period	
Documents to support the information	Registration number. Platform access link.
Observations	

Activity ID	A-2
Indicator ID	A-2.1
Indicator name	# of designed and prioritized business plans
Type	Result
Goal	Design and prioritize activities to be carried out in a participatory manner.
SDG compliance	SDG1 (Productive projects), SDG2 (productive projects), SDG8 (productive projects), SDG13 (reduction of emissions), SDG15 (protection of forest habitat),
Measurement unit	Number of designed and prioritized business plans
Monitoring methodology	For the measurement and reporting of this indicator, compliance or not with the identification of priority productive activities is considered, and designed plans are counted and registered.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs

Result indicator in the reporting period	
Documents to support the information	Minutes of the meetings. Workshop Reports.
Observations	Available documentation should be used From the fourth year on

Activity ID	A-2
Indicator ID	A-2.2
Indicator name	# of people attending workshops for identification and prioritization of the required investments in productive system
Type	Result
Goal	All the people involved in the development of productive systems participate in workshops
SDG compliance	SDG1 (Productive projects), SDG2 (productive projects), SDG8 (productive projects), SDG13 (reduction of emissions), SDG15 (protection of forest habitat),
Measurement unit	Number of people
Monitoring methodology	Number of community members who attend the training days for the management of the prioritized productive systems is counted and the value obtained is reported.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for training workshops for the management of prioritized production systems. Meeting minutes. Meeting record.
Observations	Available documentation should be used

Activity ID	A-2
Indicator ID	A-2.3
Indicator name	# of women attending workshops for identification and prioritization of the required investments in productive systems
Type	Result
Goal	All the women involved in the development of productive systems participate in workshops
SDG compliance	SDG1 (Productive projects), SDG2 (productive projects), SDG 5 (women participation in decision making), SDG8 (productive projects), SDG13 (reduction of emissions), SDG15 (protection of forest habitat),
Measurement unit	Number of women
Monitoring methodology	Number of women who attend the training days for the management of the prioritized

	productive systems is determined and the value obtained is reported.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for training workshops for the management of prioritized production systems. Meeting minutes. Meeting record.
Observations	Available documentation should be used

Activity ID	A-2
Indicator ID	A-2.4
Indicator name	# of Ha with prioritized productive systems implemented
Type	Result
Goal	Prioritized productive systems in implementation
SDG compliance	SDG1 (Productive projects), SDG2 (productive projects), SDG8 (productive projects), SDG13 (reduction of emissions), SDG15 (protection of forest habitat),
Measurement unit	Area (hectares)
Monitoring methodology	For the measurement and reporting of this indicator, the area that will be allocated to the establishment of productive systems is defined. Subsequently, Geographic Information Systems are used with the help of satellite images, remote sensors and information taken in situ to estimate the area
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Satellite images/ maps /SIG analysis. Field surveillance and monitoring reports. Photographic record and/or videos.
Observations	Available documentation should be used

Activity ID	A-2
Indicator ID	A-2.5
Indicator name	# of productive activities implemented
Type	Result
Goal	Prioritized productive activities under implementation
SDG compliance	SDG1 (Productive projects), SDG2 (productive projects), SDG8 (productive projects),

	SDG13 (reduction of emissions), SDG15 (protection of forest habitat),
Measurement unit	Number of productive activities under implementation
Monitoring methodology	For the measurement and reporting of this indicator, the number of productive activities under implementation should be count.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Field surveillance and monitoring reports. Photographic record and/or videos.
Observations	Available documentation should be used

Activity ID	A-3
Indicator ID	A-3.1
Indicator name	# Training sessions carried out for improving management of prioritized production systems
Type	Result
Goal	Participation of all community members involved in the project activity in training sessions to strengthen the community's management capacities
SDG compliance	SDG1 (Productive projects), SDG2 (productive projects), SDG8 (productive projects), SDG13 (reduction of emissions), SDG15 (protection of forest habitat avoiding deforestation),
Measurement unit	Number of training sessions
Monitoring methodology	For the measurement and reporting of this indicator a record of the training sessions carried out will be taken and reported
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for training workshops for the management of prioritized production systems. Meeting minutes. Meeting record.
Observations	Available documentation should be used

Activity ID	A-3
Indicator ID	A-3.2
Indicator name	# of people attending training sessions

Type	Result
Goal	All the people involved in the development of productive systems participate in training sessions.
SDG compliance	SDG1 (Productive projects), SDG2 (productive projects), SDG8 (productive projects), SDG13 (reduction of emissions), SDG15 (protection of forest habitat avoiding deforestation),
Measurement unit	Number of people
Monitoring methodology	For the measurement and reporting of this indicator a record of people attending training sessions will be taken and reported
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for training workshops for the management of prioritized production systems. Meeting minutes.
Observations	Available documentation should be used

Activity ID	A-3
Indicator ID	A-3.3
Indicator name	# of women attending workshops for identification and prioritization of the required investments in productive systems
Type	Result
Goal	All the women involved in the development of productive systems participate in training sessions.
SDG compliance	SDG1 (Productive projects), SDG2 (productive projects), SDG5 (women participation), SDG8 (productive projects), SDG13 (reduction of emissions), SDG15 (protection of forest habitat avoiding deforestation),
Measurement unit	Number of women
Monitoring methodology	For the measurement and reporting of this indicator a record of women attending training sessions will be taken and reported
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for training workshops for the management of prioritized production systems. Meeting minutes.

Observations	Available documentation should be used
Activity ID	A-4
Indicator ID	A-4.1
Indicator name	# of hectares with productive systems maintained and monitored
Type	Result
Goal	Productive systems maintained and monitored. Management measures that favor biodiversity are implemented in production systems.
SDG compliance	SDG1 (Productive projects), SDG2 (productive projects), SDG8 (productive projects), SDG13 (reduction of emissions), SDG15 (protection of forest habitat avoiding deforestation),
Measurement unit	Area (hectares)
Monitoring methodology	For the measurement and reporting of this indicator, the area that will be allocated to the maintenance of productive systems is defined. Subsequently, Geographic Information Systems are used with the help of satellite images, remote sensors and information taken in situ to estimate the area
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Satellite images/maps/SIG analysis. Field surveillance and monitoring reports. Photographic record and/or videos.
Observations	Available documentation should be used

Activity ID	A-4
Indicator ID	A-4.2
Indicator name	# of people involved in the project activity
Type	Result
Goal	All community members are involved in the project activity. This project activity generates employment opportunities
SDG compliance	SDG1 (employment), SDG2 (employment), SDG8 (employment), SDG13 (reduction of emissions), SDG15 (protection of forest habitat),
Measurement unit	Number of people
Monitoring methodology	For the measurement and reporting of this indicator, the number of people involved in the project's activities is reported.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	

Documents to support the information	Contracts signed with members of the community. Payment receipts.
Observations	

Activity ID	A-4
Indicator ID	A-4.3
Indicator name	# of women involved in the project activity
Type	Result
Goal	All women are involved in the project activity. This project activity generates employment opportunities
SDG compliance	SDG1 (employment), SDG2 (employment), SDG5 (women participation), SDG8 (employment), SDG13 (reduction of emissions), SDG15 (protection of forest habitat),
Measurement unit	Number of women
Monitoring methodology	For the measurement and reporting of this indicator, the number of people involved in the project's activities is reported.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Contracts signed with members of the community. Payment receipts.
Observations	

Activity ID	A-4
Indicator ID	A-4.4
Indicator name	# of people who improve their income with production systems
Type	Impact
Goal	Project activities allow community members to improve their income.
SDG compliance	SDG1 (Productive projects), SDG2 (Productive projects), SDG8 (Productive projects), SDG13 (reduction of emissions), SDG15 (protection of forest habitat by avoiding deforestation),
Measurement unit	Number of people
Monitoring methodology	For the measurement and reporting of this indicator, the number of beneficiaries who improve their income with the prioritized production systems is counted and reported.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	

Documents to support the information	Contracts signed with members of the community. Payment receipts. Income balance.
Observations	Available documentation should be used

Activity ID	A-4
Indicator ID	A-4.5
Indicator name	# of women who improve their income with production systems
Type	Impact
Goal	Project activities allow community women to improve their income.
SDG compliance	SDG1 (Productive projects), SDG2 (Productive projects), SDG5 (women participation), SDG8 (Productive projects), SDG13 (reduction of emissions), SDG15 (protection of forest habitat by avoiding deforestation),
Measurement unit	Number of women
Monitoring methodology	For the measurement and reporting of this indicator, the number of women who improve their income with the prioritized production systems is counted and reported.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Contracts signed with members of the community. Payment receipts. Income balance.
Observations	Available documentation should be used

Activity ID	A-4
Indicator ID	A-4.6
Indicator name	# of hectares of productive systems that are improved or established
Type	Result
Goal	Production systems are implemented, or existing production systems are improved.
SDG compliance	SDG1 (Productive projects), SDG2 (productive projects), SDG8 (productive projects), SDG13 (reduction of emissions), SDG15 (protection of forest habitat avoiding deforestation),
Measurement unit	Area (hectares)
Monitoring methodology	For the measurement and reporting of this indicator, the area that will be allocated to the establishment or improvement of productive systems is defined. Subsequently, Geographic Information Systems are used with the help of satellite images, remote sensors and information taken in situ to estimate the area.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative

	Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Satellite images/maps/SIG analysis. Field surveillance and monitoring reports. Photographic record and/or videos.
Observations	Available documentation should be used

Activity ID	A-4
Indicator ID	A-4.7
Indicator name	# of activities that generate surpluses implemented
Type	Result
Goal	At least one activity that generates surplus is implemented.
SDG compliance	SDG1 (Productive projects), SDG2 (productive projects), SDG8 (productive projects), SDG13 (reduction of emissions), SDG15 (protection of forest habitat avoiding deforestation),
Measurement unit	Number of activities
Monitoring methodology	For the measurement and reporting of this indicator, the number of Business Plans prepared by the project implementer and the proponents is considered.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Documents of prioritized resource-generating activities. Productive activities surplus balance.
Observations	Available documentation should be used

Activity ID	A-4
Indicator ID	A-4.8
Indicator name	# of records of controls or maintenance performed/# of controls or maintenance expected
Type	Result
Goal	The production systems receive the required controls or maintenance.
SDG compliance	SDG1 (Productive projects), SDG2 (productive projects), SDG8 (productive projects)
Measurement unit	Percentage (%)
Monitoring methodology	The beneficiaries in charge of the support activities of the productive systems keep records of maintenance activities. For the measurement and reporting of this indicator, the number of controls carried out in the production systems is quantified and divided by the number of controls required or planned.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto

	Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Report of visits. Photographic record. Records of maintenance activities to production systems.
Observations	

Activity ID	A-4
Indicator ID	A-4.9
Indicator name	Total amount of goods or services produced in production systems
Type	Product
Goal	Production systems are implemented that offer goods or services measurable for the community
SDG compliance	SDG1 (Productive projects), SDG2 (productive projects), SDG8 (productive projects), SDG13 (reduction of emissions), SDG15 (protection of forest habitat avoiding deforestation),
Measurement unit	Units
Monitoring methodology	For the measurement and reporting of this indicator, the production obtained per unit area of the established and/or improved production system is used. To do this, the quantities of product produced are recorded.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Records of production obtained in the production systems.
Observations	

Activity ID	A-4
Indicator ID	A-4.10
Indicator name	Balance of income and expenses generated in the production systems.
Type	Product
Goal	At least one productive system that presents a positive balance is implemented.
SDG compliance	SDG1 (Productive projects), SDG2 (productive projects), SDG8 (productive projects), SDG13 (reduction of emissions), SDG15 (protection of forest habitat avoiding deforestation),
Measurement unit	\$(COP)
Monitoring methodology	The measurement and reporting of this indicator is based on the registration of costs (associated with the production or provision of services: eg, harvest, post-harvest and transformation, logistics) and the income associated with the sale of products or

	services.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Balance of income and expenses of the productive system.
Observations	

Activity ID	A-5
Indicator ID	A-5.1
Indicator name	# of people who participate in meetings or workshops on social investment issues
Type	Result
Goal	The processes of identification and prioritization of social investment are carried out in a participatory manner.
SDG compliance	SDG ₁ (social investment), SDG ₃ (investment in health), SDG ₄ (investment in education), SDG ₆ (investment in water and sanitation), SDG ₁₁ (investment in housing), SDG ₁₃ (reduction of emissions), SDG ₁₅ (protection of forest habitat since discourages deforestation)
Measurement unit	Number of people
Monitoring methodology	For the measurement and reporting of this indicator a record of people attending meetings or workshops is carried out and reported
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for the workshops and meetings convened. Minutes of the meetings and workshops convened. Reports.
Observations	Available documentation should be used

Activity ID	A-5
Indicator ID	A-5.2
Indicator name	# of women who participate in meetings or workshops on social investment issues
Type	Result
Goal	The processes of identification and prioritization of social investment are carried out in a participatory manner.
SDG compliance	SDG ₁ (social investment), SDG ₃ (investment in health), SDG ₄ (investment in

	education), SDG5 (women participation), SDG6 (investment in water and sanitation), SDG11 (investment in housing), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since discourages deforestation)
Measurement unit	Number of women
Monitoring methodology	For the measurement and reporting of this indicator a record of women attending meetings or workshops is carried out and reported
Monitoring frequency	Annually
Responsible measurement for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for the workshops and meetings convened. Minutes of the meetings and workshops convened. Reports.
Observations	Available documentation should be used

Activity ID	A-5
Indicator ID	A-5.3
Indicator name	Social investment needs identified
Type	Result
Goal	Identification of social investments needs for the project to consider
SDG compliance	SDG1 (social investment), SDG3 (investment in health), SDG4 (investment in education), SDG5 (women participation), SDG6 (investment in water and sanitation), SDG11 (investment in housing), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since discourages deforestation)
Measurement unit	Identified social needs
Monitoring methodology	For the measurement and reporting of this indicator a record of social needs identified by the community members during workshops and meetings is taken and reported
Monitoring frequency	Annually
Responsible measurement for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for the workshops and meetings convened. Minutes of the meetings and workshops convened. Reports.
Observations	Available documentation should be used

Activity ID	A-6
Indicator ID	A-6.1

Indicator name	# of educational facilities improved/built
Type	Product
Goal	Improve or build educational facilities located in the reservations
SDG compliance	SDG1 (social investment), SDG4 (investment in education), SDG5 (women participation), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since discourages deforestation)
Measurement unit	Number
Monitoring methodology	It is verified from the budget execution and records of construction activities or improvement of educational facilities within the framework of the project.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Third parties
Result indicator in the reporting period	
Documents to support the information	Verification in on-site visits. Photographic record. Budget execution. Records of maintenance and construction activities. Reports.
Observations	Available documentation should be used

Activity ID	A-6
Indicator ID	A-6.2
Indicator name	Educational facilities in operation
Type	Result
Goal	Educational facilities available for the community members
SDG compliance	SDG1 (social investment), SDG4 (investment in education), SDG5 (women participation), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since discourages deforestation)
Measurement unit	Number
Monitoring methodology	It is verified during site visits or in official documents the available education facilities in operation within o nearby the Indigenous Reservation territory and the number is reported
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Verification in on-site visits. Photographic record. Documentation. Reports.

Observations	Available documentation should be used
Activity ID	A-6
Indicator ID	A-6.3
Indicator name	# of people with access to formal education programs, better quality education or scholarships
Type	Result
Goal	Access to formal education and/or Scholarship systems developed and available for community members is improved
SDG compliance	SDG1 (social investment), SDG4 (investment in education), SDG5 (women participation), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since discourages deforestation)
Measurement unit	Number
Monitoring methodology	The execution of project resources and the people who access formal education or better-quality education are verified.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Execution of project resources. Development of formal education programs. Record of actions aimed at improving community education. Registry of beneficiaries of actions aimed at improving community education.
Observations	

Activity ID	A-6
Indicator ID	A-6.4
Indicator name	# of women with access to formal education programs, better quality education or scholarships
Type	Result
Goal	Access to formal education and/or Scholarship systems developed and available for community members is improved
SDG compliance	SDG1 (social investment), SDG4 (investment in education), SDG5 (women participation), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since discourages deforestation)
Measurement unit	Number of women
Monitoring methodology	The execution of project resources and the women who access formal education, scholarships or better-quality education are verified.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs

Result indicator in the reporting period	
Documents to support the information	Execution of project resources. Development of formal education programs. Record of actions aimed at improving community education. Registry of beneficiaries of actions aimed at improving community education.
Observations	

Activity ID	A-6
Indicator ID	A-6.5
Indicator name	# of people who participate in meetings or workshops on education matters
Type	Result
Goal	The processes of identification and prioritization of social investment in education are carried out in a participatory manner.
SDG compliance	SDG1 (social investment), SDG4 (investment in education), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since discourages deforestation)
Measurement unit	Number of people
Monitoring methodology	For the measurement and reporting of this indicator a record of people attending meetings or workshops is carried out and reported
Monitoring frequency	Annually
Responsible measurement for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for the workshops and meetings convened. Minutes of the meetings and workshops convened.
Observations	

Activity ID	A-6
Indicator ID	A-6.6
Indicator name	# of women who participate in meetings or workshops on education matters
Type	Result
Goal	The processes of identification and prioritization of social investment in education are carried out in a participatory manner.
SDG compliance	SDG1 (social investment), SDG4 (investment in education), SDG5 (women participation), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since discourages deforestation)
Measurement unit	Number of people
Monitoring methodology	For the measurement and reporting of this indicator a record of women attending meetings or workshops is carried out and reported
Monitoring frequency	Annually

Responsible measurement	for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period		
Documents to support the information		Photographic record and/or videos. Attendance lists for the workshops and meetings convened. Minutes of the meetings and workshops convened.
Observations		

Activity ID	A-7	
Indicator ID	A-7.1	
Indicator name	# of health facilities improved/built	
Type	Product	
Goal	Improve or build health facilities located in the reservation	
SDG compliance	SDG ₁ (social investment), SDG ₃ (health) SDG ₁₃ (reduction of emissions), SDG ₁₅ (protection of forest habitat since discourages deforestation)	
Measurement unit	Number of people	
Monitoring methodology	The execution of project resources and the investments made in the construction and adaptation of health posts are verified. The number of health posts built or improved is quantified.	
Monitoring frequency	Annually	
Responsible measurement	for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period		
Documents to support the information		Execution of project resources. Health posts built and adequate. Evidence of contracts.
Observations		Available documentation should be used

Activity ID	A-7
Indicator ID	A-7.2
Indicator name	# of health facilities in operation
Type	Result
Goal	Health facilities available for the community members
SDG compliance	SDG ₁ (social investment), SDG ₃ (health) SDG ₁₃ (reduction of emissions), SDG ₁₅ (protection of forest habitat since discourages deforestation)
Measurement unit	Number
Monitoring methodology	It is verified during site visits or in official documents the available health facilities in operation within or nearby the Indigenous Reservation territory and the number is reported

Monitoring frequency	Annually
Responsible measurement for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Verification in on-site visits. Photographic record. Documentation. Reports.
Observations	Available documentation should be used

Activity ID	A-7
Indicator ID	A-7.3
Indicator name	# of people with access to formal health care
Type	Result
Goal	Access to health services for community members is improved.
SDG compliance	SDG1 (social investment), SDG3 (health) SDG13 (reduction of emissions), SDG15 (protection of forest habitat since discourages deforestation)
Measurement unit	Number of people
Monitoring methodology	The execution of project resources and the people who access health care is verified.
Monitoring frequency	Annually
Responsible measurement for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Execution of project resources. Development of health care programs. Record of actions aimed at improving community access to health care. Registry of beneficiaries of actions aimed at improving health care.
Observations	Available documentation should be used

Activity ID	A-7
Indicator ID	A-7.4
Indicator name	# of women with access to formal health care
Type	Result
Goal	Access to health services for women members of the community is improved.
SDG compliance	SDG1 (social investment), SDG3 (health) SDG13 (reduction of emissions), SDG15 (protection of forest habitat since discourages deforestation)
Measurement unit	Number of women
Monitoring methodology	The execution of project resources and the women who access health care is verified.
Monitoring frequency	Annually

Responsible measurement	for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period		
Documents to support the information		Execution of project resources. Development of health care programs. Record of actions aimed at improving community access to health care. Registry of beneficiaries of actions aimed at improving health care.
Observations		Available documentation should be used

Activity ID	A-7	
Indicator ID	A-7.5	
Indicator name	# of people who participate in meetings or workshops on health matters	
Type	Result	
Goal	The processes of identification and prioritization of social investment in education are carried out in a participatory manner.	
SDG compliance	SDG1 (social investment), SDG3 (health) SDG13 (reduction of emissions), SDG15 (protection of forest habitat since discourages deforestation)	
Measurement unit	Number of people	
Monitoring methodology	For the measurement and reporting of this indicator a record of people attending meetings or workshops is carried out and reported	
Monitoring frequency	Annually	
Responsible measurement	for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period		
Documents to support the information		Photographic record and/or videos. Attendance lists for the workshops and meetings convened. Minutes of the meetings and workshops convened.
Observations		Available documentation should be used

Activity ID	A-7
Indicator ID	A-7.6
Indicator name	# of women who participate in meetings or workshops on health matters
Type	Result
Goal	The processes of identification and prioritization of social investment in education are carried out in a participatory manner.
SDG compliance	SDG1 (social investment), SDG3 (health) SDG13 (reduction of emissions), SDG15 (protection of forest habitat since discourages deforestation)
Measurement unit	Number of women
Monitoring methodology	For the measurement and reporting of this indicator a record of women attending meetings or workshops is carried out and reported

Monitoring frequency	Annually
Responsible measurement for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for the workshops and meetings convened. Minutes of the meetings and workshops convened.
Observations	Available documentation should be used

Activity ID	A-7
Indicator ID	A-7.7
Indicator name	# of people trained in traditional and ancestral medicine
Type	Result
Goal	The knowledge of traditional and ancestral medicine of the members of the communities is strengthened
SDG compliance	SDG1 (social investment), SDG3 (health), SDG5 (women participation), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since discourages deforestation)
Measurement unit	Number of women
Monitoring methodology	For the measurement and reporting of this indicator a record of people attending meetings or workshops is carried out and reported
Monitoring frequency	Annually
Responsible measurement for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for the workshops and meetings convened. Minutes of the meetings and workshops convened.
Observations	Available documentation should be used

Activity ID	A-7
Indicator ID	A-7.8
Indicator name	# of health models designed
Type	Product
Goal	Health models are design to improve the provision of services related to this aspect
SDG compliance	SDG1 (social investment), SDG3 (health), SDG5 (women participation), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since discourages deforestation)
Measurement unit	Number of health models

Monitoring methodology	For the measurement and reporting of this indicator a record of health systems designed is carried out and reported
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Legal agreements signed Documents generated by the parts involved
Observations	Available documentation should be used

Activity ID	A-8
Indicator ID	A-8.1
Indicator name	# of houses improved/built
Type	Product
Goal	The houses of members of the community are improved or built.
SDG compliance	SDG1 (social investment), SDG3 (Health for better sanitation), SDG11 (better housing), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation)
Measurement unit	Number
Monitoring methodology	The number of improved or built dwellings is quantified.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Execution of project resources. Records of home improvement activities. On-site visits. Reports.
Observations	Available documentation should be used

Activity ID	A-8
Indicator ID	A-8.2
Indicator name	# of houses or infrastructure with access to electricity
Type	Result
Goal	Access to electricity in the indigenous reservation is improved (from solar panels).
SDG compliance	SDG1 (social investment), SDG7 (energy), SDG13 (reduction of emissions), SDG15 (protection of forest habitat as it discourages deforestation)
Measurement unit	Number

Monitoring methodology	The execution of project resources and the investments made in the installation of energy sources are verified. Homes that receive improvements in electricity systems are quantified.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Execution of project resources. Records of installation activities of non-conventional energy sources in homes. On-site visits. Reports.
Observations	Available documentation should be used

Activity ID	A-8
Indicator ID	A-8.3
Indicator name	# of people with access to safe drinking water or better water quality and basic sanitation
Type	Result
Goal	People in the community have access to clean water or better-quality water and basic sanitation.
SDG compliance	SDG1 (social investment), SDG6 (water and sanitation), SDG13 (reduction of emissions), SDG15 (protection of forest habitat as it discourages deforestation)
Measurement unit	Number of people
Monitoring methodology	The execution of project resources and the investments made in purification systems are verified. The number of people who have access to drinking water or better water quality is quantified.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Execution of project resources. Construction of drinking water treatment systems. Award contract. On-site visits. Reports.
Observations	Available documentation should be used

Activity ID	A-8
Indicator ID	A-8.4
Indicator name	# of women with access to safe drinking water or better water quality and basic

	sanitation
Type	Result
Goal	Women in the community have access to clean water or better-quality water and basic sanitation.
SDG compliance	SDG1 (social investment), SDG6 (water and sanitation), SDG13 (reduction of emissions), SDG15 (protection of forest habitat as it discourages deforestation)
Measurement unit	Number of women
Monitoring methodology	The execution of project resources and the investments made in purification systems are verified. The number of women who have access to drinking water or better water quality is quantified.
Monitoring frequency	Annually
Responsible measurement for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Execution of project resources. Construction of drinking water treatment systems. Award contract. On-site visits. Reports.
Observations	Available documentation should be used

Activity ID	A-8
Indicator ID	A-8.5
Indicator name	# of actions aimed at strengthening comprehensive waste management
Type	Result
Goal	Actions are implemented to carry out adequate waste management in the reservation.
SDG compliance	SDG1 (social investment), SDG3 (Health for better sanitation), SDG6 (sanitation), SDG11 (better, healthier housing), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation)
Measurement unit	Number of people
Monitoring methodology	The execution of project resources and the investments made in the development of activities that allow strengthening the management of waste in the communities are verified.
Monitoring frequency	Annually
Responsible measurement for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Execution of project resources. Records of actions implemented in order to promote integrated waste management. Contracts.

	Reports.
Observations	Available documentation should be used

Activity ID	A-8
Indicator ID	A-8.6
Indicator name	# of people who participate in meetings or workshops on housing matters
Type	Result
Goal	The processes of identification and prioritization of social investment in housing are carried out in a participatory manner.
SDG compliance	SDG1 (social investment), SDG3 (Health for better sanitation), SDG6 (sanitation), SDG7 (electricity), SDG11 (better, healthier housing), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation)
Measurement unit	Number of people
Monitoring methodology	For the measurement and reporting of this indicator a record of people attending meetings or workshops is carried out and reported
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for the workshops and meetings convened. Minutes of the meetings and workshops convened.
Observations	Available documentation should be used

Activity ID	A-8
Indicator ID	A-8.7
Indicator name	# of women who participate in meetings or workshops on housing matters
Type	Result
Goal	The processes of identification and prioritization of social investment in housing are carried out in a participatory manner.
SDG compliance	SDG1 (social investment), SDG3 (Health for better sanitation), SDG6 (sanitation), SDG7 (electricity), SDG11 (better, healthier housing), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation)
Measurement unit	Number of women
Monitoring methodology	For the measurement and reporting of this indicator a record of women attending meetings or workshops is carried out and reported
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs

Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for the workshops and meetings convened. Minutes of the meetings and workshops convened.
Observations	Available documentation should be used

Activity ID	A-9
Indicator ID	A-9.1
Indicator name	# of clan leaders and members participating in meetings or workshops
Type	Result
Goal	Clan leaders and People in the community participate in spaces that aims to boost traditional authorities, relationships and governance.
SDG compliance	SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation and governance is strengthened)
Measurement unit	Number of people
Monitoring methodology	For the measurement and reporting of this indicator a record of people attending meetings or workshops is carried out and reported
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for the workshops and meetings convened. Minutes of the meetings and workshops convened.
Observations	

Activity ID	A-9
Indicator ID	A-9.2
Indicator name	Collective governance improved
Type	Result
Goal	Collective governance will improve by strengthening traditional authorities and relations
SDG compliance	SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation and governance is strengthened)
Measurement unit	Collective Agreements and decisions
Monitoring methodology	For the measurement and reporting of this indicator a record of collective agreements and decisions regarding project activities and implementation, and regarding forest management will be carried out and reported
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative

Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for the workshops and meetings convened. Minutes of the meetings and workshops convened. Agreements and support documents of decision-making process.
Observations	

Activity ID	A-10
Indicator ID	A-10.1
Indicator name	# of people who participate in training, meetings or training days related to language, medicine, traditional productive systems, knowledge and rituals.
Type	Result
Goal	Strengthen the capacities of community members to maintain, recover improve and transfer the elements of their culture
SDG compliance	SDG3 (health and well-being), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation and governance is strengthened)
Measurement unit	Number of people
Monitoring methodology	For the measurement and reporting of this indicator a record of people attending trainings, meetings or workshops is carried out and reported
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for the workshops and meetings. Minutes of the meetings and workshops.
Observations	

Activity ID	A-10
Indicator ID	A-10.2
Indicator name	# women who participate in training, meetings or training days related to language, medicine, traditional productive systems, knowledge and rituals.
Type	Result
Goal	Strengthen the capacities of community members to maintain, recover improve and transfer the elements of their culture
SDG compliance	SDG3 (health and well-being), SDG5 (women participation) SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation and governance is strengthened)
Measurement unit	Number of women
Monitoring methodology	For the measurement and reporting of this indicator a record of women attending trainings, meetings or workshops is carried out and reported
Monitoring frequency	Annually

Responsible measurement	for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period		
Documents to support the information		Photographic record and/or videos. Attendance lists for the workshops and meetings. Minutes of the meetings and workshops.
Observations		

Activity ID	A-10	
Indicator ID	A-10.3	
Indicator name	# of programs executed to preserve traditional languages	
Type	Product	
Goal	Promote the conservation of traditional languages	
SDG compliance	SDG3 (health and well-being), SDG5 (women participation) SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation and governance is strengthened)	
Measurement unit	Number of programs	
Monitoring methodology	For the measurement and reporting of this indicator a record of programs executed is carried out and reported	
Monitoring frequency	Annually	
Responsible measurement	for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period		
Documents to support the information		Legal agreements signed. Documents generated by the parts involved.
Observations		Available documentation should be used

Activity ID	A-10
Indicator ID	A-10.4
Indicator name	# of elderly and maloqueros supported
Type	Result
Goal	Support the elderly and maloqueros in the traditional and ancestral strengthening
SDG compliance	SDG3 (health and well-being), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation and governance is strengthened)
Measurement unit	Number of people
Monitoring methodology	For the measurement and reporting of this indicator a record of elderly and maloqueros supported is carried out and reported
Monitoring frequency	Annually

Responsible measurement	for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period		
Documents to support the information		Photographic record and/or videos. Attendance lists for the workshops and meetings. Minutes of the meetings and workshops.
Observations		

Activity ID	A-10	
Indicator ID	A-10.5	
Indicator name	# of Malocas built/improved	
Type	Product	
Goal	Build/improve the malocas to strengthen the traditions and ancestral knowledge	
SDG compliance	SDG3 (health and well-being), SDG5 (women participation) SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation and governance is strengthened)	
Measurement unit	Number of malocas	
Monitoring methodology	The number of improved or built malocas is quantified.	
Monitoring frequency	Annually	
Responsible measurement	for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period		
Documents to support the information		Photographic record and/or videos. Attendance lists for the workshops and meetings. Minutes of the meetings and workshops.
Observations		

Activity ID	A-10
Indicator ID	A-10.6
Indicator name	# of families with access to traditional productive systems
Type	Result
Goal	Strengthen the access of community members to traditional production systems
SDG compliance	SDG1 (productive investment), SDG2 (productive investment), SDG3 (health and well-being), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation and governance is strengthened)
Measurement unit	Number of families
Monitoring methodology	The number of families in the community that have established and/or improved traditional production systems (chagras) is quantified and the value is reported.
Monitoring frequency	Annually

Responsible measurement	for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period		
Documents to support the information		Photographic record and/or videos. Attendance lists for the workshops and meetings. Minutes of the meetings and workshops.
Observations		

Activity ID	A-11	
Indicator ID	A-11.1	
Indicator name	# of people participating in meetings or workshops on governance and planning issues	
Type	Result	
Goal	The process of building/updating the Life Plan is carried out in a participatory manner.	
SDG compliance	SDG1 (social and productive investment), SDG2 (social and productive investment), SDG3 (investment in health), SDG4 (investment in education), SDG5 (women's participation), SDG6 (investment in water and sanitation), SDG8 (better employment and growth economic), SDG11 (investment in housing), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation)	
Measurement unit	Number of people	
Monitoring methodology	For the measurement and reporting of this indicator a record of people attending trainings, meetings or workshops is carried out and reported	
Monitoring frequency	Annually	
Responsible measurement	for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period		
Documents to support the information	Photographic record and/or videos. Attendance lists for the workshops and meetings. Minutes of the meetings and workshops. Reports.	
Observations		

Activity ID	A-11
Indicator ID	A-11.2
Indicator name	# of women participating in meetings or workshops on governance and planning issues
Type	Result
Goal	The process of building/updating the Life Plan is carried out in a participatory manner.
SDG compliance	SDG1 (social and productive investment), SDG2 (social and productive investment),

	SDG3 (investment in health), SDG4 (investment in education), SDG5 (women's participation), SDG6 (investment in water and sanitation), SDG8 (better employment and growth economic), SDG11 (investment in housing), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation)
Measurement unit	Number of people
Monitoring methodology	For the measurement and reporting of this indicator a record of women attending trainings, meetings or workshops is carried out and reported
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for the workshops and meetings. Minutes of the meetings and workshops. Reports.
Observations	

Activity ID	A-11
Indicator ID	A-11.3
Indicator name	# of Life plans developed or updated
Type	Product
Goal	At least 1 life plan document is developed
SDG compliance	SDG1 (social and productive investment), SDG2 (social and productive investment), SDG3 (investment in health), SDG4 (investment in education), SDG5 (women's participation), SDG6 (investment in water and sanitation), SDG8 (better employment and growth economic), SDG11 (investment in housing), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation)
Measurement unit	Number of life plans
Monitoring methodology	The number of life plans prepared or updated is quantified.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Community Plan documents developed. Minutes of meetings. Reports.
Observations	

Activity ID	A-11
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Indicator ID	A-11.4
Indicator name	# Indigenous life plans under implementation
Type	Result
Goal	Actions are implemented that contribute to the fulfillment of community development plans
SDG compliance	SDG1 (social and productive investment), SDG2 (social and productive investment), SDG3 (investment in health), SDG4 (investment in education), SDG5 (women's participation), SDG6 (investment in water and sanitation), SDG8 (better employment and growth economic), SDG11 (investment in housing), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation)
Measurement unit	Number of life plans
Monitoring methodology	For the report of this indicator, the number of life plans that have implementation actions will be considered.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Records of execution actions of community plans. Photographic record and/or videos Reports.
Observations	

Activity ID	A-12
Indicator ID	A-12.1
Indicator name	# of people participating in meetings or workshops on governance and planning issues
Type	Result
Goal	The process of building/updating the Environmental Management plan is carried out in a participatory manner.
SDG compliance	SDG1 (social and productive investment), SDG2 (social and productive investment), SDG3 (investment in health), SDG4 (investment in education), SDG5 (women's participation), SDG6 (investment in water and sanitation), SDG8 (better employment and growth economic), SDG11 (investment in housing), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation)
Measurement unit	Number of people
Monitoring methodology	For the measurement and reporting of this indicator a record of people attending trainings, meetings or workshops is carried out and reported
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	

Documents to support the information	Photographic record and/or videos Attendance lists for the workshops and meetings. Minutes of the meetings and workshops. Reports
Observations	

Activity ID	A-12
Indicator ID	A-12.2
Indicator name	# of women participating in meetings or workshops on governance and planning issues
Type	Result
Goal	The process of building/updating the Environmental Management plan is carried out in a participatory manner.
SDG compliance	SDG1 (social and productive investment), SDG2 (social and productive investment), SDG3 (investment in health), SDG4 (investment in education), SDG5 (women's participation), SDG6 (investment in water and sanitation), SDG8 (better employment and growth economic), SDG11 (investment in housing), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation)
Measurement unit	Number of women
Monitoring methodology	For the measurement and reporting of this indicator a record of women attending trainings, meetings or workshops is carried out and reported
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos Attendance lists for the workshops and meetings. Minutes of the meetings and workshops. Reports
Observations	

Activity ID	A-12
Indicator ID	A-12.3
Indicator name	# of Environmental Management plans developed or updated
Type	Product
Goal	At least 1 Environmental Management plan document is developed
SDG compliance	SDG1 (social and productive projects), SDG2 (social and productive projects), SDG3 (health and well-being), SDG4 (environmental education), SDG5 (women's participation), SDG6 (investment in water and sanitation), SDG8 (better employment and growth economic), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation)
Measurement unit	Number of plans

Monitoring methodology	The number of environmental management plans developed is quantified
Monitoring frequency	Annually
Responsible measurement for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Environmental management plan document Attendance lists for the workshops and meetings. Minutes of the meetings and workshops. Reports.
Observations	

Activity ID	A-12
Indicator ID	A-12.4
Indicator name	# Environmental Management plans under implementation
Type	Result
Goal	Actions are implemented that contribute to the fulfillment of the Environmental Management plans
SDG compliance	SDG1 (social and productive projects), SDG2 (social and productive projects), SDG3 (health and well-being), SDG4 (environmental education), SDG5 (women's participation), SDG6 (investment in water and sanitation), SDG8 (better employment and growth economic), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation)
Measurement unit	Number of plans
Monitoring methodology	For the report of this indicator, the number of environmental management plan that have implementation actions will be considered.
Monitoring frequency	Annually
Responsible measurement for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Records of execution actions of environmental plans. Photographic record and/or videos. Reports.
Observations	

Activity ID	A-13
Indicator ID	A-13.1
Indicator name	# of people participating in meetings and training sessions
Type	Result
Goal	Strengthen the capacities of community members to monitor the forest and control

	deforestation.
SDG compliance	SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation)
Measurement unit	Number of people
Monitoring methodology	For the measurement and reporting of this indicator a record of people attending trainings, meetings or workshops is carried out and reported
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for the workshops and meetings. Minutes of the meetings and workshops. Reports.
Observations	

Activity ID	A-13
Indicator ID	A-13.2
Indicator name	# of women participating in meetings and training sessions
Type	Result
Goal	Strengthen the capacities of community members to monitor the forest and control deforestation.
SDG compliance	SDG5 (Women participation), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation)
Measurement unit	Number of women
Monitoring methodology	For the measurement and reporting of this indicator a record of women attending trainings, meetings or workshops is carried out and reported
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for the workshops and meetings. Minutes of the meetings and workshops. Reports.
Observations	

Activity ID	A-13
Indicator ID	A-13.3
Indicator name	Document of constitution or formalization of the Group of Families that protect the

	forest (forest rangers)
Type	Result
Goal	Formalize the group of families that protect the forest
SDG compliance	SDG5 (Women participation), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation)
Measurement unit	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator a record of people that constitute the group of families that protect the forest will be carried out and reported in a document
Monitoring frequency	Annually
Responsible measurement for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Documents with the list of people and families participating in forest protections. Minutes of the meetings and workshops. Reports.
Observations	

Activity ID	A-13
Indicator ID	A-13.4
Indicator name	# of members that belong to the Group of Families that protect the forest
Type	Result
Goal	Link community members in families that protect the forest
SDG compliance	SDG5 (women participation), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation)
Measurement unit	Number of people
Monitoring methodology	For the measurement and reporting of this indicator a record of people conforming ranger families will be reported
Monitoring frequency	Annually
Responsible measurement for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for the conformation of ranger families Minutes of the meetings and workshops. Reports.
Observations	

Activity ID	A-13
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Indicator ID	A-13.5
Indicator name	Programming of the activities of the Group of families that protect the forest
Type	Result
Goal	Implement the programming of the monitoring activities of the group of families that protect the forest.
SDG compliance	SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation)
Measurement unit	Number of schedules in implementation
Monitoring methodology	For the measurement and reporting schedules and planning of monitoring activities will be quantified
Monitoring frequency	Annually
Responsible measurement for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Schedules. Programming documents.
Observations	

Activity ID	A-13
Indicator ID	A-13.6
Indicator name	Routes or expeditions carried out
Type	Product
Goal	Conduct tours and/or expeditions to identify and/or monitor biodiversity and the state of forest cover
SDG compliance	SDG13 (reduction of emissions), SDG15 (protection of forest habitat and biodiversity since it discourages deforestation and enhance monitoring)
Measurement unit	Number of schedules in implementation
Monitoring methodology	For the measurement and reporting designed routes and expeditions carried out will be quantified
Monitoring frequency	Annually
Responsible measurement for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists to expeditions. Designed routes document supports.
Observations	

Activity ID	A-13
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Indicator ID	A-13.7
Indicator name	Equipment for monitoring purposes acquired
Type	Result
Goal	Acquire and deliver to the forest rangers' equipment, tools or technologies to strengthen monitoring purposes
SDG compliance	SDG13 (reduction of emissions), SDG15 (protection of forest habitat and biodiversity since it discourages deforestation and enhance monitoring)
Measurement unit	Number of equipment acquired
Monitoring methodology	For the measurement and reporting of this indicator, a record of equipment (tools, technologies) acquired, and the execution of project resources will be verified.
Monitoring frequency	Annually
Responsible measurement for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Execution of project resources. Photographic record and/or videos of equipment bought. Invoices.
Observations	

Activity ID	A-14
Indicator ID	A-14.1
Indicator name	# of hectares of standing forest in project area
Type	Impact
Goal	Monitor the progress of deforestation and its changes in coverage
SDG compliance	SDG13 (reduction of emissions), SDG15 (protection of forest habitat and biodiversity since it discourages deforestation and enhance monitoring)
Measurement unit	Area (Ha)
Monitoring methodology	Evaluation of forest and non-forest maps according to BioCarbon Registry methodology
Monitoring frequency	Annually
Responsible measurement for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Analysis of deforestation from maps. Calculations of deforestation and deforestation rates.
Observations	

Activity ID	A-14
Indicator ID	A-14.2

Indicator name	# tons of CO ₂ not emitted (avoided)
Type	Impact
Goal	Reduce CO ₂ emissions
SDG compliance	SDG13 (reduction of emissions), SDG15 (protection of forest habitat and biodiversity since it discourages deforestation and enhance monitoring)
Measurement unit	CO ₂ emissions reduction (t CO ₂ e).
Monitoring methodology	For the measurement and reporting of this indicator, the area of standing forest present in the territory of the indigenous reservations is identified and estimated using Geographic Information Systems and satellite images from remote sensors. Subsequently, the applicable emission factor is applied
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra
Result indicator in the reporting period	
Documents to support the information	Use of non-forest forest maps from IDEAM (SMByC). Use of NREF emission factors. Calculation supports.
Observations	

Activity ID	A-14
Indicator ID	A-14.3
Indicator name	# of people employed for community forest monitoring
Type	Impact
Goal	Employ community members in forest monitoring
SDG compliance	SDG8 (employment), SDG13 (reduction of emissions), SDG15 (protection of forest habitat and biodiversity since it discourages deforestation and enhance monitoring)
Measurement unit	Number of people
Monitoring methodology	Number of people employed full-time by project activities related to the monitoring component is quantified.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Contracts signed with members of the community. Payment records.
Observations	

Activity ID	A-14
Indicator ID	A-14.4
Indicator name	# of hectares of standing forest in leakage belt
Type	Impact

Goal	Monitor the progress of deforestation and its changes in coverage of the leakage belt
SDG compliance	SDG13 (reduction of emissions), SDG15 (protection of forest habitat and biodiversity since it discourages deforestation and enhance monitoring)
Measurement unit	Area (Ha)
Monitoring methodology	Evaluation of forest and non-forest maps according to BioCarbon Registry methodology
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Spatial analysis of deforestation from maps. Calculations of deforestation and deforestation rates.
Observations	

Activity ID	A-14
Indicator ID	A-14.5
Indicator name	# of meetings with public or private entities to review deforestation trends in project boundaries
Type	Result
Goal	Strengthen the processes of regional articulation of the reservations and identify opportunities to improve the exercise of governance based on joint management with private and public entities.
SDG compliance	SDG13 (reduction of emissions), SDG15 (protection of forest habitat and biodiversity since it discourages deforestation and enhance monitoring)
Measurement unit	Number of meetings
Monitoring methodology	Number of meetings held with the aim of reviewing the problem of deforestation inside and outside the project limits, either with public or private entities.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Meeting attendance lists. Meeting minutes. Other supports of the meetings.
Observations	

Activity ID	A-15
Indicator ID	A-15.1
Indicator name	# of people participating in meetings and training sessions

Type	Result
Goal	Strengthen the capacities of community members for managing administrative, legal and financial aspects.
SDG compliance	SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation)
Measurement unit	Number of people
Monitoring methodology	For the measurement and reporting of this indicator a record of people attending trainings, meetings or workshops is carried out and reported
Monitoring frequency	Annually
Responsible measurement for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for the workshops and meetings. Minutes of the meetings and workshops. Reports.
Observations	

Activity ID	A-15
Indicator ID	A-15.2
Indicator name	# of women participating in meetings and training sessions
Type	Result
Goal	Strengthen the capacities of women for managing administrative, legal and financial aspects.
SDG compliance	SDG5 (Women participation), SDG13 (reduction of emissions), SDG15 (protection of forest habitat since it discourages deforestation)
Measurement unit	Number of women
Monitoring methodology	For the measurement and reporting of this indicator a record of women attending trainings, meetings or workshops is carried out and reported
Monitoring frequency	Annually
Responsible measurement for	Carbo-Terra Yauto Community representative Entities and/or programs
Result indicator in the reporting period	
Documents to support the information	Photographic record and/or videos. Attendance lists for the workshops and meetings. Minutes of the meetings and workshops. Reports.
Observations	



13.3. Monitoring of the REDD+ Safeguards

The monitoring plan for each applicable safeguard is presented below.

Safeguard ID	SVG-1
Indicator ID	SVG-1.1
Indicator name	Correspondence with national legislation
Type	Result
Goal	100%
Measurement unit	Percentage
Monitoring methodology	The verification of the current regulations is carried out and it is verified that the proposed activities comply with it. To monitor and report this indicator, the following equation will be used: $\frac{\# \text{ of activities that comply with national legislation}}{\# \text{ total activities}} \times 100\%$
Monitoring frequency	Annually or when a change in project activities is proposed
Responsible for measurement	Carbo-Terra Yauto
Result indicator in the reporting period	
Documents to support the information	<ul style="list-style-type: none"> • Regulatory support documents. • Analysis of legal correspondence by project activities. • Attendance lists, meeting minutes, photographic record, and recordings of meetings with the community.
Observations	All project activities have been carried out in compliance with regulations and pertinent legal aspects.

Safeguard ID	SVG-2
Indicator ID	SVG-2.1
Indicator name	Transformation and access to information
Type	Result
Goal	100%
Measurement unit	Percentage
Monitoring methodology	Access to information in language and media appropriate for the community will be verified. The number of community leaders who have access to the documents developed will be verified. To monitor this safeguard and report this indicator, the following equation will be used: $\frac{\# \text{ of community leaders with information access}}{\# \text{ total community leaders}} \times 100\%$
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto
Result indicator in the reporting period	

Documents to support the information	<ul style="list-style-type: none"> • Meeting minutes • Socialization records • Workshop attendance lists • Community interviews and surveys
Observations	Leaders have information in appropriate language and media.

Safeguard ID	SVG-3
Indicator ID	SVG-3.1
Indicator name	Accountability
Type	Product
Goal	Submit an accountability report within 6 months after the verification process.
Measurement unit	Number
Monitoring methodology	For the measurement of this indicator, the generation of accountability reports by the project implementer will be considered. Similarly, reporting and accountability sessions will be held with the stakeholders.
Monitoring frequency	Within 6 months after verification processes
Responsible for measurement	Carbo-Terra Yauto
Result indicator in the reporting period	
Documents to support the information	<ul style="list-style-type: none"> • Meeting minutes, attendance list and photographic record of the informative spaces. • Accountability reports.
Observations	

Safeguard ID	SVG-4
Indicator ID	SVG-4.1
Indicator name	Recognition of forest governance structures
Type	Impact
Goal	Recognize compliance with the forest governance structures established by the authorities of the reserves and its consistency with those established by other institutions present in the territory.
Measurement unit	Compliance
Monitoring methodology	It will be verified that the REDD+ actions are developed in accordance with the forest governance structure associated with the territorial jurisdiction by the indigenous reservations, and the forest governance structures arranged by other institutions present in the territory.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto
Result indicator in the reporting period	
Documents to support the information	<ul style="list-style-type: none"> • Forest governance structure documents for each reservation. • Meeting minutes and attendance lists. • Documents prepared by institutions on forest governance.

	<ul style="list-style-type: none"> Administrative acts of land use planning
Observations	

Safeguard ID	SVG-5
Indicator ID	SVG-5.1
Indicator name	Capacity Building
Type	Result
Goal	Increase the technical, legal and administrative capacities of the members of the indigenous reservations
Measurement unit	Number of sessions carried out
Monitoring methodology	Thematic training sessions (technical, legal and administrative) will be held, and tests will be applied at the end of the training sessions in order to evaluate the adoption of knowledge by the members of the community, and the results obtained will be reported.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto SENA, SINCHI, Research institutes
Result indicator in the reporting period	
Documents to support the information	<ul style="list-style-type: none"> Questionnaires made to the community Photographic record of property visits Attendance lists for training workshops, meeting minutes and photographic records
Observations	From the third year on

Safeguard ID	SVG-6
Indicator ID	SVG-6.1
Indicator name	Free, Prior and Informed Consent
Type	Result
Goal	Guarantee the realization of consultation spaces in accordance with the national provisions on consultation and prior, free and informed consent established in the legislation and jurisprudence, as well as by the guidelines given by the Ministry of the Interior and the control organisms for relationship with indigenous communities.
Measurement unit	Number
Monitoring methodology	Consultation sessions will be held with the interested parties and the number of sessions held will be reported.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto
Result indicator in the reporting period	
Documents to support the information	<ul style="list-style-type: none"> Evidence of relationship and consultation with the communities (minutes of meetings, lists of participants, photographic record)

Observations	
Safeguard ID	SVG-7
Indicator ID	SVG-7.1
Indicator name	Respect for traditional knowledge
Type	Result
Goal	Guarantee that the ways of understanding and relating to the environment of the communities have been taken into consideration and respected, so that the traditions, uses and customs of the communities are not affected
Measurement unit	Number
Monitoring methodology	The consultation sessions with the interested parties will be quantified, the proposal for the development of the deforestation initiative with the community will be validated and the number of sessions carried out will be reported.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto
Result indicator in the reporting period	
Documents to support the information	<ul style="list-style-type: none"> Evidence of relationship and consultation with the communities (minutes of meetings, lists of participants, photographic record)
Observations	

Safeguard ID	SVG-8
Indicator ID	SVG-8.1
Indicator name	Distribution of benefits
Type	Impact
Goal	Guarantee the distribution of 100% of the benefits derived from the implementation of policies, measures and actions to reduce deforestation and that are generated from knowledge, innovations and traditional practices for the conservation and sustainable use of forests, their diversity and ecosystem services are distributed fairly and equitably to the members of the indigenous reservations linked to the project.
Measurement unit	\$(COP)
Monitoring methodology	Considering that there is a scheme for the distribution of the resources derived from the commercialization of the carbon certificates arranged with the communities, the record of the resources received by the indigenous reservations will be kept.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto Representatives of the community
Result indicator in the reporting period	
Documents to support the information	<ul style="list-style-type: none"> Resource distribution agreement defined and signed Financial support or economic transactions
Observations	The distribution of the resources will be made once the operating expenses of the project are covered.

Safeguard ID	SVG-9
Indicator ID	SVG-9.1
Indicator name	Territory Rights
Type	Results
Goal	Guarantee respect for the collective and individual territorial rights of the indigenous reservation. As well as its use and cultural, economic and spiritual meaning.
Measurement unit	Compliance or not
Monitoring methodology	The regulations issued in terms of territorial rights for each of the communities of the reservations are reviewed and their respect is verified.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto
Result indicator in the reporting period	
Documents to support the information	<ul style="list-style-type: none"> Resolutions of titling of the territory in favor of the indigenous reserve
Observations	

Safeguard ID	SVG-10
Indicator ID	SVG-10.1
Indicator name	Participation
Type	Results
Goal	Guarantee the full and effective participation of the actors involved to guarantee governance and adequate decision-making on REDD+
Measurement unit	Compliance or not
Monitoring methodology	The participation of the actors involved will be verified to guarantee adequate governance and decision-making in the spaces designated for this purpose, in accordance with the provisions of national regulations and local forms of participation.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto
Result indicator in the reporting period	
Documents to support the information	<ul style="list-style-type: none"> Evidence of relationship, participation and consultation with the communities (minutes of meetings, lists of participants, photographic record)
Observations	

Safeguard ID	SVG-11
Indicator ID	SVG-11.1
Indicator name	Conservation of forests and their biodiversity
Type	Impact
Goal	Guarantee that the project is not detrimental to the conservation of forests and the biodiversity they harbor.

Measurement unit	Compliance or not
Monitoring methodology	The forest area present in the project area will be verified through the use of Geographic Information Systems.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto
Result indicator in the reporting period	
Documents to support the information	<ul style="list-style-type: none"> • Generation of cartographic products • On-site observations
Observations	

Safeguard ID	SVG-12
Indicator ID	SVG-12.1
Indicator name	Provision of environmental goods and services
Type	Impact
Goal	Guarantee that ecosystem services (supply, support, regulation and cultural) are not directly or indirectly affected, for example: water supply, soil, biodiversity, among others, due to the execution of project activities
Measurement unit	Compliance or not
Monitoring methodology	The forest cover present in the territory of the reservation will be monitored.
Monitoring frequency	Annually
Responsible for measurement	Carbo-Terra Yauto
Result indicator in the reporting period	
Documents to support the information	<ul style="list-style-type: none"> • Generation of cartographic products • Monitoring reports • On-site observations
Observations	

Safeguard ID	SVG-13
Indicator ID	SVG-13.1
Indicator name	Environmental and territorial planning
Type	Result
Goal	Consolidate the instruments of territorial and environmental planning under a conservation and sustainable forest management approach, recognizing the proper forms of planning of the indigenous reservations and the territorial context.
Measurement unit	Compliance
Monitoring methodology	It will be verified that the project promotes the consolidation of environmental and territorial ordering instruments under a conservation and sustainable forest management approach, adhering to the forms of government and interests of the indigenous reservations communities that participate in the project and the forms of ordering identified in the territorial context.
Monitoring frequency	Annually

Responsible measurement for	Carbo-Terra Yauto
Result indicator in the reporting period	
Documents to support the information	<ul style="list-style-type: none"> • Documents of Environmental Management Plans developed • Indigenous Life Plan • Meeting minutes and attendance lists. • Documents prepared by institutions on forest governance. • Administrative acts of land use planning
Observations	These activities will be developed within the framework of the project.

Safeguard ID	SVG-14
Indicator ID	SVG-14.1
Indicator name	Sector planning
Type	Result
Goal	Guarantee that REDD+ actions are articulated with legislation related to forests and their biodiversity
Measurement unit	Compliance
Monitoring methodology	Community members and Carbo-Terra will verify that REDD+ actions are articulated with legislation related to forests and their biodiversity
Monitoring frequency	Annually
Responsible measurement for	Carbo-Terra Yauto
Result indicator in the reporting period	
Documents to support the information	<ul style="list-style-type: none"> • Municipal Development Plans • Departmental Development Plans (Caqueta and Amazonas) • Action Plan of the Environmental Authorities • CRIMA Environmental planning and management plan
Observations	Monitoring activities will be developed within the framework of the project.

Safeguard ID	SVG-15
Indicator ID	SVG-15.1
Indicator name	Forest control and surveillance to avoid the displacement of emissions
Type	Result
Goal	Guarantee the development of community monitoring and control actions to reduce the displacement of emissions and identify the events that originate them
Measurement unit	Number
Monitoring methodology	GHG emissions in the project leak area are quantified and compared to the baseline to identify the trend of change.
Monitoring frequency	Annually
Responsible measurement for	Carbo-Terra Yauto
Result indicator in the reporting period	

Documents to support the information	<ul style="list-style-type: none"> • Reports of the routes carried out • Records of emissions displacement events identified • Reports on the execution of protocols to deal with emission displacement events. • Georeferenced satellite images
Observations	Monitoring activities will be developed within the framework of the project.

13.4. Monitoring of SDG Contribution

To demonstrate compliance and monitor the progress regarding SDG contribution, the project proponents use the Tool for the determination of contributions to the SDGs of GHG projects defined by BIOCARBON REGISTRY. For this, the indicators defined in the tool will be measured and reported on an annual basis. These indicators are presented below:

Table 16 Monitoring of the SDG contributions.

Category	tracking indicator
GHG emission reduction	Estimated net emission reductions in the project area.
Forest Cover	Forest area that is conserved in indigenous territories.
Land uses	Forest area with improved management practices.
	Agricultural systems area with improved management practices.
Capacity building	People who benefit from training and education in the management of productive systems, biodiversity monitoring strategies and territorial governance mechanisms.
	Women who benefit from training and education in the management of productive systems, biodiversity monitoring strategies and territorial governance mechanisms.
Employment	People who are employed or receive economic incentives within the framework of the project activities.
	Women who are employed or receive economic incentives within the framework of the project activities.
Livelihoods	People who improve their livelihoods or economic income as a result of project activities.
	Women who improve their livelihoods or economic income as a result of project activities.
Health	People who obtain or improve access to health services as a result of project activities.
	Women who obtain or improve access to health services as a result of project activities.

Category	tracking indicator
Education	People who gain access to or improvements in the quality of education services as a result of project activities.
	Women who gain access to or improvements in the quality of education services as a result of project activities.
Water and sanitation	People who gain access to drinking water or improve the quality of the water they consume as a result of project activities.
	Women who gain access to drinking water or improve the quality of the water they consume as a result of project activities.
Well-being	People whose well-being improves as a result of project activities.
	Women whose well-being improves as a result of project activities.
Biodiversity conservation	Intervention area in which management measures are implemented for the conservation of biodiversity.
	Species in some category of risk of extinction that are protected within the framework of the project activities.

13.5. Environmental and Socioeconomic Impacts

Considering that the impacts are related to the implementation of the project activities, its monitoring process is associated to the monitoring of the REDD+ activities implementation. The impact will be monitored to guarantee that it remains positive according to the table below.

Element	Measure of impact	Responsible
Environment		
Flora	Positive/negative	Carbo-Terra Yauto
Fauna	Positive/negative	Carbo-Terra Yauto
Ecosystems	Positive/negative	Carbo-Terra Yauto
Socioeconomic		
Capacity building	Positive/negative	Carbo-Terra Yauto
Governance strengthening	Positive/negative	Carbo-Terra Yauto
Economic conditions	Positive/negative	Carbo-Terra Yauto
Cultural identity	Positive/negative	Carbo-Terra

Element	Measure of impact	Responsible
		Yauto
Education access	Positive/negative	Carbo-Terra Yauto
Health services	Positive/negative	Carbo-Terra Yauto
Housing conditions	Positive/negative	Carbo-Terra Yauto

13.6. Monitoring of Project Permanence

The following table presents the risks of non-permanence identified, as well as the level of risk, mitigation measures, monitoring indicators and the reporting procedure in the event that any of these situations arise.

Risk	Risk Level	Mitigation measures	Monitoring Indicators	Report procedure	Monitoring frequency
Fires	Low	<ul style="list-style-type: none"> - Visual detection of fires during the tours carried out by the members of the community. - Interpretation of satellite images. - Define a communication and support request mechanism with entities that deal with emergencies (Corpoamazonia, Firefighters, Army, National Unit for Disaster Risk Management - UNGRD). 	<ul style="list-style-type: none"> M.1. # of detected fires M.2. # of hectares affected by fires M.3. tCO₂ emissions resulting from fires M.4. tCH₄ emissions resulting from fires 	<ol style="list-style-type: none"> 1. Communicate to the Reservation Captain the detection of a fire, its location and approximate extension. 2. Record the fire information in a document: People who detected the fire, Date of Occurrence, Location, Extension, Duration of the event. 3. Event report to CARBO-TERRA and local emergency response institutions (Corpoamazonia, UNGRD, Firefighters, etc.). 4. Estimation of the affected area through satellite images and field verification (if possible). 5. Quantification of CO₂ and CH₄ emissions associated with the fire. 	Annual
Floodings	Low	<ul style="list-style-type: none"> - Visual detection of fires during the tours carried 	M.5 # de hectares	<ol style="list-style-type: none"> 1. Communicate to the Reservation Captain the detection of a flood, its 	Annual

Risk	Risk Level	Mitigation measures	Monitoring Indicators	Report procedure	Monitoring frequency
		<p>out by the members of the community.</p> <ul style="list-style-type: none"> - Interpretation of satellite images. - Define a communication and support request mechanism with entities that deal with emergencies (Corpoamazonia, Firefighters, Army, National Unit for Disaster Risk Management - UNGRD). 	affected by floodings	<p>location and approximate extent.</p> <ol style="list-style-type: none"> 2. Record the flood information in a document: People who detected the event, Date of Occurrence, Location, Extension. 3. Event report to CARBO-TERRA and local emergency response institutions (Corpoamazonia, UNGRD, Firefighters, etc.). 4. Estimation of the affected area through satellite images and field verification (if possible). 5. Quantification of CO₂ and CH₄ emissions associated with the flooding. 	
Land Tenure disputes	Low	<ul style="list-style-type: none"> - Definition of an instance of dialogue and mechanisms for the resolution of conflicts over land tenure. 	M.6 # de hectares subject to land tenure dispute	<ol style="list-style-type: none"> 1. The Captains and/or Governors of the Indigenous Reservations will identify the actors who wish to claim the rights of the lands titled as territory of the Indigenous Reservations. 2. Report to the Ministry of the Interior, to the indigenous liaisons of the local mayors and respective governorates and to CARBO-TERRA the intention of a third party to claim the rights of land titling. 3. Follow the regular procedures and channels to settle disputes over land tenure. 	Annual
Conflicts between project actors	Medium	<ul style="list-style-type: none"> - Definition of an instance of dialogue and mechanisms for the resolution of conflicts between the actors of the project. 	M.7 # hectares deforested due to conflicts between project stakeholders.	<ol style="list-style-type: none"> 1. The Captain and/or Governor of the IR will report to CARBO-TERRA and to the dialogue body defined on the conflict situation, the actors involved and the possible implications 	Annual

Risk	Risk Level	Mitigation measures	Monitoring Indicators	Report procedure	Monitoring frequency
				<p>on forest cover.</p> <p>2. Address the conflict situation by following the mechanisms for conflict resolution between project stakeholders.</p> <p>3. Calculate the deforested forest areas associated with the conflict.</p>	
Non-appropriation of project activities	Medium	<ul style="list-style-type: none"> - Implementation of the activities defined and arranged with the community, according to the stages that are defined. - Monitoring of progress and expected results at each stage. - Definition and implementation of improvement actions to address the problems of appropriation of the identified activities. - Provide constant support to the actors involved in the project. 	<p>M.8. # of REDD+ activities that cannot be implemented due to low appropriation by project stakeholders.</p> <p>M.9. # of hectares of deforested forest due to low appropriation of project activities.</p>	<ol style="list-style-type: none"> 1. Review the results obtained from the activities and implementation stages and identify appropriation problems by the project actors. 2. Quantify the hectares of deforested forest and estimate the CO₂ emissions associated with the non-appropriation of project activities. 	Annual
Governance deficit	Medium	<ul style="list-style-type: none"> - Updating or elaboration of the Indigenous Life Plan and implementation of prioritized activities. - Development of the Environmental Management Plan for the Indigenous Reservation - Capacity building for the management of traditional production systems. 	<p>M.10. # of hectares of deforested forest due to poor territorial governance</p>	<ol style="list-style-type: none"> 1. Review the results obtained from the activities associated with the territorial governance component and implementation stages and identify appropriation problems by the project actors. 2. Quantify the hectares of deforested forest and estimate the CO₂ emissions associated with the governance deficit. 	Annual

Risk	Risk Level	Mitigation measures	Monitoring Indicators	Report procedure	Monitoring frequency
Community participation	Medium	<ul style="list-style-type: none"> - Guarantee the active participation of all members of the community who are involved in the project activities. - Socialize the progress of the project activities according to the defined planning. - Ensure the participation of the members of the community that are required in the instances for the decision making of the project. 	<ul style="list-style-type: none"> M.11. # of community members involved in project activities M.12. # of hectares of deforested forest due to lack of community participation. 	<ul style="list-style-type: none"> 1. Verify the participation of community members in socialization, training and decision-making spaces. 2. Quantify the hectares of deforested forest and estimate the CO₂ emissions associated with the low participation of the community in the REDD+ project. 	Annual

13.7. Monitoring of project emissions

During project implementation, activity data and emission factors are monitored in accordance with the provisions of section 12 GHG emission reduction from REDD+ activities will be estimated following the procedure and equations presented in section 12.4 GHG emissions in the analysis period.

13.7.1. Activity Data

13.7.1.1. Annual deforestation in the project area

The deforestation in the project area during the monitoring period is calculated with the following equation:

$$FSC_{REDD+project,yr} = \left(\frac{1}{t_2 - t_1} \right) \times (A_{REDD+proj1} - A_{REDD+proj2})$$

Where:

$$FSC_{REDD+project,yr} = \text{Annual change in the surface covered by forest in the project area; ha}$$

t_2 = Final year of the reference period; yr

t_1 = Initial year of the reference period; yr

$A_{REDD+project,1}$ = Forest surface in the project area at the beginning of the monitoring period; ha

$A_{REDD+project,2}$ = Forest surface in the project area at the end of the monitoring period; ha

13.7.1.2. Annual deforestation in the leakage area

The estimation of the annual deforestation in the leakage area, in the monitoring period, is estimated by equation

$$FSC_{lk,yr} = \left(\frac{1}{t_2 - t_1} \right) \times (A_{lk,1} - A_{lk,2})$$

Where:

$FSC_{lk,yr}$ = Annual change in the surface covered by forest in the leakage area; ha

t_2 = Final year of the reference period; yr

t_1 = Initial year of the reference period; yr

$A_{lk,1}$ = Forest surface in the leakage area at the beginning of the monitoring period; ha

$A_{lk,2}$ = Forest surface in the leakage area at the end of the monitoring period; ha

13.7.2. GHG emissions in the monitoring period

13.7.2.1. Deforestation

The annual emission due to deforestation in the project area is estimated with the following equation:

$$AE_{REDD+project,yr} = AD_{REDD+project,yr} \times TCO_{2eq}$$

Where:

$AE_{REDD+project,yr}$ = Annual emission in the project area; tCO₂ ha⁻¹

$AD_{REDD+project, yr}$ = Annual deforestation in the project area; ha
 TCO_{2eq} = Total carbon dioxide equivalent; tCO_{2e} ha⁻¹

The annual emission due to deforestation in the leakage area is estimated as follow:

$$AE_{lk, yr} = (AD_{lk, yr} \times TCO_{2eq}) - AE_{bl, lk, yr}$$

Where:

$AE_{lk, yr}$ = Annual emission in the leakage area; tCO₂ ha⁻¹
 $AD_{lk, yr}$ = Annual deforestation in leakage area; ha
 TCO_{2eq} = Total carbon dioxide equivalent; tCO_{2e} ha⁻¹
 $AE_{bl, lk, yr}$ = Annual emission in the leakage area, in the baseline scenario; tCO₂ ha⁻¹

13.7.3. Total project emissions reduction

13.7.3.1. Deforestation

The emission reduction due to avoided deforestation is estimated with the following equation:

$$ER_{DEF, REDD+project} = (t_2 - t_1) \times (AE_{DEF, bl, yr} - AE_{DEF, REDD+project, yr} - AE_{DEF, lk, yr})$$

Where:

$ER_{DEF, REDD+project}$ = Emission reduction due to avoided deforestation, monitoring period; tCO_{2e}
 t_2 = Final year of monitoring period; yr
 t_1 = Initial year of monitoring period; yr
 $AE_{bl, yr}$ = Annual emission by deforestation in the baseline scenario; tCO_{2e}
 $AE_{REDD+project}$ = Annual emission by deforestation in the project area; tCO₂ha⁻¹
 $AE_{lk, yr}$ = Annual emission by deforestation in the leakage area; tCO₂ ha⁻¹

13.7.4. Summary of the monitoring parameters

Data/Parameter available for verification	Purpose of the data/parameter	Evaluation procedure
Project area (ha)	Estimation of emissions in the baseline scenario	<ul style="list-style-type: none"> • Review of cartography of change from forest to forest • Appropriate use of equations and calculation procedure
Annual forest loss in the project area in the baseline scenario (ha)	Estimation of emissions in the baseline scenario and emission reductions	<ul style="list-style-type: none"> • Review of cartography of change from forest to forest • Appropriate use of equations and calculation procedure
Annual forest loss in the project area that occurred during the monitoring period (ha)	Estimation of the emissions in the scenario with the project and of the emission reduction	<ul style="list-style-type: none"> • Review of cartography of change from forest to forest
Leakage area covered by forest at the beginning of the project (ha)	Quantification of GHG discounts generated by forest loss in the leak area	<ul style="list-style-type: none"> • Appropriate use of equations and calculation procedure
Annual forest loss in leakage area in baseline scenario (ha)	Estimation of emissions in the baseline scenario and of emissions due to leaks	<ul style="list-style-type: none"> • Review of cartography of change from forest to forest
Annual loss of forest in the leak area that occurred during the monitoring period (ha)	Estimation of the emissions that occurred in the leak area in the scenario with the project	<ul style="list-style-type: none"> • Appropriate use of equations and calculation procedure
Emissions from deforestation that actually occurred during the monitoring period (tCO ₂ e)	Estimation of the emissions in the scenario with the project and of the emission reduction	<ul style="list-style-type: none"> • Appropriate use of equations and calculation procedure
Emissions from deforestation leaks that actually occurred during the monitoring period (tCO ₂ e)	Estimation of leakage emissions in the scenario with the project and of the emission reduction	<ul style="list-style-type: none"> • Appropriate use of equations and calculation procedure
Effective emissions reduction (tCO ₂ e)	Effective reduction achieved by the project during the monitoring period	<ul style="list-style-type: none"> • Appropriate use of equations and calculation procedure

13.7.5. Quality control and quality assurance procedures

The document CRIMA Predio Putumayo Andoque y Aduch QC-QA Procedure file v1.pdf, contains the procedure to be carried out to ensure the quality of the information and that the GHG emission estimates accurately reflect in a consistent, complete and transparent way the characteristic of the project is presented.

The QC – QA Procedure, ensures that data processing is collected appropriately in field and digital systems to be reviewed according to BioCarbon Registry procedures. Moreover, the project information will be stored in an organized and secure manner in digital and physical formats with sufficient copies for at least five years after the project activities last verification period.

14. Risk Management

14.1. Project Risk Assessment

The risk assessment was carried out based on the PMBOK® Guide (Guide to the Foundations for Project Management) for the social, environmental and financial dimension. The following is an evaluation of the identified risks, considering their probability and impact.

Table 17 Probability and impact matrix.

Score (Probability x Impact)	Risk Classification	
	Value	Level
9	3	High
6	3	High
4	2	Medium
3	2	Medium
2	1	Low
1	1	Low

Table 18 Project Risk Analysis

Dimension	Risk	Probability	Impact	Score	Classification
Social	Forced displacement of community members	1	3	3	Medium
	Weakening of government structures defined by the indigenous reservation	1	3	3	Medium
	Dissatisfaction on the part of the community with the implementation of the REDD+ project	1	3	3	Medium
	Economic dependence on the income generated by the commercialization of Carbon Credits	1	2	2	Low
	Cultural changes (e.g. loss of traditional IR practices)	1	2	2	Low
Environmental	Extreme climatic events (e.g. floods, mass removal phenomena, etc.)	1	2	2	Low

Dimension	Risk	Probability	Impact	Score	Classification
	Displacement of deforestation and degradation actions due to the implementation of the project	2	2	4	Medium
	Fires of anthropogenic origin	2	2	4	Medium
	Expansion of the agricultural frontier	2	2	4	Medium
	Pests and diseases in production systems	1	2	2	Low
	Changes in land use in the project area	2	2	4	Medium
Financial	The project reaches the break-even point after more than 7 years	1	2	2	Low
	Market price sensitivity	1	3	3	Medium
	Annual budget deficit	1	3	3	Medium
	Delays in the execution of project activities due to poor budget programming	1	2	2	Low
	The project ensures a financing percentage of less than 50%	1	3	3	Medium
	Financial viability of the project	1	2	2	Low

Defined mitigation measures for the identified risks are presented below:

Table 19 Mitigation measures for risk management

Risk	Mitigation measures
Forced displacement of community members	<ul style="list-style-type: none"> Strengthening of the governance structures defined by the IR Operation of the PQR Attention Mechanism (early warnings) Strengthening of capacities for conflict management with community members Collaborative work with national authorities
Weakening of government structures defined by the indigenous reservation	Execution of the Governance component whose actions are aimed at strengthening government structures

Risk	Mitigation measures
Dissatisfaction on the part of the community with the implementation of the REDD+ project	Operation of the PQR Attention Mechanism (early alerts and design of actions that allow pertinent adjustments to be made)
Economic dependence on the income generated by the commercialization of Carbon Credits	The development of an alternative livelihood component (productive projects) guarantees that there is no place for economic dependency
Cultural changes (e.g. loss of traditional IR practices)	Execution of activities aimed at strengthening traditional practices and knowledge transfer (e.g. strengthening traditional medicine, conservation of indigenous languages, among others)
Extreme climatic events (e.g. floods, mass removal phenomena, etc.)	<ul style="list-style-type: none"> • Project area monitoring • Climate change adaptation measures implementing
Displacement of deforestation actions due to the implementation of the project	<ul style="list-style-type: none"> • Monitoring of vegetation cover in the leakage area defined for the project.
Fires of anthropogenic origin	<ul style="list-style-type: none"> • Project area monitoring • Early warning and detection system
Expansion of the agricultural frontier	<ul style="list-style-type: none"> • Territorial planning • Activities that allow improving the performance per area unit of production systems. • Community agreements
Pests and diseases in production systems	Technical assistance for the management of production systems
Changes in land use in the project area	<ul style="list-style-type: none"> • Project area monitoring • Territorial planning
The project reaches the break-even point after more than 7 years	The project reaches the break-even point before the seventh year of implementation
Market price sensitivity	Regulated prices for carbon tax management
Annual budget deficit	Within the framework of the implementation of the project, it was defined that the Annual Investment Plan is prepared annually, the limit of which must not exceed the available budget amount.
Delays in the execution of project activities due to poor budget programming	Within the framework of the implementation of the project, it was defined that the Annual Investment Plan is prepared annually, the limit of which must not exceed the available budget amount.
The project ensures a financing percentage of less than 50%	The project has more than 85% of the required financing secured
Financial viability of the project	The project presents positive financial indicators and presents a sustainable cash flow for its implementation period.

14.2. Reversal Risk Management

To offset the reversal risk, the project has a longevity agreement signed with the community for a period of 100 years.

However, as defined by the BIOCARBON REGISTRY Standard, considering that the project belongs to the AFOLU sector, a discount of 15% will be made of the total GHG reductions quantified for each verification period (this discount is made automatically by BIOCARBON REGISTRY). This, in order to guarantee that there are VCU's that can replace the emissions that may arise in the event that the risk materializes.

14.3. Component Risk Assessment

The community has been in charge of identifying the problem to be addressed with the development of the REDD+ project, this being the loss of the forest present in their territories and the reduction of environmental, social and economic benefits over time. The social relationship process of the team in charge of the project development with the local community included a participatory discussion of the advantages and disadvantages associated with the development of the REDD+ project with the communities of the Indigenous Reserves. The discussion included topics such as the volatility in CCV prices, the need to fulfill commitments (technical, social and economic), handling possible disagreements that may arise between community members and how to guarantee their full participation. and effective during the formulation and execution of the project, among others.

Component	Risk category	Identified risks	Mitigation measures
Productive activities	Social	Cultural changes due to changes in the economic context of the population and production practices.	Strengthening of the traditional practices of the communities (e.g. strengthening of traditional production systems)
	Environmental	<ul style="list-style-type: none"> • Introduction of invasive species in production systems. • Establishment of production systems associated with monocultures. • Increase in the intervened area for the establishment of areas for productive and commercial purposes in the project zone. 	<ul style="list-style-type: none"> • Prioritize the use of promising species from the region in the production systems to be implemented. • Prioritize the development of agroforestry production systems. • Develop productive activities in areas that are previously intervened.

Component	Risk category	Identified risks	Mitigation measures
Social investment	Social	The living conditions of the communities do not improve with the implementation of the project.	<ul style="list-style-type: none"> • Monitor the improvement of the living conditions of the communities. • Promote the development of strategic alliances with entities and programs present in the territory.
Monitoring and governance	Social	<ul style="list-style-type: none"> • Low participation of the captains/governors, boards of directors, members of the REDD+ Committee in the implementation of the project. • Low-capacity development by IR members to exercise adequate territorial governance. 	<ul style="list-style-type: none"> • Maintain constant communication channels with the communities and their representatives through socialization sessions and workshops before, during and after implementing the defined REDD+ actions. • Strengthen the capacities of community members by carrying out training activities and technical assistance.
	Environmental	The annual deforestation rate in the project area exceeds the projected annual deforestation rate according to the dynamics analyzed in the reference region.	<ul style="list-style-type: none"> • Territorial planning. • Activities that allow improving the performance per area unit of production systems. • Community agreements.

Additionally, prior to the execution of the REDD+ actions agreed with the community, an analysis of environmental and social risks will be carried out with the project participants, and the measures to counteract them and prevent their materialization will be defined. Likewise, efforts will be made so that the actions that are implemented during the period of execution of the project are articulated with the instruments of territorial planning and the development plans designed by the institutions present in the territory.

15. Stakeholder Consultation processes

15.1. Community members

The process of stakeholder identification was started within the communities of the area that are part of the Great Indigenous Reservation Predio Putumayo in the Puerto Zábalo and Los Monos, and Monochoa sectors, and the Aduche Indigenous Reservation. Those communities are rightful



owners of the area of the project, and they oversee making decisions. It is important to mention that the whole identification process has respected the community's autonomy to stand for their decisions regarding their engagement in REDD+ projects, local dynamics, and regional institutional relations.

Consultations with stakeholders has been carried out accordingly to the community's ways and reality. A set of workshops has been conducted to discuss and build the REDD+ Project on a participatory manner.

Different strategies have been implemented throughout the socialization process, including presentations, documents delivery and voice to voice scenarios. These activities aimed to make emphasis on the development of appropriate community level engagement processes and materials to ensure complex issues are presented in a way that communities can understand. This included identification of the project zone, participatory mapping of project areas, identification of risks to the communities, prioritization of project activities, and role-playing to better understand potential financing and implications for the project.

The scheduling of meetings and workshops has been done to ensure: 1) formal approval from community assemblies is undertaken in an objective and timely manner; 2) communities understand and can take coherent decisions regarding the negotiation of any term sheet with investors; 3) the communities are able to understand and commit to any final contract that emerges because of these activities.

As part of the project's strategy, it is essential to recognize the importance of involving those directly and indirectly responsible for deforestation in the reservation area, tending to strengthen cultural identity and foster community unity. During the consultation activities the community members have stated their interest in the different stages of the project, being the productive activities the most preferred activity, followed by monitoring and supervision ones and finally governance activities.

The process with the community for the identification of costs, risks and benefits related with REDD+ mechanism has been done through a series of participatory workshops and information disclosing. The first community spaces were used to informed what is a REDD+ project and then analyzed the community situation. The people mentioned their problems and consequences. It was identified that productive practices in the chagra, mining activities, governmental neglect, lack of economic resources and armed conflict groups in the region threat their stability and future (see folder *Talleres*). In this way, the participants described deforestation trends and identification of deforestation drivers (problem tree).



In a second workshop proposed solutions were identified with the elaboration of a solution tree, making emphasis in alternatives or actions that lead to a change in current deforestation trends and what activities can be implemented to offer livelihood improvement and stability (see folder *Talleres*). In a third workshop the members of the community established in what activities the carbon credit sales resources should be invested and how the distribution of the benefits should take place, according with the needs and expectations of the whole community (see folder *Talleres*). During a fourth workshop, the implementation scheme of the project, as well as prioritization of places for productive systems development, was defined with the members and leaders of the communities; also, the PDD was socialized to guarantee project designing process, the community has received relevant and transparent information about REDD+ project development, and they approved the project and agreed to participate voluntarily on it (see folder *Talleres*).

In addition, for educational purposes, a REDD+ booklet was design and given to the community members (see folder *Evidencias monitoreo* file *Cartilla REDD+_Putumayo CRIMA.pdf*), where they can find the outcome of all the workshops and all the principal aspects regarding their REDD+ project.

15.2. Other interested parties

Institutions that should be articulated during the implementation phase have also been identified, not as stakeholders, but as key partners that facilitate and contribute to project implementation and integration with the regional context and initiatives. Among these are the Departmental Government, the Regional Environmental Authority, NGOs, and institutions for conservation of natural resources.

Meetings were held to present and socialize the project with CORPOAMAZONÍA, National Natural Parks of Colombia and the Government of Amazonas. Topics included definitions of the REDD+ mechanism, project location, project objectives, components and activities to be implemented, and potential synergies (see folder *Relacionamiento Institucional*).

16. Double accounting

To guarantee a robust and transparent accounting, and avoid overestimation of the benefits related to the project, the following criteria was assessed:

Table 20 Double accounting avoidance.

Criteria	¿Occurs?	Justification
A ton of CO ₂ e is counted more than once to demonstrate compliance with the same GHG mitigation goal.	No	A ton of CO ₂ e is no counted more than once in the estimation of the GHG emission reduction of the project.
A ton of CO ₂ e is counted to demonstrate compliance with more than one GHG mitigation goal.	No	A ton of CO ₂ e is only counted once to demonstrate the project mitigation result.
A ton of CO ₂ e is used more than once to obtain remuneration, benefits, or incentives.	No	The serial guarantees that a VCU will not be issued more than once.
One ton of CO ₂ e is verified, certified, or accredited through the implementation of more than one GHG project.	No	No other projects are being implemented within the CRIMA Predio Putumayo and Andoque de Aduche REDD+ project area.

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