



Verified Carbon Standard

REDD PROJECT PREDIO PUTUMAYO



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(South Pole)

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1 PROJECT DETAILS

1.1 Summary Description of the Project

The Predio Putumayo REDD Project is a local community initiative of four Indigenous Associations of the Predio Putumayo Reservation, which seeks certification of actions related to the reduction of carbon emissions due to unplanned deforestation and degradation (AUDD) in about 3 million hectares of Amazon forest.

The initiative includes activities in multiple instances, corresponding to the Associations of Indigenous Authorities (AATI): the Puerto Alegría Indigenous Council Association (COINPA), the Murui United People's Major Indigenous Council (CIMPUM), the Association of Indigenous Authorities of the Puerto Arica Zone (AIZA) and the Association of Traditional Councils and Authorities from Chorrera Indigenous Zone (AZICATCH); all of which are present in the Predio Putumayo Indigenous Reserve in the Department of Amazonas (Colombia).

Within the alternative land use scenarios, agriculture and selective timber extraction are the most widespread uses in the rural environment, especially under traditional systems. These are carried out without exception almost throughout the territory, even under adverse biophysical conditions (floodable forests, riverbanks). The project's activities are aimed precisely at managing land use and, in this way, generating a less negative impact that allows the recovery of the natural environment and the maintenance of the forest's structure.

The communities that live in the surroundings of the project area have a high economic dependence on the natural resources associated to the forest, so some traditional initiatives of sustainable management have been worked historically with the idea of improving their economic welfare.

In this way, the general objective of the project is the reduction of Greenhouse Gas (GHG) emissions through activities that allow the identification, prioritization and implementation of actions for the adequate management of the forest, the promotion of sustainable development, the strengthening of local governance and the promotion of alternative productive activities, while contributing to the protection of traditional knowledge and biodiversity.

The project started on December 31 of 2016 and has a duration of 30 years;¹ during this period, it is expected that the reduction of 70 million tCO_{2e} will be achieved through the implementation of activities related to six action lines framed in the Life Plans of the four AATI: forest and conservation, self-government and indigenous autonomy, education and languages, sustainable economy and food sovereignty, exchange of knowledge and new skills and, women and indigenous family.

¹ The crediting period runs from December 31 of 2016 to December 30 of 2035, it may be renewed for additional 10 years for a total duration of 30 years.

Finally, the project area is framed in the reference region of the Vision Amazonia Program; a strategy of the Colombian Government that seeks to promote a development model low in deforestation in the Colombian Amazon, as part of the national efforts against climate change.

1.2 Sectoral Scope and Project Type

The project is developed under the requirements of Agriculture, Forestry and Other Land Use (AFOLU) projects and is classified as an "Avoided Unplanned Deforestation and Degradation" (AUDD) project for Reduced Emissions from Deforestation and Degradation (REDD), as it seeks to reduce deforestation and degradation and to conserve carbon stocks associated with above- and below-ground biomass. These activities are in accordance with REDD+ actions defined by the United Nations Framework Convention on Climate Change (UNFCCC) in decision 1/CP.70.16.²

Similarly, this REDD project is set up as part of the mitigation actions in the Land Use, Land Use Change and Forestry (USCUSS) sector that are being carried out at the regional and national levels within the framework of the National Development Plan 2018-2022, the Colombian Low Carbon Development Strategy (ECDBC), the National REDD+ Strategy (ENREDD+), and the principles and objectives of the National Policy on Climate Change and the National Forestry Policy.

1.3 Project Eligibility

The REDD project is eligible under the VCS program because:

- the project and the execution of the activities will not lead to the violation of any law, whether the law applies;
- project activities do not involve the use of hydrological conservation, drainage or degradation of native ecosystems to generate GHG credits;
- the project certifies the reduction of net greenhouse gas (GHG) emissions by reducing unplanned deforestation or forest degradation, activities covered by the scope of the VCS program;
- the project does not include carbon footprint assessments or carbon neutrality statements; and
- the project area meets the definition of forest³ presented by Colombia to the UNFCCC for the purposes of the National REDD+ Strategy (ENREDD+) and specifically for the construction of the NREF for the Amazon Biome, and was covered by forest for a period of 10 years before the project start date.

² Report of the Conference of the Parties on its sixteenth session, held in Cancun from 29 November to 10 December 2010. The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention. Available at: <https://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf>

³ For Colombia, forest is defined as any portion of land where tree cover predominates with a minimum canopy density of 30%, a minimum canopy height (in situ) of 5 m at the time of identification, and a minimum area of 1.0 ha, and tree cover of commercial forest plantations, palm crops, with trees planted for agricultural production excluded. This definition is consistent with the criteria defined by the United Nations Framework Convention on Climate Change (UNFCCC) in its decision 11/COP.7, with the definition adopted by Colombia before the Kyoto Protocol (MAVDT, 2002), as well as with the definition of natural forest cover included in the adaptation for Colombia of the legend of the CORINE Land Cover methodology (CLC Colombia).

According to the requirements of the standard, for activities related to emission reductions from REDD activities it must be demonstrated that the areas in which the project boundaries are defined were covered by forest for at least ten years prior to the start of the project.

Using the Forest/Non-Forest layers of the Forest and Carbon Monitoring System (FMCS) at a scale of 1:100,000, the layers for 2005-2016 were mapped and the information was reclassified. Zones that remained as stable forest during the analysis period were considered eligible areas, while non-eligible areas were those with stable non-forest or with gains or losses in forest cover in the same period.

The sources of information and the cartographic process performed for the eligibility evaluation are detailed below.

Basic information

To carry out the eligibility analysis for the 2005-2016 period in the project area, the Forest/Non-Forest layers (30 m resolution) generated by the Forest and Carbon Monitoring System (FMCS) were post-processed. The procedure consisted in cutting, cleaning and improving the general aspect of the result of the classification of the layers, combining the cut layers and assigning output values for the categories Forest (1), Non-Forest (2) and No information (3) to the Forest/Non-Forest layers for the years 2005-2016 (historical reference period of 10 years). These come from the classification by Principal Component Analysis of SPOT, IKONOS, QUICKBIRD images, among others, of high and very high spatial, spectral and radiometric resolution, which comply with a spatial resolution of maximum 10 meters, 20-50% cloud coverage and quality indicator higher than seven (Galindo, et al., 2014) (Table 1).

Table 1. Cartographic information used for the delimitation of eligible areas.

Layer	Spatial resolution	Minimum mapping unit	Geographical boundaries		Source information
			Latitude	Length	
Non-Forest. Fine resolution. Republic of Colombia, 2005	30 m	1 ha	12°30.7' N - 4°13.5' S	66°01.4' W - 79°50.8' W	Landsat TM and ETM+ satellite images from 2005
Non-Forest. Fine resolution. Republic of Colombia, 2010	30 m	1 ha	12°30.7' N - 4°13.5' S	66° 50.9' W - 79°1.4' W	Landsat TM and ETM+ satellite images from 2010
Non-Forest. Fine resolution. Republic of Colombia, 2012	30 m	1 ha	12°30.7' N - 4°13.5' S	66°01.4' W - 79°50.8' W	Landsat TM and ETM+ satellite

Layer	Spatial resolution	Minimum mapping unit	Geographical boundaries		Source information
			Latitude	Length	
					images from 2012
Non-Forest. Fine resolution. Republic of Colombia, 2013	30 m	1 ha	12°28.7' N - 4°14.7' S	66°39.4' W - 79°6.1' W	Landsat TM and ETM+ satellite images from 2013
Non-Forest. Fine resolution. Republic of Colombia, 2014	30 m	1 ha	12°28.7' N - 4°14.7' S	66°39.4' W - 79°6.1' W	Landsat TM and ETM+ satellite images from 2014
Non-Forest. Fine resolution. Republic of Colombia, 2015	30 m	1 ha	13°24.7' N - 4°14.7' S	66°39.4' W - 81°47.7' W	Landsat TM and ETM+ satellite images from 2015
Non-Forest. Fine resolution. Republic of Colombia, 2016	30 m	1 ha	13°24.7' N - 4°14.7' S	66°39.4' W - 81°47.7' W	Landsat TM and ETM+ satellite images from 2016
Non-Forest. Fine resolution. Republic of Colombia, 2012	30 m	1 ha	12°30.7' N - 4°13.5' S	66°01.4' W - 79°50.8' W	Landsat TM and ETM+ satellite images from 2012

Source: Environmental Information System (EIS) – Metadata Management⁴

Cartographic processing

Within the final analysis and quantification of deforestation, it is necessary to consider that the data exclude areas for which there is information (0.4% of the project area). It is therefore possible that slightly smaller areas are recorded than those that correspond to Forest or No Forest on the ground. The No information category included all pixels that could not be interpreted in the construction of the

⁴ Environmental Information System (EIS) – Metadata Management. Available at: <http://geoapps.ideam.gov.co:8080/geonetwork/srv/es/main.home?uuid=61eed66b-672e-472d-8450-9a4856ad09c4>.

Forest/Non-Forest *raster* due to the presence of clouds or other factors, at the time when the Colombian Forest and Carbon Monitoring System (SMBYC) constructed the layers for each of the periods and areas that were not analyzed by SMBYC due to the lack of adjustment between the administrative boundary layers used.

Deforestation was understood as any change in the areas classified as Forest in the years 2005 and 2016 and as Not Forest in subsequent years. All procedures were performed in ArcGIS v.10.5.

To obtain the eligible area of the project, the following steps were followed:

- The IDEAM layers were trimmed according to the project area boundaries using the Extraction by Mask function.
- The raster layers were combined using the Combine function.
- Pixels with a change between Forest (1), Non-Forest (2), and No information (3) categories were detected.
- An attribute table was created with the categories Stable forest (1), Non-stable forest (2), No information (3), Deforestation (4) and Regeneration (5).
- Isolated polygons smaller than 1 ha were eliminated, using the Eliminate function.

With the resulting raster information, the following post-processing was carried out:

- The projection system was changed to MAGNA Colombia Bogotá.
- The resulting layer (raster) was transformed to vector format.
- An attribute table was created with the categories: Eligible (Stable Forest), Non-Eligible (Non-Stable Forest, Deforestation and Regeneration) and No Information.
- The final eligible layer was cropped to within the limits of the project area
- The areas of eligible forest for the 2005-2016 period were quantified.

Results

A total of 3,893,277 hectares of eligible forest were found, corresponding to 98% of the project area as of December 31 of 2016 (Table 2).

Table 2. Land eligibility, period 2005-2016.

Category	Area	
	Hectares	%
Eligible	3,893,277	98.1
Not eligible	58,562	1.5

Category	Area	
	Hectares	%
No information	16,089	0.4
Total	3,968,228	100.0

Source: prepared by South Pole (2020).

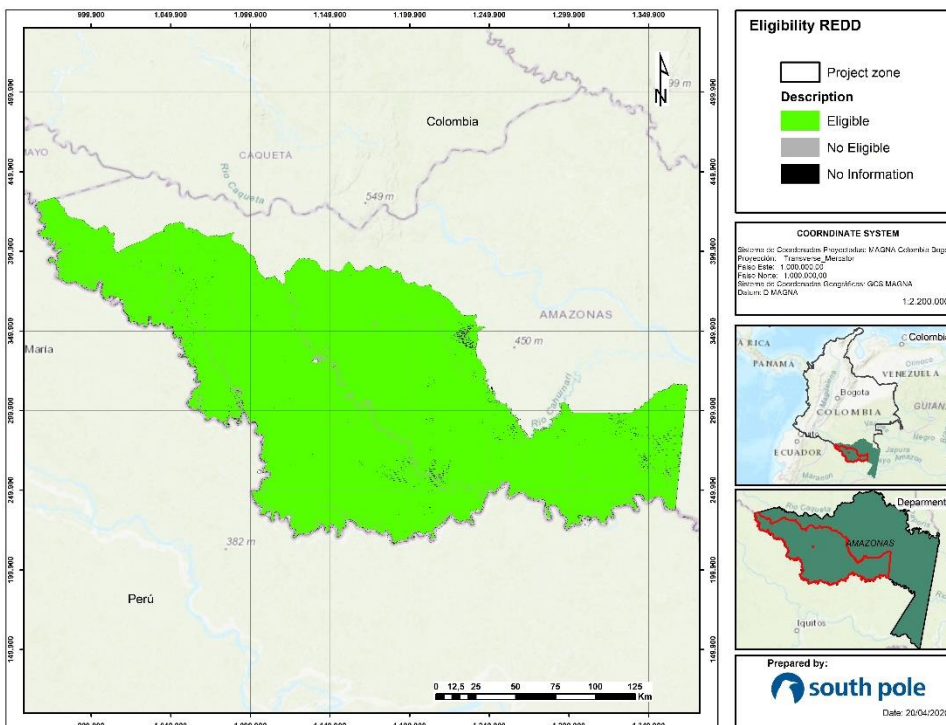


Figure 1. Eligible areas map, period 2005-2016.

Fuente: prepared by South Pole (2020).

1.4 Project Design

The project has been designed to include four instances of project activities which correspond to the territories of four Associations of Indigenous Authorities (AATIs): the Puerto Alegría Indigenous Council Association (COINPA), the Murui United People's Major Indigenous Council (CIMPUM), the Association of Indigenous Authorities of the Puerto Arica Area (AIZA) and the Association of Traditional Councils and Authorities Chorrera Indigenous Zone (AZICATCH), all of which are present in the Putumayo Reservation

in the Department of Amazonas (Colombia). The project does not consider the inclusion of additional instances during its credit period.

1.5 Project Proponent

Organization name	Puerto Alegria Indigenous Council Association (COINPA)
Contact person	Edgar Ricardo Sanda
Title	Legal Representative
Address	Puerto Alegria, Amazonas
Telephone	+57 313 850 1281
Email	aati.coinpa@gmail.com

Organization name	Major Indigenous Council of the Murui People (CIMPUM)
Contact person	Germinio Biguidima
Title	Legal Representative
Address	San José Community, El Encanto, Amazon
Telephone	+57 322 702 3557
Email	cimpum2024@gmail.com

Organization name	Association of Indigenous Authorities of the Puerto Arica Area (AIZA)
Contact person	Abel Marquez Tobar
Title	General Manager
Address	Puerto Arica, Amazonas
Telephone	+57 312 396 27 62
Email	aizaorganizacionindigena@gmail.com

Organization name	Association of Traditional Councils and Authorities from Chorrera Indigenous Zone (AZICATCH)
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Contact person	Manuel Joinama
Title	Legal Representative
Address	La Chorrera, Amazon
Telephone	+57 322 251 8602
Email	chorreraazicatch2017@gmail.com

1.6 Other Entities Involved in the Project

Organization name	South Pole Carbon Asset Management S.A.S (South Pole)
Role in the project	Advice and accompaniment in the development of the project, monitoring and accounting for the reduction of emissions. South Pole will also be in charge of marketing the mitigation results verified by the project.
Contact person	South Pole is a globally active carbon project developer and consultant with a successful track record in forest carbon projects.
Title	Daniela Herrera Serna
Address	Head of Colombian Carbon Tax Projects
Telephone	Carrera 46 # 7-59, Medellín, Antioquia, Colombia
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1.7 Ownership

1.7.1 1.7.1 Conditions of tenure and land use rights

The land belongs to the 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 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 Predio Putumayo Indigenous Reserve was established on April 5, 1988, by the Colombian Institute of Agrarian Reform (INCORA), now the Colombian Institute of Rural Development (INCODER) and was granted an area of 5,818,702 hectares and 5,000 square meters. Through Agreement No. 105 of March

29, 2007, the reservation was extended, awarding a property called "La Chorrera" acquired in liquidation by INCODER from the *Caja Agraria*, to add a final area of 5,819,505 hectares. In this way, the resolutions that account for the land tenure and use rights of the territory of the Predio Putumayo Indigenous Reserve are the following:

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

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 resources in the territory is restricted by the obligation to fulfil the ecological function of the property; in other words, they must be responsible for the protection and preservation of renewable natural resources in accordance with the uses, customs and culture of the communities.

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.

The indigenous peoples of the Predio Putumayo Reserve are represented at the national and international levels by the Organization of Indigenous Peoples of the Colombian Amazon (OPIAC). Unlike in other departments, these peoples do not have an organization at the departmental level; local government structures have therefore been consolidated into the Associations of Traditional Indigenous Authorities (AATIs), formally registered with the Ministry of the Interior. This entity constitutes the main administrative and political axis recognized in the indigenous peoples while the Indigenous Territorial Entities (ETI) are being established in the region. The AATIs are special public entities that are organizational and political subjects and have constitutional origins in the transitional Article 56 as a tool to promote the organization and administration of indigenous territories. The Associations of Indigenous Traditional Authorities are recognized as organizations of indigenous representation according to Decree 1088 of 1993.

In addition, the figure of the *Council* constitutes the basic unit of organization of the communities; its functions include communicating with external agents (public organisms, private companies, NGOs, etc). Similarly, it is in charge of channelling, executing and enforcing all the actions statutorily agreed upon by the communities that are contemplated and in accordance with the stipulations of the Life Plan of each AATI.

1.7.2 1.7.2 Agreements with owners, holders and occupiers of the project area

The four Indigenous Associations (AATI) participating in the project and South Pole Carbon Asset Management S.A.S. (South Pole) signed agreements for the purchase of Emission Reductions (ER) generated by the REDD Project within each of their territories (Table 3). These documents stipulate the general terms and conditions that apply to the development of the project (from feasibility to verification) and to the subsequent purchase of the emission reductions that were agreed by the parties. The agreements also specify the activities that will be carried out by each party, in relation to the formulation and implementation of the project during the crediting period, and the subsequent responsibilities related to the purchase and sale of the Verified Emission Reduction Units (VER).

The documents in question were created and shared with representatives of the communities of the four associations and were subsequently signed by legal representatives or general coordinators on duty.

Table 3. Agreements signed with each AATI participating in the REDD Project.

AATI	Agreement	AATI Representative	Date
COINPA	Puerto Alegría REDD+ Emission Reduction Purchase Contract	Edgar Ricardo Sanda, Legal Representative	March 27, 2019
CIMPUM	Purchase Contract for REDD+ Emission Reductions from the Murui People's Major Indigenous Council (CIMPUM)	Jose Achin Guetty, Legal Representative	November 29, 2019
AIZA	REDD+ Emission Reduction Purchase Contract of the Association of Indigenous Authorities of the Puerto Arica Area (AIZA)	Abél Marquez Tobar, General Coordinator	November 27, 2019
AZICATCH	La Chorrera REDD+ Emission Reduction Purchase Contract	Bartolome Attama Toikemuy, Legal Representative	December 3, 2019

Source: South Pole (2020).

1.8 Project Start Date

The REDD project is a retroactive initiative that started activities on December 31, 2016.

This date was chosen taking into account that:

- according to Resolution 1447 of 2018—which regulates the Monitoring, Report and Verification System (MRV) of nation-wide mitigation actions in Colombia and establishes the mechanism for the National Registry for the Reduction of GHG Emissions (RENARE)—the mitigation actions that are valid for less than five years can only be reported in the country for national accounting purposes, as of January 1, 2020.
- to avoid double counting with Visión Amazonía's REM Early Movers Program, the project will not be able to claim emission reductions for the period in which said Program had received payment for results for the same mitigation activity (reduction of emissions from deforestation). The REM Program received payment by results for the period 2013-2016.⁵

1.9 Project Crediting Period

The crediting period runs from December 31 of 2016 to December 30 of 2035, it may be renewed for additional 10 years for a total duration of 30 years.

1.10 Project Scale and Estimated GHG Emission Reductions or Removals

Project Scale	
Project	X
Large project	

Year	Estimated GHG emission reductions or removals (tCO ₂ e)
2017	2,593,751
2018	2,357,956
2019	2,357,956
2020	2,357,956
2021	2,357,956
2022	2,357,956
2023	2,357,956
2024	2,357,956
2025	2,357,956

⁵ <https://redd.unfccc.int/submissions.html?country=col>

Year	Estimated GHG emission reductions or removals (tCO ₂ e)
2026	2,357,956
2027	2,357,956
2028	2,357,956
2029	2,357,956
2030	2,357,956
2031	2,357,956
2032	2,357,956
2033	2,357,956
2034	2,357,956
2035	2,357,956
2036	2,357,956
2037	2,357,956
2038	2,357,956
2039	2,357,956
2040	2,357,956
2045	2,357,956
Total estimated ER	70,974,466
Total number of crediting years	30
Average annual ER	2,365,816

1.11 Description of the Project Activity

The project will gradually implement the activities following a technically oriented strategic plan that is subdivided into six action lines.⁶ These will group the transcendence and synergy between communities associated with Project that have worked participatively for conservation, restoration and appropriation of their forests.

⁶ The Project's action lines will be subject to modification considering the discussions with the community during the stakeholder consultation.

The strategic plan is being framed according to the Life Plans of the AATI, which presents advances in traditional activities aimed at the conservation and protection of the Amazon forests.

The action lines and project activities are and will be based on the principle of indigenous autonomy supported by:

- tradition, education and their own languages;
- the indigenous principle of living well, of using and taking advantage of local elements seeking the least impact on biodiversity and culture for the development of indigenous life; and
- the strengthening of ancestral practices of forest management, which, like the *chagra*, have proven to be the basis for effective conservation of forest cover and Amazonian biodiversity for centuries within indigenous territories;

Finally, the strategic plan of the Project is considering the contemporary context of the indigenous peoples in a globalized world, looking for to generate a healthy interchange of knowledge that allows a beneficial interaction with the rest of the society and that allows to confront the challenges and the present problems that have the conservation of the Amazon forests in indigenous territories.

A description of each project strategic line and the expected objectives and programs are presented in Table 4.

Table 4. Action lines in the Predio Putumayo REDD Project.

Action line	Background	Objective	Programs
ACTION LINE 1: FORESTS AND CONSERVATION This line focuses on the management and care of forest cover, which includes the management of natural resources, the administration of the territory, the recognition of ecosystem services and areas of use, environmental management actions aimed at the conservation of vulnerable species of flora and fauna, and the care and sustainable use of rivers and streams.	In indigenous territories, new problems arise in the management of the territory and the care of the environment: the growing external demand for natural resources generates an increase in farming, fishing, hunting and wood extraction; the use of chemicals for fishing; the use of grazing land for raising cattle; mining; the disposal of solid and liquid waste in rivers, streams and on the ground; the absence of environmental regulation and zoning and the neglect of ancestral rules for the care and use of forest resources. In addition, there are new pressures from the entry of new machinery for extraction processes (chainsaws, boats, motors), new forms of resource use, waste, and foreign forms of construction, among others, that make it possible to affect the natural environment in different	To strengthen the environmental management of indigenous territories based on the recognition of territory, ecosystem services, cultural values associated with biodiversity and the optimization of practices for the sustainable use of natural resources	• Territorial planning • Environmental Zoning, Environmental Management and Valuation of Ecosystem Services • Relationship with other actors and institutions for environmental management • Biodiversity research and monitoring • Sustainable production practices • Restoration and reforestation • Waste management

Action line	Background	Objective	Programs
	ways than those that have occurred in the area in the past.		
LINE OF ACTION 2: SELF-GOVERNMENT AND INDIGENOUS AUTONOMY Priority is given to the autonomy, sovereignty and self-determination of indigenous peoples. The improvement of the system of self-government is sought, so that it is an appropriate representation of the culture, the communities, the traditional indigenous authorities and the spiritual government. An adequate interlocution with the other governmental entities at a regional and national level is promoted, for the successful articulation with the channels of administration, government and political participation that the constitution and the policies of the country allow. The generation of technical, operational and human capacities in the indigenous population is a priority for adequate social	The new forms of government that emerged after the 1991 political constitution, together with the norms and resolutions generated in recent years for the political participation of indigenous communities, have favored the entry of resources, decision-making, and participation in regional and national policies. On the other hand, this has been a challenge due to the absence of political, leadership and social management capacities in the territory. There is a pressing need to balance ancestral forms of community administration and new forms of government, without contradicting the spiritual governance of the councils. This implies improving the political capacities of the indigenous population and valuing traditional forms of government based on the use of	Promote the consolidation of an autonomous government with technical, political and social capacities suitable for the social management of the indigenous communities, based on the recognition of the traditional and spiritual authority of the territory and the forms of indigenous participation.	• Capacity building for indigenous leadership • Legal capacity building in the indigenous world • Indigenous policy and traditional and cultural management • Communication between communities • Association information management and archiving

Action line	Background	Objective	Programs
management for the communities and their inhabitants.	words, thought and care for the world.		
ACTION LINE 3: EDUCATION AND LANGUAGES The conservation of one's own languages allows for the preservation of ancestral knowledge, care of the natural world and traditional practices that have promoted forest conservation for centuries. In this way, together with the conservation of the language, the conservation of the indigenous life is promoted with the learnings that the Amazonian peoples have acquired for the management of the forest and the territory and the care of the biodiversity that lives there.	Traditional education in the territory dates to the times of the Capuchin missions and the rubber tapping. This brought with it the oblivion of the native languages, the little appreciation of the indigenous forms of knowledge of the grands, the interruption of the transmission of knowledge through the teachings in the <i>chagras</i> , added to the losses produced by years of progressive acculturation. Today, many speakers are passive speakers who understand the language but do not use it, which poses a greater risk to the preservation of the language.	Promote the strengthening of self-education, as a basis for the understanding of ancestral, cultural and immaterial territory, for the understanding of the natural world and the care of biodiversity and for the permanence of the language and the indigenous customs.	• Teaching your own languages • Conservation and research in own languages • Own Indigenous Education System • Government schools
LINE OF ACTION 4: SUSTAINABLE ECONOMY AND FOOD SOVEREIGNTY The principle of self-sustainability and food sovereignty is based on the	The growing demand for natural resources generates an increase in farming, fishing, hunting and wood extraction; the use of chemicals for fishing; the use of grazing land for raising cattle;	Manage the use of natural resources in a sustainable manner as a guarantee of food security for the indigenous peoples of the Amazon and as an opportunity for the development	• Green economies and sustainable productive projects • Sustainable production and marketing chains

Action line	Background	Objective	Programs
indigenous concept of living well as synonymous with eating well: eating what the land provides, in a healthy way, cultivated and harvested according to ancestral standards but also including other knowledge that allows for rethinking the territory and maintaining autonomy in food production.	mining; and the disposal of solid and liquid waste in rivers, streams and on the ground. There is an external flow of foreign food to the communities, which is not cultivable in the region, promoting other cultural dynamics and in turn generating dependencies with new customs that are not sustainable with the Amazon environment.	of sustainable production practices that make possible a green economy, human welfare and social equality together with the reduction of environmental impacts on the Amazon ecosystems	Amazon entrepreneurship initiatives
ACTION LINE 5: EXCHANGE OF KNOWLEDGE AND NEW SKILLS Under the current scenario, the generation of capacities, the exchange of knowledge and the acquisition of new knowledge are essential for the recognition of the value of being and being indigenous. The capacity for interaction with other cultures and forms of perception of reality allows for a fruitful dialogue for the exchange of ideas, projects and ways of seeing the world, including the care and understanding of the forest from non-indigenous perspectives.	The new forms of interaction with the majority society require new capacities of the indigenous population to interact. The weaknesses in knowledge, technical capacities and skills that the contemporary world implies generate a risk for the communities themselves because they make possible unhealthy forms of interaction with external entities and actors. In this sense, the risk of cultural loss due to the exchange of external knowledge and know-how must be diminished, in order to constitute itself as a promoter	Promote the exchange of knowledge between the indigenous world and the western world, with the interest of forming new capacities that allow a better management and human development in the indigenous population, based on the principles of ancestral traditions.	- Technical, administrative and legal capacities building to implement REDD activities. - Connection with formal and non-formal education. - Communication and dissemination of indigenous knowledge for the western population

Action line	Background	Objective	Programs
	of customs, traditions and forms of care of the world through the local indigenous vision.		
ACTION LINE 6: WOMEN AND INDIGENOUS FAMILY For indigenous women, the beginning of education during childhood, the transmission of the mother tongue, the family economy and the ability to cultivate the land are supported, along with the teachings of caring for the world and standards. The indigenous woman is the center of the bond with the land and the principle of contact with the indigenous culture from the family.	The indigenous woman is the center of the family and the beginning of education in the home and in the <i>chagra</i> . Current forms of relationship have allowed women to isolate themselves from this vocation and disconnect from their role within the indigenous family, and furthermore, not be present in the processes of traditional political and cultural participation.	Strengthen the relationship of women in the contemporary indigenous world in the levels of organization of the communities, in the valuation of their role as a principle of the indigenous family, in the teaching of their own language and the knowledge of the land and cultivation	- Indigenous women's political and cultural leadership. - Children and indigenous families.

Source: prepared by South Pole (2020) based on Life Plans of AATI.

1.12 Project Location

The REDD Project is in four Indigenous Associations (AATI) of the Predio Putumayo Indigenous Reserve, in Amazonas Department, Colombia. The area is located between the coordinates -0.5222 S to -2.4886 S and -70.7139 W to -74.3881 W and has a total area of 3,824,920 hectares. Relevant information on the location of each AATI is presented in Table5.

The Resguardo is located on the banks of the Putumayo and Caquetá rivers, and is a border area with the Republic of Peru. The nearest major city is Puerto Leguizamo (Putumayo), which is 171 km away by river from the first population center in the project area, Puerto Alegría. Putumayo is bordered on the north by the Monochoa Indigenous Reserve, on the east by the Chiribiquete National Natural Park (NNP) expansion area, on the south by Tarapacá region and, on the west by the Peruvian Republic (Figure 2).

Table5. Location and estimated management area of each AATI in the Predio Putumayo REDD Project.

AATI	Main town center	Coordinates		Estimated management area	
		X (West)	Y (South)	hectares	%
COINPA	Puerto Alegria	-74,0187	-0,9042	226,536	5.9
CIMPUM	San Rafael	-73,2832	-1,4494	987,238	25.8
AIZA	Puerto Arica	-72,5614	-1,3717	1,114,591	29.1
CHORRERA	Chorrera	-71,7794	-1,9982	1,496,570	39.1

Source: Prepared by South Pole (2020) from the mapping information of the Life Plans of the four AATI.

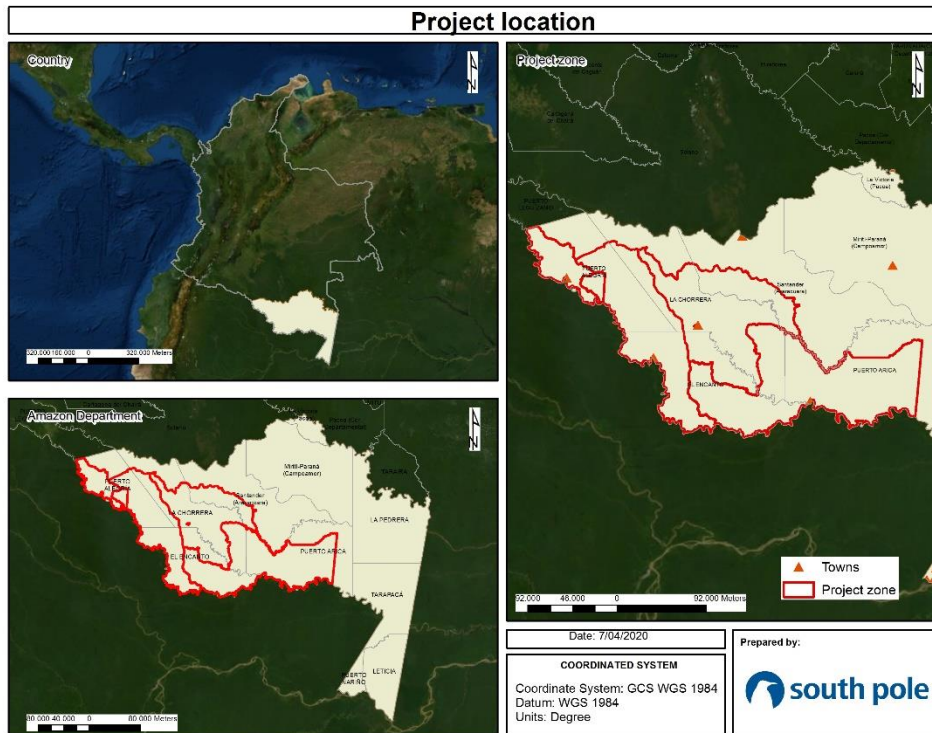


Figure 2. Location map of project zone.

Source: prepared by South Pole (2020)

1.13 Conditions Prior to Project Initiation

The following describes the present and past environmental conditions of the project zone in terms of climate, hydrology, topography, geomorphology, soils and land covers.

Since the baseline scenario is the same as the conditions existing before the start of the project, refer to Section 2.4 (Baseline Scenario) for a full description of this scenario.

1.13.1 Climate

The Colombian Amazon region is in the northwestern portion of the great Amazon basin. Because of its climatic, ecological and biogeochemical processes due to the interaction between the Andean and Amazonian systems, complex dynamic models are presented. The climate of the Colombian Amazon varies along the north-south axis, with two distinct regimes of precipitation, perpendicular incidence of solar radiation throughout the year, humidity, intertropical atmospheric circulation systems (NE and SE trade winds) and regional conditions, which generate particular climatic characteristics in the region (SINCHI, 2014).

The average temperature in the project area is 25.8°C, with its maximum in the months of February and November (26.3°C), while the lowest average temperature is recorded in the month of May (25.0°C). Information on average monthly temperatures recorded at the La Chorrera meteorological station shows four trends during the year. From January to February the temperature increases to a maximum of 26.3°C. Then, it decreases until May, falling 1.3°C, the lowest temperature recorded in May (25.0°C). Later, between May and June, a progressive increase in temperature begins, until obtaining its maximum in the month of November, where later it diminishes slightly in the month of December (Figure 3).

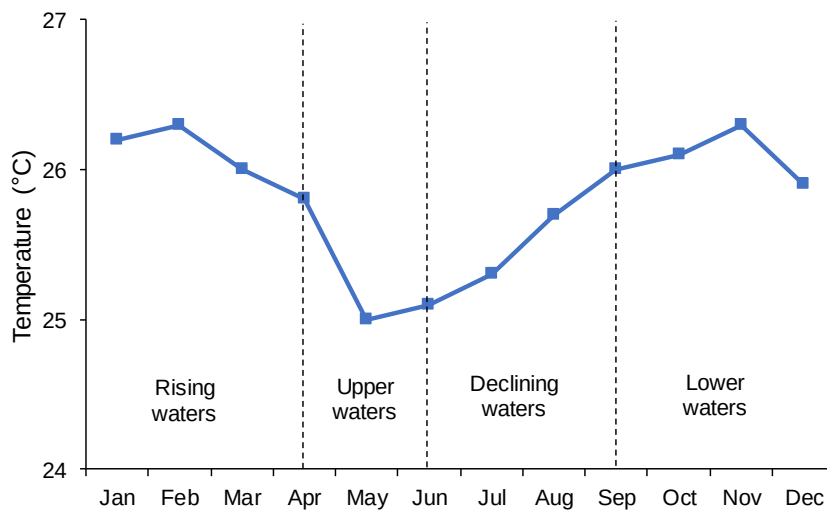


Figure 3. Average multiannual temperature in the project zone.

Source: South Pole based on climate information from SINCHI (2014). Sinchi (2014), Instituto Amazónico de Investigaciones Científicas based on temperature information from La Chorrera weather station [47075010].

According to information from 13 meteorological stations of the Institute of Hydrology, Meteorology and Environmental Studies (IDEAM) located in the department of Amazonas (Figure 4), precipitation is unimodal in the project area and there are three tendencies in monthly multiannual precipitation. The first occurs between January and April through a gradual increase in the amount of rainfall from 200 mm/month to about 375 mm/month; the second one occurs between April and June where the highest amount of rainfall occurs during the year, being April the month with the highest rainfall (376.6 mm/month). Third, although it continues with high rainfall, the precipitation drops about 33% between September and October, to remain stable until January. The highest Potential Evapotranspiration (PET) occurs in the months of December and January, with values of 119 mm/year, and the lowest PET in the month of May with 101 mm/year (SINCHI, 2014).

The estimated multiannual average precipitation in the project area is 3,466 mm/year and is always above potential evapotranspiration, so there is no water deficit at any time of the year. The climate is

classified as Warm Humid (CH) according to the Caldas-Lang Climate Method, and in terms of Holdridge life zones, the entire project area corresponds to Tropical Rainforest (bh-T).

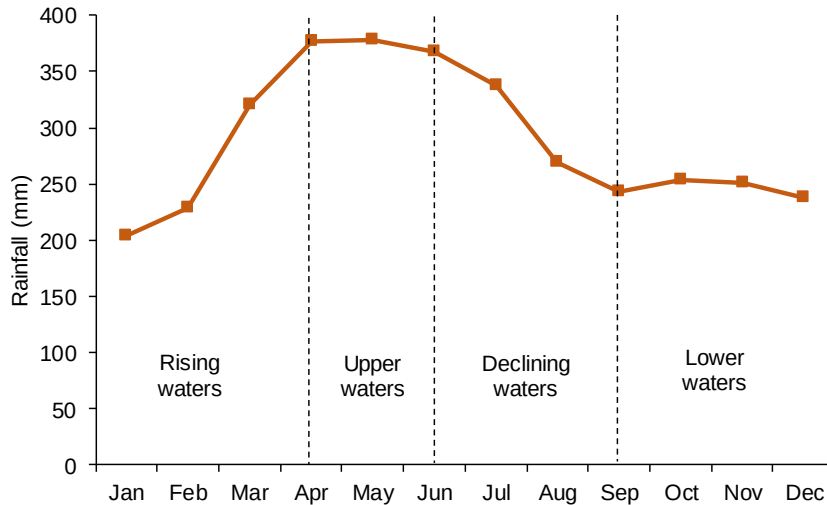


Figure 4. Annual multiannual rainfall in the project zone.

Source: South Pole based on climate information from SINCHI (2014). Sinchi (2014), Amazon Institute for Scientific Research based on precipitation information from IDEAM weather stations: Pto Belén [44130030], Monos Los [44130040], Angosturas [44130060], Monochoa [44130070], Quinche [44160010], Refugio El [47040020], Pto Toloza [47040030], Remolino [47040040], San Agustín [47040050], El Encanto [4706001], Estrecho-Marandua [47060020], La Chorrera [47075010] and Arica [47080010].

1.13.2 Hydrology

The project area is located on the Putumayo and Caqueta river basins. The Putumayo River originates in the Sibundoy Valley (foothills of the Central Eastern Cordillera, Colombia) and flows into the Amazon River in Sao Antonio do lá (Brazil). It has a length of approximately 2,500 km and, from its source to its mouth, has about 1,950 km of navigable water. It is characterized by shallow but very fast waters. The most relevant tributaries of the Putumayo River are Cara-Paraná (150.8 km long), the Igara-Paraná (283.6 km), the Pupuña (127.5 km), and the Cotuhé (with 58.6 km belonging to Colombian territory) (SINCHI, 2014).

The Caquetá River (towards the northern part of the project area), on the other hand, has a total length of 2,200 km, of which 750 km are within the department of Amazonas. It has abundant streams and jets through which it flows. It is characterized by its white and clear waters. Notable tributaries are: Cahuinari (377 km long), the Mirrití-Paraná (150 km long) and the Apaporis River (SINCHI, 2014).

Both rivers, being of Andean origin, are characterized by their white waters, which are muddy, yellow, rich in nutrients and loaded with sediments, with sand and silt, and have a neutral degree of acidity. They have a relatively high electrolyte content and a significant load of suspended particles from the erosive

processes of the mountain range, pH between 6.2-7.2 (slightly acidic to neutral), low transparency and high productivity (SINCHI, 2014).

In general, the region has a high drainage density due mainly to the nature of the predominant geological materials in the area, but this is accelerated by the precipitation caused by the processes of erosion and accumulation in the riverbeds. Nearly 50% of the micro basins present high drainage density. The drainage pattern is dendritic, characterized by small, short and irregular courses, arranged in different directions, and reaching the main rivers at any angle (SINCHI, 2014).

1.13.3 Topography, Geomorphology and Soils

The Amazon corresponds to a natural region of Colombia where elevations are rare since it is 98% flat jungle. Formed by systems of terraces, the scarce undulations of the land influence the general direction of the hydrographic network that allows flooding during the rainy season (Mejía Valenzuela, 1983). In the department of Amazonas, there are six types of landscape: high plateau, water body, hilly area, alluvial plain, alluvial valley and urban area. These landscapes are subdivided into different types of relief such as plateaus, hills, valleys, flood plains and terraces, and are mainly in a hot humid climate zone (IGAC, 2019).

In general terms, the soils of the Colombian Amazon are chemically very poor and physically very susceptible to deterioration. The organic layer is a thin layer of leaf litter and plant residues in varying degrees of decomposition. According to reference information from the Colombian Amazon Territorial Environmental Information System (SIAT-AC),⁷ four important physiographic and soil formations are identified in the project area:

Amazonian plains of sedimentary origin: this is the most representative unit of the project area; it is made up of flat to slightly flat, undulating and strongly undulating surfaces resulting from the dissection of an ancient fluvial-marine plain. The parental materials are Tertiary sediments from the Mio-Pliocene, in different deposition environments, with the most common being clay, sandy clay and clayey sand. The slopes can be 1-3%, 3-7%, 7-12%; those with undulating reliefs. The soils are sandy, clayey-loam or very fine clay; drainage can be poor to moderate; fertility is low to very low; Entisols, Inceptisols, Ultisols and some Oxisols predominate.

Alluvial plains of the Andean rivers: this represents about 10% of the project area; from flat to slightly elevated and concave, with slopes of 0-3%; those with a medium slope are elongated surfaces with gentle relief, slopes of 0-3%, which are part of the river floodplain; those of high incline occupy the highest level of the floodplain, have gentle relief with slopes of 0-3%, suffer occasional floods every 3 or 7 years, and are known in the region as *conejeras*. The soils of these landscapes are loam or clay; they suffer frequent floods; poor drainage; superficial and limited by the phreatic line; the fertility is average. Taxonomically, Entisols and Inceptisols predominate, and in the upper parts Ultisols.

⁷ The information has been generated from several studies of the Instituto Geográfico Agustín Codazzi (IGAC, 1979, 1993, 1995, 1997 and 1999). Available at: <http://siatac.co/web/guest/fisiografia>

Alluvial plains of the Amazon rivers: these are in the plains of the rivers that originate in the Amazon plain such as the Yari, the Mirití, the Igarapará and the Cahuinari) and represent about 10% of the project area. The lowest alluvial plain presents a flat to gentle relief, with slopes less than 3%, there are natural dikes and small terraces; with sporadic floods, occurring every year or two. The soils originate from highly weathered sediments, with a dominance of quartz sands and very acidic kaolinitic clays; the texture ranges from sandy loam to clay; they suffer sporadic flooding, drainage is moderate to poor; fertility is low. They are classified as Entisols and Ultisols.

Metamorphic rock structures: these occupy between 5% and 10% of the project area. They are complex structures derived from granite and quartzite; they present a broken relief with slopes between 7 and 25%, affected by light to moderate erosion, according to the slope. The soils are sandy loam and are superficial, limited by the rock bed and gravel. Drainage is good; fertility is low to very low; they are classified mainly as Entisols.

1.13.4 Land covers

The delimitation of the land cover in the project's expansion area was done using the Map of Continental, Coastal and Marine Ecosystems of Colombia, scale 1:100,000, Version 2.1 (IDEAM, 2017).⁸ The minimum categories are defined according to the categories proposed by the adaptation for Colombia of the CORINE Land Cover methodology (CLC Colombia). The definitions of each of the covers identified in the project area are presented in detail in the National Land Cover Legend (IDEAM, 2010).

A total of 18 land covers were identified (Table 6), with dense high forest cover predominating in 98% of the area, distributed throughout the territory. The second most important cover is the rivers (0.6%), whose areas in the territory correspond mostly to the Putumayo River.

In the project area there are also lands covered by fragmented forests and secondary vegetation. These are natural vegetation that appears after an intervention such as the destruction of primary vegetation; the land reverts to its original state in the process of succession. Some areas of dense herbaceous vegetation are also identified; plant formations dominated by typically herbaceous elements, which have not been intervened or their intervention has been selective (IDEAM, 2010).

Heterogeneous agricultural areas account for a small proportion of the total, with less than 0.22% of the total area in mosaic of crops, pastures and natural spaces, which are generally used to harvest cassava (41.9%), pineapple (1.6%) and *chontaduro* (peach palm) (0.98%) and other products for home consumption such as branch onions, beans and coconuts.⁹

⁸ 2017 Update of the Map of Continental, Coastal and Marine Ecosystems of Colombia (MEC) at a scale of 1:100,000. Institute of Hydrology, Meteorology and Environmental Studies (IDEAM). Available at: http://181.225.72.78/Portal-SIAC-web/faces/Dashboard/Biodiversidad2/mapa_ecosistemas/estadoEcosistemasColombiano.xhtml

⁹ Municipal Agricultural Evaluations (EVA), Oficina Asesora de Planeación y Prospectiva (MADR). Accumulated participation in harvested area (2006-2018). Available at: <https://www.agronet.gov.co/estadistica/Paginas/home.aspx?cod=2>. Consulted on March 12, 2020.

Table 6. Land covers in project zone.

Land covers			Hectares
Level 1	Level 2	Level 3	
Artificial surfaces	Developed areas	Discontinuous urban fabric	88
Agricultural areas	Pastures	Pastures	795
	Heterogeneous agricultural areas	Mosaic of crops, pastures and natural areas	4,158
		Mosaic of crops with natural spaces	7,498
		Mosaic of pastures and natural spaces	1,354
		Mosaic of pastures with natural spaces	686
		Mosaic of crops and pastures	39
Forests and semi-natural areas	Forests	High dense forest	3,728,708
		Dense lowland forest	3,313
		Fragmented forest with secondary vegetation	17,091
		Fragmented forest with grasses and crops	7,163
	Areas with herbaceous or shrubby vegetation	Secondary vegetation	12,100
		Dense grass	9,390
		Dense bush	3,129
	Open areas, with or without vegetation	Natural sandy areas	46
Wetlands	Inland wetlands	Swamp areas	334
Water bodies	Inland waters	River	23,915
		Lagoon	5,106
Total			3,824,912

Source: adapted from IDEAM (2017).

1.14 Compliance with Laws, Statutes and Other Regulatory Frameworks

1.14.1 Legal and environmental requirements

The activities of the REDD Project Predio Putumayo are carried out within the framework of the Integrated Strategy for Deforestation Control and Forest Management (EICDGB), a mechanism derived from the national policy for the Integrated Management of Biodiversity and its Ecosystem Services (PNGIBSE). This policy is based on international agreements and commitments signed by the country such as:

- United Nations Framework Convention on Climate Change
- Convention on Biological Diversity
- United Nations Convention to Combat Desertification and Drought (UNCCD)
- RAMSAR Convention on Wetlands of International Importance, particularly on waterfowl habitats
- International Tropical Timber Agreement
- Convention on Trade in Endangered Species of Wild Fauna and Flora (CITES)
- Andean Decision 391
- Kyoto Protocol

In order to align with previous international agreements and to articulate REDD Project activities with national conservation objectives, the laws approving each of the above-mentioned international treaties and the policy documents that develop them at the national level have been also considered:

- National Climate Change Policy (NCCP)
- Colombian Low Carbon Development Strategy (ECDBC)
- National Plan of Adaptation to Climate Change (PNACC)
- National Policy for the Integrated Management of Biodiversity and its Ecosystem Services (PNGIBSE)
- Biodiversity Strategy and Action Plan (NBSAP)
- Forest Policy (FP)
- National Forestry Development Plan (PNDF)
- CONPES 3680 of the National System of Protected Areas (SINAP)
- National Plan for Ecological Restoration, Rehabilitation and Recovery of Degraded Areas (PNR)
- Sustainable Soil Management Policy (SSMP)

On the other hand, activities associated with the REDD Project are developed in accordance with existing national and regional land management structures. In the case of the indigenous communities of the different instances or AATI that are part of the project, their territory is recognized legally as non-municipal areas that do not have a Land Use Plan (POT) and, therefore, the only land use planning instrument is the Life Plans carried out by each AATI, which are taken as the guiding axis for the development of the REDD Project and as the basis for the formulation of its strategic lines.

In addition, the REDD Project takes into consideration special provisions regarding the main environmental determinants of the territory that guide its zoning and management:

- National System of Protected Areas (SINAP): part of the REDD project area is located within the Cahuinarí National Natural Park (NNP), more specifically for the northern zone of the AIZA community in Puerto Arica. The boundaries of the Cahuinarí NNP are defined in Article 1 of Agreement No.0044 of 1986, which establishes land use restrictions that are contemplated within the activities of the REDD Project.
- Amazon Forest Reserve (created by Law 2 of 1959):¹⁰ according to the provisions of Law 160 of 1994, when there is overlap between an indigenous reserve and a forest reserve, both are compatible. Therefore, the indigenous reserve is at the same time a forest reserve. Given that the project is an initiative of the communities of the reserve themselves and that it does not imply intervention on the territory such as infrastructure or mining projects, no environmental license or subtraction of areas from the reserve is required for the implementation of the project.
- Strategic Ecosystems under Article 4, Ordinal 1.4 of Decree 3600 of 2007: Wetlands are environmental determinants in accordance with the provisions of CORPOAMAZONIA and the provisions enshrined in Article 1 (numerals 2 and 5) of Law 99 of 1993; Law 165 of 1994; Law 357 of 1997; Resolutions 157 of 2004 and 196 of 2006, issued by the then Ministry of Environment, Housing and Territorial Development. Thus, this component is in turn incorporated into the REDD Project in order to guarantee its protection and conservation and through the National Registry of Greenhouse Gas Emissions Reduction (RENARE). Corpoamazonia will be notified of the project's development.

Similarly, the REDD project is articulated within the public policy tools at the national level established by Law 1931 of 2018 through which the guidelines for climate change management are established. These include the provisions established by the National Information System on Climate Change (SISCLIMA) through Decree 298 of 2016 and other planning and management instruments such as the Comprehensive Sectoral and Territorial Climate Change Management Plans (PIGCCS and PIGCCT, respectively).

As a special provision, Law 1931 of 2018 also created the Climate Change Information System (SNICC) as part of the Environmental Information System (SIAC). The SNICC included, as an instrument for the management of information on GHG mitigation initiatives, the National Registry of Emissions Reduction (RENARE) created by Article 175 of Law 1753 of 2015. This instrument was then regulated by the Ministry of the Environment and Development (MADS) through Resolution 1447 of 2018 as part of the System for Monitoring, Reporting and Verification (MRV) of GHG mitigation actions. In this sense, and with the objective of making mitigation results the object of national accounting, the REDD Project recognizes and is governed in all its phases (feasibility, formulation, and implementation) by the guidelines of said Resolution, in addition to incorporating the evaluation and monitoring of compliance with social and environmental safeguards for REDD in Colombia.

¹⁰ The areas of the Forest Reserve under the 2nd law of 1959 are geographical spaces that, due to the richness of their plant formations and the strategic importance of their environmental services, were delimited and declared 'Protective Forest Zones' and 'Forests of General Interest' (article 1, law 2 of 1959).

At the regional level, the articulation of the REDD Project with the forest governance structures recognizes formal bodies such as: the Intersectoral Commission for the Control of Deforestation and Integral Management for the Permanent Table of Indigenous Concertation, the Amazon Regional Table and the Indigenous Environmental and Climate Change Table (MIAACC) and the Organization of Indigenous Peoples of the Colombian Amazon (OPIAC). In this way, all phases of the REDD+ Project are oriented towards the recognition of:

- Articles 2, 13, 20, 38 and 80 of the Political Constitution of Colombia
- Law 2 of 1959, creating the Amazon Forest Reserve
- Decree – Law 2811 of 1974, by which the National Code of Renewable Natural Resources and the Environment is issued
- Law 99 of 1993, creating the Ministry of the Environment and the National Environmental System (SINA)
- National Development Plan 2018-2022, "Pacto por Colombia – pacto por la equidad" (Pact for Colombia – pact for equity)
- Decree 1791 of 1996 – Forest Use Regime
- Decree 3750 of 2011, “by which the objectives and structure of the Ministry of Environment and Sustainable Development are modified, and the Administrative Sector of Environment and Sustainable Development is integrated”
- CONPES 2834 of 1999, adopting the Forest Policy
- Decree 2372 of 2010, regulating the National System of Protected Areas
- Decree 298 of 2016, which establishes the organization and operation of the National Climate Change System SISCLIMA and contains other provisions
- Decree 1257 of 2017, “by which the Intersectoral Commission for the Control of Deforestation and Integral Management for the Protection of Natural Forests is created, and other determinations are made”
- Law 388 of 1997, which modifies Law 9 of 1989, and Law 3 of 1991, and dictates other provisions in the area of territorial planning
- Decree 1397 of 1996, establishing the National Commission on Indigenous Territories and the Permanent Committee for Consultation with Indigenous Peoples and Organizations
- Decree No. 3012 of 2005, establishing the Amazon Regional Table for the Indigenous Peoples of the Colombian Amazon, and other provisions
- Environmental Management Plan for the Southern Region of the Colombian Amazon (PGAR) 2018-2038
- Life Plan of the Indigenous Council Association of Puerto Alegria Amazonas (COINPA) 2008
- Life Plan of the Murui United People's Indigenous Council Association (CIMPUM) 2008
- Life Plan of the Association of Indigenous Authorities of the Puerto Arica Zone (AIZA)

- Life Plan of the Zonal Association of Traditional Councils and Authorities of La Chorrera (AZICATCH)

It is important to mention that the REDD Project also considers the Colombian regulatory framework related to indigenous territories (articles 63 and 329 of the Political Constitution of Colombia), which recognizes the right and autonomy of indigenous territories through reserves, the special indigenous jurisdiction whose lands "are inalienable, imprescriptible and unseizable" and the collective land tenure.

Since mitigation activities affect or may directly affect the communities that are part of the AATI, the project must take into account national and Ministry of Interior provisions on prior consultation and free and informed consent, and seek to ensure the participation and fair and equitable distribution of economic benefits generated by the commercialization of mitigation results and identify social and environmental benefits generated by the activities implemented to reduce deforestation in the forests of the reserve.

Although Decree 1320 of 1998 established a procedure for the development of prior consultation, this is quite limited and is not correctly applied to projects of this nature, since this decree regulated prior consultation for activities that require an environmental license. Up to now the country does not have a clear and homogeneous mechanism that guarantees such consultation, nor does it have regulations on the way in which prior, free and informed consent proceeds in mitigation projects.

Considering the above, the REDD Project will carry out an awareness raising processes in the four AATIs considering the methodological guidelines of the Verified Carbon Standard (VCS) for the consultation of relevant stakeholders (see Section 5.1), in order to raise awareness about the project design and maximize stakeholder participation; to assess impacts and establish its mitigation measures; and to establish permanent communication mechanisms with communities so that they can raise their concerns about possible negative impacts during project implementation.

Additionally, the REDD Project will design a Benefit Sharing System (BDS) that specifies the type of benefits that are generated (be they economic, social, cultural, or ecosystemic), interventions to be developed, the rules or mechanisms to distribute them fairly and equitably among the communities involved, and the responsibilities assumed by the project parties in the management of these benefits. The SDB is so far under construction; in due course it will be communicated to and later validated by the communities of the reserve in the traditional consultation and information spaces.

The recognition of the right and autonomy of indigenous territories and the right to free, prior, and informed consent within the REDD Project is related to the following norms:

- ILO Convention 169 and the United Nations Declaration on Indigenous Peoples
- Articles 2, 7, 40, 63, 70, 93, 229 and 330 of the Political Constitution of Colombia
- Law 70 of 1993, regulating transitional article 55 of the Constitution, and recognizing the right of collective property of black and indigenous communities over some portions of the national territory

Since its conception and as an essential requirement for the certification process of reducing emissions from deforestation, the project takes into account and guarantees that the collective territorial rights of the communities of the reserve are respected in accordance with the guidelines of Law 70 of 1993 and

Decree 2164 of 1995 (it partially regulates Chapter XIV of Law 160 of 1994 in relation to the provision and titling of lands to indigenous communities for the constitution, restructuring, expansion and sanitation of the indigenous reserves in the national territory).

Once validated, the REDD Project will also guarantee the recognition of traditional knowledge systems and the communities' own visions of the concept of territory in the reserve, especially in relation to respect for the communities' cultural assets and values, the participation of the different ethnic groups living in the reserve, the identification and mitigation of community risks associated with the implementation of project activities, and the knowledge and strengthening of the Internal Regulations and Life Plan.

Respect for the traditional knowledge of the reserve communities is framed by the following provisions:

- Law 397 of 97, Art. 4. Cultural Heritage of the Nation, incorporating all cultural assets and values that are an expression of the Colombian nationality: tradition, customs, habits.
- United Nations Declaration on the Rights of Indigenous Peoples; Law 21 of 1991, concerning the constitutional rights of indigenous peoples in Colombia.
- Decree 2941 of 2009, which partially regulates Law 397 of 1997 in relation to intangible cultural heritage.
- Process 004 and 005 on plans for safeguarding traditional knowledge.

1.14.2 Conformity of the project actions with the territorial planning

The REDD Project also seeks to support the consolidation of instruments of territorial and environmental management provided for in national, regional and local legislation, with a focus on conservation and sustainable management of the forest, so from its facility phase the project proponent has sought to recognize and respect the guidelines (measures and instruments) of territorial and environmental management defined in Table 7. Similarly, during the awareness raising and consultation spaces, the project has enabled people from the communities of the reserve to receive clear information about the articulation of this initiative with the measures and instruments mentioned, as well as with the reserve's own rules in order to contribute to the project's permanence.

The articulation with the main guidelines of land-use planning identified at the regional and local level will be monitored at each verification in order to ensure the periodic evaluation of its compliance.

Table 7. Land-use planning guidelines at regional and local levels of the AATI that have signed up to the REDD Project.

Regulatory framework and guidelines for territorial planning	Description	Articulation with the REDD Project
Integral Strategy for Deforestation Control and Forest Management (EICDGB) 2018	This trans-sectoral proposal of the National Government of Colombia through the Ministry of Environment and Sustainable Development seeks to comprehensively cover different aspects related to the effectiveness of forest governance in order to reduce deforestation and improve forest management. The proposal envisages five strategic lines: • Community-based land management, livelihoods and diversified economies based on the natural forest • Integrated action for the closure of the agricultural frontier and the transformation of the forest economy • Land use planning and environmental determinants • Permanent monitoring and control	The specific objectives of the strategic lines of the project are (see Section 1.8): • Recovery and rehabilitation of forests • Agricultural production and business projects • Strengthening food security through traditional production systems (<i>chagras</i>) • Monitoring • Strengthening governance These comply with the proposals mentioned in the different national and regional instances (EICDGB and PGAR), since they are strategic lines oriented to the execution of actions for the adequate management of environmental resources, the promotion of sustainable development and the conservation of the traditional values of the reserve under a pilot implementation in the framework of the ENREDD+ Strategy, which is developed considering a whole normative framework in matters of environment and sustainable development.
Environmental Management Plan for the Southern Region of the Colombian Amazon (PGAR) 2018-2038	The programs included in the plan were developed in recognition of the existence of a regional vision group of different actors and are focused on: • Governance and community and institutional empowerment for environmental management in the region • Strengthening of inter- and extra-regional relations	

Regulatory framework and guidelines for territorial planning	Description	Articulation with the REDD Project
	- Information and knowledge for the environmental management of the region - Functional land-use planning for the preservationist development of the region - Governance of disaster and climate change management - Environmental management of ordered functional areas	
Life Plans of the communities of the Associations: COINPA CIMPUM AIZA AZICATCH	For the indigenous people, these documents constitute the political orientation that the communities, leaders and authorities must follow; institutions must also follow these so that they can concur in supporting the initiatives formulated in this Plan of Life, in compliance with their function and the obligations for which they were created by mandate of the law. - The main themes are: - Political organization and self-government - Self-righteousness - Land and environment - Health and spirituality - Education and culture - Economy - Infrastructure and equipment	With respect to the general guidelines of the Life Plans, the REDD Project was born as an initiative to advance actions with respect to: - General objectives: To strengthen the governance, administrative and political autonomy, and territorial unity of the communities belonging to the Associations COINPA, CIMPUM, AIZA and AZICATCH. - Territory: To build our own model of territorial and environmental planning based on traditional thinking and the development of Life Plans. - Production and economy: To promote actions for the improvement and development of productive activities, in accordance with customs, and to strengthen traditional agriculture. To improve the living conditions of the reserve's population, through solidarity-based productive initiatives that promote the social and economic well-being of the communities.

Regulatory framework and guidelines for territorial planning	Description	Articulation with the REDD Project
		• Special Indigenous Jurisdiction: To develop and implement internal regulations of the AATIs. • Community infrastructure: To improve management of the environment and solid waste, and production of organic fertilizers.
Internal Regulations of the AATIs	They are divided by title, in which the characteristics of the members, rights and duties, permanence in the reserve, use of natural resources, indigenous government, faults and sanctions committed by members are broken down	The REDD Project adopts the guidelines of the Internal Regulations of the AATIs assigned to the project in terms of • Organizational structure • Resource management and accountability • Respect for traditional knowledge • Sectoral planning • Mitigation of potential project risks and management of misconduct and sanctions • Regulation and marketing of renewable natural resources (control and management)
Cahuinarí National Natural Park (Resolution 190 of 19 October 1987) ¹¹	Since the Cahuinarí NNP area overlaps with AATI AIZA, article 2 of Agreement No. 0044 of 1986 regulates the restrictions on use: "Within the area listed in the previous article, activities other than conservation, research, education, recreation, culture, recovery, control and especially the allocation of waste and those referred to in	The REDD Project includes and fits in with the uses regulated by the Cahuinarí NNP by orienting the project activities with the conservation of natural forest areas, as well as allowing for activities that contribute to the appropriation of the culture and education of the communities in the development with their territorial environment. In this way, the regulated uses in the NNP

¹¹ Environmental Determinants and Environmental Issues for Land Management in the Department of Amazonas (CORPOAMAZONIA). 2014. Section: 5.1.1.3 Cahuinarí NNP.

Regulatory framework and guidelines for territorial planning	Description	Articulation with the REDD Project
	Articles 30 and 31 of Decree 0622 of 1977 are prohibited"	have already been considered by the strategic lines proposed by the project and do not cause significant alterations to the environment.

Source: prepared by South Pole (2020) based on the above-mentioned land use planning guidelines.

1.15 Participation under Other GHG Programs

1.15.1 Projects Registered (or seeking registration) under Other GHG Program(s)

The REDD Project has not been registered nor is it seeking registration in any other Greenhouse Gas (GHG) program.

1.15.2 Projects Rejected by Other GHG Programs

The REDD project has not been rejected by any Greenhouse Gas (GHG) program.

1.16 Other Forms of Credit

1.16.1 Emissions Trading Programs and Other Binding Limits

The territory of the four AATI linked to the project is framed within the reference region of the Vision Amazonia Program, a strategy of the Government of Colombia that seeks to promote a low-deforestation development model low in the Colombian Amazon, as part of the national efforts to fight in a forceful way against climate change and biodiversity loss and of the strategies of the Government of Colombia to fulfill the commitments before the UNFCCC to reduce net deforestation in the Amazon by 2020. Amazon Vision frames different projects, plans and programs, financed with resources from the national government and international cooperation resources that are developed within this jurisdiction, in addition to some private and local government resources leveraged by the Government of Colombia.

Among the most relevant programs is the REDD+ Early Movers Program (REM), a results-based initiative to reduce emissions from deforestation and degradation that seeks to support the reduction of emissions from deforestation in the Colombian Amazon Biome, in line with the provisions agreed by the UNFCCC, and with which, through the pay-for-performance scheme, incentives will be generated for policies to reduce deforestation at the regional level.

The programme rewards the reduction of emissions as a result of the reduction of gross deforestation, at a value of USD 5 per tonne of CO₂e. Payments under this agreement are initially based on the reduction of emissions for the period 2013-2017.

Therefore, and under the terms of Resolution 1447 of 2018, there is an overlap not compatible between the REDD Project and the REM Program, which is the cause of double accounting of GHG emissions reductions, since a ton of CO₂e will be used more than once for obtaining compensation, benefits or incentives.

However, the working scheme of the REM Program provides a broad and flexible framework, which is open to the promotion of existing activities and the development of new activities that contribute to the development of REDD+ at the national, regional, and local levels.

Considering the principles of the Monitoring, Reporting and Verification System (MRV) of mitigation actions for Colombia with respect to the double accounting of GHG mitigation results, the MADS has opened the possibility of requesting Amazon Vision to exclude the project area, provided that the Predio

Putumayo REDD Project completes the feasibility and formulation phases in the National Registry of Emissions Reduction (RENARE).

Appealing to the principle of ‘maximizing the autonomy of indigenous communities or minimizing the restrictions to their autonomy’ (Constitutional Court Ruling T-601 of 2011), the four AATI will request the Ministry of Environment and Sustainable Development (MADS) and Amazon Vision to exclude the limits described in Section 1.9, so that they will not be included in the REM Program regarding emissions reductions. They will thus proceed independently and autonomously in the certification of emissions reductions in their territory.

The request for exclusion will be made within the framework of the registration of the project in the National GHG Emission Reduction Register (RENARE). Once the platform is enabled, the project proponents will take the necessary actions to register and update the information of the initiative in the RENARE, in a period of less than three months after this registry is put into operation by the MADS, and will be responsible for the veracity of the information provided to it, in addition to applying the principles of the MRV System for the country.

1.16.2 Other Forms of Environmental Credit

The project has not applied for or received any other form of environmental credit related to Greenhouse Gases (GHG), including renewable energy certificates.

1.17 Additional Information Relevant to the Project

Leakage Management

Where applicable, describe the leakage management plan and implementation of leakage and risk mitigation measures.

Commercially Sensitive Information

Indicate whether any commercially sensitive information has been excluded from the public version of the project description and briefly describe the items to which such information pertains.

Note - Information related to the determination of the baseline scenario, demonstration of additionality, and estimation and monitoring of GHG emission reductions and removals (including operational and capital expenditures) cannot be considered to be commercially sensitive and must be provided in the public versions of the project documents.

Sustainable Development

Describe how the project contributes to achieving any nationally stated sustainable development priorities, including any provisions for monitoring and reporting same.

Further Information

Include any additional relevant legislative, technical, economic, sectoral, social, environmental, geographic, site-specific and/or temporal information that may have a bearing on the eligibility of the project, the net GHG emission reductions or removals, or the quantification of the project's net GHG emission reductions or removals.

2 SAFEGUARDS

2.1 No Net Harm

Summarize any potential negative environmental and socio-economic impacts and the steps taken to mitigate them.

2.2 Local Stakeholder Consultation

Describe the process for, and the outcomes from, the local stakeholder consultation conducted prior to validation. Include details on the following:

- *The procedures or methods used for engaging local stakeholders (e.g., dates of announcements or meetings, periods during which input was sought).*
- *The procedures or methods used for documenting the outcomes of the local stakeholder consultation.*
- *The mechanism for on-going communication with local stakeholders.*
- *How due account of all and any input received during the consultation has been taken. Include details on any updates to the project design or justify why updates are not appropriate.*

For AFOLU projects, also demonstrate how the project has or will communicate the following:

- *The project design and implementation, including the results of monitoring.*
- *The risks, costs and benefits the project may bring to local stakeholders.*
- *All relevant laws and regulations covering workers' rights in the host country.*
- *The process of VCS Program validation and verification and the validation/verification body's site visit.*

2.3 Environmental Impact

Summarize any environmental impact assessments carried out with respect to the project, where applicable.

2.4 Public Comments

Demonstrate how due account of all and any comments received during the public comment period has been taken. Include details on any updates to the project design or demonstrate the insignificance or irrelevance of comments.

2.5 AFOLU-Specific Safeguards

For AFOLU projects, provide details on the following:

- *Local stakeholder identification process and a description of results.*
- *Risks to local stakeholders due to project implementation and how the project will mitigate such risks.*
- *Risks to local stakeholder resources due to project implementation and how the project will mitigate such risks, including the plans to ensure the project will not impact local stakeholder's property rights without the free, prior and informed consent.*
- *Processes to ensure ongoing communication and consultation with local stakeholders, including a grievance redress procedure to resolve any conflicts which may arise between the project proponent and local stakeholders.*

For AFOLU projects with no impacts on local stakeholders, provide evidence of such.

For non-AFOLU projects, this section is not required.

3 APPLICATION OF METHODOLOGY

3.1 Title and Reference of Methodology

The VCS Methodology VM0037 Methodology for Implementation of REDD+ Activities in Landscapes Affected by Mosaic Deforestation and Degradation was used to quantify emission reductions.¹²

3.2 Applicability of Methodology

The following describes the compliance with the applicability conditions for the use of the VCS VM0037.

- The methodology has no geographical restrictions, so it can be applied to any project area.
- Baseline activities include unplanned deforestation/degradation of forest cover, i.e. deforestation occurs due to the development of productive activities that promote alternative uses or transformation of forest cover and the inability of institutions to control these activities.

¹² Available at: <https://verra.org/wp-content/uploads/2018/03/VM0037-Implementation-of-REDDin-Mosaic-Landscapesv1.0.pdf>

Unplanned deforestation activities include subsistence agriculture or selective logging in legally designated areas or collective territories.

- The project area includes only land that has been classified as 'forest' for at least 10 years prior to the project start date (see Section 1.3) for REDD activities.
- The project will not consider activities in the AFOLU sector other than REDD such as ARR, ACoGS, WRC, etc.

3.3 Project Boundary

Spatial limits

Considering the guidelines of the VCS VM0037 methodology, the spatial project boundaries were defined in the following way in terms of reference region, project area and leakage belt for projects with unplanned deforestation:

Reference region: corresponds to the jurisdiction of Vision Amazonia Program, which includes the entire Amazon Biome delimited by the Ministry of Environment and Sustainable Development (MADS) based on biogeographic criteria, mainly associated with the presence of Amazon forest, geomorphology and altitudinal ranges. The jurisdiction of Vision Amazonia corresponds to an existing sub-national baseline, created as part of national efforts to combat climate change and biodiversity loss within the framework of the ENREDD+ strategy. This region is located between the coordinates 4,2280 S – 4,9823 S and 66,8473 W – 77, 1151 W and covers a total area of 45.9 million hectares, distributed in the departments of Putumayo, Caquetá, Amazonas, Guainía, Guaviare, Vaupés, Meta, Vichada and Cauca (Figure 5).¹³

The area covered by the reference region was defined based on biogeographic criteria, mainly associated with the presence of Amazon forest, geomorphology and altitudinal ranges (territories below 500 m).

The north-western limit of the reference region corresponds to the so-called Amazon Piedmont, which is located between 400-500 meters above sea level, where Andean and tropical elements of the Amazon and Orinoco converge; the northeaster limit corresponds to the northern limit of distribution of the Amazon forest with the Orinoco savannas; and to the east and south to the borders with Venezuela, Brazil, Peru and Ecuador. The Amazon Biome includes 11 National Natural Parks and about 169 indigenous reserves of 57 different ethnicities.

The reference region was selected in compliance with Article 21 of MADS Resolution 1447 of 2018, which establishes the use of national Forest Emission Reference Level (FERL) to account for mitigation results from REDD projects.

¹³ Ministry of Environment and Sustainable Development (MADS). Amazon Vision. Retrieved from: http://www.minambiente.gov.co/images/Atencion_y_participacion_al_ciudadano/consultas_publicas_2015/viceministerio/Resumen-VisionAmazonia-WEB.pdf

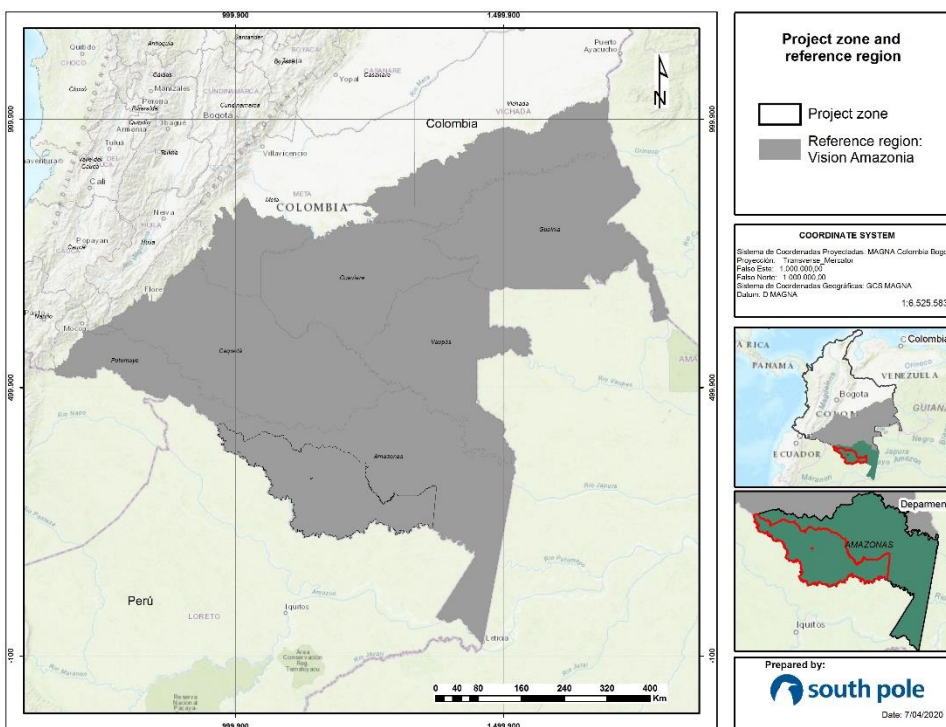


Figure 5. Location and geographical limits of the reference region.

Source: elaborated by South Pole (2020).

Project area: the project area corresponds to the discrete plot(s) of land, covered entirely with forest on the date of commencement of the project activity, which are under threat of deforestation/degradation and over which the project proponent has full control.

For this case, the PA corresponds to the eligible forest at December 31 of 2016 within the limits of the territories of the four AATI in the Predio Putumayo Indigenous Reservation (Figure 1). The PA covers an area of 9,893,277 ha and is located between -0.5222 S to -2.4886 S and -70.7139 W to -74.3881 W. The PA does not include forests in which no REDD project activities will be carried out or which have not been included in the baseline assessment, and 100% of the area is under the control of the project proponents at the time of validation.

Leakage belt: for ex-ante estimates leakage belt will not be defined and associated baseline emissions will not be quantified. The project will use the following optional default leakage deductions proposed by Section 3.14.13 of VCS-Standard-v4.0 Document:

1. To consider activity-shifting leakage, the project will use a deduction of 15% of the gross GHG emission reductions and/or removals.

2. To consider market leakage of timber, which could be a significant commodity driving deforestation and/or degradation in the baseline scenario, the project will apply a deduction of 10% of the gross GHG emission reductions and/or removals.

Carbon pools

According to VCS Methodology VM0037, at least the sinks of the aerial biomass and wood products should be included. As a conservative approach and given that the reference scenario for the Amazon Biome does not consider carbon values in litter, deadwood or in the soil due to lack of available official information. At now, only aerial and underground biomass carbon sinks were considered for both the baseline scenario and the project scenario.

Table 8 presents the relevant carbon sinks for the Project and the baseline scenario considered by the methodology.

Table 8. Carbon sinks included or excluded within the project area boundary.

REDD activity	Carbon pool	Included?	Justification/Explanation
REDD with annual crop or pasture grass as the land cover in the baseline scenario	Above-ground tree biomass	Yes	The change in carbon stocks for this sink is always significant. Mandatory according to the methodology. Considered by the sub-national FERL.
	Above-ground non-tree biomass	No	Subnational FERL does not consider carbon values in aerial non-tree biomass due to lack of available official information.
	Below-ground biomass	Yes	Considered by the sub-national FERL (see Section 3.1.8.1). It represents 20% of the carbon stock in the airborne biomass.
	Litter	No	Subnational FERL does not consider carbon values in litter, deadwood or soil due to lack of available official information (see Section 3.1.8.1). The exclusion of these sinks does not result in a significant overestimation of the net mitigation results of the project.
	Dead wood	No	
	Soil organic carbon	No	

REDD activity	Carbon pool	Included?	Justification/Explanation
	Wood products	Pending	Pending to evaluated applicability according to methodology and FERL requirements.

Source: elaborated by South Pole (2020) based on the VM0037 Methodology.

GHG sources

The greenhouse gases included in or excluded from the project boundary are shown in Table 9 below.

Table 9. GHG sources included in or excluded from the project boundary.

Source	Gas	Included?	Justification/Explanation
Baseline	CO ₂	Yes	Emissions are related to changes in above-ground and below-ground biomass.
	CH ₄	No	Project does not included activities related to cook stoves, fuel efficiency or land preparation for ARR.
	N ₂ O	Yes	If biomass is burnt in the baseline or project scenarios, N ₂ O is included. Biomass is burnt in baseline and project scenarios for establishing and maintaining traditional agricultural systems in project area (<i>chagras</i>)
	Other	N/A	N/A
Project	CO ₂	No	Emissions are excluded as they are a part of the changes in carbon pools.
	CH ₄	Yes	CH ₄ emissions of burning tree biomass from unplanned fires must be included. Biomass is burnt in baseline and project scenarios for establishing and maintaining traditional agricultural systems in project area (<i>chagras</i>)

Source	Gas	Included?	Justification/Explanation
	N ₂ O	Yes	N ₂ O emissions of burning tree biomass from unplanned fires are to be accounted. Biomass is burnt in baseline and project scenarios for establishing and maintaining traditional agricultural systems in project area (<i>chagras</i>).
	Other	N/A	N/A
	Fossil fuel used during operations	CO ₂	Emissions from fossil fuel combustion is considered de minimis for REDD and ARR and is therefore excluded.
		CH ₄	Insignificant
		N ₂ O	Insignificant
	Removal of tree biomass during assisted natural regeneration (ANR and ARR) activities	CO ₂	Project does not include ANR or ARR activities
		CH ₄	
		N ₂ O	
	Fertilizer used during enrichment planting for assisting natural regeneration and ARR	CO ₂	Project does not include ANR or ARR activities
		CH ₄	
		N ₂ O	
	Increased fertilizer use	CO ₂	N/A
		CH ₄	N/A
		N ₂ O	No fertilizer will be used in project activities implementation

Source: elaborated by South Pole (2020) based on the VM0037 Methodology.

3.4 Baseline Scenario

The baseline scenario corresponds to the identification of trends in land cover or land use and deforestation rates in the reference region of the REDD project.

Given that there is a scenario or reference level for REDD+ actions generated by the Ministry of Environment and Sustainable Development (MADS) for the period 2013-2017, and taking into account the considerations of Articles 21, 29 and 40 of Resolution 1447 of 2018 on Reference Levels of Forest Emissions (NREFs) at the national level and the establishment of baselines for REDD+ Programs and Projects, the historical reference period shall be considered that selected by the FERL for the generation of its activity data, in this case 2000-2012.

In the selected baseline scenario and in the absence of mitigation activities, the project includes actions related to the reduction of carbon emissions due to deforestation in floodplains and dryland forests within the Predio Putumayo Indigenous Reserve, which are deforested at existing or historical rates as defined by the Colombian Forest and Carbon Monitoring System (SMBYC) under the proposed reference level of forest emissions from deforestation in the Colombian Amazon Biome for payment for REDD+ results under the UNFCCC (MADS & IDEAM, 2014).¹⁴

The technical assessment by the UNFCCC was published on October 20, 2015 and noted that the data and information used by Colombia in the construction of its FERL for the Amazon Biome are transparent and complete, and are in accordance with the guidelines contained in the Annex 'Guidelines for reporting on reference levels' to Decision 12/CP.17.¹⁵

For the quantification of emissions reductions, the average annual deforestation in the Amazon Biome between 2000 and 2012 was taken as the baseline scenario, in order to make use of the national forest information generated by the B&C and to maintain the same reference region for the entire crediting period. The annualized average of deforestation in the Amazon Biome was 82,882 ha/year for the 2000-2012 period.

Although the FERL is only applicable for the period 2013-2017, in accordance with Article 21 of Resolution 1447 of 2017, the MADS will formally submit to the UNFCCC a reference level of national coverage that includes at least the activity of reducing deforestation, and the carbon stocks of aerial and underground biomass. This reference level shall be used to account for mitigation results from REDD+ projects from 2018 onwards, in accordance with the provisions of Articles 29 and 40 of the same resolution. However, since the UNFCCC has not approved the reference level update submitted by MADS in January this year, the annualized average deforestation rate 2000-2012 will be used as the baseline for the entire credit period until the new proposal is approved.

¹⁴ Proposed reference level for forest emissions from deforestation in the Amazon Biome of Colombia for payment for REDD+ results under the UNFCCC (MADS & IDEAM, 2014) Available at: https://redd.unfccc.int/files/nref_amazonia_colombia_espanol_19_12_2014_esp.pdf

¹⁵ Report of the Conference of the Parties on its seventeenth session, 28 November 2011 Available at: <https://unfccc.int/resource/docs/2011/cop17/spa/09a02s.pdf>.

The selection of the reference scenario based on the NREF was made to comply with the provisions of Resolution 1447 of 2018 on national mitigation actions.

3.5 Additionality

The “Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities - VT0001”, Version 3.0, was employed for the Additionality Analysis.

This tool is applicable because it meets the following conditions:

1. The AFOLU activities of the Project do not involve any violation of applicable laws.
2. The baseline methodology is used to offer a progressive approach that justifies the decision over the most plausible scenario for project development.

Furthermore, the evaluation of requirements provided for in Resolution 1447 of 2018 regarding the additionality of REDD projects in Colombia was included.

3.5.1 Additionality under VCS

According to the tool employed, the outlined steps must be followed for demonstrating the additionality of the project:

Step 1. Identification of alternative land-use scenarios regarding the activity of the proposed AFOLU project.

Step 2: Investment analysis

Step 3: Barrier analysis

Step 4: Common practice analysis

Step 1. Identification of alternative land-use scenarios regarding the activity of the proposed AFOLU project.

Substep 1a. Identification of alternative land-use scenarios credible for the activity of the proposed AFOLU project.

Scenario 1: Subsistence farming

Small-scale agriculture is the most traditional productive activity among indigenous communities in the Colombian Amazonia. They have developed a system called *chagras*, it is a diversified productive system where transitory and perennial species are cultivated on a cyclical basis, while promoting passive assisted natural recovery in areas previously exploited (SINCHI, 2009). This *chagras* system is complemented by hunting, fishing and wild-product harvesting activities that depend on the environmental supply of the territory (CEPAL & Patrimonio Natural, 2013).

The creation of indigenous *chagras* consists of cutting down all woody vegetation in a piece of land in the forest, then the area is burnt to obtain a nutrient-fertile soil (SINCHI, 2009), and then, sowing takes place. In general, the plantation of products starts with the cultivation of cassava, since it is an indicator of the degree of maturity of the *chagra*. It is in production when the first cassava is harvested, which occurs between six and eight months after planting, it depends on the quality of the cassava grown. A *chagra* is kept for a two-three-year period, that is, from two to three cassava reseeding (Corpoamazonia, IAvH, SINCHI & UAESPNN, 2007). However, although cassava is the most important product, crops grown are diversified attempting to keep a complete food supply (Table 10).

Table 10. Main crops grown in the *chagras* of the southern region in the Colombian Amazonia.

Common name	Scientific name	Common name	Scientific name
Bitter cassava	<i>Manihot aipi*</i>	Grape	<i>Pourouma cecropiifolia</i>
Sweet cassava	<i>Manihot esculenta</i>	Cashew	<i>Anacardium occidentale</i>
Yam	<i>Dioscorea alata</i>	Guacure	<i>Poraqueiba sericea</i>
Purple taro	<i>Xanthosoma violaceum</i>	Wild sugar-apple	<i>Rollinia mucosa</i>
Sweet potatoe	<i>Ipomaea batatas</i>	Xagua	<i>Genipa americana</i>
Banana	<i>Musa paradisiaca</i>	Cocona or lulo amazónico	<i>Solanum sessiliflorum</i>
Pineapple	<i>Ananas comosus</i>	Arazá	<i>Eugenia stipitata</i>
Chili Pepper	<i>Capsicum spp</i>	Dale-dale / Sweet corn root	<i>Calathea allouia</i>
Coca	<i>Erythroxilum coca</i>	Amazon tree-grape	<i>Pouroma cecropiifolia</i>
Tobacco	<i>Nicotiana tabacum</i>	Ayahuasca or yagé	<i>Banisteriopsis caapi</i>
Guaya	<i>Cayaponia sp</i>	Barbasco	<i>Lonchocarpus urucu</i>
Barbasco / mullein	<i>Various species</i>	Peanut	<i>Arachis hypogaea</i>
Mocambo tree	<i>Theobroma bicolor</i>	Corn	<i>Zea mays</i>
Chontaduro / peach palm	<i>Bactris gasipaes</i>	Camu	<i>Myrciaria dubia</i>
White-flowered gourd	<i>Lagenaria vulgaris</i>	Banano	<i>Musa paradisiaca</i>

Common name	Scientific name	Common name	Scientific name
Totuma /calabash tree	<i>Crescentia cujete</i>	Copoazú	<i>Theobroma grandiflorum</i>
Caimo /star apple	<i>Pouteria caimito</i>	Sugar cane	<i>Saccharum officinarum</i>
Guamo	<i>Inga</i> spp	-	-

* In the chagras of the Colombian Amazon up to 37 varieties of bitter cassava have been registered.

Source: Corpoamazonia, IAvH, SINCHI and UAESPNN (2007) and Ministerio de Cultura (2015).

Most of the territory of the Amazonas Department is hold by indigenous reserves (Figure 6), it means that production in the *chagras* determines food security. Apart from being a cultivation method, the *chagras* also serve to collect insects and obtain fuelwood and other elements to perform rituals (Fundación Puerto Rastrojo, AZICATCH, WWF, COICA, OPIAC, 2018).

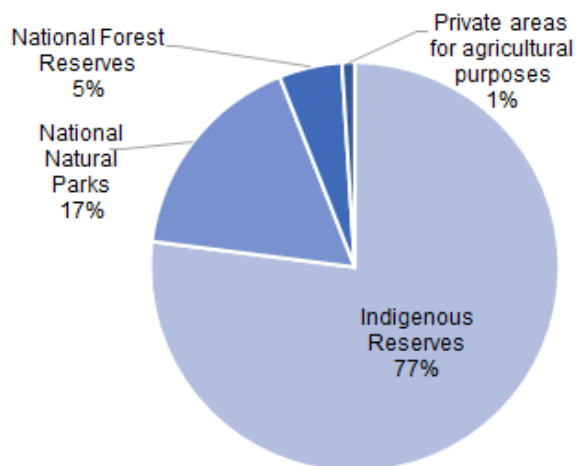


Figure 6. Legal status of the territory in the Amazonas Department.

Source: SINCHI (2009).

Most of the territory is occupied by extensive families who follow a traditional organization for assigning production responsibilities in the *chagras* (SINCHI, 2009). Depending on the ethnic group, the *chagras* have a characteristic spatial distribution (Corpoamazonia, IAvH, SINCHI & UAESPNN, 2007) and, in general, they are close to communities; distances vary from one to two kilometers from the settlement.

In most of those ethnic groups, women are in charge of caring for and maintaining the *chagras* (Ministerio de Cultura & Fundación ACUA, 2015).

They represent balance and harmony for indigenous communities, because they embody both the masculine element with the sowing of products such as tobacco and mullein; and the female one, with products as sweet cassava and peanuts (Ministerio de Cultura & Fundación ACUA, 2015).

Historically, the great majority of the *chagras* in the project area are characterized by being family run. Regarding to size, *chagras* measuring 1-2 hectares are the ones prevailing in COINPA and CIMPUM, whereas, in AIZA *chagras* smaller than one hectare are more common. As to distance, most of AIZA and COINPA *chagras* are less than one kilometer from the community; in the case of COINPA, the majority of them are more than one kilometer from the communities; regarding operating time of the *chagras*, the average period is five years in AIZA and CIMPUM, whereas, in COINPA the period is shorter, between two and five years is the most frequent one (Figure 7).

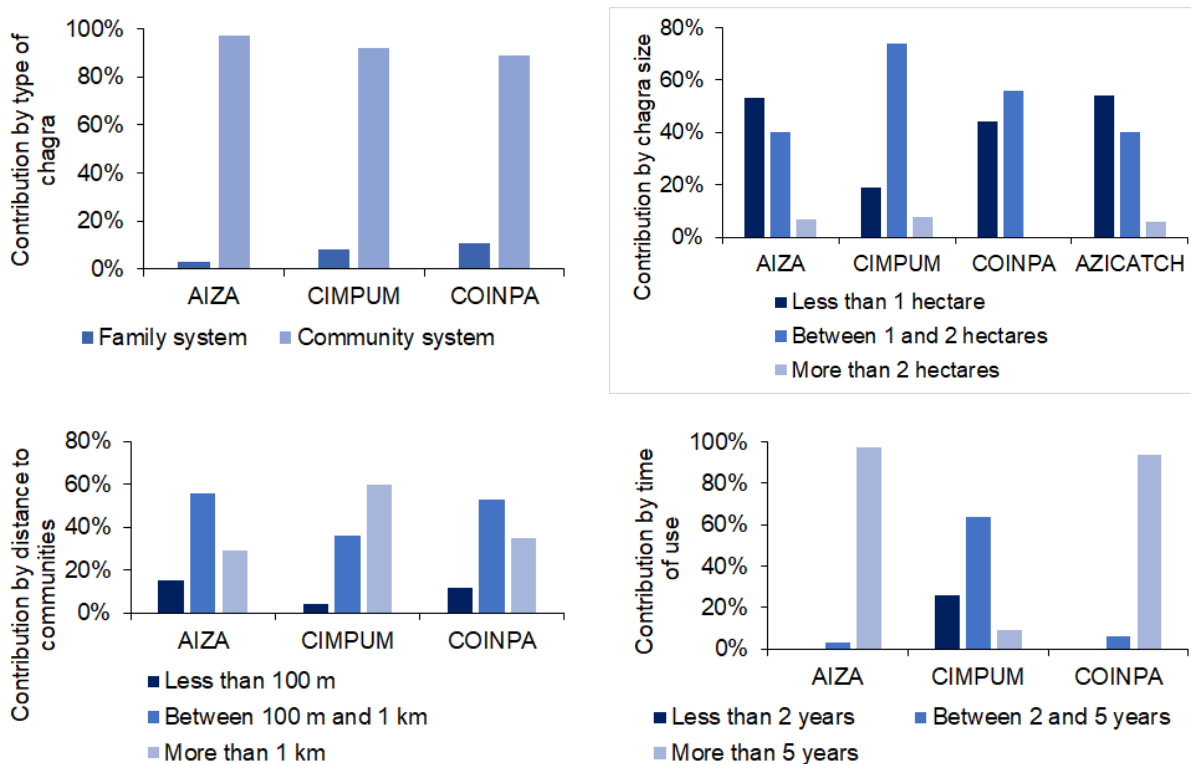


Figure 7. Main characteristics of the *chagras* in the project area. Type of *chagra* (left, above), size (right, above), distance to the communities (left, below), operating time of the *chagra* (right, below).

Source: prepared by South Pole (2019), based on information collected in situ.

As to the floristic composition of the *chagras*, they are highly diverse, in each Association of Traditional Indigenous Authorities (AATI) more than 30 products are cultivated; AZICATCH offers the greatest variety, more than 80 different crops. The main crops grown in the *chagras* are banana, cassava, *chontaduro* and corn; these products are mainly for self-consumption, but surplus production of the *chagras* is also sold in the Peruvian communities. In AIZA, the *chagras* over two hectares are community type in the Sabaloyaco community, where they only plant sugar cane to produce brown-sugar loaf (called *panela*) that is sold in nearby Peruvian communities (Figure 8 and Figure 9).

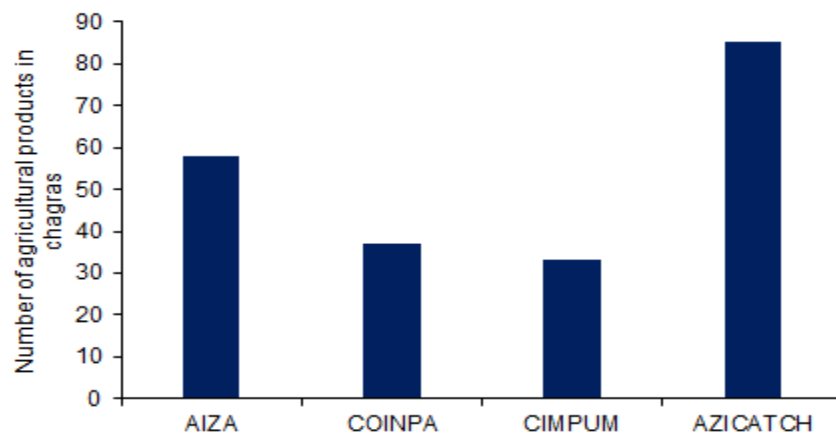


Figure 8. Number of crops grown in the *chagras* of the project area.

Source: adapted from (SINCHI & MADS, 2011).

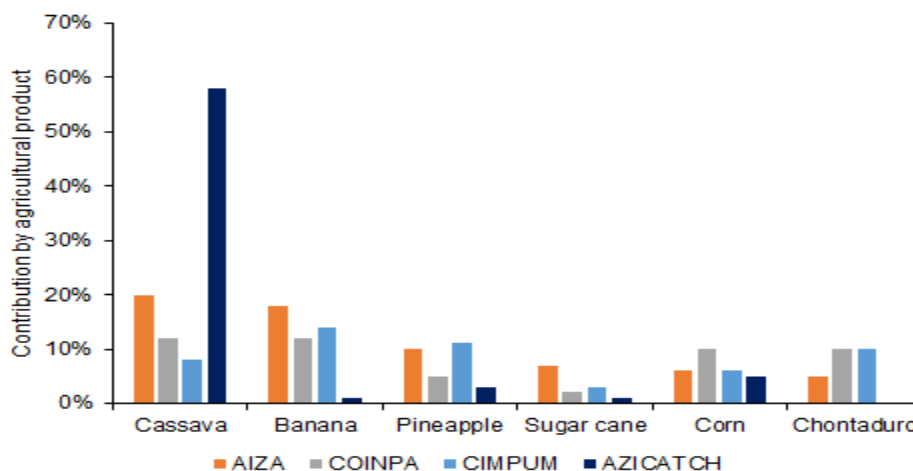


Figure 9. Main crops grown in the *chagras* of the project area.

Source: adapted from (SINCHI & MADS, 2011).



Figure 10. Cultivation of cane sugar in Sabaloyaco (left) and cane processing machine in Sabaloyaco (right).

Photographs by South Pole (2019).



Figure 11. Crops in the *chagras*. Banana (left, above), chili pepper (right, above); pineapple (left, below), banana and *chontaduro* (right, below).

Photographs by South Pole (2019).

Chagras are established in different types of soil and land cover to favor food production and, as mentioned before, they also have a cycle, during which they are specifically managed by indigenous people according to their traditions (SINCHI & MADS, 2011).

1. New *chagras*: these are cultivation areas that have been operating between one and three months, they are usually opened in the summer; in general, the first crop is cassava, which works as an indicator for the phases of the *chagra*. Additionally, crops as tobacco, onion, cucumber and tomato are also grown. In this stage, the first practice of maintenance and weeding takes place.
2. Young *chagras*: these are cultivation areas that have been operating between four and six months. During this period the cassava reaches a height between 1 and 2 meters, and the second tobacco harvest is carried out. Likewise, products such as corn, peanuts, lulo, chili pepper, watermelon and some varieties of early cassava are harvested; as well as other crops that were introduced, including rice, tomato, bean and cucumber.
3. *Chagras* ready for harvest: these are cultivation areas that have been operating between 7 and eight months. It is also harvest time for crops as coca, *mafafa* (*Xanthosoma robustum*), yam, and sweet corn root. In this phase, most of products to be harvested have been planted. In this stage, the second maintenance practice of the *chagras* takes place.
4. *Chagras* in production: these are cultivation areas that have been operating between 9 and 23 months. During this period, the highest production and use of the cassava plants is reached; simultaneously, the stems of cassava harvested are replanted, cabbage seedlings are cut and replanted for a new production. It is also the harvest season for banana and sugar cane.
5. *Chagras* in completion: these are cultivation areas that have been operating between 24 and 48 months. In this stage, the cassavas that were replanted offer their production or they are no longer exploited. Likewise, considering the long period of land use and the resulting loss of nutrients, the cassava varieties do not manage to offer optimal characteristics for family consumption. It indicates the culmination of a production cycle, because no maintenance practices are carried out in the *chagras*, leaving weeds to grow back in the area and thus, the process of natural regeneration and soil recovery begins. It is said that these *chagras* become a *riare* or fruit stubble and later, they will transform into a *méido*, as these places are called when they are abandoned. Once the *chagra* reaches the completion stage, the harvest time for fruit trees as pineapple, peach palm, Amazon-tree grape and *mocambo* tree begins.

Scenario 2: Extraction of forest and non-forest products

The extraction of wood and non-forest products from the forest is an activity carried out in the project communities to obtain economic income from the sale of wood. All the Life Plans of the indigenous organizations of the project raise their concern about a recent problem, the selective extraction of timber species both to earn a livelihood and for trading purposes. Among the species they exploit is *amarillo*, *achapo* (*Cedrelinga cateniformis*), and *cedro*.

Apart from the wood they extract from the forest, they also obtain other products, including fibers that serve to make other items, including sieves, strainers and baskets, wild fruits such as *açaí*, *canangucho*, *milpesos* and *vacaba* (Figure 12) (Fundación Puerto Rastrojo, AZICATCH, WWF, COICA, OPIAC, 2018). These products are usually collected in areas near the communities where they live (Figure 13). The products they trade are usually sold in Peruvian communities or on boats on the Putumayo river, which are very common in the area since it is the territorial boundary with Peru (Figure 14).

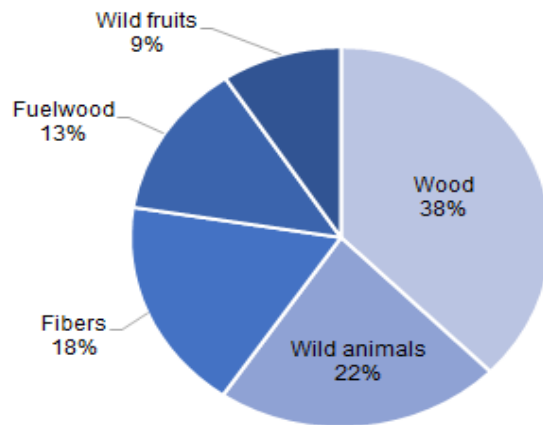


Figure 12. Main products collected in the forest.

Source: prepared by South Pole (2019).

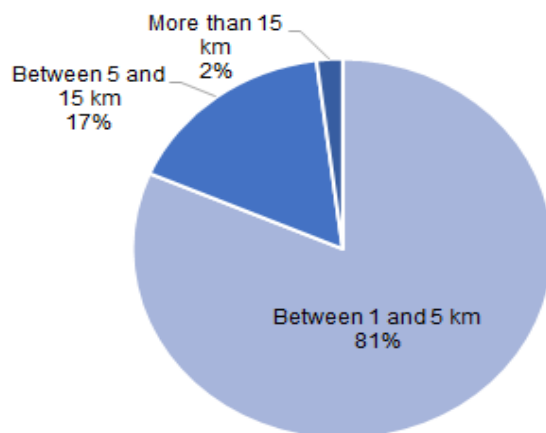


Figure 13. Distance between the communities and the forest.

Source: prepared by South Pole (2019).

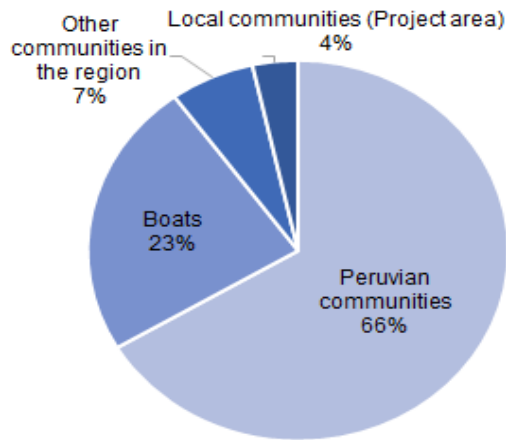


Figure 14. Places where forest and non-forest products are sold.

Source: prepared by South Pole (2019).

Scenario 3: Residential land use

Recently, the demographic flow was revitalized in two Associations of Traditional Indigenous Authorities of the project (CIMPUM and COINPA), mainly related to informal and small-scale mining activities. These are mostly performed on the Putumayo river, where people operate small dredgers and rafts to extract gold from the river. In 2010, there was an increase in mining activities in the *corregimientos*¹⁶ of Puerto Alegría, El Encanto, Puerto Arica, Tarapacá, La Pedrera, Puerto Santander and La Chorrera. Even in the area of the project, an application to legalize mining was filed in 2018 (Salazar Cardona, y otros, 2019). Mining has brought along a high movement of people who come to settle in the communities to perform such activities.

The increase in population is evident in several of the project's communities (Figure 15), such as Puerto Alegría, which has received constant colonization by displaced families and people with commercial interests (COINPA & Fundación Zio-a'i, 2008). In CIMPUM, the communities located in the downstream sector of the Putumayo River, such as Puerto Belén, Puerto Molano and Marandúa, close to the region known as the Strait of Peru, where the length of the Putumayo River's course is considerably reduced, facilitating the transit of people and products between Peru and Colombia and, consequently, the massive entry of settlers into the territory of the Predio Putumayo Indigenous Reserve. The arrival and semi-permanent to permanent installation of colonists in indigenous communities has generated an evident increase in demographic pressure in the territory (COINPA & Fundación Zio-a'i, 2008).

The Associations of Traditional Indigenous Authorities (AATI) have identified external problems in their territories: the steady colonization by displaced families or people with commercial interests; for example,

¹⁶ In Colombia, the word *corregimiento* is used to describe populations living on a same territory but that do not constitute a municipality.

in communities such as Peña Blanca in CIMPUM, there are conflicts caused by the felling of trees and the indiscriminate exploitation of resources carried out by inhabitants of Peru, who make roads and dig in the Colombian land to take advantage of the resources using techniques that are harmful to health, such as the use of poison in the water tanks adjoining the main buddle.

In general, in all the Associations of Traditional Indigenous Authorities of the project, except for AZICATCH, there was a population increase from 2017 to 2019 (Figure 15).

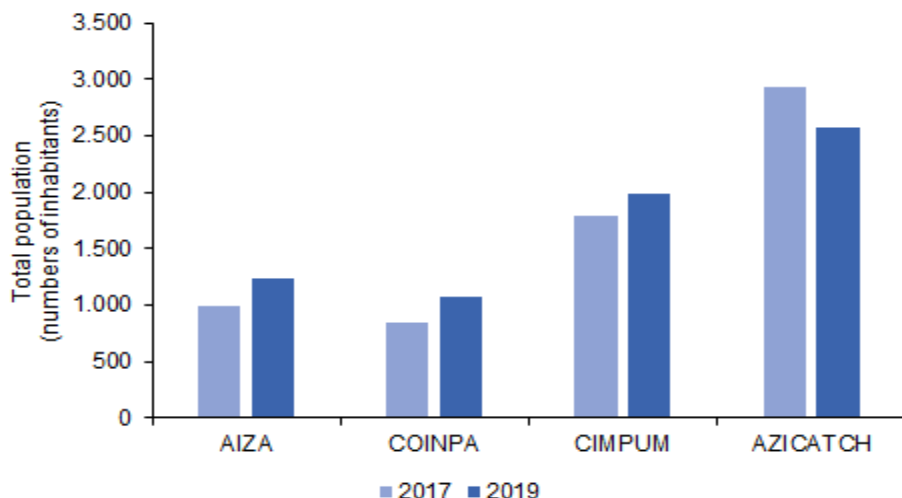


Figure 15. Population in the Associations of Traditional Indigenous Authorities of the project.

Source: Gobernación del Amazonas (2017, 2019).

Scenario 4: Illicit crops

Most of the coca crops are in the Amazonia of Colombia, Peru and Bolivia (Dávalos, Sanchez, & Armenteras, 2016). In fact, not all coca crops are related to cocaine production, since for a large majority of ethnic groups in the Amazon region, such as those found in the project area —Muinane, Inga, Uitoto (Murui), Miraña, Cocama, Okaina, Yoriai, Bora, Tikuna and Andoque—, the tobacco, coca and sweet cassava are sacred elements in their worldview of the universe. Tobacco represents power, coca represents the strength of men, and sweet cassava the power of women (AZICATCH, 2006; OIMA, Fundación Zio-a'i, 2008; AIZA, 2009).

In the 1980s, the economic difficulties of the country and, specifically, the poor conditions in the agricultural sector led farmers to grow coca in large areas to produce cocaine (Mejía, 2016). Until 1994, Colombia was a producer of cocaine hydrochloride using the coca leaf coming from Peru and Bolivia; later, due to the control actions taken by the Peruvian government, coca started to be grown in Colombia, mainly in the Guaviare, Caquetá and Putumayo departments. This led to the enlargement of the area cultivated with coca until it reached a maximum of 163,000 hectares in 2000 (UNODC, 2014). On

account of this, the Colombian government has invested a huge amount of money to fight against illicit crops, and developed several strategies during 2000, such as the Plan Colombia (Mejía, 2016).

In the Amazon region, there was a high dynamic in terms of illicit crops during the 2001-2012 period (Figure 16); for example, coca crops were rotational, and they were not registered in the same site during such period. In the Amazonas Department, at least 1,275 km² were identified between 2011 and 2012, less than 1% of them were areas permanently affected, which are mainly located in the jurisdiction of Puerto Alegría of the COINPA from the Association of Traditional Indigenous Authorities. In the same period, about 3% of the Department's area presented intermittent coca crops, mainly on the banks of the Putumayo and Igará-Paraná rivers, in La Chorrera, El Encanto Puerto Alegría, the Mirití-Paraná river, La Victoria and on the boundary between La Chorrera and El Encanto on the Igará-Paraná river (UNODC, 2014).

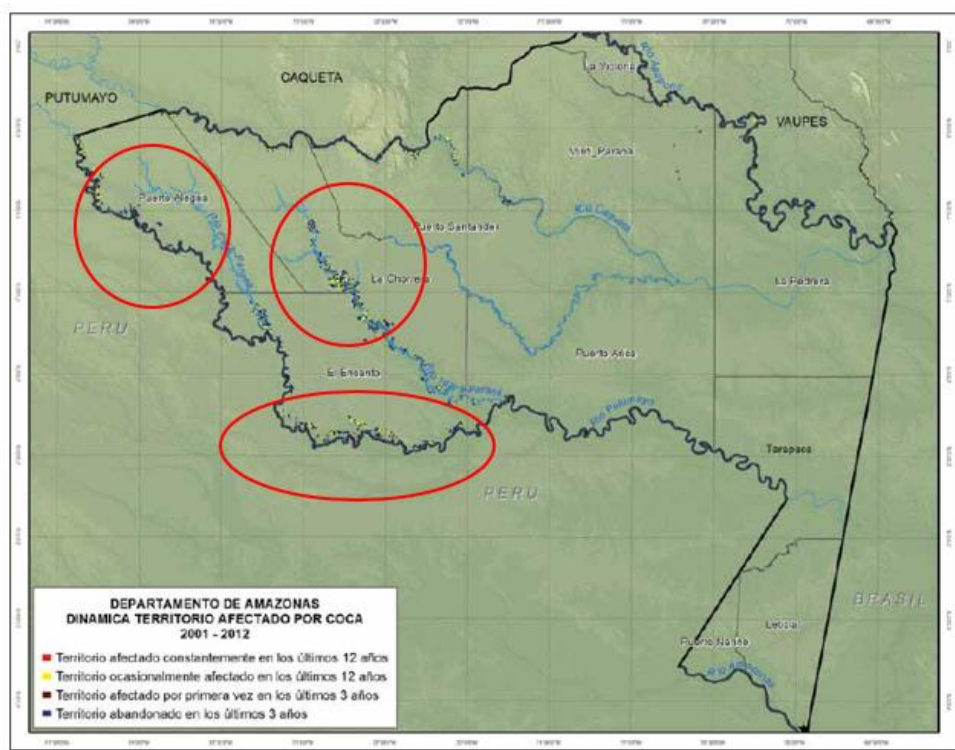


Figure 16. Dynamics of coca crops in the Amazonas Department between 2001 -2012. Red circles highlight areas that had permanent or intermittent coca crops.

Source: UNODC (2014).

During the 2010-2018 period, coca crops were also very dynamic in the Amazonas Department, reaching a peak in 2010; but over the last years, the territory planted with illicit crops showed a trend decline (Figure 17). Between 2014 and 2017, there was a general increase in coca crops in Colombia, but in

2017-2018 there was a 1.2% decrease in the Nariño, Putumayo, Meta, Chocó and Amazonas departments, achieving a reduction over 11,000 ha (UNODC, 2019). Specifically, in the project area most of the illicit crops were abandoned during the period 2009-2018 (Figure 18).

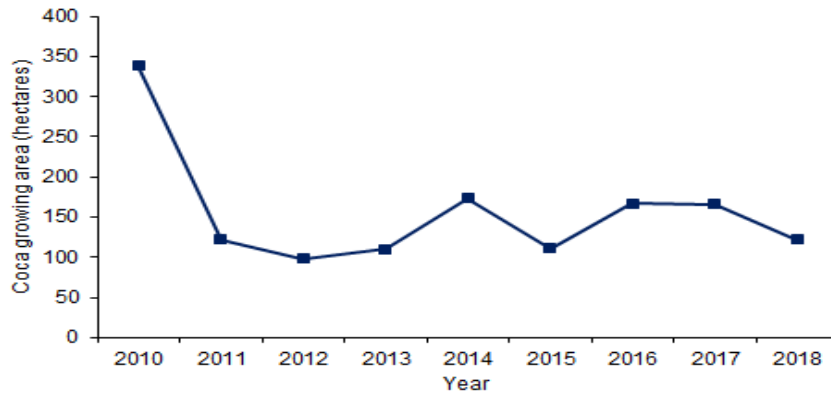


Figure 17. Coca crops in the Amazonas Department during 2010 and 2018.

Source: UNODC (2019).

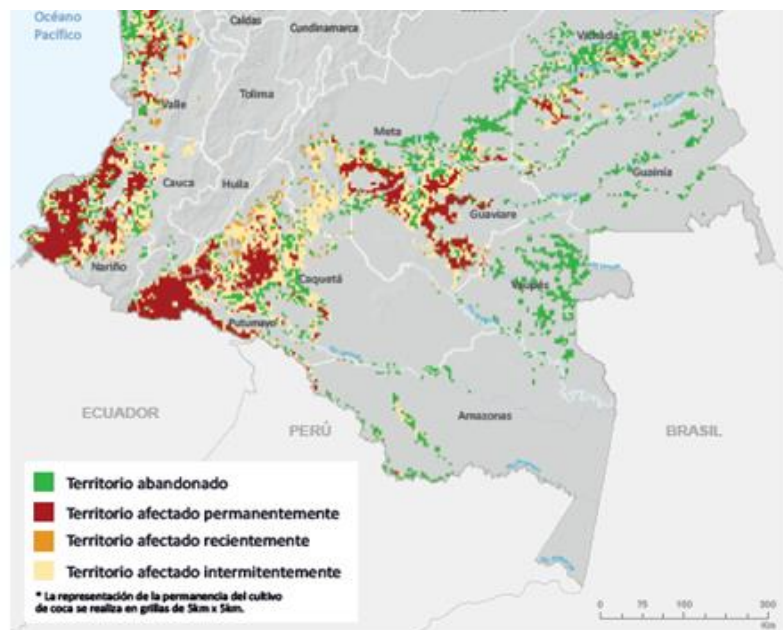


Figure 18. Distribution of coca crops according to permanence between 2009 and 2018. Abandoned territories (green), permanently affected territories (red), recently affected territories (orange), intermittently affected territories (light yellow).

Source: UNODC (2019).

Scenario 5: The activities of the project within the established area are developed without the project being registered as VCS AFOLU: traditional conservation of the forest

The identify and worldview of indigenous communities in the project consider the importance of conservation and sustainable management of the forest, activities that they have traditionally carried out and included in their Life Plans, which are the instruments stating the proposals and policies brought forward by indigenous peoples, who previously identified the problems in the territory (COINPA & Fundación Zio-a'i, 2008).

Life Plans recount the origin of each ethnic group, analyze the individual historical conditions of each Association of Traditional Indigenous Authorities in the specific environmental, territorial and cultural dimensions of each of them; and present conditions are also assessed to direct strategic lines, goals and strategies to strengthen their objectives and purposes as a community, which, as a whole, keeps harmony between mand and nature.

The Life Plan of COINPA states that, historically, there was a good relationship between the environment and man; but, currently, there is a slight imbalance produced by the exploitation of natural resources (COINPA & Fundación Zio-a'i, 2008). The need to develop regulations to use, take advantage of, and preserve the natural resources is established in the projects prioritized in the Life Plan. The main

activities currently performed at COINPA are wood extraction, agriculture, fishing and hunting (COINPA & Fundación Zio-a'i, 2008).

In the same way, according to its identity and beliefs, CIMPUM ascertains that both living and inert beings live from water; consequently, it is necessary to take care of all the elements in nature in an orderly way to protect the territory given by the Creator. They also acknowledge as environmental problems the lack of recognition of their territory, the over-exploitation of timber as a means of financial support, and the cultural loss among young people in their communities and indifference towards the territory. Likewise, they ascertain that conservation is related both to respect for forests and to the development of the *chagra* system, which is useful to avoid the loss of species (OIMA, Fundación Zio-a'i, 2008).

On its part, the AIZA Life Plan states that environment is the basis of indigenous life and, consequently, the stewardship both territory and of natural resources must be guaranteed. As they recognize that there are shortcomings in this sense, the economic and environmental dimensions of their projects are aimed at improving the relationship between man and nature, and prevent the depletion of natural resources (AIZA, 2009). In order to improve these situations, in 2019 they developed an Environmental Management Plan and a Regulation on the Use, Management and Environmental Control which, as of today, has not been implemented due to the lack of resources.

Lastly, the AZICATCH Life Plan considers the territory as sacred, guarded and protected by the creator Moo uai, who —from the beginning— entrusted the mission of caring and respecting nature, as well as the creatures existing in it; each territory has its protective spirit and each being inhabiting there has a protective mother. Regarding production, the AZICATCH people consider themselves as ethno-farmers, their subsistence system relies on the produce from the *chagras*, both for self-consumption and for trading, they also earn income from selling handicrafts, as an occasional option. Their Life Plan considers as priorities the strengthening both *chagras* and fishing, poultry and pig programs, improving the processing and conservation techniques of regional species and the development of Environmental Management Plans to preserve (AZICATCH, 2006).

Despite the guidelines stated in the Life Plans and Environmental Management Plans of the Associations of Traditional Indigenous Authorities which, in general, ascertain conservation as an integral part of their identity and indigenous worldview as millenarian inhabitants of their territory and stewards of nature, the access to and management of resources, as well as the loss of cultural values mainly in the youth of the communities are strong barriers to implement their projects; which leads to weakening local governance and, consequently, the implementation of actions aimed at preserving the forests in their territory.

Thus far, the initiatives in favor of conservation have been in a greater proportion of traditional type, and their formalization has not advanced beyond the consideration of priority actions in the Life Plans and some activities that have been financed with funds from the General System of Contributions (SGP); resources that are transferred by the Nation to territorial entities (municipalities and departments) and to indigenous reserves for they to finance duties and services under their responsibility, but that, in general, rely on earmarked transfers, prioritized in the territory, for infrastructure, education, health, clean drinking water and basic sanitation.

Substep 1b. Consistency of credible land-use scenarios with mandatory laws and regulations.

Table 11 describes the consistency of credible land-use scenarios with mandatory laws and regulations.

Table 11. Land-use scenario and applicable regulatory frameworks.

Land-use scenario	Applicable regulatory framework
Subsistence farming, extraction of forest and non-forest products, and residential land use	Indigenous territories have a comprehensive legal framework that gives them rights to manage their territory and favor, in many ways, their autonomy and survival (see Section 1.14). Specifically, Article 286 establishes indigenous peoples as territorial entities; and Article 287 states that “territorial entities enjoy autonomy to manage their interests, and within the limits of the Constitution and the law. By virtue of this, they will have the following rights: i) To be governed by their own authorities, ii) To exercise the powers that correspond to them, iii) To administer the resources and establish the tributes necessary to perform their duties, and iv) To participate in national income.” Additionally, Decree 632 of 2018 establishes that, indigenous communities in non-municipalized areas from the departments of Amazonas, Guainía and Vaupés, can be governed by their own authorities and define, execute and evaluate their own economic, social, environmental and cultural policies in the framework of Life Plans or their equivalents, within the framework of the applicable legislation (Article 5). For indigenous peoples, indigenous plans express the exercise of their autonomy and the way in which they see and direct their own affairs (Contraloría General de la República de Colombia, 2017). All these scenarios are provided for in the Life Plans of the Associations of Traditional Indigenous Authorities of the project and, therefore, they comply with all legal requirements
Illicit crops	The cultivation of coca to produce cocaine hydrochloride is an illegal activity in Colombia and has an extensive legal framework that prohibits the activity and promotes the implementation of control mechanisms under the Strategy for the Eradication of Illicit Crops (Table 12). In general, Colombia has been greatly affected by those illicit crops, and alliances have been established with other countries, such as the Plan Colombia, to fight drug trafficking (UNODC, 2019).
The activities of the project within the established area are developed without the	Section 1.14 offers a comprehensive description of laws and regulatory frameworks endorsing the importance of the conservation and reduction of deforestation activities in the country and, thus, account for the legality of these activities.

Land-use scenario	Applicable regulatory framework
project being registered as VCS AFOLU: traditional conservation of the forest	Traditional forest conservation is part of the lines of work prioritized by indigenous communities in their Life Plans which, under the objectives of Earth and Environment, finally seek to set goals and activities that favor the strengthening of traditional conservation initiatives, the sustainable exploitation of local biodiversity, and the generation of efforts to protect and safeguard the cultural and natural heritage of the communities.

Source: prepared by South Pole (2020).

Table 12. Legal framework associated with the Strategy for the Eradication of Illicit Crops in Colombia

Elements of the Strategy for the Eradication of Illicit Crops	Regulation	Content
Program for the Eradication of Illicit Crops through aerial spraying of herbicide glyphosate (PECIG), voluntary manual eradication and forced manual eradication	Resolution 1065 of 2001 (MADS)	Through which a management plan is enforced, and other decisions are taken.
	Resolution 1054 of 2003 (MADS)	By which an environmental management plan is modified, and other provisions are taken.
	Resolution 0013 of 2003	By which resolutions 1, of February 11, 1994, and 5, of August 11, 2000, are revoked, and a new procedure is adopted for the Program for the Eradication of Illicit Crops.
	Resolution 031 of 2003	By which, Article 5 of Resolution 0013 of June 27, 2003, is modified and a new procedure is adopted for the Program for the Eradication of Illicit Crops.
	Resolution 099 of 2003 (MADS)	Resolution of the Ministry of the Environment which modifies the Environmental Management Plan enforced by Resolution No. 1065, of 2001, submitted by the Directorate General for Narcotics (DNE) for the Program for the Eradication of Illicit Crops with Glyphosate (PECIG), which is currently suspended by the National Narcotics Council (CNE), according to Resolution No. 0006 of May 29, 2015.

Elements of the Strategy for the Eradication of Illicit Crops	Regulation	Content
	Law 30 of 1986.	Articles 8, 9, 77 and 91, subparagraph g). Scheme for the eradication of illicit crops, powers and procedure.
	Resolution 0013 of 2003 (CNE)	By which, Resolutions 0001, of February 11, 1994, and 0005, of August 11, 2000, are revoked, and a new procedure is adopted for the Program for the Eradication of Illicit Crops.
	Resolution 015 of 2005 (CNE)	By which an authorization is granted (to decide on aerial spraying with the herbicide Glyphosate).
Prior consultation process for the eradication of illicit coca crops in indigenous territories.	Decree 1320 of 1998	By which Law 21 of 1992 is regulated.
	Judgement SU/383 Supreme Court of Justice	Prior consultation with indigenous communities on the eradication of illicit coca crops.
	Presidential Directive 0001 of 2010	Through which prior consultation to all national minorities for the eradication of illicit crops is ordered.

Source: ODC (2020).¹⁷

Results from Step 1b.

All the scenarios proposed are plausible except for Scenario 4 on illicit crops.

Step 2: Investment analysis

The *Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities - VT0001* requires for the development of the additionality analysis to proceed as stated in Step 2 (Investment analysis) or Step 3 (Analysis of barriers). In this case, the barrier analysis was selected and is developed as follows.

¹⁷ Retrieved from: <http://www.odc.gov.co/NORMAS>

Step 3: Barrier analysis

The barriers that prevent the implementation of the proposed project activity are listed below, considering that the AFOLU project is not registered with the VCS.

Substep 3a. Identify the barriers that would prevent the implementation of the type of project activity proposed

Financial and investment barriers

Indigenous communities depend heavily on the funds they receive from the government, mainly through the General System of Contributions (SGP); these correspond to the resources transferred to indigenous reserves as provided for in Article 356 of the Political Constitution, and Articles 2 and 83 of Law 715 of 2001, for financing investment projects duly formulated, in line with the Life Plans or according to the customs and traditions of indigenous peoples. The departments or municipalities administer the resources from the Special Allocation of the General System of Contributions (SGP) for Indigenous Reserves, by signing an administration contract concluded between the respective local president and the authorities of the indigenous reserve (Controlaría General de la República de Colombia, 2017).

The General System of Contributions corresponds to the resources transferred by the Nation to the departments, districts and municipalities for they to finance services under their responsibility; it consists of sectoral contributions and special allocations that include the one that corresponds to indigenous reserves; most of these resources have a sectoral distribution and only 0.52% is allocated to indigenous reserves in Colombia (Figure 19).

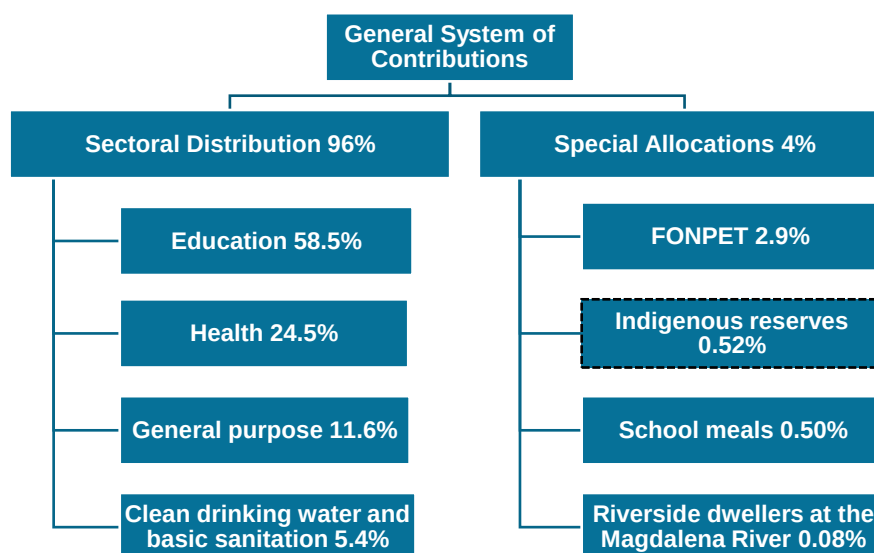


Figure 19. Composition of the General System of Contributions of Colombia.

Source: Controlaría General de la República de Colombia (2017).

The conditions to formulate the investment projects of indigenous reserves are as follows (Controlaría General de la República de Colombia, 2017):

- Be properly formulated, that is, include complete information about what wants to be done.
- Be included in the Life Plan or equivalent document of the indigenous people living in the reserve.
- Be included in the administration contract to be signed with the municipality.
- Be the single mechanism for allocating resources from the General System of Contributions, without projects, resources cannot be executed.

Most of the resources from the General System of Contributions are invested in the acquisition of goods and services for the communities and, to a lesser extent, in consumable products; only 2% is invested in environmental-related activities. Despite the fact that the highest allocation is for health, education, clean drinking water, and basic sanitation, mortality indicators show that the situation of indigenous people is worse if compared to non-indigenous rural population and similar to that of other ethnic minorities, who do not have a special allocation of resources. This proves that those resources have failed to close the existing gaps (Controlaría General de la República de Colombia, 2017).

Other financial barriers pertaining the management of funds from the special allocations of the SGP are closely related to the following facts:

- Budgets depend on the size of the population;
- The development level of the strategies to back the financial planning and the generation and management of own income is low in the municipalities (the relationship between the reserves and territorial entities is not always good), and
- Investment plans do not have effective monitoring and reporting mechanisms, cost-effectiveness principles or transparent and operational accounting and auditing systems.

As a result, the funds from the special allocations of the SGP are not enough to generate investment in all the sectors making up the Reserve and, at the same time, invest in conservation. This situation is not unique in the communities of Predio Putumayo, but it extrapolates on all indigenous communities in Colombia.

Institutional barriers

Managing the funds from the General System of Contributions is a challenge for indigenous communities, because, on one side, they should have technical and administrative capabilities that allow them to efficiently manage the resources and have an impact on improving the quality of life in their communities and, on the other, harmonizing ordinary jurisdiction with their own law, and strengthening their special jurisdiction, regarding the exercise of powers and the administration of public resources (Controlaría General de la República de Colombia, 2017).

At national level, the execution of SGP projects was relatively low, in the 2013-2016 period the execution reached 65%, and for the years 2014 and 2016 it was close to 50% (Controlaría General de la República de Colombia, 2017). In general, this shows that most of the Colombian indigenous communities have problems both for formulating the projects and for executing the scarce resources they get from the special allocations of the SGP. In many cases, the main limitation for allocating those resources is an incomplete delivery of funds; and, in others, the proposals from the communities are inconsistent or very general in nature.

In addition to the general shortcomings in the Colombian indigenous reserves, the municipalities and departments which are responsible for contracting with the reserves the implementation of resources in the SGP often have weaknesses in their administrative capacity, insufficient staff and resources to perform such activities (Controlaría General de la República de Colombia, 2017).

Specifically, the Associations of Traditional Indigenous Authorities of the project acknowledge in the Life Plans difficulties for formulating the project and executing the resources. For instance, AZICATCH explicitly says that “...they are aware that they have made an inappropriate use of some resources; and they require administration; and they recognize the need of an environmental management plan in each community and area, for the best handling and management of their natural resources...” On the other hand, AIZA has regulations on environmental use and an environmental management plan, but they lack control and surveillance systems to supervise if the laws of their own government are complied with. Having the same problems, the CIMPUM Association was known as the OIMA Organization (Organización Indígena Murui); but most of the municipal boards decided to separate due to corruption issues and mismanagement of funds.

The Ministry of the Interior, which monitors resource management in indigenous territories, mentions in its annual report that by March 2017, only 333 reservations had signed contracts with municipalities in the country, i.e. about 39% of the total. This shows that there is a lack of compliance with the signing of contracts or activities with AESGP resources, which in turn causes delays in the execution of these resources, and subsequently their impact on the goods and services required by the indigenous communities. Once the resources have been allocated, the execution of these resources by indigenous communities is relatively low, which is indicative of money planning and management failings.

Barriers related to local tradition

The Life Plans were born as a strategy to build a vision of indigenous community development which would allow them to comply with the constitutional objectives and goals that the indigenous organizations set for themselves since the beginning of their struggles to achieve recognition and equitable inclusion in the country. However, given that there must be some level of coordination between the State and private development plans, as well as indigenous Life Plans, many difficulties have arisen around the creation of the latter, since there is no adequate dialogue of knowledge between territorial entities and indigenous people (Vieco, 2009).

The main characteristic of the development plans promoted by the territorial entities is the promotion of economic income generation through increased market integration. As such, the development projects currently being implemented by the state promote and prioritize projects aimed at generating economic income in indigenous communities, often ignoring the community's social structure and local knowledge (Vieco, 2009).

On the other hand, the Life Plans are based on cosmogonic and ontological principles, which from the local level reclaims a vision to maintain their social conditions of production, their forests and their rivers, which originates from the very place they fight for. However, the plans lack modern ways of social, economic and political relations that demand integration into the market economy and the generation of economic income at both individual and community levels (Vieco, 2009).

Considering the above, and given that the Life Plans are the documents that govern the management of the territory and, of course, whether or not initiatives in favor of conservation are implemented, it is clear that in order to achieve support for the creation, implementation and monitoring of these plans, it is necessary that the indigenous communities can adopt the languages and discourses of modernity and development, without losing of course, the associative forms and solidarity that characterize their daily life. It is very difficult otherwise for the Life Plans to be heard, understood and financed by state entities or by Non-Governmental Organizations (NGOs). Subsequently, the strong financial, institutional and technological barriers for conservation in these territories that exist today are maintained (Vieco, 2009).

Historically, the care of the forest located in the indigenous communities of the project has been carried out in a traditional way based on the belief in the balance between man and nature. However, until now, these initiatives have not defined long-term implementation and monitoring plans. In addition, the initiatives are also isolated and have as their only guide the Life Plans of each AATI, which in most cases are formulated by prioritizing sectors such as infrastructure, education and self-government. Conservation activities are then relegated to the understanding that each community has about the importance of the forest as a source of resources for survival and in some communities, as a sacred site.

In AZICATCH, for example, although within their traditions they are aware of the millennial Amazonian conservation work and have established traditional management practices as a way to secure and care for the territory (Fundación Puerto Rastrojo, AZICATCH, WWF, COICA, OPIAC, 2018), the Life Plan only qualifies as 'conservation' a project that improves processing techniques and conservation of regional species (AZICATCH, 2006).

Regarding territorial and environmental projects, CIMPUN and AIZA are interested in prioritizing projects related to the regulation of the use and management of natural resources, the training of environmental promoters, the elaboration of the environmental management plan, reforestation and forest conservation projects, as well as cultural strengthening via oral tradition, among others. However, they have not yet managed to establish an effective mechanism to meet these objectives (OIMA, Fundación Zio-a'i, 2008).

Similarly, COINPA defines conservation as "*maintaining and caring for the permanence of our natural resources in good condition*", within the projects in the Life Plan regarding use, conservation and exploitation of the territory, projects such as the regulation of the use and management of resources,

greater institutional and public force presence and the development of reforestation of species associated mainly with the construction of housing are considered (COINPA, Zio-a'i Foundation, 2008). However, these initiatives have not been able to be established due to the lack of financial resources and the sheer distance of the communities.

On the other hand, the concept of conservation that varies from community to community has also been consolidated as a major barrier in the creation and implementation of conservation activities. An example of this is the communities of CIMPUM, where the definition of conservation is very broad and varies from community to community. In the community of Santa María, conservation is defined as *"protect so as to not extinguish, strengthen for the future... and it is also spiritually related, since the territory was protected and conserved with traditional myths and beliefs"*; while in Puerto Belén, conservation is *"respecting the reserve areas of each person and protecting them, not only the collective area but also that of each member of the community; furthermore, conservation is having different crops in a farm so as not to provoke species loss. But above all, conservation is a way of working where what is valued is protected, mainly the territory."* Such diverse concepts of conservation have led to a weakening of the possibility of associating initiatives, because when a community or AATI wants to lead conservation activities, the message ends up being confusing to others who have a different understanding of what it means to take care of the forest.

Barriers produced by social conditions

- Distance to population center

The indigenous communities of the project are far away from large villages, the closest ones are Leticia, in the Amazonas Department, and Puerto Leguísimo, in the Putumayo Department; for most of the corregimientos, the only access is by river, except for La Chorrera, that has a small airport offering weekly flights from San José del Guaviare (Table 13).

Table 13. Type of access to the departmental corregimientos of the project.

Corregimiento	AATI	Type of access	Description
Puerto Alegría	COINPA	Waterway	Puerto Alegría is located about 580 km from Leticia, from this place it is possible to flight to Puerto Alegría via Leticia-Bogotá-Puerto Leguísimo and then over the Putumayo river. The journey takes 1-4 days depending on the type of boat chosen.

Corregimiento	AATI	Type of access	Description
El Encanto	CIMPUM - CIMCE	Waterway	El Encanto is located about 455 km from Leticia, from this place it is possible to flight to El Encanto via Leticia-Bogotá-Puerto Leguizamo and then over the Putumayo river. The journey from Puerto Leguizamo to El Encanto takes 2-5 days, depending on the type of boat chosen.
Puerto Arica	AIZA	Waterway	Puerto Arica is located about 310 km from Leticia, from this place it is possible to get by river: Leticia-San Antonio do Içá (Brazil) over the Amazon river, San Antonio do Içá – Puerto Arica over the Putumayo river. The journey takes 4-8 days depending on the type of boat chosen. It is also possible to travel from Puerto Leguizamo over the Putumayo river towards Puerto Alegría – El Encanto and finally reach Puerto Alegría. The journey takes 3-7 days depending on the type of boat chosen.
La Chorrera	AZICATCH	Waterway/ Airway	La Chorrera is located about 450 km from Leticia. Waterway access: flight Bogotá – Puerto Leguizamo, then boat over the Putumayo river in the route of Puerto Leguizamo – Puerto Alegría - El Encanto - Puerto Arica, and from there along the Igara-paraná river to La Chorrera. Waterway transportation will take 4-9 days. Airway access: flight Bogotá – San José del Guaviare – La Chorrera. Flight service from San José del Guaviare is offered by private companies that travel to La Chorrera and Araracuara regions mainly to collect fish that is sold in the domestic market. These are weekly flights. It takes approximately two hours from San José del Guaviare to La Chorrera.

Source: South Pole (2020) based on information collected during the visits to the territory.

The geographical isolation of the project communities and the lack of mobile signal coverage in much of the territory makes more difficult and expensive the development of conservation projects and it also

obstructs the establishment of productive chains for developing other actions in the territory, that allow communities to generate income and reduce so the pressure on the forest.

In addition to this, since the project area adjoins Perú, this proximity creates conflicts because sometimes indigenous people from Peruvian communities carry out activities, such as the extraction of wood, and the Associations of Traditional Indigenous Authorities do not have mechanisms or resources to watch over their territory.

- Armed conflict

There is a close relationship between illicit crops, armed conflict and violence in Colombia (Meisel Roca, et al., 2013). Specifically, the department of Amazonas has been the scene of problems such as corruption and drug trafficking since the 1980s, when the region became the entry route into the country for coca paste from Bolivia and Peru. This situation, together with the precarious institutional framework, has awakened the interest of illegal armed groups in the area. For this reason the Colombian national government established a riverine brigade of marines in Puerto Leguizamo and with it river posts located in some communities of the project area in order to exercise control over the armed actors in the territory (Navy of Colombia, 2007).

Among the main victims of the conflict are indigenous groups. Between 1986 and 2006, nearly 1,641 indigenous people had been killed in the country due to issues related to armed groups (Meisel Roca, et al., 2013). The project's indigenous communities have not been immune to the country's armed conflict and insecurity. Between 2012 and 2017, 237 victims of the armed conflict were registered, although from 2016 onwards there has been a significant decrease in the number of victims (Figure 20).

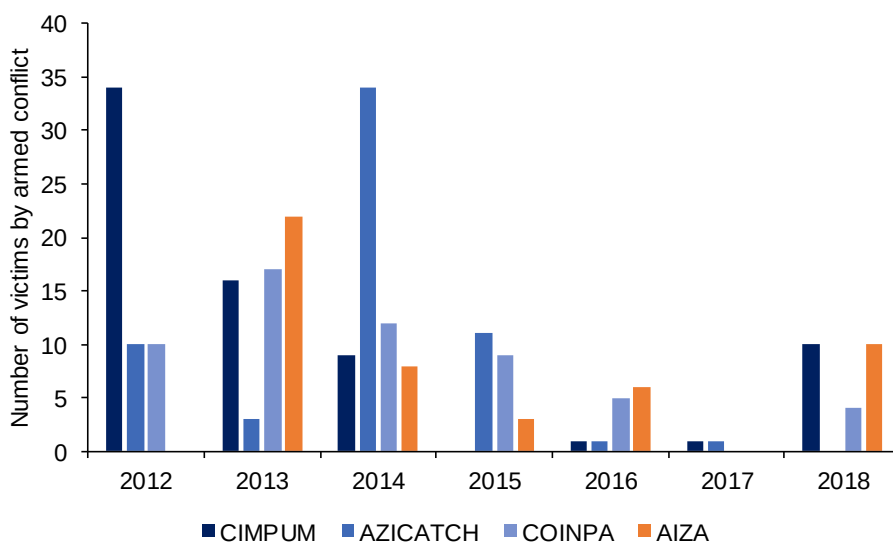


Figure 20. Victims of the armed conflict in the project's AATI.

Source: National Network of Information (2020).

- Poverty

According to the National Administrative Department of Statistics (DANE) the Unsatisfied Basic Needs Index (UBN), the rural communities and non-municipalized areas of the project exceeds the departmental average, which by 2018 was 35% (Figure 21). These indices reflect the high degree of vulnerability of the indigenous populations in the project area, which generally have inadequate housing, critically overcrowded households (more than 5 people per household), poorly serviced or non-existent housing (90% of the communities do not have access to public services), households with high economic dependency, and households with school-age children who do not attend school (Ministry of Health and Social Protection, 2014).

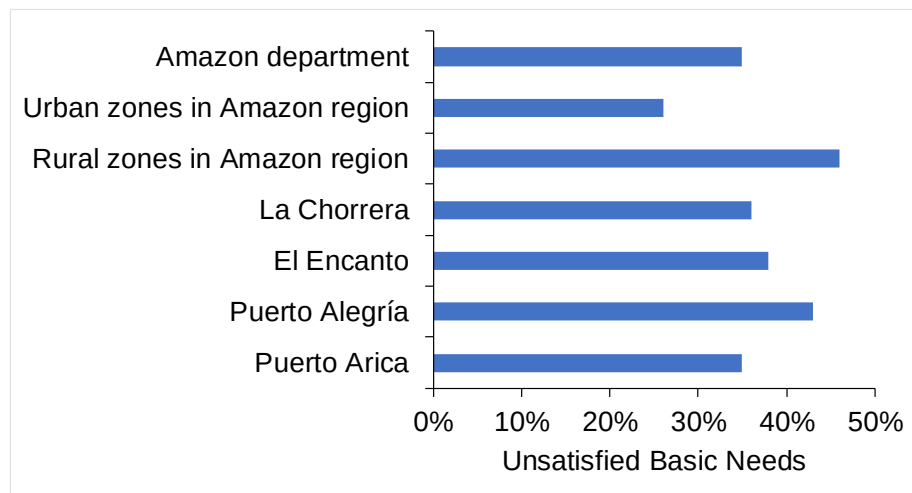


Figure 21. Unsatisfied Basic Needs (NBI) in the Amazonas department and non-municipalized areas in the project area.

Source: DANE (2018).

- Associativity

The indigenous communities in the project have problems of governance and partnership. Even though the State has tried to provide guarantees for the indigenous peoples to structure their own government, most of the population does not trust them as there has been some history of corruption. This is even though the management and handling of the most important source of income for the communities (the AESGP) is dependent upon the AATIs that represent these very communities in the project area. Subsequently, this has led to the separation of communities and the creation of new town councils, so that each community manages its own resources without resorting to associations.

The associations directly face the financial and poverty barriers that characterize their territories, since they lack income that allows them to function. So far, the AATI has chosen to use a percentage of the economic resources that they receive from the AESGP reservation; however, it is not normatively allowed to finance this kind of expenses from the resources of the Special Allocation. Since there is no other income, these expenses end up becoming necessary to finance the administrative structure required for accreditation in the direct management of the reservation's resources and the representation of the communities before formal authorities.

Substep 3b. To show that the identified barriers would not prevent the implementation of at least one of the alternative land-use scenarios (except the activities of the proposed project)

Among the alternative land-use scenarios, it was decided that those about subsistence farming and extraction of forest and non-forest products are the baseline scenarios, because they were the only ones whose implementation was not prevented by the above-mentioned barriers. Table 14 shows the list of land-use scenarios and their respective limitations or barriers that were identified.

Table 14. Alternative land-use scenarios and associated barriers.

Alternative land use	Type of barrier
Subsistence farming	None of the barriers identified. It is a widespread activity in the indigenous territories, it guarantees food security, since it is the main way of obtaining food.
Extraction of forest and non-forest products	None of the barriers identified. It is a widespread activity in the indigenous territories, it is carried out both for the sustenance of the communities and for building houses and malocas (ancestral communal long houses). Additionally, it is the main source of economic income for the indigenous people of the project.
Residential land use	Social barriers The geographic isolation makes that population only increases in communities near Perú, mainly in communities such as Marandúa from CIMPUM, near the Strait of Peru.
The activities of the project within the established area are developed without the project being registered as VCS AFOLU: forest conservation.	Social and financial barriers. Lack of economic resources to perform these activities and little capacity of the Associations of Traditional Indigenous Authorities to formulate conservation projects.

Source: prepared by South Pole (2020).

Step 4: Common practice analysis

The Amazon biome covers an area of 476,000 km² and occupies 41.8% of the national territory. It is comprised of the Amazonas, Caquetá, Guainía, Guaviare, Putumayo and Vaupés departments. There are three main types of land use: 178 indigenous reservations covering 25 million hectares, and 12 national nature parks covering nearly 8 million hectares; there are also 8 million hectares of forest reserves (Act 2 of 1959). Among these groupings there are overlaps in 4 million hectares (CEPAL & Patrimonio Natural, 2013).

The indigenous peoples of the Amazon region possess more than 50% of all the forests in said region within their territories, so given the boom in carbon markets and mitigation projects in the country, many of these peoples have begun a process of formalizing their conservation activities in order to access emission reduction certifications. Under this scenario, it is not feasible to say that there are no conservation activities like the project in the Colombian Amazon, since from their worldview all indigenous communities consider the care of the forest as an essential part of their daily lives.

However, just as the ways of caring for the forest are somewhat similar among the indigenous peoples of the Amazon, so are the barriers identified in the previous section. Poverty is a generalized problem in the Amazon region, which is accentuated in departments such as Vaupés and Guainía where the UBN is close to 80%; in the other departments the rate is lower, but still above the national average of rural communities, which is 30.2%.

Most of the indigenous communities in the Amazon biome depend mainly on the General System of Contributions (SGP); for the allocation of this resource there are two models for resource management (General Control Office of the Republic of Colombia, 2017):

- Territorial entities as resource administrators: the money is administered by the municipality in which the indigenous reservation is located. In order to use this money, the municipality must enter into an administration contract with the reservation authorities.
- Certified reservations for the direct administration of resources: indigenous reservations must accredit experience or good practices according to the amount of resources they intend to administer. During 2015 and 2016, 45 reservations applied for direct SGP administration, but only eight were approved. To date, only eight reservations have been accredited and directly administer resources, and none of them are in the Amazon region.

Institutional barriers are also common to the region, since, due to the extensive border that Colombia shares with Brazil and Peru, there are strong deficiencies for the control and surveillance of the territory. In addition, the institutions have very little inherent capabilities to make their presence felt in such a wide territory. 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).

As for the use of resources, the projects are mainly aimed at covering the food security needs of the reservations, represented by farms, crops, agricultural and fish farming projects, supply of inputs and food, among others. Likewise, activities related to education, such as educational infrastructure,

provision of school supplies, uniforms, school transportation, teacher training sessions, computer equipment, furniture and other equipment, and ethno-education are the focus. Only 1% of the projects are invested in environmental issues (Office of the Controller General of the Republic of Colombia, 2017).

With respect to all of the aforementioned situations, it is evident that in the indigenous communities of the Amazon biome, the same restrictions to develop conservation projects are present given the social, economic and cultural conditions. Therefore, the development of projects to reduce deforestation in a region where 138,176 ha of natural forest were exploited during 2018, requires economic incentives, such as those obtained from REDD projects that strengthen governance and contribute to the implementation of projects directly related to the environment. This should be done not only in Predio Putumayo, but also in many other territories of the Colombian Amazon that are in a condition of significant vulnerability, just as the indigenous peoples are.

With respect to important distinctions compared to other initiatives in the region, the Predio Putumayo Project has prioritized within its creation process the full compliance of the Social and Environmental Safeguards for REDD+ in Colombia. This ensures that, since the signing of the agreements for the development of the Project, transparency and access to information for all communities, recognition of forest governance and indigenous leadership structures, capacity building on REDD and climate change, respect for traditional knowledge and different forms of self-government, and free, prior and informed participation and consent to all activities associated with it is always sought. The implementation of the National Safeguard System and the Monitoring, Reporting and Verification System is now a challenge for the country, and being quite recent, many mitigation initiatives have advanced in their creation without considering these guidelines, increasing social and institutional risks for indigenous communities.

Finally, it is clear that project activities aimed at the conservation and sustainable use of the forest in the project area, while they could become common practice, the widespread barriers throughout the region of reference demonstrate the clear need for incentives derived from carbon credits in the decision to proceed with the project activities. As well, it can act like a mechanism to overcome said barriers identified in the previous section, while also ensuring the permanence of the project's activities during the accreditation period.

3.5.2 Additionality on Colombian regulatory framework

As provided for in Article 43 from Resolution 1447 of 2018, the project proponent must demonstrate a net benefit to the atmosphere in terms of reduced or removed GHG emissions, and that these mitigation results would not have occurred in the absence of the project; this must be addressed in line with the criteria of the certifying program, in this case VCS (see previous section) and, additionally, it must be considered that the project does not fall in any of the following situations:

- GHG removals due to the capture of carbon dioxide by the natural forest that remains as natural forest and, consequently, it is not eligible for national accounting
- Emission reductions or GHG removals produced by the compensation activities carried out by the biotic component resulting from the impacts caused by projects, works or activities in relation to environmental licenses, concessions, applications for single-forestry-exploitation permits

because the land use changed; and the request for permanent subtractions from national and regional forest reserves.

- Emission reductions or GHG removals resulting from the preservation and restoration activities in strategic areas and ecosystems that enable access to payments for environmental services for the reduction and capture of GHG, as provided for in Chapter 8, Title 9, Part 2, Book 2, from the Decree 1076 of 2015.

The Predio Putumayo REDD Project does not fall in any of the three circumstances previously described; therefore, it complies with the guidelines on additionality provided for in Resolution 1447 of 2018.

3.6 Methodology Deviations

Describe and justify any methodology deviations. Include evidence to demonstrate the following:

- *The deviation will not negatively impact the conservativeness of the quantification of GHG emission reductions or removals.*
- *The deviation relates only to the criteria and procedures for monitoring or measurement, and does not relate to any other part of the methodology.*

4 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

4.1 Baseline Emissions

Describe the procedure for quantification of baseline emissions and/or removals in accordance with the applied methodology. Include all relevant equations, and explain and justify all relevant methodological choices (e.g., with respect to selection of emission factors and default values).

4.2 Project Emissions

Describe the procedure for quantification of project emissions and/or removals in accordance with the applied methodology. Include all relevant equations, and explain and justify all relevant methodological choices (e.g., with respect to selection of emission factors and default values).

4.3 Leakage

Describe the procedure for quantification of leakage emissions in accordance with the applied methodology. Include all relevant equations, and explain and justify all relevant methodological choices (e.g., with respect to selection of emission factors and default values).

4.4 Net GHG Emission Reductions and Removals

Describe the procedure for quantification of net GHG emission reductions and removals. Include all relevant equations. For AFOLU projects, include equations for the quantification of net change in carbon stocks.

Provide the ex-ante calculation (estimate) of baseline emissions/removals, project emissions/removals, leakage emissions and net GHG emission reductions and removals in the table below.

For data and parameters monitored, use estimates. Document how each equation is applied, in a manner that enables the reader to reproduce the calculation. Provide example calculations for all key equations, to allow the reader to reproduce the calculation of estimated net GHG emission reductions or removals.

Year	Estimated baseline emissions or removals (tCO ₂ e)	Estimated project emissions or removals (tCO ₂ e)	Estimated leakage emissions (tCO ₂ e)	Estimated net GHG emission reductions or removals (tCO ₂ e)
Year A				
Year B				
Year C				
Year...				
Total				

5 MONITORING

5.1 Data and Parameters Available at Validation

Complete the table below for all data and parameters that are determined or available at validation, and remain fixed throughout the project crediting period (copy the table as necessary for each data/parameter). Data and parameters monitored during the operation of the project are included in Section 5.2 (Data and Parameters Monitored) below.

Data / Parameter	
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Data unit	<i>Indicate the unit of measure</i>
Description	<i>Provide a brief description of the data/parameter</i>
Source of data	<i>Indicate the source(s) of data</i>
Value applied	<i>Provide the value applied</i>
Justification of choice of data or description of measurement methods and procedures applied	<i>Justify the choice of data source, providing references where applicable. Where values are based on measurement, include a description of the measurement methods and procedures applied (e.g., what standards or protocols have been followed), indicate the responsible person/entity that undertook the measurement, the date of the measurement and the measurement results. More detailed information may be provided in an appendix.</i>
Purpose of Data	<i>Indicate one of the following:</i> <i>Determination of baseline scenario (AFOLU projects only)</i> <i>Calculation of baseline emissions</i> <i>Calculation of project emissions</i> <i>Calculation of leakage</i>
Comments	<i>Provide any additional comments</i>

5.2 Data and Parameters Monitored

Complete the table below for all data and parameters that will be monitored during the project crediting period (copy the table as necessary for each data/parameter). Data and parameters determined or available at validation are included in Section 5.1 (Data and Parameters Available at Validation) above.

Data / Parameter	
Data unit	<i>Indicate the unit of measure</i>
Description	<i>Provide a brief description of the data/parameter</i>
Source of data	<i>Indicate the source(s) of data</i>
Description of measurement methods and procedures to be applied	<i>Specify the measurement methods and procedures, any standards or protocols to be followed, and the person/entity responsible for the measurement. Include any relevant information regarding the accuracy of the measurements (e.g., accuracy associated with meter equipment or laboratory tests).</i>
Frequency of monitoring/recording	<i>Specify measurement and recording frequency</i>

Value applied	<i>Provide an estimated value for the data/parameter</i>
Monitoring equipment	<i>Identify equipment used to monitor the data/parameter including type, accuracy class, and serial number of equipment, as appropriate.</i>
QA/QC procedures to be applied	<i>Describe the quality assurance and quality control (QA/QC) procedures to be applied, including the calibration procedures where applicable.</i>
Purpose of data	<i>Indicate one of the following:</i> <i>Calculation of baseline emissions</i> <i>Calculation of project emissions</i> <i>Calculation of leakage</i>
Calculation method	<i>Where relevant, provide the calculation method, including any equations, used to establish the data/parameter.</i>
Comments	<i>Provide any additional comments</i>

5.3 Monitoring Plan

Describe the process and schedule for obtaining, recording, compiling and analyzing the monitored data and parameters set out in Section 5.2 (Data and Parameters Monitored) above. Include details on the following:

- The methods for measuring, recording, storing, aggregating, collating and reporting data and parameters. Where relevant, include the procedures for calibrating monitoring equipment.*
- The organizational structure, responsibilities and competencies of the personnel that will be carrying out monitoring activities.*
- The policies for oversight and accountability of monitoring activities.*
- The procedures for internal auditing and QA/QC.*
- The procedures for handling non-conformances with the validated monitoring plan.*
- Any sampling approaches used, including target precision levels, sample sizes, sample site locations, stratification, frequency of measurement and QA/QC procedures.*

Where appropriate, include line diagrams to display the GHG data collection and management system.

APPENDIX

Use appendices for supporting information. Delete this appendix (title and instructions) where no appendix is required.

REFERENCES

- AIZA. (2009). *Ordenamiento fortalecimiento y rescate del camino de la palabra de vida de la nueva generación de AIZA*.
- Armada de Colombia. (2007). Cumplimiento a Colombia en cualquier mar. *Revista armada*(92).
- AZICATCH. (2006). *Plan de vida de los hijos del tabaco, la coca y la yuca dulce - Zona Chorrera*.
- CEPAL & Patrimonio Natural. (2013). *Amazonia posible y sostenible*. Bogotá, D. C.: Comisión Económica para América Latina y el Caribe (CEPAL). Patrimonio Natural.
- COINPA & Fundación Zio-a'i. (2008). *Plan de vida Pueblos Huitoto e Inga - Jurisdicción COINPA*.
- Controlaría General de la República de Colombia. (2017). *Los recursos de la asignación especial del SGP para resguardos y el reto para los pueblos indígenas en el ejercicio de la función pública*.
- Corpoamazonia, IAvH, SINCHI & UAESPNN. (2007). *Diversidad biológica y cultural del sur de la Amazonía Colombiana - Diagnóstico*. Bogotá, D. C.: Corpoamazonia. Instituto de Investigación de Recursos Biológicos Alexander von Humboldt (IAvH). Instituto Amazónico de Investigaciones Científicas SINCHI. Unidad Administrativa Especial del Sistema de Parques Nacionales Naturales (UAESPNN).
- DANE. (2018). *Necesidades Básicas Insatisfechas (NBI)*.
- Dávalos, L. M., Sanchez, K. M., & Armenteras, D. (2016). Deforestation and Coca Cultivation Rooted in Twentieth-Century Development Projects. *Bioscience*, 974 - 982.
- Fundación Puerto Rastrojo, AZICATCH, WWF, COICA, OPIAC. (2018). *Análisis de servicios ecosistémicos en el territorio de Azicatch, Amazonía colombiana*. Bogotá, D. C.: WWF Colombia.
- IDEAM. (2010). *Leyenda Nacional de Coberturas de la Tierra. Metodología CORINE Land Cover adaptada para Colombia Escala 1:100.000*. Bogotá, D. C.: Instituto de Hidrología, Meteorología y Estudios Ambientales (IDEAM).
- IGAC, I. G. (2019). *Mapa de Suelos del Territorio Colombiano a escala 1:100.000. Departamento: Amazonas*. Obtenido de <https://www.datos.gov.co/dataset/Mapas-de-Suelos-del-Territorio-Colombiano-a-escala/mtnc-q37j>
- Meisel Roca, A., Bonilla, L., & Sánchez Jabba, A. (2013). Documentos de trabajo sobre economía regional. *Geografía económica de la Amazonía Colombiana*, 193.
- Mejía Valenzuela, A. (1983). La Amazonía colombiana. *Sociedad geográfica de Colombia. Academia de ciencias geográficas*.
- Mejía, D. (2016). Plan Colombia: an analysis of effectiveness and costs. *Foreign Policy*, 1-17.
- Ministerio de Cultura & Fundación ACUA. (2015). *La Tierra de la Abundancia: las cocinas tradicionales indígenas del sur del Departamento del Amazonas*. Bogotá, D. C.: Ministerio de Cultura.
- Ministerio de Salud y Protección Social. (2014). *Reporte epidemiológico*.

- Misión de Observación Electoral - MOE. (2008). *Monografía Político Electoral departamento de Amazonas 1997 a 2007*.
- ODC. (18 de Marzo de 2020). *Observatorio de Drogas de Colombia*. Obtenido de Observatorio de Drogas de Colombia: <http://www.odc.gov.co/NORMAS>
- OIMA, Fundación Zio-a'i. (2008). *Plan de vida del pueblo Murui Jurisdicción OIMA*.
- Red Nacional de Información. (1 de Enero de 2020). *Victimas de conflicto armado*. Recuperado el 05 de Abril de 2020, de <https://cifras.unidadvictimas.gov.co/Home/Vigencia>
- Salazar Cardona, C., Riaño Martínez, A., Reyes Bonilla, M., Riaño Umbarila, E., Castañeda Hernández, W., Rubiano, S., & Rodríguez, C. (2019). *Minería: impactos sociales en la Amazonia*. Bogotá, D. C.: Instituto Amazónico de Investigaciones Científicas SINCHI.
- SINCHI & MADS. (2011). *La chagra en La Chorrera: más que una producción de subsistencia, es una fuente de comunicación y alimento físico y espiritual, de los Hijos del tabaco, la coca y la yuca dulce*. Leticia: Instituto Amazónico de Investigaciones Científicas SINCHI. Ministerio de Ambiente y Desarrollo Sostenible (MADS).
- SINCHI. (2009). *Seguridad alimentaria en comunidades indígenas del Amazonas: ayer y hoy*. Bogotá: Instituto Sinchi.
- SINCHI. (2014). *Zonificación ambiental y ordenamiento de la Reserva Forestal de la Amazonia, creada mediante la Ley 2ª de 1959, en los departamentos de Guainía, Vaupés y Amazonas*. Bogotá, D. C.: Instituto Amazónico de Investigaciones Científicas (SINCHI). Grupo de Gestión de Información Ambiental y Zonificación del Territorio: Amazonia Colombiana (GIAZT).
- UNODC. (2014). *Análisis multitemporal de cultivos de coca periodo 2001 - 2012*. Bogotá, D. C.: Oficina de las Naciones Unidas contra la Droga y el Delito (UNODC).
- UNODC. (2019). *Colombia: Monitoreo de territorios afectados por cultivos ilícitos 2018*. Bogotá, D. C.: Oficina de las Naciones Unidas contra la Droga y el Delito.
- Vieco, J. J. (2009). Planes de Desarrollo y Planes de Vida: ¿diálogo de saberes? *Mundo Amazónico*, 2145-5074.