REDD Project of the indigenous peoples of Vaupés YUTUCU and Others

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South Pole
South Pole Carbon Asset Management SAS - Carrera 46 #7-59 – Medellín - Colombia
+57 4 520 5000 · info@southpole.com · southpole.com

REDD Project of the indigenous peoples of Vaupés YUTUCU and Others

REDD+ de los pueblos indígenas del Vaupés YUTUCU y Otros

Conservando nuestro territorio para vivir bien

Document prepared by South Pole Carbon Asset Management S.A.S. (South Pole)

Project Document Template (Version 2.0)	
Name of the project	REDD Project of the Indigenous Peoples of Vaupés YUTUCU and Others
Project proponent	Associations of Traditional Indigenous Authorities (AATIAM), (AATIVAM), (ASATRAIYUVA), (ASOUDIC) and (AZATIAC).
Project proponent's contact information	See Section 5.1
Project holder	Associations of Traditional Indigenous Authorities (AATIAM), (AATIVAM), (ASATRAIYUVA), (ASOUDIC) and (AZATIAC).
Project holder's contact information	See Section 5.1

Project Document Template (Version 2.0)	
Project participants	See Sections 5.1 and 5.2
Version	10
Date	22 January, 2024
Project type	Reduction of Emissions from Deforestation and Degradation (REDD). Developed under the requirements of the Agriculture, Forestry, and Other Land Uses (AFOLU) Sector Scope. It is classified as an "Avoided Deforestation and Degradation project"
Grouped project	The project corresponds to a grouped project
Applied Methodology	This initiative applies to the *Standard for the voluntary carbon market – BCR Standard – from differentiated responsibility to common responsibility*. BioCarbon Registry, Version 3.2 of September 23, 2023 (hereinafter BCR Standard), and applies the conditions of the *Methodological Document AFOLU sector for the quantification of GHG Emission Reductions from REDD+ Projects BCR0002,* Version 3.1 of September 15, 2022 (Hereinafter *REDD+ methodological document*).
Project location (City, Region, Country)	Country: Colombia Region: Amazon Biome City: Vaupes

Project Document Template (Version 2.0)	
	The first instance area of the REDD project in the indigenous peoples of Vaupés YUTUCU and Others is located in the territory of AATIAM, AATIVAM, ASATRAIYUVA, ASOUDIC and AZATIAC; five Traditional Indigenous Authority Associations of the Great Vaupés Indigenous Reservation. The reservation is located in the department of Vaupés, Colombia. It is characterized as being a central area in the southeast region of Colombia and located within the Colombian Amazon Biome.
Starting date	October 29, 2016
Quantification Period of GHG emissions reductions	October 29, 2016 - October 28, 2036
Estimated total and average annual GHG emission reduction amount	Total amount of GHG emission reductions (during the quantification period): over 20 years, the project estimates a reduction of approximately 12,986,006 tCO_2eq (of which 10,388,793 tCO_2eq could be commercialized). Estimated average annual amount of GHG emission reductions: the project estimates an annual reduction of 618,381 tCO_2eq of emissions associated with deforestation each year (of which 494,704 tCO_2eq /year could be commercialized). Total amount of GHG emission reductions (during the first monitoring period): during the January 01, 2017, and December 31, 2018 period, the project avoided the emission of 1,225,507 tCO_2eq (of which 980,406 could be commercialized).

Project Document Template (Version 2.0)	
Sustainable Development Goals	SDG 4 Quality education SDG 6 Clean water and sanitationSDG 11 Sustainable cities and communities SDG 13 Climate action SDG 15 Life on land
Special category, related to co-benefits	See Section 13

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1 Project eligibility

1.1 Scope

The project of quantifiable GHG emission reductions generated by the implementation of REDD+ activities in the REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others is eligible under the scope of the BCR Standard, upon meeting one of the following conditions.

The scope of the BCR Standard is limited to:	
The following greenhouse gases, included in the Kyoto Protocol: Carbon Dioxide (CO_2), Methane (CH_4) and Nitrous Oxide (N_2O).	
GHG projects using a methodology developed or approved by BioCarbon Registry, applicable to GHG removal activities and REDD+ activities (AFOLU Sector).	
Quantifiable GHG emission reductions and/or removals generated by the implementation of GHG removal activities and/or REDD+ activities (AFOLU Sector).	X
GHG projects using a methodology developed or approved by BioCarbon Registry, applicable to activities in the energy, transportation, and waste sectors.	
Quantifiable GHG emission reductions generated by the implementation of activities in the energy, transportation**,** and waste sectors.	

1.2 Project type

Activities in the AFOLU sector, different from REDD+	
REDD+ Activities	X
Activities in the energy sector	
Activities in the transport sector	
Activities related to waste management and disposal	

The climate change mitigation project REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others is a Reducing Emissions from Deforestation and Degradation (REDD+) project. It is developed under the requirements of the Agriculture, Forestry and Other Land Use Sector Scope (AFOLU). It is classified as an Avoided

Deforestation and Degradation project and includes activities to reduce emissions due to deforestation and forest degradation, as well as promoting conservation of carbon stocks associated with above-ground biomass of tree vegetation, below-ground biomass and soil organic carbon, sustainable forest management and increasing forest carbon stocks; activities in accordance with REDD+ actions defined by the United Nations Framework Convention on Climate Change (UNFCCC) in paragraph 70 of decision 1/CP.16 (UN, 2010).[1] Furthermore, the initiative is established in line with the mitigation actions in the Land Use, Land-Use Change and Forestry (LULUCF) sector, which are carried out at the regional and national level within the framework of the National Development Plan 2018-2022, the Colombian Low Carbon Development Strategy (CLCDS) and the National REDD+ Strategy (ENREDD+), and the principles and objectives of the National Climate Change Policy and the National Forestry Policy.

The project will use a programmatic approach (grouped project). The first instance includes five AATIs, made up of 74 indigenous communities (including *caseríos* (villages)) of the Great Vaupés reservation.

This initiative applies to the *Standard for the voluntary carbon market – BCR Standard – from differentiated responsibility to common responsibility. BioCarbon Registry, Version 3.2 of September 23,* 2023 (hereinafter BCR Standard), and applies the conditions of the *Methodological Document AFOLU sector for the quantification of GHG Emission Reductions from REDD+ Projects BCR0002, Version 3.1 of September 15, 2022* (Hereinafter *REDD+ methodological document*).

1.3 Project scale

In accordance with the provisions of BioCarbon Registry in its document *Standard for the voluntary carbon market – BCR Standard – from differentiated responsibility to common responsibility. BioCarbon Registry, Version 3.2 of September 23*, 2023 GHG projects classified as REDD+ activities are not subdivided into categories related to project scale; therefore, the project is not categorized under a scale.

[1] ONU. (2010). The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention. *Framework Convention on Climate Change* . Cancún, Mexico. https://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf

2 General description of the project

The project for climate change mitigation, called REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others, has the main objective of conserving the region's native forests by reducing Greenhouse Gas (GHG) emissions caused by deforestation, while preserving and protecting local biodiversity through community conservation efforts. It is located in the southern area of the department of Vaupés, in the territory of 5 Associations of Traditional Indigenous Authorities (AATIs), belonging to the Great Indigenous Reservation of Vaupés; these being respectively AATIAM, AATIVAM, ASATRAIYUVA, ASOUDIC, and AZATIAC.

The project activity consists of Avoiding Deforestation.The first instance area of the project is located within the reference region of the REDD Early Movers (REM) Program, Early REDD Initiatives, based on the results of emission reductions from deforestation and degradation in the Colombian Amazon biome, in accordance with the provisions agreed upon in the UNFCCC. The project communities seek to make efforts for the conservation and restoration of the territory's Amazon forests, since the region where the project is located is characterized by having a high diversity of fauna and flora distributed in different types of ecosystems, as well as with a great supply of water resources.

In the scenario without project, local communities have experienced a gradual loss of their natural territory due to colonization activities and the need to establish productive activities for their own survival. Due to the above, it has been proposed to establish initiatives to reduce CO_2 emissions that promote and strengthen the execution of conservation strategies in the territory, with the purpose of maintaining forests in a state of conservation. Likewise, it is planned to stop actions linked to deforestation and change in land use as a result of different socio-environmental conflicts, taking into account that the main deforestation and landscape transformation agents and drivers are livestock farming and agriculture, carried out by small and medium-sized producers in the sector, in addition to mining extraction activities, armed groups and the development of productive activities by indigenous communities, and each of these activities is being performed through unsustainable practices that expand the agricultural frontier and leave deep footprints in the natural landscape, transforming the Amazon forest ecosystems into matrices of grasses and herbaceous vegetation in early succession stages.

In this order of ideas, the project seeks the certification of activities that will allow the reduction of 10,388,793 tCO_2e caused by deforestation in 797,598.40 hectares of forest, during the credit generation period. Therefore, the average annual reductions will be

494,704 tCO2e. Deforestation reduction will be achieved through the implementation of four strategic lines (FRES, as per its acronym in Spanish, see the definition in Section3.6), identified in the local consultation process with the five associations that make up the first instance of the project, and which are found in line with the life plans of each association. In the monitoring period, from October 29, 2016, to December 31, 2018, the project has focused mainly on the development of activities that have allowed the articulation of cultural and environmental elements. At the same time, there have been actions to strengthen self-government instances and dialogue with the State regulatory sectors.

2.1 GHG Project name

REDD Project of the indigenous peoples of Vaupés YUTUCU and Others

2.2 Objectives

The main objective of the project is to promote the conservation of the region's native forest, by controlling the risk of deforestation existing in the territory, through the development and implementation of activities related to the sustainable management of the forest, thus generating a reduction in Greenhouse Gas (GHG) emissions by preventing them from being emitted into the atmosphere.

2.3 Project activities

The project seeks to Avoid Deforestation by reducing GHG emissions, through the implementation of four environmental strategic lines called FRES[2] on which the project's actions will focus with the purpose of conserving forest areas and reducing the risks of their degradation. These strategic lines seek: (1) local governance strengthening; (2) ecological and cultural restoration, (3) development of an own economy and productive systems, and (4) the promotion of traditional knowledge and own education that not only contribute to the reduction of GHG, but also generate positive impacts on the communities, ecosystems, and biodiversity. The project activities were designed and are carried out in order to promote the responsible use of forest resources, the conservation

[2] During the local consultation process, the AATIs defined naming that way the strategic lines to group the initials of each one of these. The strategic lines are: Local governance strengthening; Ecological and cultural restoration; Own economy and productive systems; Traditional knowledge and own education.

of forests, the reduction of deforestation and GHG emissions, the protection of ecosystems and the biodiversity. This set of actions will allow the generation of financial resources through forestry assets that are aligned with the sustainable development objectives and the preservation of natural resources. For greater detail, the FRES strategic lines of the project are described in depth in Section 3.6 of this document.

2.4 Project location

2.4.1 Grouped project expansion region

The project is located in the department of Vaupés (Figure 1), which has an extension of 54,135 km^2 and is located in the southeast of Colombia and within the regions of the country, is part of the northeast of the Amazon Biome, approximately between 02°06' N and 01°11' S and between 69°10' and 72°3' W. 77.1% of the surface of Vaupés is under the figure of Indigenous Reservation. The department has three large Indigenous Reservations that cover an area of about 4'175,521 hectares (ha): The Great Vaupés Indigenous Reservation, the Arara-Bacatí-Lagos de Jamaicurú Reservation (shared with the Guaviare department) and the Yaigojé-Reservation Apaporis (shared with the Amazon). (Administración Departamental, 2012). The expansion region of the project is delimited by the extension of territory assigned to the Great Vaupés Indigenous Reservation, with a *buffer* of 15 km in the north-western and south-eastern sector, The area is 3,377,052.68 ha.[3]

The Great Indigenous Reservation of Vaupés was established by Resolution Number 0086 of July 27, 1982 of INCORA (current Agency for Rural Development) with a total extension of 3,375,125 hectares (220 communities) and in 2013, through Agreement 304 of April 17 of the Colombian Institute of Rural Development (INCODER), the expansion of the Reservation (521,065 ha) was sanctioned (approved), which had a final extension of 3,896,190 hectares according to INCODER Plan No. 10-0-001124 of June of 2012. This section lists the area occupied by the reservation in each of the territorial entities in which it is located. The Reservation is a territorial entity recognized by the State as collective property with three fundamental characteristics: it is inalienable, imprescriptible, and unattachable; and it was established as a mechanism to guarantee the ownership of communities and peoples over ancestral territories.

[3] The KML is available in the information management path: 03_Soportes\Cartografía\2_Límites del proyecto\

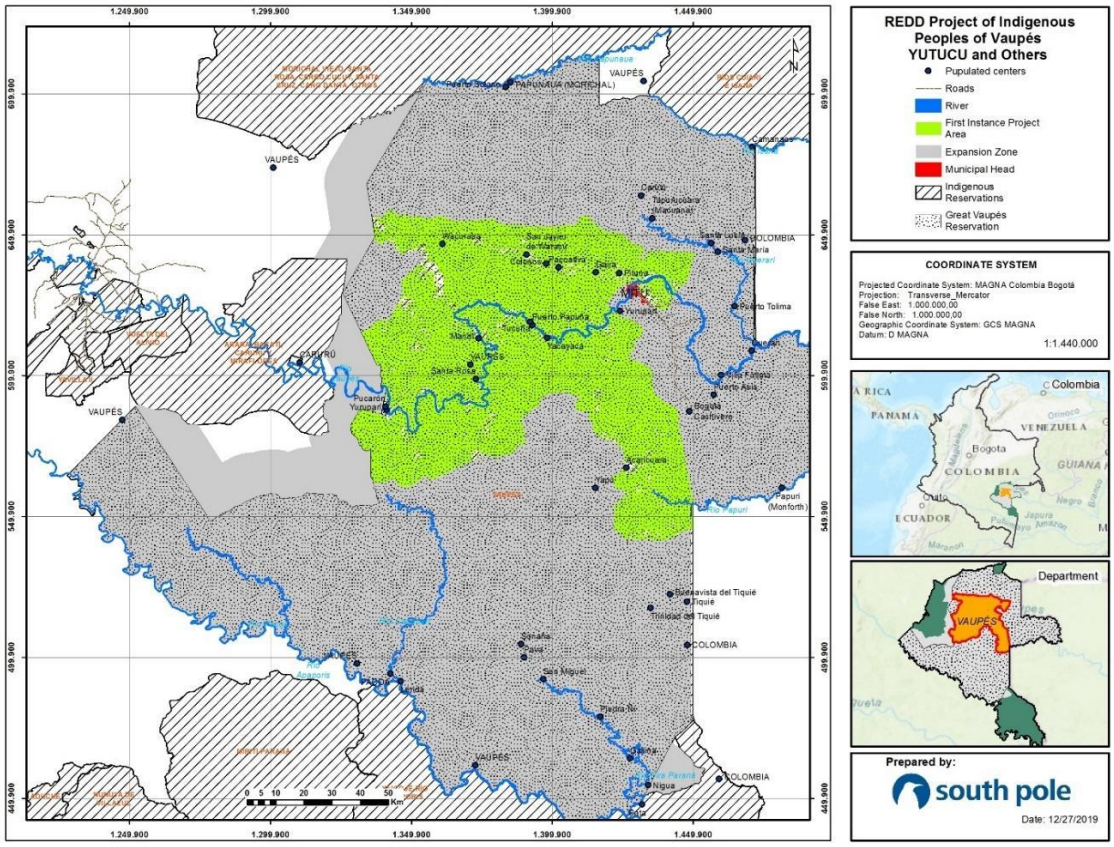


Figure 1. Location of the REDD project of the indigenous peoples of Vaupés YUTUCU and Others.

(Source: Prepared by South Pole, 2019, from the layer of Colombian Indigenous Reservations of the Agustín Codazzi Geographical Institute (IGAC)).

Table 1. Area of the Great Vaupés Indigenous Reservation in the territorial entities of the department of Vaupés

Municipality	Area in the Great Vaupés Indigenous Reservation (ha)
Carurú	40,662.40
Mitú	1,620,363.40
Pacoa (Departmental township (*Corregimiento**))	1,343,081.14
Papunaua (Departmental township (*Corregimiento**))	428,671.08
Taraira	7,827.55
Yavaraté (Departmental township (*Corregimiento**))	465,302.55
Total	3,905,908.12

* Town or village in the departmental jurisdiction.

(Source: Prepared by South Pole, 2019, From the Colombian municipalities layer of the Agustín Codazzi Geographical Institute (IGAC)).

The communities that make up the Great Vaupés Indigenous Reservation are located on the political-administrative limits of the municipality of Mitú and Carurú in the department of Vaupés. The area of reservations in the department is made up of 19 Associations of Traditional Indigenous Authorities and Indigenous Captains - AATIs or zones (zonal areas[4]) (Table 2).

Table 2. Indigenous Organizations present in the Great Vaupés Reservation in Colombia

Zonal	Name
ACAZUNIP	Association of Captains of the Papurí Indigenous Union Zone (Asociación de Capitanes de la Zona Unión Indígena del Papurí)
ASATRIBVA	Association of Indigenous Tribes of Lower Vaupés (Asociación de Tribus Indígenas del Bajo Vaupés)
AATIAM	Association of Traditional Indigenous Authorities Surrounding Mitú (Asociación de Autoridades Tradicionales Indígenas Aledañas a Mitú)
AATIVAM	Association of Middle Vaupés Authorities (Asociación de Autoridades del Vaupés Medio)
ASOUDIC	Cubeo del Cuduyarí Indigenous Union (Unión Indígena Cubeo del Cuduyarí)
OZCIMI	Organization of the Central Indigenous Zone of Mitú (Organización Zona Central Indígena del Mitú)
ASATRAIYUVA	Association of Traditional Yurutí Indigenous Authorities of Vaupés (Asociación de Autoridades Tradicionales Indígenas Yurutíes del Vaupés)
AATIVAM	Association of Traditional Authorities of the Middle Vaupés (Asociación de Autoridades Tradicionales del Vaupés Medio)
ASATAV	Association of Traditional Indigenous Authorities of High Vaupés (Asociación de Autoridades Tradicionales Indígenas del Alto Vaupés)
ATICAM	Association of Traditional Indigenous Authorities near the MCH (Asociación de Autoridades Tradicionales Indígenas aledañas a la MCH)
UNIQ-ASAMQ	Indigenous Union of the Querarí Zone (Querari Mining Association) (Unión Indígena de la Zona del Querarí (Asociación Minería del Querari))
ACURIS	Indigenous Association of Captains of the Isana and Surupí River (Asociación Indígena de Capitanes del Río Isana y Surupí)
OZIRPA	Indigenous Organization Papunagua River Area (Organización Indígena Zona del Río Papunagua)

[4] The indigenous peoples of Vaupés are organized in AATIs and most of them have been constituted as Associations of Traditional Indigenous Authorities registered with the Ministry of the Interior.

Zonal	Name
AZATIAC	Association of Traditional Indigenous Authorities of Acaricuara (Asociación de Autoridades Tradicionales Indígenas de Acaricuara)
ASATRIZY	Association of Traditional Indigenous Authorities of the Yapú Zone (Asociación de Autoridades Tradicionales Indígenas de la Zona del Yapú)
AATIZOT	Association of Traditional Indigenous Authorities of the Tiquie Zone (Asociación de Autoridades Tradicionales Indígenas Zona del Tiquie)
ACAIPÍ	Association of Indigenous Captains of Pirá-Paraná (Asociación de Capitanes Indígenas del Pirá-Paraná)
ACTIVA	Association of Traditional Indigenous Captains of Cananarí (Asociación de Capitanes Tradicionales Indígenas del Cananarí)
ACIYAVA	Association of indigenous captains of the Yaigojé Apaporis Vaupés (Asociación de capitanes indígenas del Yaigojé Apaporis Vaupés)

(Source: Departmental Development Plan 2016-2019, Community Development Office)

2.4.2 Areas included in validation

The first instance project area is located in the central part of the Great Vaupés reservation between coordinates 70°16'2.92" W, 0°27'12.29" N and 70°31'16.23" W, 1°27'46.34" N. It corresponds to the forest area (797,598.40ha) that has remained stable in the 2005-2015 period, within 853,280 ha of the territory of the AATIAM, AATIVAM, ASATRAIYUVA, ASOUDIC and AZATIAC AATIs (Table 3 y Figure 2).

Table 3. AATIs of the REDD+ project of the Indigenous Peoples of the Great Vaupés YUTUCU and Others [5]

Zonal name	Resolution	Zonal registration/recognition resolution
AATIAM – Association of Traditional Indigenous Authorities (Asociación de Autoridades Tradicionales Indígenas)	Res. 0064 of June 30, 2015	Constitution Assembly: March 11, 2015.
ASOUDIC – Association of Traditional Authorities PAMIJABOVA of the Cuduyarí River for an Own Government (Asociación de Autoridades Tradicionales – PAMIJABOVA del río Cuduyarí para un Gobierno Propio)	Res. 039 of April 4, 2019	Res. 0097 of July 28, 2014 (PAMIJABOVA of the Cuduyarí River for an own-government-UDIC) and Resolution N. 01281 of November 3, 1994.
AATIVAM – Association of Middle Vaupés Authorities (Asociación de Autoridades del Vaupés Medio)	Res. 0198 of December 26, 2017	Res. No 0030 of May 17, 2007
ASATRAIYUVA – Association of Traditional Indigenous Yuruti Authorities of Vaupés (Asociación de Autoridades Tradicionales Indígenas Yuruti del Vaupés)	Res. 059 of May 3, 2019	Res. No 008 of September 7, 2001, and registration by Public Deed No. 064 of the Unique Notary Public Office of Mitú.
AZATIAC – Zonal Association of Traditional Indigenous Authorities of Acaricuara (Asociación Zonal de Autoridades Tradicionales Indígenas de Acaricuara)	Res. 0029 of March 3, 2017	Res. 0016 of February 7, 2008.

(Source: Prepared by South Pole (2020), based on information on Colombian legislation regarding the constitution of AATIs, applicable to the sector).

[5] See support at: 03_Soportes\Documentos legales\Resolucion_Constitucion_AATI

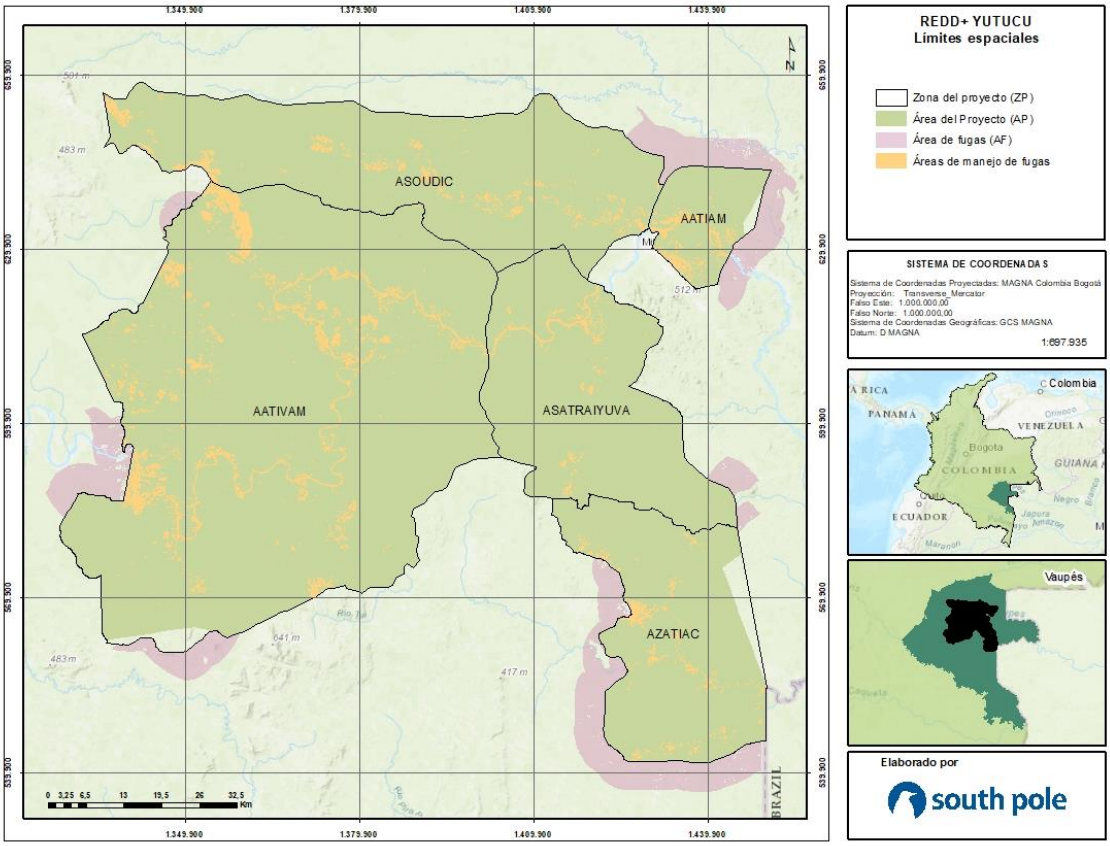


Figure 2. Forest area under the jurisdiction of the five ATTIs that make up the first instance of the REDD+ project of the indigenous peoples of Vaupés YUTUCU and Others

(Source: Prepared by South Pole based on information from the Institute of Hydrology, Meteorology and Environmental Studies (IDEAM, as per its acronym in Spanish) available in the SMByC, for the 2005-2015 period. The KML is located in Soportes\Limites del proyecto\Area_proyecto)[6]

[6] The limits of the ATTIs jurisdiction are supported by the limits defined by the AATIs, activity carried out between May and October 2019, see supports at: 03_Soportes\Actividades de proyecto\Actividades_2019\Actividad_delimitacion_Jurisdiccion_ATTIS and the resulting cartography in: 03_Soportes\Cartografía\2_Límites del proyecto\6_Otros\Actividad de Delimitación

The geographical coordinates of each of the communities participating in the project in its first instance are found on Table 4. The spatial location of each of the ATTIs can be seen in Figure 2.[7]

The **AZATIAC** zonal administratively belongs to the municipality of Mitú, which has a township (*corregimiento*) in the Acaricuara community. This area includes the Papurí river basin up to the border with Brazil, it is made up of creeks that run from north to southeast following the axis of the Papurí River. The main creeks of this basin are Paca, Yapú and Inambú, and includes the headwaters of Caño Colorado (a tributary of the Pirá-Paraná River). There are 19 communities distributed along the river and its tributaries, following a settlement process determined by the origin of some ethnic groups, with their own historical migration processes. The main fluvial axes or sectors of the river and creeks are Caño Paca (high, medium and low), Caño Viña, Caño Inambú, Río Papurí (high and medium), Caño Wiba, Caño Tabari, Caño Ibacaba (AZATIAC, 2017).

The **ASATRAIYUVA** zonal is located on the banks of the Vaupés River, Caño Yi and Caño Paca in the Municipality of Mitú, west of the municipality, and is made up of nine communities. The communities that are located on both sides of the Vaupés River are Puerto Inayá, Puerto Colombia, Bocas del Yí and Miritί Cachivera; on the right bank of the Yi pipe, Santa Rosalía and on the Fariña pipe (which flows into the Yi creek) San Marcos; On the other hand, San Luis, Consuelo and Puerto Loma are located in the Paca creek sector (AZATRAIYUVA, 2008).

The **AATIVAM** area is traveled from East to West by four Cachiveras (name used for river rapids and/or a specific indigenous community): Yacayacá, Mandí, Piraiba Roca and Yuruparí. In the summer, river transport is difficult given the number of stones and beaches in the river. On the banks of the Vaupés River and between the creeks, several important hills are present, such as the Umarí, Cubiyú, Mandí, the Cerros, etc. The Vaupés river also has several creeks of great importance for indigenous communities such as the Pacú, Cubiyú, Paraná Pichuna, Tatú, Ñamú, Ti, Tuí and Pirandira(AATIVAM, n.d.)

The **ASOUDIC** area is located around the Cuduyarí river or creek. This creek is located on the left bank of the Vaupés River, two kilometers downstream from the capital of the

[7] See in: 03_Soportes\Cartografía\2_Límites del proyecto\0_Zona del proyecto (ZP)

department, and has 21 communities along the creek, the majority belonging to the Cubeo ethnic group. The hydrographic basin of the Cuduyarí creek runs from the north-west to the north-east of the departmental territory and discharges into the Vaupés river, downstream from the city of Mitú (CDA, 2016).

The **AATIAM** zonal is located near the municipal head (urban area) of Mitú, with four communities that are located along the Vaupés River (Mituseño, Tucunaré, Macaquiño and Trubón). The Ceima Cachivera community is located on the Caño Ceima, a tributary of the Vaupés River. The association limits in the east with the Animación y Lucha del Bajo Vaupés indigenous area (ALUBVA) at the height (location) of cachivera de oso palmera, and on the northeast side with the area of Unión Indígenas del Querarí (UNIQ); On the west, it borders the jurisdiction of the Cubeos del Cuduyarí Indigenous Zonal Organization (UDIC) zone and the south-western side with the OZCIMI zone; to the north it borders UNIQ and to the south it borders OZCIMI and ALUBVA (AATIAM, 2008).

Table 4. Geographical location [8] of the AATI communities of the REDD+ project of the Indigenous peoples of Vaupés YUTUCU and Others

Zonal	Community	Latitud North	Longitud West
AATIAM	Ceima Cachivera	1.224194	-70.162500
	Macaquiño	1.267083	-70.115170
	Tucunaré	1.296500	-70.161060
	Mituseño-Urania	1.271000	-70.197360
ASATRAIYUVA	Miritί Cachivera	1.155361	-70.315472
	Santa Rosalía	1.058417	-70.300222
	Bocas del Yí	1.131028	-70.320500
	Puerto Inayá	1.123806	-70.430444
	Puerto Colombia	1.135972	-70.357861
	San Marcos	1.032333	-70.307833
	San Luis de Paca	0.873645	-70.344765
	Puerto Loma	0.914044	-70.356976
	Consuelo	0.926640	-70.343744
AATIVAM	Bellavista del Tuy	0.723643	-70.914267
	Los Cerros	0.887228	-70.758881
	Santa Rosa	0.963024	-70.728814
	Villanueva	1.073832	-70.696996

[8] See support at: 03_Soportes\Cartografía\2_Límites del proyecto\6_Otros\Comunidades

Zonal	Community	Latitud North	Longitud West
	Yacayacá	1.101471	-70.505873
	Puerto Pupuña	1.126072	-70.539256
	Wasay	1.177328	-70.611425
	Tierra Grata	1.212345	-70.709599
	Puerto Limón	1.164904	-70.910733
	Ñamu	0.933764	-70.881008
	Puerto Laguna	0.801056	-70.954164
	Mandí	1.100097	-70.719722
	San José de Guamal	1.144725	-70.756483
	Pucarón	0.892214	-71.043479
	Yuruparí	0.858746	-71.028991
	Virabazu	1.292233	-70.929548
	Puerto Nazareth	0.806955	-70.682520
	San Pedro del TI	0.801478	-70.694725
	Mensajero	1.199459	-70.803769
	Sabana	1.239368	-70.850676
	Nueva Florida	0.865141	-71.014011
ASOUDIC	Santa Marta	1.284550	-70.233433
	Puerto Golondrina	1.299467	-70.227417
	Puerto López	1.298083	-70.266900
	Garrafa	1.292517	-70.280500
	Pituna	1.295233	-70.328450
	Piracemo	1.328133	-70.380350
	Nueva Reforma	1.326300	-70.401317
	Santa Helenea deTiposo	1.323650	-70.421817
	Camuti	1.309933	-70.423967
	Quina	1.314433	-70.456117
	Pacuativa	1.319533	-70.466133
	San Javier de Guaracú	1.336933	-70.536750
	Piramiri	1.366450	-70.559617
	Puerto Pacu	1.425194	-70.984117
	Wacuraba	1.389700	-70.906167
	Arara	1.408567	-70.722383
	Puerto Pato	1.375952	-70.650867
	Puerto Casanare	1.376744	-70.634500
	Querarimiri	1.381433	-70.598350
	Barranco Colorado	1.403900	-70.579683
	Santa María del Tapinima	1.356483	-70.555417
AZATIAC	Acaricuara	0.685107	-70.238661
	Arara Paca	0.643257	-70.174571
	Belén de Inambú	0.470331	-70.185342
	La Floresta	0.680633	-70.241664

Zonal	Community	Latitud North	Longitud West
	Los Ángeles	0.573804	-70.123489
	Puerto Esperanza Inambú	0.468324	-70.150104
	Puerto Ibacaba Inambú	0.495900	-70.104131
	San Gerardo	0.766764	-70.289967
	San Ignacio	0.574794	-70.242861
	San Joaquín	0.469942	-70.093919
	San José del Viña	0.708578	-70.184047
	San Pablo de Wiwa	0.781919	-70.323144
	Santa María	0.592839	-70.150101
	Santa Rita	0.456353	-70.233386
	Santo Domingo	0.778089	-70.307742
	Tamacuarí	0.610267	-70.216211
	Tarira Papurí	0.594769	-70.252628
	Waracapurí	0.790914	-70.149556
	Guadalajara	0.747777	-70.266691

(Source: Prepared by South Pole (2020), based on information on the constitution of the AATIs and its spatialization).

2.5 Additional information about the GHG Project

The Great Vaupés Reservation occupies a large area, approximately 44% of its territory is in the municipality of Mitú, and more than 50% covers the department of Vaupés, therefore, Annex 4 compiled the information of relevant data from the region, municipality and department where the project is developed. Due to the similarity in regional conditions, it is considered important to know its characteristics for the implementation of the project, information that is compiled in Annex 4.[9]

2.5.1 Commercially Sensitive Information

Confidential documents such as trade agreements and other documents that are considered highly sensitive are presented as supporting documents.

[9] See support at: Soportes\Anexos\ Anexo 4_Información adicional.

3 Quantification of GHG emission reductions

3.1 Quantification methodology

The methodology used for the development of the project is the *Methodological Document AFOLU sector for the quantification of GHG Emission Reductions from REDD+ Projects BCR0002, Version 3.1 of September 15, 2022*. And BCR Standard. From differentiated responsibility to common responsibility. Version 3.2. September 23, 2023.

Tools applied:

- BCR TOOL. SUSTAINABLE DEVELOPMENT GOALS (SDG). Version 1.0. June, 2023.
- BCR TOOL TO DEMONSTRATE COMPLIANCE WITH THE REDD+ SAFEGUARDS. Version 1.1. 26 January 2023.
- BCR TOOL. AVOIDING DOUBLE COUNTING (ADC). BCR avoid double counting of emissions reductions/removals. Version 1.0 March 9, 2023
- BCR TOOL. PERMANENCE AND RISK MANAGEMENT. BCR project holder take actions to ensure the project benefits are maintained over time. Version 1.0 March 7, 2023.
- BCR TOOL. NO NET HARM ENVIRONMENTAL AND SOCIAL SAFEGUARDS (NNH). BCR project activities do not cause any net-harm to the environment or to local communities and society in general. Version 1.0 March 7, 2023
- BioCarbon Registry. 2023. BIOCARBON GUIDELINES. BASELINE AND ADDITIONALITY. BCR projects generate verified carbon credits (VCC) that represent emissions reductions, avoidance, or removals that are additional. Version 1.1 Febuary 17, 2023.

3.1.1 Applicability conditions of the methodology

Due to the characteristics of the activities developed by indigenous communities within the framework of their life plans, the REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others is in the Reducing Emissions from Deforestation and Avoided Degradation (REDD+) category and complies with the conditions of applicability of the

program (see Table 5) and with the methodologies of initiatives of this nature. The applicability of the methodological inputs and tools are presented in Table 6.

Table 5. Conditions of applicability of the BCR Standard

Conditions of applicability of the guidelines	Complies	Description of REDD+ compliance
The methodological documents contain the applicability criteria and detailed steps for quantifying and monitoring results against design and implementation of GHG Projects, by a given project type.	Yes	The initiative is developed in accordance with the guidelines of the *REDD+ Methodological Document* .
Project holders can only certify and register, with the BCR STANDARD, projects whose start date is defined within the five (5) years prior to the start of validation.	Yes	The project start date corresponds to October 29, 2016, which is within the 5 years prior to validation.[10]
The GHG project holder shall demonstrate compliance with legislation related to the activities carried out by the GHG mitigation activities.	Yes	Compliance with laws, statutes, and other regulatory frameworks, it is shown that the activities of the proposed project are in accordance with the country's regulatory regulations (Section 4).

(Source: South Pole, based on Biocarbon registry and REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others, (2022).

Table 6. Applicability of the BCR REDD+ methodological document methodology

Applicability condition	Compliance of the REDD+ methodological document
a) The areas in the project boundaries correspond to the forest category (as outlined by the national forest definition for the Clean Development Mechanism), at the start of the project activities and ten years before the project start date.	The project area only includes lands classified as "forest" for a period of 10 years prior to the project start date, between 2005 and 2015 (see Section 3.2). This qualification is derived from the definition of forest presented by Colombia to the UNFCCC for the purposes of the National REDD+ Strategy (ENREDD+) and specifically for the construction of the National FREL (they comply with the definition of the Clean Development Mechanism). In turn, the project area corresponds to primary and secondary

[10] The project validation began on June 12, 2020, thus complying with "The validation starts once signed a commercial agreement with the CAB"

Applicability condition	Compliance of the REDD+ methodological document
	tropical forests which are located within the very humid tropical forest (bmh-T) life zone.
b) The identified causes of deforestation may include, among others, expansion of the agricultural frontier, mining, timber extraction, and infrastructural expansion.	The identified causes of deforestation include expansion of the agricultural frontier, mining, timber extraction and infrastructure expansion.[11] Baseline activities include deforestation of forest covers, associated with the development of productive subsistence activities that promote alternative uses or transformation of forest covers and the inability of institutions to control these activities. deforestation activities include, among other drivers, subsistence agriculture or illegal logging, mining, and illicit crops (see Section 3.5).
c) The causes of forest degradation identified may include selective logging, fuelwood extraction, forest fires, forest grazing, and expansion of the agricultural frontier – illicit crops.	Degradation in the project area is associated with fuelwood extraction. To date, there is not enough information to establish an emissions baseline associated with degradation, therefore, this element will not be counted in the first monitoring period.
d) No reduction in deforestation or forest degradation is expected to occur in the absence of the Project.	According to the barrier analysis (see Step 2 in Section 3.4.2) of Section 3.3 and 3.4, it is demonstrated that the reduction of deforestation or degradation is not expected to occur in the absence of the project due to the dynamics of the region.
e) The carbon stock in the organic matter of soil, the litter and deadwood in project boundary may decrease or remain stable.	Deforested areas suffer loss of soil organic matter, litterfall and dead wood due to the lack of availability of plant material, therefore, it is possible that in deforested areas, the carbon reserves in soil organic matter, litterfall and dead wood decrease, or remain stable.
f) The quantification of GHG other than CO_2 should be included in the quantification of emissions caused by forest fires (if applicable) during the monitoring period.	When a fire occurs in the project area, GHGs other than CO_2 will be quantified in accordance with the guidelines of the *REDD+ methodological document.*
g) This Methodology allows the inclusion of areas in the Project that correspond to the wetlands category and the lands that contain organic soils. However, the project holder shall submit to BIOCARBON	The project area includes forested wetlands (flooded forests of lowlands and floodplains), but these do not grow on organic soils (see Section 8.1.5).

[11] The complete document on deforestation agents and drivers is presented in Anexo 3. Agentes y motores de deforestación. In the path: Gestión de la información\Secciones Anexas\Anexo 3_CausasyAgentesDeforestación.

Applicability condition	Compliance of the REDD+ methodological document
REGISTRY a methodological approach with activity data, emission factors, and quantification of emission reductions from avoided deforestation and forest degradation that would be applied.	

(Source: South Pole, 2020).

3.1.2 Methodology Deviations

For the development of a REDD+ project in Colombia, the guidelines established by Resolution 1447 of 2018[12] must be followed. *The Methodological Document AFOLU sector for the quantification of GHG Emission Reductions from REDD+ Projects BCR0002, Version 3.1 of September 15, 2022*, is aligned with the national guidelines regarding the applicable regulatory provisions of Resolution 1447 of 2018, as well as the country's Forest Reference Emission Level (FREL) and its applicability to the current baseline of the project and for future scenarios. Therefore, there are no deviations to the *Methodological Document AFOLU sector for the quantification of GHG Emission Reductions from REDD+ Projects BCR0002, Version 3.1 of September 15, 2022*, nor adjustments to the calculation model applied for the quantification of the net GHG emissions reduction of the REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others.

3.2 Project boundaries

3.2.1 Spatial limits of the project

Eligible area

Taking into account the Methodology guidelines, the spatial limits for projects with deforestation were defined, in relation to the reference region, the project area and the leakage belt (leakage area).

The REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others has a project area of 853,280.23 ha, which corresponds to the jurisdiction of the five AATIs of the Great Vaupés Indigenous Reservation that make up the project.

[12] The document can be consulted at: Soportes\Marcos_regulatorios\RENARE\RESOLUCION_1447

Within this extension, as of 2015, 797,598.40 hectares correspond to the forest category within the territory and make up the area of the REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others on which the accounting of the mitigation results will be carried out for the first instance of the initiative.

Table 7 shows the eligible[13] and non-eligible areas of the project. Information and details of the initiative are found in Section 2.4.2.

Table 7. Spatial limits of the project zone

Classification	Total
Eligible	797,598.40
Not eligible	55,681.83
Total	**853,280.23**

(Source: South Pole, 2020)

First instance project area

As required by the BCR, methodology, the land in the project area [14] is forest that meets the definition established by the Colombian government (areas with crown cover percentage greater than 30%, tree height greater than 5 m and a minimum area of 1 ha). The project area (Figure 2) was forest at least 10 years before the project initiation date. This area was defined, through a historical analysis of Forest, Non-Forest.[15] (See Annex 6). The project area is considered as the stable forest area with more than 10 years at the time of project start. The forest harvesting area in the Villanueva community (AATIVAM) is excluded from the project area as defined by the scope of the methodology.[16] The detail of the project area description regarding physical parameters and general conditions is shown in Section 8 and Section 9.

[13] The eligible areas (797,598.40 ha) are called project area.

[14] This definition is in accordance with the criteria defined by the UNFCCC in decision 11 / CP.7, the definition adopted by Colombia under the Kyoto protocol (MADVT 2002), the definition of forest used in the estimates and reports of the National Greenhouse Gases Inventory and the definition included in the adaptation of the legend CORINE Land Cover Colombia. Ministry of the Environment, Housing and Territorial Development - MAVDT. 2002. 927 Forest definition for land use, land use change and forestry projects for the first 928 commitment period. p. 19.

[15] See Annex 6 "Cartographic procedure to define the project area and quantify the change in forest cover in the monitoring period" in: Soportes\Anexos\Anexo 6_Procedimiento area Proyecto.

[16] Planned deforestation is excluded from the baseline. Forest harvesting area of Villanueva will continue to be exploited for commercial purposes.

Reference region

The reference region of the REDD project of the indigenous peoples of the Vaupés YUTUCU and Others corresponds to the Colombian Amazon Biome (see Figure 3). Since, compliance with Article 21 of MADS Resolution 1447 of 2018 is guaranteed, in which the use of the most up-to-date national Forest Reference Emission Levels (FREL) that Colombia has submitted to the UNFCCC is established to account for mitigation results of REDD+ projects.

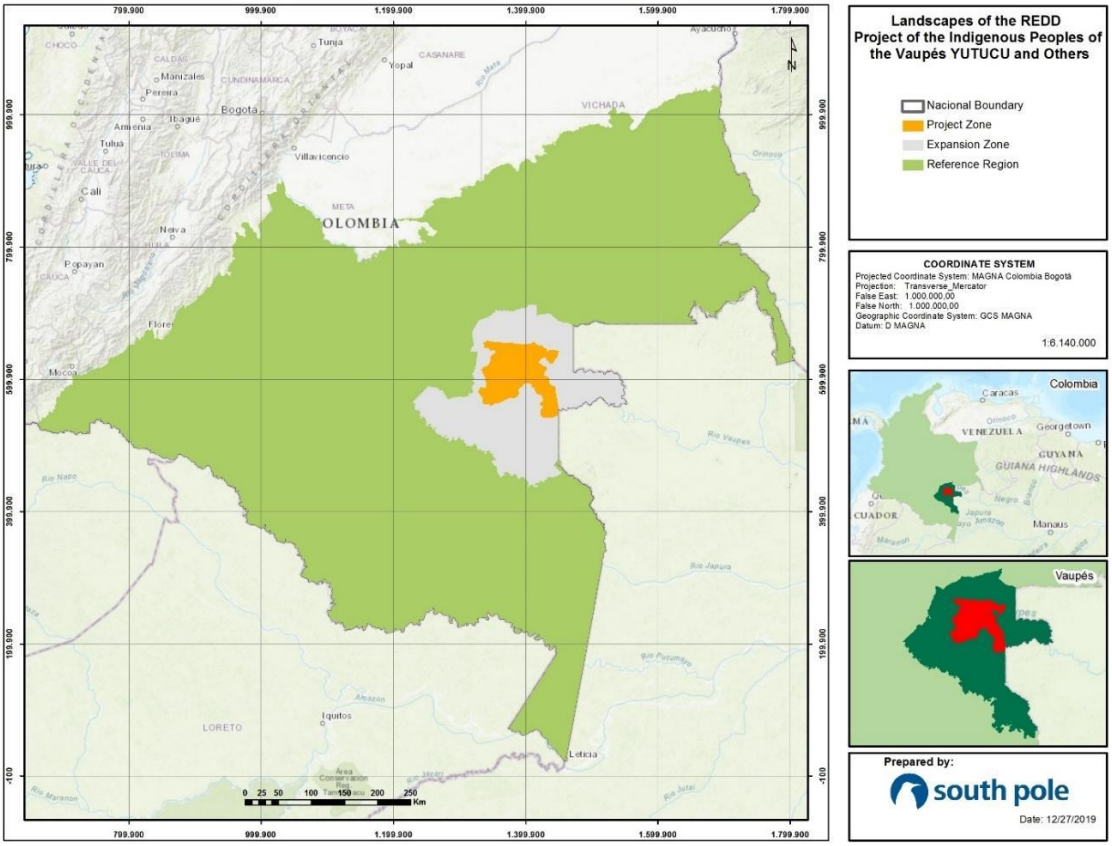


Figure 3. Reference region – Forest Reference Emission Level (FREL)

(Source: Prepared by South Pole (2019). FREL of the Colombian Amazon biome, DE, REDUCTION REPORT, EMISSIONS UNDER THE REDD AGREEMENT, and EARLY MOVERS REM. Ministry of Environment and Sustainable Development - MADS (2016))

To comply with the methodological guidelines, the criteria established in Table 2, which must be met by the pre-existing sub-national baseline (see Table 8) in order to be used, are evaluated.

Table 8. Existing Baseline Criteria

No	Applicability criteria	Compliance
1	The reference region should be similar to the project area in terms of access, deforestation/degradation agents and determinants, and possible land use changes. a) The reference region may include all or part of the project area. b) The deforestation/degradation agents and determinants, identified in the reference region, can access the project area. c) The project area is of interest to the agents identified in item b, above. d) The figures of land ownership and land use rights must be characterized in the reference region. e) Exclude areas with restricted access to deforestation and degradation agents and drivers.	The reference region of the REDD+ project of the indigenous peoples of the Vaupés YUTUCU and Others corresponds to the Colombian Amazon Biome, an area of 458,961 km2 (MADS & IDEAM, 2014) which presents the same geographic, deforestation and degradation, conditions similar to the project area. Deforestation rates, agents and determinants have been studied in this region and it has conditions similar to those of the project see Section 3.3
2	The existing baseline covers at least the duration of the first fixed reference period and is not outdated.	The FREL of Colombia has established 2008-2017 as the reference period and 2018-2022 as the projection period. However, this reference level will be used to count the mitigation results of REDD+ projects, in accordance with the provisions of articles 29 and 40 of Resolution 1447 of 2018.
3	The spatial resolution of the existing baseline is equal to or finer than the minimum “forest” mapping unit that will be used to monitor deforestation during the fixed reference period.	The spatial resolution of the baseline and the minimum forest mapping unit is one hectare, in accordance with the definition of forest presented by Colombia to the UNFCCC for the purposes of the National REDD Strategy (ENREDD) and particularly for the construction of the FREL.
4	The methods used to develop the existing baseline are transparently documented.	The methods used to develop the baseline are documented in the “Proposal for a forest reference emissions level from deforestation in the Colombian Amazon Biome for results-based payments for REDD+ under the UNFCCC” of the MADS and in the “Protocol of

No	Applicability criteria	Compliance
		digital image processing for the quantification of deforestation in Colombia."[17]

(Source: Prepared by South Pole, based on project development and BCR guidelines)

Leakage belt

The leakage belt (leakage area), Figure 2, was defined according to what is stated in Section 8.3 of the *Methodological Document AFOLU sector for the quantification of GHG Emission Reductions from REDD+ Projects BCR0002, Version 3.1 of September 15*, 2022, through a mobility analysis. Variables selected correspond with results presented in Section 3.5 (analysis of agents and drivers of deforestation). In annex 6[18] The methodology to define the leakage belt is presented.

Leakage management areas

The first instance leakage management area corresponds to the non-forest areas of the jurisdiction of the project proponents: AATIAM, AATIVAM, ASATRAIYUVA, ASOUDIC and AZATIAC (Figure 2). In these areas, project activities that require the use of land will be implemented, especially those related to the line of own economy and productive systems.

3.2.2 Carbon reservoirs and GHG sources

The carbon pools and GHG sources are described below:

Carbon pools and reservoirs

In compliance with the methodology of the *Methodological Document AFOLU sector for the quantification of GHG Emission Reductions from REDD+ Projects BCR0002, Version 3.1 of September 15, 2022* (*REDD+ BCR Methodological Document*), carbon reservoirs of above-ground plant biomass, below-ground biomass and soil organic carbon are selected, both for the baseline scenario and for the project scenario. Reservoirs associated with above-ground non-tree plant biomass, dead wood and litterfall were not included according to the *REDD+ Methodological Document*. Furthermore, the Forest

[17] See protocol in: Soportes\Marcos_regulatorios\Protocolo Subnacional PDI
[18] See in: Soportes\Anexos\Anexo 6_Procedimiento area de proyecto y cinturon de fugas

Reference Emission Level in the Amazon biome (FREL[19]) does not consider these values due to lack of official information available. Table 9 presents the relevant carbon pools for the Project and the reference scenario considered by the methodology.

Table 9. Carbon pools included or excluded within the project area boundary

Pools	Included?[20]	Justification/Explanation
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 and national FREL.
Above-ground non-tree biomass	No	Subnational and national FREL does not consider carbon values in aerial non-tree biomass.
Below-ground biomass	Yes	Considered by the sub-national and national FREL. It represents 20% of the carbon stock in the airborne biomass.
Litterfall	No	Subnational and national FREL does not consider carbon values in litterfall and deadwood. The exclusion of these pools does not result in a significant overestimation of the net mitigation results of the project.
Dead wood		
Soil organic carbon	Yes	A gross emission is assumed where the soil carbon content (SOC) is emitted in equal proportions for 20 years once the deforestation event occurs.

(Source: Prepared by South Pole based on the *REDD+ BCR Methodological Document*).

GHG sources

The greenhouse gases included in or excluded from the project boundary are shown in Table 10 below.

Table 10. GHG sources included in or excluded from the project boundary

Source		GHG Gas	Included?	Justification/Explanation
Baseline	Biomass burning (Woody biomass combustion)	CO_2	No	CO_2 emissions due to woody biomass combustion are quantified as changes in carbon stocks.
		CH_4	No	Potential emissions are negligible.

[19] Forest reference emissions level. Proposal for a forest reference emissions level from deforestation in Colombia for results-based payments for REDD+ under the UNFCCC. Available at: https://redd.unfccc.int/files/02012019_nref_colombia_v8.pdf

[20] For all carbon reservoirs and GHG emission sources to be considered, the relevance of their inclusion was assessed using the IPCC (2019) guidelines. In this sense, only reservoirs and sources that are significant after the analysis, are taken into account, as well as above- and below-ground biomass and soil carbon pools. Carbon values in litter and dead wood are not considered due to the lack of official information available.

Source		GHG Gas	Included?	Justification/Explanation
				They represent less than 5% of emissions and are therefore not considered significant for accounting in the baseline.[21]
		N_2O	No	Potential emissions are negligible. They represent less than 5% of emissions and are therefore not considered significant for accounting in the baseline.[22] N_2O emissions were not included because no fires occurred in the monitoring period in the Project Area.
	Livestock emissions	CO_2	No	GHG emissions from land uses implemented on deforested land are conservatively omitted.
		CH_4		
		N_2O		
Project Scenario	Biomass burning	CO_2	No	CO_2 emissions due to woody biomass combustion are quantified as changes in carbon stocks.
		CH_4	No	CH_4 and N_2O emissions were not included because no fires occurred in the monitoring period in the Project Area - PA. These sources will be included whenever, in the following monitoring periods, fire events occur that generate the loss of forest and the emission of gases associated with CH4 and N2O that are considered significant. In the event of a fire occurring, the affected area will be identified, and the CO2 and CH4 emissions will be included in the quantification of the project's emissions in the monitoring period.[23]
		N_2O		
	deforestation	CO_2	No	Project activities do not include increased emissions from livestock.
		CH_4		
		N_2O		

(Source: Prepared by South Pole based on the *REDD+ BCR Methodological Document*).

3.2.3 Time limits and analysis periods

According to the selected methodology, the following time limits were considered:

[21] See documents in: soporte Anexos "*Anexo 12_Emisiones HWP.*
[22] See documents in: soporte Anexos "*Anexo 12_Emisiones HWP.*
[23] According to the *REDD+ BCR Methodological Document*, the quantification of CH_4 and N_2O emissions caused by woody biomass combustion is estimated based on the guidelines presented in the 2006 IPCC guidelines for national greenhouse gas inventories. Volume 4. Agriculture, forestry and other land uses. Non- CO_2 greenhouse gas emissions from biomass burning

Project start date

The REDD Project of the indigenous peoples of Vaupés YUTUCU and Others stared in October 29, 2016.[24] On this date, the Meeting of *sabedores* (wise men) "Ancestral Thoughts for Times of Change" was held, in Vaupés, in which community leaders participated based on the knowledge acquired (identification of the effects that the indigenous peoples of the department have suffered over time and the way in which Climate Change has affected their planting, hunting and fishing processes), the activities management and changes implementation in deforestation control and reduction practices began.

Quantification period of the GHG emission reductions

The credit period begins on October 29, 2016, and ends on October 28, 2036, for a total duration of 20 years. After this period elapses, it can be renewed for another 10 years. For a 30-year total at the end of the project life.[25]

Year	Estimated GHG emission reductions or removals (tCO_2eq)
2016	519,566.37
2017	530,672.24
2018	541,756.99
2019	552,820.67
2020	563,863.32
2021	574,884.97
2022	585,885.67

[24] See in: Soportes\Fecha de inicio\Fecha de inicio.

[25] In accordance with the provisions of BioCarbon Registry in its document *Standard for the voluntary carbon market – BCR Standard – from differentiated responsibility to common responsibility. BioCarbon Registry,* Version 3.2 *(BCR Standard)*, GHG projects, classified as REDD+ Projects, are not subdivided into project scale categories (Section 10.3), therefore, the project is not categorized under a scale.

Year	Estimated GHG emission reductions or removals (tCO_2eq)
2023	596,865.46
2024	607,824.38
2025	618,762.46
2026	629,679.75
2027	640,576.29
2028	651,452.11
2029	662,307.26
2030	673,141.77
2031	683,955.68
2032	694,749.04
2033	705,521.88
2034	716,274.24
2035	727,006.16
2036	519,566.37
Total Estimated GHG Emission Reductions of the project	12,986,006.08
Total number of years of accreditation	20
Average annual GHG Emission Reductions of the project	618,381.24

Monitoring periods

The first monitoring period of the project covers the mitigation results, from the start date of the initiative, October 29, 2016, until December 31, 2018.

Subsequent monitoring periods will be established and take place in accordance with the timing established by the BCR standard and its most recent applicable methodology.

Historical period of reference

For the deforestation projection, the reference period corresponds to the years between at least three spatial data points. Considering the availability of satellite images for the classification and delimitation of forest areas, the historical reference period selected was 2005-2010-2012-2013-2014-2015 (10 years into the past with respect to the start date of the project).

Baseline revalidation date

Considering that the baseline must be renewed every 10 years after the start date of the project, the date for this revalidation is the year 2026.[26]

3.3 Identification and description of baseline scenario

The most plausible scenario for the project baseline is the continuity of the previous land use conditions in the territory, given that the previous occurrence of subsistence activities in the project area is highly probable (deforestation permanence for expansion of agricultural areas in livestock and domestic agriculture, together with disorderly colonization processes, expansion of infrastructure and urban planning, and unsustainable extractive markets at local and regional scales).

The baseline scenario was determined in accordance with the methodology *Methodological Document AFOLU sector for the quantification of GHG Emission Reductions from REDD+ Projects BCR0002 Version 3.1 of September 15, 2022,* and the tool *Baseline and Additionality version 1.0 of February 17, 2023*. The steps taken to identify the scenario that represents the GHG emissions, which would occur in the absence of the project, are presented in the following Section 3.4.

3.4 Additionality

In accordance with Article 43 of Resolution 1447 of 2018, the proponent must apply in its procedures the additionality criteria established in said Article, in a complementary way to the additionality criteria established by the *Methodological Document AFOLU sector for the quantification of GHG Emission Reductions from REDD+ Projects*

[26] The methodology requires that a minimum historical reference period of 10 years be established and that this be reevaluated at least every 10 years. The REDD project is located within the FREL defined for the Amazon Biome, the project is coupled to this period, as stipulated by Colombian regulations (resolution 1447 of 2018), and BioCarbon Registry.

BCR0002, Version 3.1 of September 15, 2022, and the *Baseline and Additionality BCR Tool version 1.1.*

3.4.1 Additionality on Colombian regulatory framework

Since the project began, a total of 2,044,539 tCO_2eq has been reduced, which shows that, starting from an estimated total of 2,647,646 tCO_2eq in a baseline scenario (without project), a considerable reduction of more than 77.2% of the carbon dioxide that would have been emitted into the atmosphere without the project activities was generate.

3.4.2 Additionality under BCR

The identification of the baseline scenario and the additionality of the REDD+ initiative were added to the rules of the *REDD+ BCR Methodological Document*, following criterion C, which is related to changes in carbon stocks within the project limits, and identifying the most probable land use at the beginning of the project and the tool *Baseline and Additionality, version 1.*1. To determine the baseline scenario and additionality of the REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others, the following steps (steps 0 to 3) were taken into account in order to validate that the incentive derived from the planned sale of emission reductions is necessary and demonstrates additionality:

Step 0. The start date of REDD+ project

Step 1. Identification of alternative land-use scenarios

Step 2. Investment analysis

Step 3. Barrier analysis**Step 4.**analysis**4** Impact of Project registration

Step 0. The start date of REDD+ project

Table 11. Start date of the initiative

Initiative	Start date[27]	Description	Compliance
REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others	October 29, 2016.[28]	On this date, the Meeting of *sabedores* (wise men) "Ancestral Thoughts for Times of Change" was held, in Vaupés, in which community leaders participated based on the knowledge acquired (identification of the effects that the indigenous peoples of the department have suffered over time and the way in which Climate Change has affected their planting, hunting and fishing processes). From this, the management of activities and the implementation of changes in practices to control and reduce deforestation began.	Complies with five years prior to the start of validation.[29]

(Source: South Pole based on information from the initiative holder)

Step 1: Identification of alternative land use scenarios with respect to the proposed project activity

Through the following Sub-steps, alternative land use scenarios are identified with respect to the activities related to the AFOLU project proposal that could be considered as a baseline scenario.

3.4.2.1.1 Sub-step 1a. Identification of probable land use alternatives in the project areas

3.4.2.1.1.1 Scenario 1. Continue with the preconditions of land use

Within the realistic and credible alternative scenarios, in the absence of the AFOLU project activity, the continuation of the same previous conditions and land use activities without the development of the project is included. The conditions that ultimately accelerate the pattern of deforestation in the study area are: the lack of productive alternatives, the growing demand for agricultural territories and the intervention of extractive practices.

[27] For more details on the start date, go to the Section 3.2.1
[28] See in: Soportes\Fecha de inicio\Fecha de inicio.
[29] The validation began on June 12, 2020, complying with"The validation starts once signed a commercial agreement with the CAB"

For this scenario, the Amazon Cooperation Treaty (TCA), ratified by Law 17 of 1981, recognizes indigenous rights and the conservation of natural resources in the Amazon basin. For its part, Convention 169 of the International Labor Organization (ILO) on indigenous and tribal peoples in independent countries, ratified in Colombia through Law 21 of 1991, which regulates the right of indigenous peoples to use existing natural resources in their territories. In this sense, although indigenous peoples with a productive and cultural organization have guaranteed the conservation of natural resources in their territories (Cepal & Natural Patrimonio, 2013), the permanence of indigenous communities implies the use (exploitation) of natural resources that can reach the point of being carried out in an unsustainable way. In practice, communities can cause impacts on forest cover by generating uses that are regionally encouraged by population growth that favors the expansion of the agricultural frontier and the demand for goods and services, due to external factors of the indigenous communities, which promote deforestation. Recently, one of the engines that could contribute to deforestation is the existing Peace agreement between the National Government and the FARC, due to the possibility of new actors (groups) arriving in forest areas given the low presence of the armed group (FARC) and the consequent deforestation such as collateral effect of land conversion and appropriation. Evidence of the effect of these new conditions on deforestation has already been mentioned by Prem, Saavedra, & Vargas, (2019) who mention that the signed peace agreement generated economic incentives that increase deforestation in areas with the presence of this armed group.

In general terms, the area of the Great Vaupés Indigenous Reservation presents dispersed human settlements and reduced connectivity. As a consequence of pressure for agricultural use (exploitation), this same isolation and disconnection of urban settlements in the center of the country maximizes deforestation, for the expansion of the agricultural frontier in pastures for livestock, domestic agriculture, expansion of legal and illegal urban infrastructure projects as the construction of communication routes with the consequent arrival of settlers, especially in the territories bordering the three municipal heads (see in detail in Annex 4).

The isolation of the area also favors the presence of illegal alternative markets such as coca cultivation, which have high prices in the illegal market and that allow to economically compensate the inhabitants given the unproductiveness of the soil and fertility limitations (Dávalos *et al*., 2011; Dávalos, Holmes, Rodríguez, & Armenteras, 2014)). This same situation is generated with illegal logging and includes a wide spectrum of conditions that favor it, such as not having permits or obtaining logging rights through illegal means (see in detail in Section 3.5). And in the case of the expansion of

the agricultural frontier, this situation is further aggravated by the lack of technification and resources for more intensive production and with fewer impacts on the environment.

This isolation scenario also includes the transformation of (forest) cover in relation to legal or illegal mining, which compensates the distances and transport costs with the return of capital of the product, which in turn leads to generating economic dependence on foreign companies and to create economic needs not characteristic of indigenous social and economic dynamics. Furthermore, in the case of illegal markets, these are associated with illegal armed groups and with speculation of buying and selling prices on the black market for products that are reinforced by isolation (Section 3.5).

3.4.2.1.1.2 Scenario 2. REDD+ activities within the established area are developed without the project being registered, certified in the AFOLU sector for the reduction of emissions

In this scenario, the project is developed by the communities themselves without the support of carbon credits income, as a product of an agreement of wills between all the communities of the reservation and the neighboring settlers of the municipality of Mitú and Carurú. The gradual loss of natural territory, the expansion of the agricultural frontier, and the loss pressures and drivers and biodiversity transformation, which favor deforestation in the area, are stopped.

In this scenario, it is assumed that indigenous communities effectively carry out organizational strengthening activities and implement local governance activities in addition to the control and vigilance that they have as an indigenous environmental authority and that allows the implementation of strategies that facilitate the conservation of forest cover, hand in hand with new economic alternatives far from a free market that does not include illegal coca and timber extraction businesses. As a consequence, the expansion of the agricultural frontier is stopped, and the colonization of forest areas is avoided. Additionally, the uses and customs of the communities are favored by the strategies implemented by the communities themselves, which in turn allow them to secure income and resources without the need to cut more forests.

These processes manage to be maintained on a decades-long scale through planned activities and adaptive contingencies management within and outside the communities, from the implementation and reformulation of avoided deforestation strategies and the management and use of financial and logistical resources so that such strategies remain.

Finally, these strategies manage to restore the ecological and social function of the Amazon Forest, the rivers, and their associated cultural values, through the effective recovery of areas affected by the impacts of climate change and the ecological

rehabilitation of the project areas, in addition to improving connectivity and ecological dynamics in the water flows of creeks and rivers.

3.4.2.1.1.3 Scenario 3. Presence of activities similar to those proposed by the project in at least part of the project area, as a result of compliance with legal requirements or by extrapolation of similar activities observed in the geographical area and socio-economic and ecological conditions related to the proposals, which have occurred in a period not exceeding ten years prior to the project start date

Compliance with legal requirements in indigenous communities favors their rights and strengthens local governance. In this sense, this scenario is based on the application of the Political Constitution of Colombia of 1991 in which the autonomy of indigenous peoples to exercise jurisdictional functions within their territorial scope is guaranteed (Article 246) and compliance is ensured in the protection of the cultural and natural wealth of the Nation (Article 8) in these areas, as well as the participation of communities regarding the use of natural resources within indigenous territory (Article 330). Therefore, the application of the Constitution encourages the adequate planning of the indigenous territory and allows controlling, sanctioning, and seeking cooperation strategies to correct environmental damage.

Under this scenario, activities similar to those of the REDD AFOLU project are observed in the geographical area and extrapolated to the area as a consequence of compliance with regulations for the protection of natural resources; the socioeconomic and ecological conditions of the area tend to reach desired standards in the project scenario. The National Policy strategies for the Integrated Management of Biodiversity and Ecosystem Services (PNGBISE) are applied in the territory to promote the management of natural resources, in order to maintain and improve the resilience of socio-ecological systems in the Great Indigenous Reservation of Vaupés through the implementation of strategies to achieve the commitments established in the Convention on Biological Diversity (CBD) in the vision of the Strategic Plan of CBD 2011-2020 and the Aichi Targets (CDB & PNUMA, 2012).

As part of the policies to reduce greenhouse gas emissions and the commitments made at the country level, the National Climate Change Policy (PNCC)[30] and strategies to stop deforestation in the Colombian Amazon region are applied, making use of the

[30] See document in: Soportes\Marcos_regulatorios\PNCC

Comprehensive Strategy Control of Deforestation and Forest Management (EICDGB) and the Colombian Low Carbon Development Strategy (ECDBC)[31] as key instruments.

The Corporation for the Sustainable Development of the North and East Amazon (CDA per its acronym in Spanish) respects the autonomy of the Reservation and exercises control in adjacent areas and carries out strategies to enforce administrative acts for the reduction and control of deforestation, along with technical and scientific support of the Amazon Institute of Scientific Research (SINCHI).

The formal instances of articulation with the National Government such as the National Climate Change System (SISCLIMA), the Intersectoral Commission for the Control of Deforestation and Integral Management for the Permanent Board of Indigenous Concertation, the Amazon Regional Board and the Indigenous Environmental and Climate Change Board (MIAACC) generate strategies in decision making to strengthen local governance in relation to deforestation control.

Actions with the Indigenous Amazonian Environment and Climate Change Board (MIAACC) allows dialogue between indigenous representatives, their organizations and government entities. Additionally, the REM/Visión Amazonía Program, in conjunction with the GEF Heart of the Amazon project, the Joint Interest Declaration (DCI) or Memorandum of Understanding (MoU), as well as the execution of the Visión Amazonía Initiative, the "Investment Portfolio for the Colombian Government's Visión Amazonía Program" and the National REDD Strategy allow technical and operational weaknesses to be corrected to stop deforestation in the Great Vaupés Indigenous Reservation area, where net deforestation is reduced and a new development model that allows reducing deforestation is promoted in the reservation, maintaining the natural base that sustains biodiversity and sustaining production, as well as improving the living conditions of local populations.

The strategies of chapter 1.23, Committed with the environment and climate change, of the Departmental Development Plan 2016-2019[32] for the department of Vaupés, are carried out in aspects related to biodiversity, natural resources and land use planning, in a manner that progress is made towards sustainable and low-carbon growth, the sustainable use of natural capital is protected and ensured, and environmental quality

[31] See documents in: Soportes\Marcos_regulatorios\ECDBC
[32] See documents in: Soportes\Marcos_regulatorios\Plan de desarrollo departamental_2016-2019

and governance are improved, with growth that is resilient and less vulnerable to the risks of disasters and climate change.

3.4.2.1.1.4 Result of sub step 1a. List of probable land use alternatives that would occur in the project area in the absence of project activities

In accordance with the above, the alternative land use scenarios are:

- Scenario 1. Continue with the preconditions of land use.
- Scenario 2. REDD+ activities within the established area are developed without the project being registered, certified in the AFOLU sector for the reduction of emissions.
- Scenario 3. Presence of activities similar to those proposed by the project in at least part of the project area, as a result of compliance with legal requirements or by extrapolation of similar activities observed in the geographical area and socio-economic and ecological conditions related to the proposals, which have occurred in a period not exceeding ten years prior to the project start date.

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

All land use scenarios identified in Sub-step 1a are in compliance with all applicable laws and legal requirements.

In all scenarios, there are still some exploitations or uses that are not supported by Colombian legislation, such as the illicit coca cultivation and illegal wood extraction. These land uses come from the absence of sustainable economic alternatives appropriate to the needs of the Reservation and the region, together with the weakening of indigenous governance institutions.

According to the information presented and considering the systematic lack of law enforcement due to financial and institutional barriers in the project area, the same scenarios identified in Sub-step 1a remain.

Table 12. Regulatory framework for land use

Land use – sub-step 1b relationship	Laws and regulations	Description
Scenario 1	Law 0089 of December 10, 1993, and Decree	"By which the Livestock and Dairy Promotion Quota is established, and the National Livestock Fund is created."

Land use – sub-step 1b relationship	Laws and regulations	Description
	696 of March 30, 1994	Article 1. The parafiscal contribution for the promotion of the livestock and dairy sector will adhere to the conditions stipulated in this Law, in the terms of numeral 12 of Article 150 of the National Constitution.
	Law 363 of 1997	Livestock funds are recognized as mixed economy entities in order to encourage, improve and promote the sustainability of the agricultural sector. These funds are constituted or will be constituted with contributions from the nation, territorial entities or territorial entities of any order and from private capital, and will access credits (loans) or rediscounts for specific support to small and medium-sized livestock producers.
	Decree 1615 of 1998	Law 363 of 1997 is partially regulated and the provisions are dictated for the incentive and loan to small and medium-sized livestock farmers through the Fund for the Financing of the Agricultural Sector (FINAGRO, as per its acronym in Spanish).
	Law 676 of 2001	Laws 363 of 1997 and 510 of 1999 are reformed and additional provisions are issued on the rediscounting of credit (loan) operations before the Fund for the Financing of the Agricultural Sector (FINAGRO) and on the granting of the livestock capitalization incentive to independent livestock funds of the National Federation of Livestock Breeders (Fedegan) and the National Livestock Fund.
	Resolution 3814 of September 27, 1995	"By which approval is granted for the practice of inspection visits to the accounting books and other accounting supports of those who have the legal obligation to collect and pay the Livestock and Dairy Development Fee."
	Law 395 of August 2, 1997, and Decree 3044 of 1997	"By which the eradication of foot-and-mouth disease throughout Colombian territory is declared of national social interest and as a health priority and other measures aimed at this end are dictated."
	Decree 1187 of June 30, 1999	"By which the Stabilization Fund for the Promotion of the Exportation of Meat, Milk and its Derivatives is organized."
	Decree 2255 of 2007	"By which Decree 696 of 1994 that regulates Law 89 of 1993 is modified." Related to livestock promotion and the National Livestock Fund.
	Law 1876 of 2017	"By which the National Agricultural Innovation System is created, and other provisions are issued." Article 1. The Zones of Interest for Rural, Economic and Social Development (ZIDRES, as per its acronym in Spanish) are created as territories with agricultural, livestock, forestry

Land use – sub-step 1b relationship	Laws and regulations	Description
		and fish farming aptitudes identified by the Rural Agricultural Planning Unit (UPRA, as per its acronym in Spanish).
	Law 1776 of 2016	"By which the Zones of Interest for Rural, Economic and Social Development (ZIDRES) are created and developed."
	Law 1731 of 2014	"By which financing measures are adopted for the reactivation of the agricultural, fishery, aquaculture, forestry and agroindustrial sector."
	Law 811 of 2003	"By which Law 101 of 1993 is modified, chain organizations are created in the agricultural, fishery, forestry, and aquaculture sectors, the Agrarian Transformation Societies (SAT, as per its acronym in Spanish), and other provisions are dictated."
	Law 607 of 2000	"By which the creation, functioning and operation of the Municipal Agricultural Technical Assistance Units (UMATA, as per its acronym in Spanish) is modified and direct rural technical assistance is regulated."
	Law 160 of 1994	"By which the National System of Agrarian Reform and Rural Peasant Development is created, a subsidy for the acquisition of land is established, the Colombian Institute of Agrarian Reform is reformed, and other provisions are issued."
	Resolution 000051 of 2020	"By which the coverage and crops that are part of the Agricultural Risk Management Plan for the period 2020 are established, and other provisions are dictated."
	Resolution 000006 of 2020	"By which the National Plan for the Promotion of the Commercialization of the Peasant, Family and Community Economy Production is adopted, formulated in compliance with the provisions of Point 1.3.3.4 of the Final Agreement."
	Decree 1071 of 2015	"By which the Sole Regulatory Decree of the Agricultural, Fishery and Rural Development Administrative Sector is issued."
		Article 1.1.1.1. The Ministry of Agriculture and Development shall be responsible for guiding, controlling and evaluating the performance of the functions of its affiliated and related entities, without prejudice to the decision-making powers vested in them, as well as their participation in policy formulation, in the preparation of sectoral programs and in the execution thereof.

Land use – sub-step 1b relationship	Laws and regulations	Description
		Article 1.1.1.2. The Agricultural, Fishery and Rural Development Sector, in accordance with current regulations, is made up of the Ministry of Agriculture and Rural Development and its attached and linked entities.
		Article 1.2.1.2. The entities attached to the Ministry of Agriculture and Rural Development without legal person are the following: 1. Rural Agricultural Planning, Land Adequacy and Agricultural Uses Unit (UPRA).
		Article 1.2.2.1. The entities linked to the Ministry of Agriculture and Rural Development are the following: 2. Fund for the Financing of the Agricultural Sector (FINAGRO). 1. Livestock funds. 2. Supply corporations in which the Nation or the decentralized entities of the sector, at the national level, own shares or have made capital contributions.
	Law 101 of December 23, 1993	General Law of Agricultural and Fishery Development.
	Resolution 40076 of February 27, 2020	"By which the methodology for the distribution and partial allocation of operating resources is defined to encourage the use and comprehensive exploitation of non-renewable natural resources in the territorial entities for the 2019-2020 biennium and the respective allocation is made."
	Decree 2253 of December 29, 2017	"By which article 365 of Law 1819 of 2016 is regulated and the Sole Decree of the Mines and Energy Administrative Sector, 1073 of 2015, is added, in relation to the incentive for investments in hydrocarbons and mining."
	Decree 1666 of October 21, 2016	"By which the Single Sole Decree of the Mines and Energy Administrative Sector, 1073 of 2015, related to mining classification, is added."
	Law 685 of 2001 and Law 1382 of February 9, 2010	"By which the Mining Code is issued, and other provisions are issued." Article 1. Promote technical exploration and exploitation of state- and privately-owned mining resources; stimulate these activities in order to satisfy the requirements of their internal and external demand and that their use is carried out in a harmonious manner with the principles and standards of rational exploitation of non-renewable natural resources and the environment, within a comprehensive concept of sustainable development and the economic and social strengthening of the country.

Land use – sub-step 1b relationship	Laws and regulations	Description
Scenario 2 and 3	Decree Law 2811 of 1974	Decree-Law 2811 of 1974 issues the National Code of Renewable Natural Resources and Environmental Protection, in chapters IV and V it dictates the public administration functions to guarantee adequate management of the special management areas, so that conservation, biological ecosystems balance and rational use of natural resources can be promoted (as long as this is possible due to the activities permitted in each area).
	Law 99 of 1993	"By which the Ministry of the Environment is created, the Public Sector in charge of the management and conservation of the environment and renewable natural resources is reorganized, the National Environmental System (SINA, as per its acronym in Spanish) is organized, and other provisions are issued." The general principles that environmental policies must follow, such as precaution, prevention, and sustainable development, are set out. In addition, the Ministry of the Environment is created as the governing body for the management of the environment and renewable natural resources, and the National Environmental System (SINA) as the set of guidelines, standards, activities, resources, programs, and institutions that allow the implementation of environmental law. The legal nature of the Regional Autonomous Corporations (CAR, as per its acronym in Spanish) is defined, and the Institute of Hydrology, Meteorology and Environmental Studies (IDEAM) created.
		Article 4. Establishes the National Environmental System (SINA), composed of the Ministry of the Environment, the Regional Autonomous Corporations, departments, districts, municipalities, research institutes and civil society.
		Article 31. Determines that it is up to the Regional Autonomous Corporations to comply with the policies and guidelines established by the Ministry of Environment and Sustainable Development.
		Article 108. Declares that the State, through the CAR, must acquire strategic areas or ecosystems for the conservation, preservation and recovery of natural resources.

Land use – sub-step 1b relationship	Laws and regulations	Description
	National Policy for Comprehensive Management of Biodiversity and Ecosystem Services (PNGBSE) of 2011	Emphasis is placed on the need to include other ecosystem services, in addition to those related to water resources, in existing biodiversity management instruments, including PES.
	Decree 2372 of 2010, relating to the SINAP	By which Decree-Law 2811 of 1974, Law 99 of 1993, Law 165 of 1994 and Decree-Law 216 of 2003 are regulated, in relation to National System of Protected Areas (SINAP, as per its acronym in Spanish), the management categories that integrate it and other provisions."
		Article 4. The conservation and management of protected areas is the joint responsibility of the national government, the Regional Autonomous Corporations, territorial entities, and other stakeholders involved in the management of protected areas.
		Article 14. The protected areas categories include the National Natural Park System, Regional Natural Parks, and Soil Conservation Districts, under the responsibility of the Regional Autonomous Corporations.
		Articles 34 and 35 specify the different management categories that can be assigned to the zones and determine the activities permitted in each of them.
	Decree 953 of 2013	Payments for environmental services schemes, mainly associated with water resources, are considered for the first time as an economic alternative.

Land use – sub-step 1b relationship	Laws and regulations	Description
	Law 1753 of 2015	Article 174. Article 108 of Law 99 of 1993 is modified in relation to the authorization of national or regional resources for the implementation of PES or other economic incentives aimed at the conservation of ecosystems of strategic interest. These resources correspond to water use tax, transfers from the electricity sector and the forced investment of 1% from projects that require water resources to compensate for loss of biodiversity, within the framework of environmental licenses. The Ministry of Environment and Sustainable Development must design the terms, conditions, procedures, and sources of financing for the implementation of PES and other conservation incentives.
	CONPES 3886 of 2017	Public policy guidelines are developed for the implementation of payment for environmental services in relation to public institutions, the private sector and civil society. Strategies focused on overcoming technical and operational gaps, scarce institutional articulation mechanisms, financial weaknesses and regulatory limitations are also established.
	Decree 870 of 2017	It is determined that the owners, possessors, or occupants of properties in strategic areas and ecosystems may be beneficiaries of the payment for environmental services incentive, including those who are subject to restitution or compensation according to Law 1448 of 2011 and those located in protected areas, special environmental management areas or the National System of Protected Areas (SINAP).
	Decree 1007 of 2018	The general components of the payment for environmental services incentive and the acquisition and maintenance of properties in strategic areas and ecosystems are regulated. This instrument is applicable to environmental authorities, territorial entities and other public or private persons that promote, design, and implement payment for environmental services projects financed or co-financed with public and private resources, or that carry out property acquisition and maintenance processes in accordance with the standards indicated in the previous article.
	Political Constitution of Colombia of 1991	Article 8: enshrines the obligation of the State to protect the cultural and natural wealth of the Nation. Article 79: declares the right of all people to enjoy a healthy environment and guarantees that communities participate in all decisions by which they will be affected. It also dictates that the State has the duty to protect the diversity and

Land use – sub-step 1b relationship	Laws and regulations	Description
		biological integrity of the environment and conserve biologically important areas. Article 80: decrees that the State must plan the management and use of natural resources with the objective of conserving, restoring, or replacing them with the objective of achieving sustainable development. Article 95: the duties of the citizen include the protection of the country's natural resources and ensuring a healthy environment. Article 339: the State must present a national development plan, which must include environmental policies.
All sectors	Decree 1076 of 2015	It is a compilation of the regulations issued by the National Government, headed by the President of the Republic.
		The intention of this initiative is to collect in a single regulatory body all the current regulatory decrees issued to date on environmental matters.

(Source: South Pole (2020), based on existing Colombian legislation applicable to the sector).

3.4.2.1.2.1 Result of sub-step 1b. List possible land use alternatives that comply with the legislation and mandatory norms and regulations, considering their compliance in the region or country, for national or sectoral policies

- Scenario 1. Continue with the preconditions of land use.
- Scenario 2. REDD+ activities within the established area are developed without the project being registered, certified in the AFOLU sector for the reduction of emissions.
- Scenario 3. Presence of activities similar to those proposed by the project in at least part of the project area, as a result of compliance with legal requirements or by extrapolation of similar activities observed in the geographical area and socio-economic and ecological conditions related to the proposals, which have occurred in a period not exceeding ten years prior to the project start date.

Step 2. Investment analysis

According to the tool *Baseline and Additionality projects version 1.0 of February 17, 2023*, it is a requirement to develop one of the two steps in the process, either Step 2 (Investment analysis) or Step 3 (Barrier Analysis) to prepare the additionality analysis. In this case, the barrier analysis was selected, which is detailed below. Therefore, an investment analysis is not carried out.

Step 3. Barrier analysis

Below are the barriers the project must overcome for the implementation of the REDD+ activities to be successful, considering that the AFOLU project is not registered.

The barriers that the proposed project activity faces and that could:

- Prevent the implementation of the project activity without the revenue from the sale of GHG credits.
- Not prevent the implementation of at least one of the alternative land use scenarios.

3.4.2.1.3 Sub-step 3a. Identify the barriers that would prevent the implementation of the type of project activity proposed

3.4.2.1.3.1 Investment barriers

- Lack of own economic resources allocated to long-term processes to avoid deforestation.
- External administration of resources assigned by the State.
- Difficulty in accessing credit due to the geographical remoteness of the area and the legal characteristics of the collective territory.
- Difficulty in inclusion in regional, national, or international markets due to the lack of intercommunication that are sustainable and help avoid deforestation.

Indigenous communities do not have own economic resources that can be used to implement the activities that make up their Indigenous Life Plan in the territory and environment component, thus, much less projects that stop deforestation, therefore, similar activities to those of the AFOLU project have only been possible with the help of grants or other forms of financing.

Although there is a Special Assignment of the General System of Participations for Indigenous Reservations for the indigenous communities, this corresponds to resources that the Nation transfers by mandate of the Political Constitution for the financing of the competences and services under their responsibility in education, health, drinking water, basic sanitation and general purposes, as provided in Article 76 of Law 715 of 2001 and Law 1176 of 2007, as long as it allows them to carry out activities and achieve the goals of their Integral Plan for Indigenous Life. These mandatory subsidies are transferred to the municipality or municipalities where the reservation is located, according to Law 715 of 2001, and therefore, it is the municipality that manages the resources of each reservation. For this reason, projects can also be hampered since the reservations must

commonly request these resources from the corresponding municipality, and the money often requires going through procedures that decrease efficiency in execution. In a broad sense, the execution of resources is conditioned to satisfy the basic health needs, including affiliation to the Subsidized Category, preschool, primary and secondary education, drinking water, housing, and agricultural development of the indigenous population, but it is important to note that these resources are not expressly destined to stop deforestation or to allow governance strengthening for conservation and land use planning purposes.

Only the reservations that are established as Indigenous Territorial Entities will receive and directly manage the transfer (funds). Particularly, for the non-municipalized areas of the departments of Amazonas, Guainía and Vaupés, there are no certified reservations to directly execute the Special Assignment of the General System of Participations, and therefore, the Great Vaupés Indigenous Reservation does not have direct access to these resources (SGP-36-2019, February 13, 2019) which compromises the efficiency in the use of these (funds).

In addition, according to what is indicated in article 26 of Decree 1953 of 2014, the distribution is made based on the population size of each reservation with respect to the total indigenous population of all reservations according to the census reported by DANE. Therefore, even when deforestation pressures were high and the reservation wanted to access resources from the General Participation System to promote projects that prevent deforestation, these items (funds) would be conditioned by the population size of the reservation, which might not agree with the deforestation rates or with the importance or forest cover area, and areas with low population size may require greater efforts to stop high deforestation rates.

On the other hand, historical weaknesses in the financing of this type of projects lie in the short term in which the initiatives are framed, which in some cases focus only on capacity building, and to a lesser extent, on the escalation of projects to major scales.

Given the geographic distance from these areas, the local markets of the Great Vaupés Reservation area are not associated with regional, national, and international markets. This prevents financing flows from outside the area from supporting or strengthening the local economy, fostering the introduction and permanence into markets where added value is given to products obtained from sustainable production, and avoiding directing the local market to an extraction-based market.

In addition to the above, there is little or no access to funds that allow the implementation of productive projects to intensify production so that the communities themselves can

build strategies to avoid deforestation. In this sense, the financing of these types of projects is not necessarily effective in the long term, since pre-existing financing sources are not intended to stop deforestation with lasting efforts over time, but, are resources generally directed to short and medium term focal projects, based on sustainable production strategies.

3.4.2.1.3.2 Institutional barriers

- External administration of resources allocated by the State through the General System of Participations.
- Reduced governance in the reservation given the extensive area that requires control and surveillance.
- Risk of changing political structures within the indigenous communities.
- Inefficiency in the application of regional and national policies that regulate deforestation or strengthen different initiatives for resource use.

As previously mentioned, one of the barriers in the Great Reservation is the management of resources from the General Participation System (SGP by its acronym in Spanish), which does not arrive directly to the reservation, but is managed by a state entity. According to Law 715 of 2001, the legally established Indigenous Reservations were constituted as beneficiaries of the SGP, as long as the indigenous territorial entities are not established, and the resources of the Special Allocation of the General Participation System (AESGP, as per its acronym in Spanish) are administered by the municipality, or municipalities in which the indigenous reservation is located, from separate accounts to those of the territorial entities and through an administration contract with the reservation authorities; contract that must be concluded before December 31 of each year and sent to the Ministry of the Interior before January 20 of the following year. The conclusion of the administration contract is carried out between the respective territorial entity (municipality or municipalities) and the legal representative of the reservation designated by their own authorities. The above implies adjustments for both parties, for the territorial entities, in the understanding of the life plans or uses and customs for the formulation of the projects and to be able to follow up on this type of proposals, and for the indigenous reservations, in the registration and formalization of their legal representatives. In addition, coordination is required between the national level entities responsible for providing guidelines in this regard.

As of March 2017, only 333 reservations nationwide had signed contracts with municipalities, that is, about 39% of the total (Díaz Lemos et al. 2017); which shows that a non-compliance has been occurring in the timing of the subscription of the AESGP

administration contracts, which in turn generates delays in the execution of these resources, and its impact on the goods and services required by the indigenous communities. In the department of Vaupés, only 50% of the opportunities to execute contracts had been taken for the same period, and in the departments of the southern Amazon region (Guainía, Amazonas, and Vaupés), the average number of contracts concluded with respect to the total opportunities was only 32%. Said non-compliance is mainly explained by causes such as the absence of a documented Life Plan by the indigenous reservations and the lack of knowledge of the necessary requirements for signing contracts; situations that reflect the strong institutional barriers that indigenous communities have historically faced within their administration and representation bodies.

Once the resource management contract is signed, the resources are incorporated into the budget and managed in accounts independent of that of the territorial entity, for execution by the municipalities, districts, and departments as their administrators. The execution carried out by the territorial entities is performed based on the investment projects formulated by the Reservation Authorities; however, according to information from the Comptroller General of the Republic (Díaz Lemus et al. 2017), the execution of the resources of the Special Allocation of the General Participation System (AESGP) between 2013 and 2016 (prior to the REDD project start date), was on average 65%, and for the 2016 period it was only 53%, so it is evident that this administration modality denotes failures in the application and contract management of the money. On average, only 26% of the execution is carried out directly by the Indigenous Associations (AATIs).

Monitoring reports reviewed by the Social Sector Delegation of the Comptroller's Office in an analysis of the effectiveness in the execution of AESGP resources (Díaz Lemus et al. 2017), showed that the low percentage of resources managed directly by the AATIs under the administration contract is due to the fact that indigenous associations use economic resources for contracting under their own and subjective criteria, taking into account that they are made within the uses and customs framework, without carrying out market studies, for example, to establish the most favorable prices, or the best bidder in terms of product or service quality, which present delays that are often not justified or have to do with the lack of capacity to execute within the stipulated times. The above sets off alarm bells among territorial entities regarding the management and use of resources and the controls that must be considered when resources are executed by indigenous associations through self-administration figures lacking any monitoring and control system, and this negatively impacts the opportunities of indigenous communities to advance in strengthening their own government and resource management.

The administration of AESGP resources by territorial entities, although it can guarantee minimum control and good practices in the management of economic resources, also implies serious consequences at an institutional level such as delays in the signing of contracts or agreements for the execution of resources or untimeliness in the delivery of contracted products or services to the communities, this is mainly due to factors such as lack of personnel and training between the parties, planning deficiencies, inadequate interaction between territorial entities and reservations, among others. In the Amazon region departments, the delays just for the signing of contracts or agreements were from 61 to 219 days between 2015 and 2016, when in departments such as Antioquia or Huila, the delays were from 62 to 97 days during the same period.

Additionally, there are risks associated with the change in political structures within indigenous communities, since with the entry into force of Law 1450, the destination of AESGP resources (main source of income) changed, now within the framework of the life plans or uses and customs and subsequently, with Decree 1953 of 2014, in the subscription and formalization of administration contracts that are no longer made with the authority of the reservation but with the legal representative of the same, who are expected to directly manage the Special Allocation resources and also other public resources that may be administered or executed by these peoples under fiscal management figures, but they do not necessarily have a significant level of coordination to receive support for operation, training, formation, communication, management, strengthening and monitoring of the Special Indigenous Jurisdiction, since generally these representatives are community members designated by the community's own authorities, but without relevant training that allows them to perform their functions adequately. Although, according to Decree 1953 of 2014, legal representatives must be designated by each Indigenous Council or similar collective structure of own government, and register with the Directorate of Indigenous Affairs of the Ministry of the Interior, this figure does not exist in most of the legally constituted reservations and their designation implies an important logistical deployment since the registration of the legal representation of the communities must be done in Bogotá, so the administration of the resources continues to be under the responsibility of the municipalities and only on occasions, in the execution stage of indigenously owned resources, mayors sign agreements for the execution of resources with Associations of Traditional Indigenous Authorities, as is the case of the proponents of the REDD+ project.

The indigenous communities of the REDD+ Project face difficulties in strengthening their governance and forming associations and although the regional Government has attempted to offer guarantees for indigenous peoples to structure their own government through the AATIs (after the dissolution of the Own Government in 2015), most of them

do not trust these guarantees due to a history of corruption. Furthermore, AATIs are directly facing financial difficulties due to the lack of income to maintain their operational activities. For this reason, they have decided to use a part of the resources they receive from the AESGP; however, the use of these resources to cover such expenses is prohibited by law.

On the other hand, the life plans were born as a strategy to build an own vision of development in indigenous communities, which would allow them to meet the constitutional objectives and goals that indigenous organizations set for themselves from the beginning of their struggles to achieve their recognition and equitable inclusion in the country. However, given that there must be some level of coordination between state development plans, private initiatives and indigenous life plans, many difficulties have arisen in the formulation of the latter since there is no adequate dialogue of knowledge between the parties (Vieco, 2010). The main characteristic of the development plans promoted by territorial entities is the promotion of the generation of economic revenue through increasing integration into the market and, therefore, development projects are intended to generate economic income in indigenous communities, ignoring many times the community social structure of the peoples and local knowledge (Vieco, 2010).

Considering the above and given that life plans are the documents that govern territory management and, of course, the implementation or not of initiatives in favor of conservation, it is clear that indigenous communities need to integrate modern languages and discourses and development to their traditional forms of association and solidarity. Otherwise, it will be very difficult for life plans to be heard, understood, and financed by state entities or Non-Governmental Organizations (NGOs) and, therefore, the strong financial, institutional, and technological barriers that exist today to make conservation in these territories would remain (Vieco, 2010).

On the other hand, The Great Vaupés Reservation is also one of the most extensive Reservation in Colombia, therefore, there are high operating costs that involve controlling and monitoring these large areas. This represents an institutional barrier since it reduces the reservation governance and the possibility of appropriate control and surveillance. The indigenous communities of the REDD+ Project are very far from large settlements; the closest ones are located around the urban area of Mitú, in the department of Vaupés, but for most of the small indigenous populations, the only access is by river or even by air through weekly private flights (Table 13 y Figure 4).

Table 13. Location of communities by AATI and access roads

AATI	Community	River distance to Mitú (km)	Travel route	Access points and description
ASOUDIC	Puerto Pacu	144.03	Cuduyarí River to Vaupés River to reach Mitú	
	Wacuraba	129.98	Cuduyarí River to Vaupés River to reach Mitú	
	Arara	99.33	Cuduyarí River to Vaupés River to reach Mitú	
	Puerto Pato	85.69	Cuduyarí River to Vaupés River to reach Mitú	
	Puerto Casanare	81.25	Cuduyarí River to Vaupés River to reach Mitú	
	Querarimiri	75.07	Cuduyarí River to Vaupés River to reach Mitú	
	Barranco Colorado	69.87	Cuduyarí River to Vaupés River to reach Mitú	
	Piramiri	63.44	Cuduyarí River to Vaupés River to reach Mitú	
	Santa María de Itapimina	60.56	Cuduyarí River to Vaupés River to reach Mitú	
	San Javier de Guaracú	56.68	Cuduyarí River to Vaupés River to reach Mitú	

AATI	Community	River distance to Mitú (km)	Travel route	Access points and description
	Pacuativa	46.59	Cuduyarí River to Vaupés River to reach Mitú	
	QuinaQuina	45.15	Cuduyarí River to Vaupés River to reach Mitú	
	Camuti	39.30	Cuduyarí River to Vaupés River to reach Mitú	
	Santa Elena del Tiposo	37.45	Cuduyarí River to Vaupés River to reach Mitú	
	Nueva Reforma	33.72	Cuduyarí River to Vaupés River to reach Mitú	
	Piracemo	30.11	Cuduyarí River to Vaupés River to reach Mitú	
	Pituna	20.32	Cuduyarí River to Vaupés River to reach Mitú	
	Garrafa	12.73	Cuduyarí River to Vaupés River to reach Mitú	
	Puerto López	10.16	Cuduyarí River to Vaupés River to reach Mitú	
	Santa Marta	5.21	Cuduyarí River to Vaupés River to reach Mitú	

AATI	Community	River distance to Mitú (km)	Travel route	Access points and description
	Puerto Golondrina	7.09	Cuduyarí River to Vaupés River to reach Mitú	
AATIAM	Macaquiño	18.21	Vaupés River to Mitú	
	Tucunaré	11.37	Vaupés River to Mitú	
	Ceima Cachivera	26.86	Caño and Vaupés River to Mitú	
	Mituseño-Urania	6.10	Vaupés River to Mitú	
AATIVAM	Pucarón	235.15	Vaupés River	
	Yuruparí	231.90	Vaupés River	
	Nueva Florida	228.45	Vaupés River	
	Bellavista del Tuy	230.44	Caño Tui to Río Vaupés River	
	Fuerto Laguna	216.41	Caño Tui to Río Vaupés River	
	Ñamu	189.63	Caño Ñamu and Vaupés River	
	Los Cerros	162.96	Vaupés River	
	San Pedro del TI	174.24	Caño Tui and Río Vaupés River	
	Puerto Nazareth	165.50	Caño Tui and Río Vaupés River	

AATI	Community	River distance to Mitú (km)	Travel route	Access points and description
	Santa Rosa	144.69	Vaupés River	
	Villanueva	116.46	Vaupés River	
	Mandí	110.72	Vaupés River	The community and some individuals have a boat for transportation. The trips to Mitú range between 3.5 to 6.5 hours.
	San José de Guamal	102.89	Vaupés River	
	Puerto Limón	123.73	Pichuna River to Vaupés River	
	Virabazu	124.71	Caño Cubiyú to Vaupés River	The community has a 2-ton canoe for transportation, which can take 8 hours to Mitú, requiring a 2.5-hour trip to the Vaupés River and 6 hours along the Vaupés River to Mitú.
	Sabana	111.19	Caño Cubiyú to Vaupés River	
	Mensajero	99.01	Caño Cubiyú to Vaupés River	
	Tierra Grata	83.94	Vaupés River	
	Wasay	70.60	Vaupés River	
	Puerto Pupuña	58.15	Vaupés River	The trips to Mitú are estimated to last 5 hours by river.
	Yacayacá	53.36	Vaupés River	The community has a canoe for transportation, which can take 4 hours to Mitú.

AATI	Community	River distance to Mitú (km)	Travel route	Access points and description
ASATAIYUVA	San Luis de Paca	59.39	Paca River, walk 5 km to Caño YI then Vaupés River	Travel by boat or motorboat lasts approximately one day until reaching Mitú.
	Puerto Loma	55.26	Paca River, walk 5 km to Caño YI then Vaupés River	
	Consuelo	53.35	Paca River, walk 5 km to Caño YI then Vaupés River	
	San Marcos	41.27	Caño YI to Vaupés River	
	Santa Rosalía	37.78	Caño YI to Vaupés River	
	Puerto Inayá	41.12	Vaupés River	Travel to Mitú is carried out in an approximate time that varies from 45 minutes to 3 hours.
	Puerto Colombia	28.09	Vaupés River	The community has a canoe and two motorboats. Usually on Mondays, they coordinate which families travel to Mitú throughout the week to commercialize their products. In addition, families who go to Mitú must contribute approximately $10,000 COP to the motorist. Families also collectively contribute food or money for celebrating parties, shopping, and repairing engines. Distance to Mitú (time): from 45 minutes to 2 hours.
	Bocas del YÍ	23.16	Vaupés River	
	Miritíí Cachivera	20.08	Vaupés River	

AATI	Community	River distance to Mitú (km)	Travel route	Access points and description
AZATIAC	San Joaquín	177.29	Inanbú creek, walk 2 km to Paca River, walk 3 km to Caño YI, then take Vaupés River.	The AZATIAC area is not located on the Vaupés River but on the Viña and Paca rivers, which flows into the Papurí River and runs downstream until reaching the Vaupés River in the Yavarete, drawing the border with Brazil. Transportation from the area to Mitú is very difficult for most families. Transportation can only be carried out by air. When transportation is done by rivers, difficulties arise because there are many *cachiveras* (river rapids) and a *barador* (land road between two caños (creeks)) through which the boats must be dragged for two hours. On the road between Acaricuara and Consuelo, before taking the Mitú River, you can count up to 6 *cachiveras*. The trip to Mitú takes two days by river, three with cargo, including a full day in the *barador* where the communities do everything possible to arrive. The duration of the aerial trip is estimated at 40 minutes.
	Puerto Ibacaba Inambú	174.28	Inanbú creek, walk 2 km to Paca River, walk 3 km to Caño YI, then take Vaupés River.	
	Puerto Esperanza Inambú	166.19	Inanbú creek, walk 2 km to Paca River, walk 3 km to Caño YI, then take Vaupés River.	
	Belén de Inanbú	162.07	Inanbú creek, walk 2 km to Paca River, walk 3 km to Caño YI, then take Vaupés River.	
	Santa Rita	160.84	Inanbú creek, walk 2 km to Paca River, walk 3 km to Caño YI, then take Vaupés River.	
	San Ignacio	143.92	Papurí River, then Paca River, walk 3 km to Caño YI, then take Vaupés River	
	Tarira Papurí	141.14	Papurí River, then Paca River, walk 3 km to Caño YI, then take Vaupés River	

AATI	Community	River distance to Mitú (km)	Travel route	Access points and description
	Tamacuarí	133.84	Papurí River, then Paca River, walk 3 km to Caño YI, then take Vaupés River	
	Los Ángeles	130.49	Papurí River, then Paca River, walk 3 km to Caño YI, then take Vaupés River	
	Santa María	126.11	Papurí River, then Paca River, walk 3 km to Caño YI, then take Vaupés River	
	Arara Paca	117.75	Paca River, walk 3 km to Caño YI, then take Vaupés River	
	Waracapurí	126.50	Caño Viña, take Rio Paca, walk 3 km to Caño YI, then take Rio Vaupés	
	San José del Viña	112.74	Caño Viña, take Rio Paca, walk 3 km to Caño YI, then take Rio Vaupés	
	Acaricuara	99.97	Paca River, walk 3 km to Caño YI, then take Vaupés River	
	La Floresta	99.97	Paca River, walk 3 km to Caño YI, then take Vaupés River	
	Guadalajara	88.00	Paca River, walk 3 km to Caño YI, then take Vaupés River	

AATI	Community	River distance to Mitú (km)	Travel route	Access points and description
	San Gerardo	83.07	Paca River, walk 3 km to Caño YI, then take Vaupés River	
	Santo Domingo	79.06	Paca River, walk 3 km to Caño YI, then take Vaupés River	
	San Pablo de Wiwa	79.56	Paca River, walk 3 km to Caño YI, then take Vaupés River	

(Source: Prepared by South Pole, (2023), based on cartographic information, territorial approaches, and interviews with the communities).

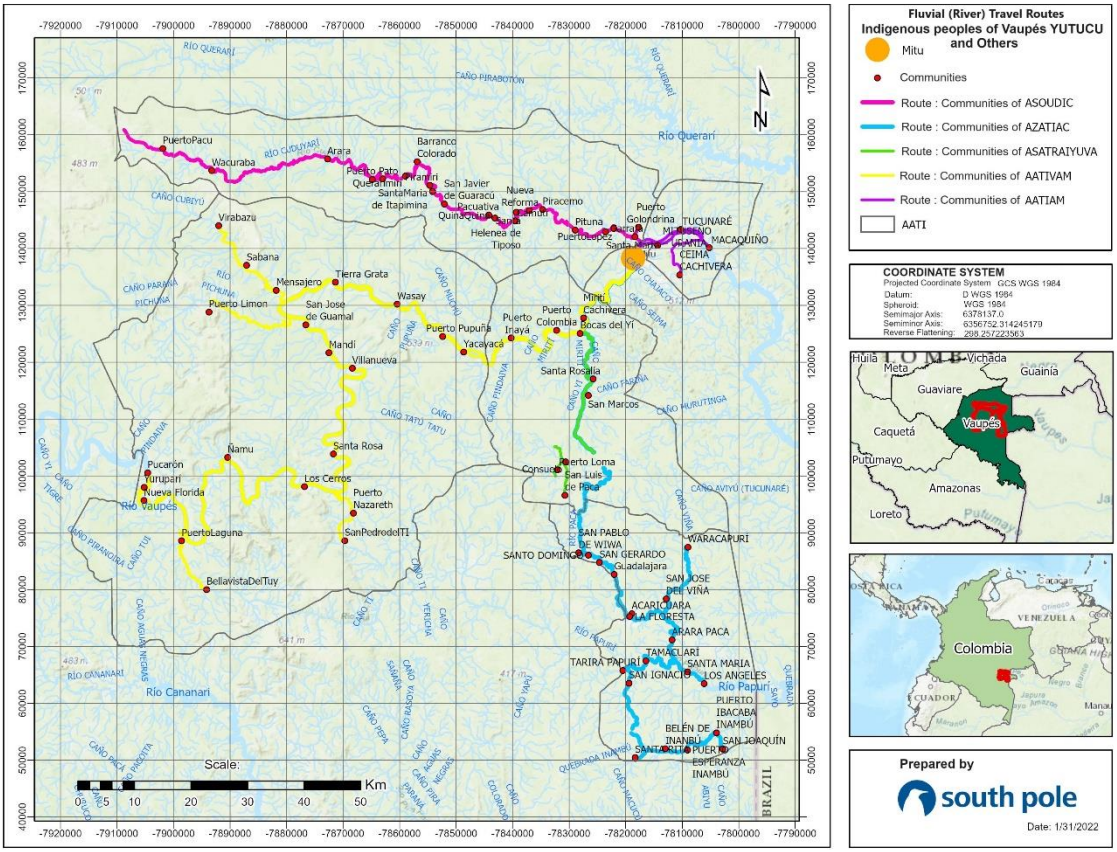


Figure 4. River routes and access roads to the communities of the Yutucu REDD+ project

(Source: Prepared by South Pole, (2023), based on cartographic information).

The geographical isolation of the project communities and the lack of cell phone or internet coverage in most of the territory makes the development of conservation projects more difficult and expensive and creates difficulties for the establishment of productive chains related to agriculture or other alternatives to reduce pressure on the forest.

Finally, the challenges in the exercise of the public function for the indigenous territories with respect to the administration of financial resources are not only with respect to the AESGP, but also with respect to other resources owned by the municipalities and departments, the capacities of the communities to reach agreements and the inadequate formulation of projects, a situation that becomes more evident in the case of the reservations that have annual council changes. The Office of the Comptroller General of the Republic (Díaz Lemus et al. 2017), found that, in 2017, out of 68 territorial entities at

the national level, 22% stated as the main difficulty for the management of AESGP resources, poorly formulated investment projects, followed by the agreement with the indigenous authorities for the signing of the resource management contract with 20% and the limitation in the human resources available by the territorial entity with 19%. With lower percentages are, for example, the lack of operating resources of the territorial entity (16%), geographic dispersion (12%) and the ambiguity or non-existence of the Life Plans, with the remaining 10%. Geographic dispersion was strongly emphasized, especially in the departments of Amazonas and Vaupés.

3.4.2.1.3.3 Technological barriers

- Difficulties in accessing alternative sources and technologies for agricultural production.
- Difficulties in accessing equipment, training, and infrastructure for the development of productive projects for sustainable use and for conservation purposes and avoiding deforestation.
- Increase in travel time to obtain resources due to long distances.

The remoteness of the area prevents access to alternative agricultural production sources, including cultivated plant varieties that can help increase the food supply with the consequent social, economic, and nutritional changes that these actions would have on the communities.

The AESGPRI (Special Allocation of the General System of Participations for Indigenous Reservations) resources must be allocated to the financing of investment projects duly formulated and aimed at improving the living conditions of the indigenous population that lives in the Reservation. Investment projects must have complete information about what they want to do, be included in the life plan or equivalent document of the indigenous population that lives in the Reservation, be included in the administration contract that is signed with the municipality and be the only mechanism through which SGP resources are allocated. Without formulated projects, resources clearly cannot be executed.

For indigenous communities, programming involves the prioritization of resources, the definition and preparation of investment projects and the preparation of budgets in a concerted manner prior to signing contracts with territorial entities; activities for which indigenous authorities do not always have sufficient capabilities; while for the municipalities, the administration of the AESGP implies the direct administration and execution of resources, including through processes of direct contracting of suppliers or

consultants, or the delivery of goods and/or services to the authorities and members of the reservation.

There is an additional absence of equipment, training and infrastructure for the implementation of different development, agriculture and conservation projects and sustainable use of forest resources, considering the high transportation costs required. Furthermore, studies by the Comptroller General of the Nation have shown that, of the AESGP resources that enter the indigenous reservations at the national level, only 7% are allocated to projects related to administrative strengthening, concerning the formalization of life plans, training of the councils or leaders of the communities on issues of justice, own law, resource management, organization (set up) of administrative headquarters, provision of office equipment, service provision contracts to support administrative tasks; which explains the deepening of the technological barriers that limit the permanence of any project led by the indigenous communities themselves.

Specifically for the REDD+ project, financial resources have been allocated for the rental and organization (set up) of an office in the urban area of Mitú. The main purpose of this has been to contribute to addressing the barriers that currently affect the AATIs of the project in relation to access to equipment and technological infrastructure.

In 2017, the Comptroller General of the Republic evidenced that, of the perception on the technical capacities of the Indigenous Reserves in compliance with their principle of autonomy to exercise administrative, legislative, and judicial functions in their jurisdiction, 71% consider that they lack the technical capacities for the proper management of AESGP resources, for example. Although the National Planning Department (DNP, as per its acronym in Spanish) has an Adjusted General Methodology Conceptual Manual (MGA, as per its acronym in Spanish) that, in accordance with Law 152 of 1994 and Resolution 4788 of 2016, is a computer tool with access via the Internet (MGA WEB) that helps in the identification, preparation, evaluation and programming processes of public Investment Projects, this is not adjusted to the framework of the uses and customs of the people and its implementation requires that the indigenous reservations have the technological elements to facilitate and qualify the investment project formulation process; a situation that is not met in all cases given the justifications regarding distance of indigenous peoples with respect to populated centers and the financial and institutional barriers described above.

3.4.2.1.3.4 Barriers due to social conditions and land use practices

- Historical presence of colonization (settlement), deforestation, and praderization dynamics.

- Presence of mining, which promotes other social and land use dynamics.
- Illegal logging that generates a future chain reaction towards cover transformation.

In the Reservation area, indigenous communities historically participated in a rubber extraction dynamic, especially the Wanano, Cube, Barasano, Tatuyos, Tuyucas, Piratapuyos and Desanos peoples; They also had the influence of a coca and gold extraction era that affected some part of the territory, especially, in limits with neighboring municipalities like Carurú. The communities have had an economy based on subsistence practices that include traditional productive activities such as itinerant agriculture in a *chagras* production system, hunting, gathering wild fruits and fishing.

Recently, a colonizing dynamic has determined some deforestation fronts and defined settlement and extensive livestock praderization areas, as well as areas for of natural resources extraction such as wood and expansion of the agricultural and livestock frontier. These activities threaten to penetrate the interior of the AATI through the establishment of activities on the banks of the main rivers and tributaries (as in AATIVAM and ASOUDIC) and in road areas as is the case of Ceima Cachivera (AATIAM) (Section 3.5).[33]

In the department of Vaupés, illegal logging includes a wide spectrum that not only implies not having permits, but also, obtaining logging rights through illegal means, invasion of areas without permission, and logging of protected species or extraction of a quantity of wood greater than the limits allowed by the authorizations of forest exploitation (utilization).

3.4.2.1.4 Sub-step 3b. Shows that the identified barriers would not prevent the implementation of at least one of the alternative land use scenarios (except the project activity)

The identified barriers do not completely prevent the implementation of the three alternative land use scenarios and, in many cases, incentivize or promote some of these scenarios.

Table 14. Barriers and alternative land use scenarios

[33] According to the Delegate Defender for Collective and Environmental Rights, the existence of mining with a high degree of informality has been grouped into small associations, which make (carry out) exploration/exploitation contracts for precious metals, these have divided the different associated indigenous communities (2014).

Barrier	Justification/Explanation
Investment barriers	Investment barriers hinder scenarios 2 and 3 and favor scenario 1. There are considerable barriers to the economic resources investment in the area, which favors deforestation for subsistence purposes, and conversely, prevents an adequate self-government and the effective application of environmental policies.
Institutional barriers	Institutional barriers hinder scenarios 2 and 3 and favor scenario 1. Participation, self-government, change in political structures, and inefficiency in the application of regional and national policies to avoid deforestation barriers occur, allowing incentives for deforestation for subsistence purposes.
Technological barriers	Technological barriers hinder scenarios 2 and 3 and favor scenario 1. Access to technologies makes scenarios 1 and 2 difficult, since it makes local people more dependent on the use (exploitation) of natural resources focused on extraction because it prevents access to alternative equipment, training, infrastructure and technologies that would allow optimizing and improving the productivity of more sustainable processes, including the intensification and improvement of local economies.

Barrier	Justification/Explanation
Barriers due to social conditions and land use practices	Barriers due to social conditions and land use practices hinder scenarios 2 and 3 and favor scenario 1. deforestation can be favored by colonization dynamics and by the presence of mining or illegal logging.

(Source: South Pole, 2020).

As mentioned before, these barriers are increased by inequity in access to resources. For this, the AFOLU REDD+ project seeks to strengthen local governance institutions, the generation of sustainable productive alternatives, the improvement of control, surveillance and own-government in the territory, the generation of productive capacities, for a peaceful permanence of the communities and for a sustainable use of the territory, in addition to the strengthening and written compilation of the traditions and management projects of *chagras.* All this seeks the success of the project in its scope over time. Therefore, it seeks to reduce the impact of pre-existing barriers that would promote deforestation. In the case of the communities, the participation in the formulation and implementation, together with the accompaniment in the different phases of the project, allows the appropriation of these activities by all members and representatives of the AATI. Thus, it reduces targeted pressures not only with local traditions, but also, with the social conditions, tenure, and land use practices, as well as the ecological conditions of the area.

In this regard, the communities themselves indicate the positive perception of opportunities in the REDD mechanism, which is perceived as a tool to guarantee the survival and assurance of the territory, strengthen indigenous leaders and authorities and institutions in their own decisions and their own financial resources, and capacity building through training programs and actions to rescue ancient traditions and practices. This reduces the pressure of the aforementioned barriers in the case of the REDD+ project financed through the AFOLU sector emissions reduction certification. The activities carried out by the REDD+ project will allow applying and investing in strategic lines of the PIVI, and for this reason, the financing received through the project is considered a positive mechanism and incentive since it helps to overcome the barriers that the reservation territory has had to achieve the goals established in said plans.

Step 3. Impact of Project registration

The implementation of activities, their validation and verification within the REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others will allow to continue protecting relicts of natural forest in the Amazon region and their ecological integrity. The additional cash flow derived from the issuance and sale of carbon credits will financially compensate the communities that own the project, not only for sustaining the natural

forests within the reservation, but for managing the underlying causes behind deforestation and degradation, both in the territory of the AATIs that are part of the initiative, and in the influence area of the project.

The implementation of GHG emission reduction activities through the certification and registration of the REDD+ project generates the following impacts:

- Evidence of net anthropogenic GHG removal.
- Increase in the GHG emission reductions in the atmosphere due to the continuity of activities thanks to the benefits perceived by the registration and certification of the project.
- Permanence of conservation activities and increase of carbon stocks.
- From the free cash flow of the project, and the payback period obtained from the project scenario with the sale of VCCs (Verified Carbon Credits), it is evident that the project, without the financial benefits of carbon, is unlikely to be financially attractive. With the benefits obtained from the sale of the VCCs, it is expected to reduce the economic and financial barrier that will prevent the expansion of agricultural activities.
- The initiative holder reduces the economic and financial risks of the project through the benefits from the sale of VCCs that will allow the execution of forest conservation activities.

For its part, the impacts identified for the REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others are addressed comprehensively, in Sections 8.3 and 12.1.5

3.4.3 Common practice analysis

For several years, the Amazon Biome region has received interest for forest cover conservation and the prevention of deforestation and degradation of forests. As explained in detail below, these projects and initiatives, similar to the AFOLU REDD+ project, were aimed at strengthening REDD type project capacities and socialization. These projects were not aimed at applying local REDD strategies and activities in the long-term.

Strengthening REDD knowledge

At the regional level, the WWF, Patrimonio Natural and the National Organization of Indigenous Peoples of the Colombian Amazon (OPIAC), have worked in the Amazon in the construction of the First Summary of Safeguards[34] Information. These organizations developed great advances in the socialization and dialogue of REDD projects, with the communities independently and with the support of the Ministry of Environment and Sustainable Development (WWF, 2018).

Since 2010, the Strengthening Capacities for Climate Change and REDD workshop was carried out, developed by the Coordinator of the Coordinator of the Indigenous Organizations of the Amazon Basin (COICA), the Organization of Indigenous Peoples of the Colombian Amazon (OPIAC), the then Ministry Environment, Housing and Territorial Development (MADVT), Patrimonio Natural and WWF, with support from the World Bank. Its objective was to make known to the indigenous organizations and communities of the Vaupés department the bases on REDD projects. The associations of AATIVAM, AATIAM, ASATRAIYUVA and ASOUDIC participated in this workshop and a dialogue was generated to define the concerns, needs, interests, and opportunities of the communities regarding REDD projects. Its progress was decisive for the creation of the Amazon Indigenous Climate Change Board (MIACC) in 2012.

WWF and Patrimonio Natural, with the support of USAID, have also worked on the construction of a national REDD Safeguards strategy in the communities. This has allowed progress to be made in understanding the foundations of REDD projects and for communities to understand that "*inalienable principles or conditions of communities that inhabit forests and jungles […] are not affected in their basic structure while everyone benefits from REDD activities*" (Camacho *et al.*, 2017). These activities have been fundamental for the appropriation and dissemination of REDD project dynamics in the Amazon territory, although they constitute activities similar to the REDD+ AFOLU project related to capacity building, these are not applied and do not affect the material development of the projects.

The REDD Amazon Indigenous Approach is an initiative at the Amazon region level, led in Colombia by the Amazon Indigenous Peoples Organization OPIAC and launched in the departments of the Amazon and Guainía, and constitutes an opportunity to include the indigenous vision in policies and forest conservation and CO_2 emission reduction projects. In this sense, RIA seeks to recognize the territories' potential to mitigate climate change, recognize the leading role of indigenous peoples and their territories, conservation of biodiversity, maintenance of ecological processes and ecosystem services regulation, considering that a large number of indigenous territories are outside the compensation mechanisms for climate change mitigation processes.

In this sense, these activities constitute a pilot study in which the indigenous organization located in the pilot area carries out studies related to the threats of forest transformation, the provision of ecosystem services and forest carbon stocks. RIA is then a mechanism for the management of the territory and the forest, which seeks the participation of the community and the possibility of including territory management elements (life plans, safeguard plan, environmental zoning) in policies and programs about REDD, but despite constituting activities similar to the AFOLU REDD+ project, RIA is not in itself a REDD-type project, or a project where economic benefits would be obtained in the short term, and it is not a carbon bonds commercialization project.

REDD Early Movers Program (REM)

At the Amazon Biome scale, the Visión Amazonía Program is a program promoted by the national government, with the support of foreign financing governments, which seeks to reduce deforestation in the Amazon by 2020 through a sustainable regional development model focused on avoiding deforestation (MADS & IDEAM, 2016). This program emerged in 2013 when the Governments of Colombia, Norway, the United Kingdom, and Germany began structuring a national level REDD program with financial cooperation, which is based on payment by results to reduce deforestation in the Colombian Amazon region (the financing parties provide contributions based on avoided deforestation). In this sense, Visión Amazonía is part of the process of the National REDD Strategy and includes, among others, the GEF Amazon Heart Project and the REM Visión Amazonía Program. To develop projects, the Associations of Indigenous Traditional Authorities - AATIs or Zonal organizations, or autonomous alliances between institutions and NGOs, must present a proposal that is executable in a minimum time of

[34] See in: Soportes\Marcos_regulatorios\Salvaguardas_Nacionales

12 months and a maximum of 24 months, according to the Project Presentation Guide for Pilar Indígena Visión Amazonía 2018. The projects must contribute to existing processes in indigenous organizations and to the strengthening of capacities in communities and their organizations; In addition, indigenous organizations must provide counterparts, coming from the same associations or from organizations or projects that accompany the communities. This program has initially focused on the departments of Caquetá and Guaviare, and has been extended to the departments of Putumayo, Meta, Guainía, Amazonas, Vichada, and Vaupés, respectively. In the case of the areas around the project, they are located within the REDD Early Movers (REM) Program – Early REDD Initiatives of the Visión Amazonía program, within the framework of the results-based payments scheme. Considering the mobility of deforestation agents in the project area, the ownership of the land and the dynamics of the indigenous territories within the reference region, the most possible area of leakage from the project is related to the Great Vaupés Indigenous Reservation where, in addition, there is the presence of seven AATIs that have similar socioeconomic characteristics, a common organizational structure, and common environmental problems. Therefore, although Visión Amazonía's Early REDD Initiatives program is present in the macro area, its presence at the regional and local scale fails to meet the needs required by the Great Vaupés Reservation area to stop deforestation. During Visión Amazonía's first call for proposals, only 10 projects were benefited throughout the Amazon region and only three were developed in the department of Vaupés (MADS, 2018b).

Considering the above, the proposed AFOLU REDD+ project is additional since que:

- Of the related activities that have been developed in the area, none intends its development in the long term.
- There are substantial distinctions between REDD+ AFOLU project activities and other activities.
- The REDD+ AFOLU project scenario does not constitute the project baseline scenario.
- The proposed activities would not be feasible without the availability of financial resources from the sale of carbon credits.

3.4.4 Baseline scenario selection

Scenario 1 is selected as the most plausible scenario for the project baseline, since the previous occurrence of subsistence activities in the project area is highly probable (deforestation permanence for expansion of agricultural areas in livestock and domestic agriculture, together with disorderly colonization processes, expansion of infrastructure

and urban planning, and unsustainable extractive markets at local and regional scales). Although in practice, different uses in indigenous communities can generate impacts on forest cover, the utilization of renewable natural resources is compatible with the permanence of the communities. For its part, under this scenario it is possible to affirm that the project's emission reductions do not correspond to emission reductions attributable to the implementation of actions required by law.

3.5 Agents and drivers of deforestation

3.5.1 Spatial, temporal dimensions and context

The spatial and temporal limits of the REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others related to the project area (PA),[35] reference region (RR) and Leakage Belt or Area (LA) are located in the Colombian Amazon region (Southeast of the country), which is considered one of the richest and most diverse regions of the country. This wealth and diversity, however, is in danger because both socioeconomic development and the environment receive the scourges of political instability and the excessive exploitation of resources and ecosystem services and, in addition, they are recipients of the increasingly most common events of drought, floods or windstorms. Detailed information on the project's spatial and temporal boundaries is found in Section 3.2 and information on the historical context is detailed in Section 9.1

3.5.2 Key stakeholders, interests, and motivations

Identification of agents and drivers causing deforestation

The deforestation agents in the Colombian Amazon region were described in a general way by González Arenas et al. (2018) and correspond to the agricultural producers of coca, praderization agents, large-scale livestock producers and informal and formal

[35] The project area is the eligible areas of the REDD+ initiative (see Section 2.4.2).

minerals and hydrocarbons extractors. In the case of the AATIs jurisdiction, the main groups of deforestation agents are:

3.5.2.1.1 Agricultural producers of coca

They are rural farmers, represented mainly by settlers who are motivated by the income generated by this type of cultivation. Although they are not currently reported within the project area, they constitute a latent threat.

In 2018, about 47% of coca crops for illicit use in Colombia were within the jurisdiction of indigenous reservations and national parks (Benavides, 2019). According to Mingorance, Le DU, & Olsen. (2008), this is due to the fact that the reservations are located in isolated areas and far from the communication axes, they have a low presence of the State and, according to the legislation, it requires carrying out a prior consultation process for eradication. It is important to mention that the highest point in the historical series of coca crops in the departments of Guainía, Vaupés and Amazonas occurred in 2001, with 3,768 ha mainly concentrated in Vaupés, where 49% of them were located in 2013. The municipalities with the largest area affected by coca crops in the department, in the entire historical series, are Carurú and Mitú (ONUDC, 2014). In 2015, although

there was a trend towards the abandonment of crops, areas with intermittent crops were also recorded (ONUDC, 2016).

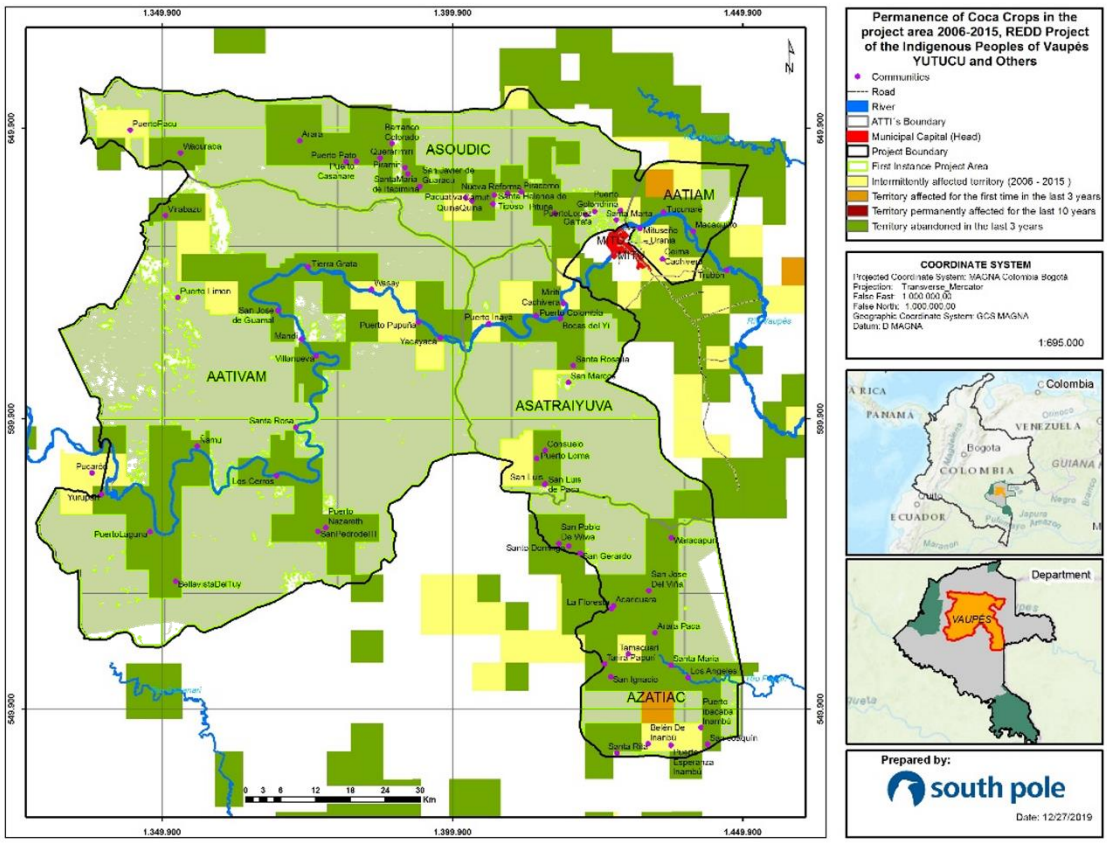


Figure 5. Permanence of coca crops in the project area

(Source: Adapted from the Permanence of coca crops map – 2015. Retrieved from: https://simcimetadatos.unodc.org.co/geonetwork/srv/spa/catalog.search#/metadata/7969787a-8c68-4ca7-a47a-bbbdec67f200)

Currently, according to the (UNODC, 2019), the Amazon region (made up of the departments of Guainía, Amazonas and Vaupés), registers a trend towards the reduction of coca crops for illicit use. However, there are some increases due to its proximity to historical coca concentration cores and in current expansion: to the south, with Putumayo and Caquetá; and to the west, with Meta and Guaviare. Likewise, due to the difficulty of carrying out effective controls in the extensive border area, this region is increasingly representative for the international traffic of the alkaloid. Consequently, it is considered that, despite the absence of reports of coca crops for illicit use, it is important

to consider this actor as a possible deforestation agent in the future and to establish measures that prevent their entry into the project area.

3.5.2.1.2 Praderization agents

Settlers and indigenous people who turn forests into underutilized pastures, mainly to house a minimum number of livestock. In the Amazon region, an increase in pastures was detected, going from 2,027 km^2/year in the 2002-2007 period to 1,096 km^2/year in 2007-2012 and 2,399 km^2/year in 2012-2014. This means that the highest reported has been during the praderization process (González Arenas *et al*., 2018).

3.5.2.1.3 Small farmers

Settlers and indigenous people who convert wooded areas into cultivated soils or *chagras* (Amazon community production system) with the purpose of acquiring food products for their subsistence. Due to the fact that the population of the department of Vaupés has increased in recent years, the need for the establishment of *chagras* has also increased in response to the new food demands of families and households, thus, expanding the area of deforested forest.

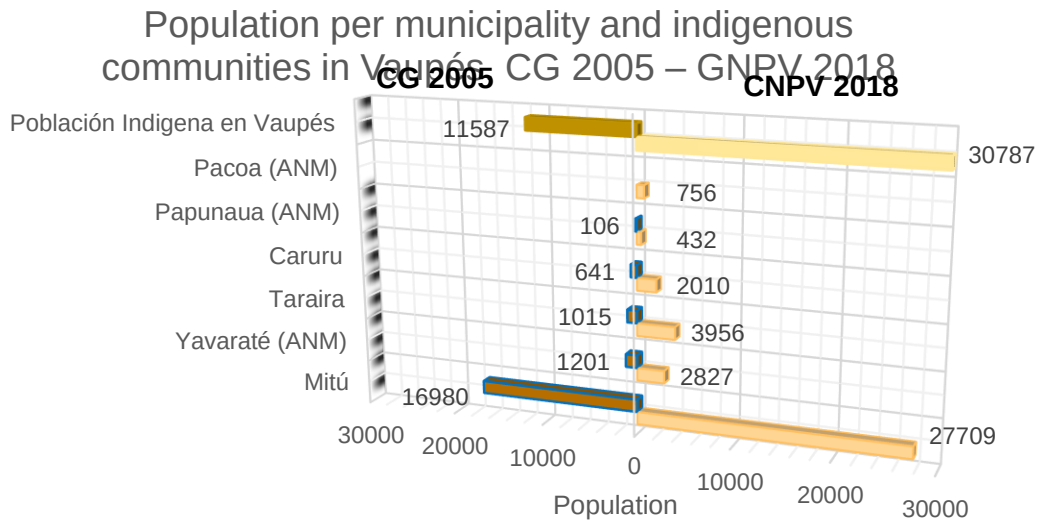


Figure 6. General population increase and of indigenous communities in the department of Vaupés

(Source: Prepared by South Pole based on: (DANE, 2015) y (DANE, 2019))

3.5.2.1.4 Formal and informal Mineral Extractors

This group is made up of settlers and indigenous people. Currently, there are applications for mining titles in the project area, specifically within the strategic mining areas declared through Resolution 0045 of 2012. Although this is temporarily suspended until the Law 2 zoning of the forest reserve and the regulation of mining-free natural resource reserves is carried out, mining companies may become deforestation drivers in the project area in the future. Additionally, illegal mining activities occur in the project area.

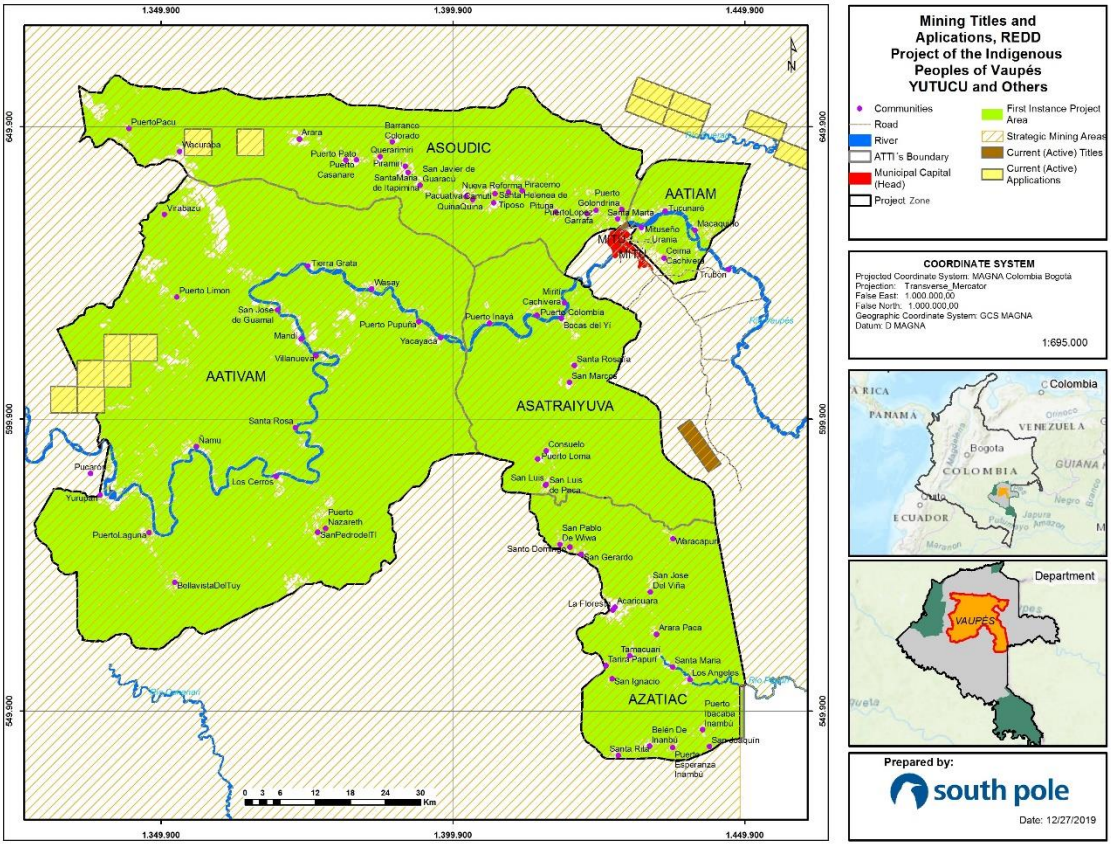


Figure 7. Current (Active) Mining Titles and Applications

(Source: Prepared by South Pole. Information retrieved from: https://annamineria.anm.gov.co/annageo/rest/services/SIGM/VisorInterno/MapServer).

3.5.3 Direct and indirect impacts, relationships, and synergy

Determinants of deforestation and underlying causes

Deforestation agents in the Colombian Amazon region are described in general by González *et al*., (2014) and correspond to small, medium and large farmers, ranchers, mining, gas and oil companies, and armed groups; while the historically identified determinants have been the expansion of the agricultural boundaries, livestock, illicit crops, migration (colonization and displacement), mining (legal and illegal), oil and gas exploitation, infrastructure development, forest fires and population density.

The Vaupés region is part of the southeast sector of the Amazon biome, it has dispersed settlements, reduced, or restricted connectivity, low historical density of coca crops and livestock production. However, the historical, economic, and sociocultural context make up a deforestation front described by IDEAM (2018). Recently, a colonizing dynamic has determined some deforestation fronts and has defined areas of settlement and praderization with extensive livestock, as well as areas for extraction of natural resources such as wood and extension of the agricultural and livestock boundaries. These activities threaten to penetrate the interior of the AATI through the establishment of activities on the banks of the main rivers and effluents (as in AATIVAM and ASOUDIC) and in road areas such as Ceima Cachivera (AATIAM). Mining has also exerted its influence in the Reservation area due to the progress it has had from the municipality of Taraira in the form of alluvial and terrace mining, mining mainly for gold extraction that in many cases has been done in an uncontrolled manner and without environmental permits.

Some evidence of the impact that increased accessibility can cause due to physical infrastructure, such as the construction of roads, can be seen in the area of the Mitú-Monforth highway, very close to AATIAM, occupied for more than thirty years, and as a result, there is ecosystems fragmentation in the road influence area. Particularly, some areas near this highway have dispersed the colonization, affecting the Ceima Cachivera territory and facilitating Reservation area access through the illegal purchase of land, for the establishment of productive systems, in order to supply the demand for the basic market basket in Mitú, the subdivision (plotting) and wood extraction.

The causes of deforestation for the department have been categorized according to their incidence: (A) illegal logging for the expansion of the urban fabric, (B) increase of communication routes, (C) licit and illegal extraction of minerals and (D) colonization boundary for agriculture, livestock, and illicit crops. And other minor causes such as: (E) forest fires and (F) the extension of the agricultural frontier in reservations (CDA & MADS, 2018) (see Figure 8).

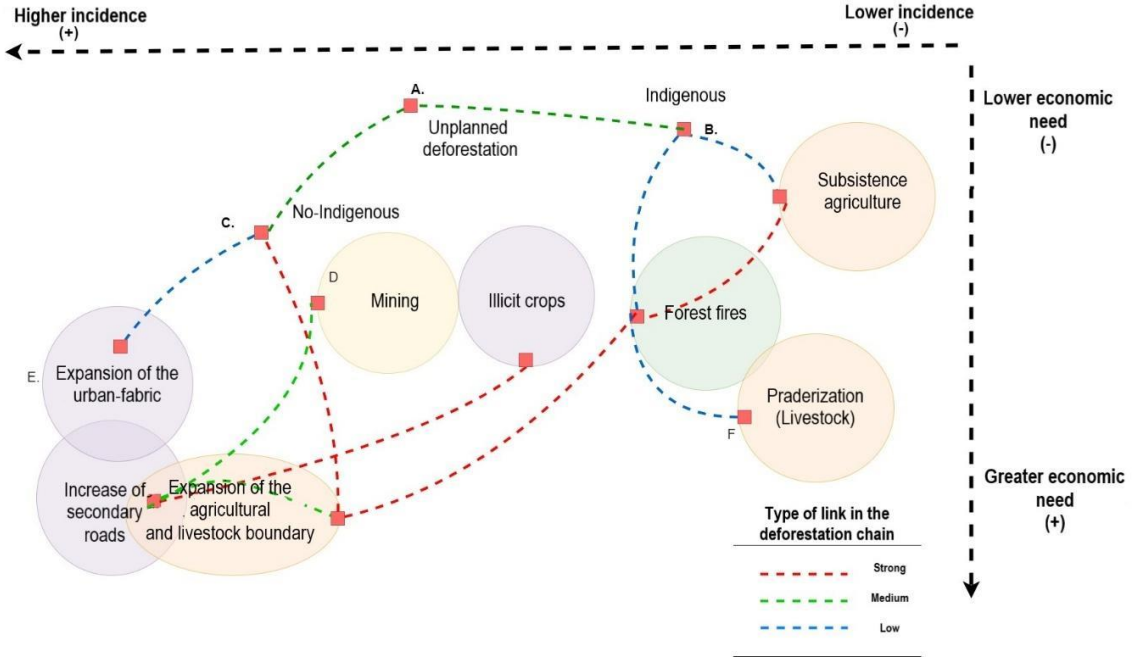


Figure 8. Causes of deforestation from highest to lowest incidence in the department of Vaupés

(Source: Adapted from Departmental Forest Diagnosis CDA Sectional Vaupés (2019))

During the local consultation process, surveys were conducted to evaluate the deforestation drivers and agents (Annex 2). These were carried out in the field between May 15 and May 31, 2019.[36] Strong evidence was found of the causes of deforestation, which are determined by broader forces, which constitute the underlying causes of deforestation. An exploratory analysis allowed us to identify three key factors:

- Lack of economic opportunities.
- Lack of laws and enforcement capacity.
- Problems linked to armed conflict.

A combined analysis of the agents, determinants and underlying causes of deforestation shows that the main factors are related to illegal logging, traditional agriculture, urban expansion, forced displacement, which accelerates the colonization process with

[36] In the following route you can find the surveys carried out: Soportes\Agentes y motores de deforestacion\Encuestas

productive schemes un suitable for the Amazon, the existence of armed actors (groups), scarce possibilities of legal and formal development and low presence of the State, generate a favorable space for deforestation, since forests continue to be considered development barriers(Vargas *et al*., 2017).

To assess the causes of deforestation in spatial terms, a series of potential deforestation factors were statistically investigated. The spatial variables that best explain the deforestation process in the Gran Vaupés Reservation were identified and compared with each other, in a set of twenty variables.

The modeling approach was agent-based and was developed using the DINAMICA-EGO software that uses an evidence weights process to determine the representativeness of the variable (see Annex 7). The modeling is based on the assumption that the phenomenon of deforestation does not occur randomly but by a combination of physical and social attributes, attractive or particular to deforestation agents.

Given that many initial factors showed similar behaviors such as the distance to primary and secondary roads, the distance to rivers and creeks, among other variables, the covariance between these factors was analyzed to determine how and in which intervals they had a significant correlation. The covariance of the initial factors was analyzed by applying Chi-square tests and a contingency coefficient was used to select the factors. The correlated factors were removed from the factor analysis since the inclusion of these factors would violate the assumption of independence in the modeling. The effects of the factors were measured using a generalized linear model, assuming an underlying binomial response (deforested vs. non-deforested) and a logistical link function.

As a result of the correlation analysis, the final factors that explained the greater variance in the location of deforestation include distance variables to rivers (River Distance); population centers (Urban Distance); previously deforested areas (Grasslands Distance) and some continuous variables, such as elevation, number of productive units and (No UPA) and, of people registered according to DANE (see Figure 9 and Table 15).

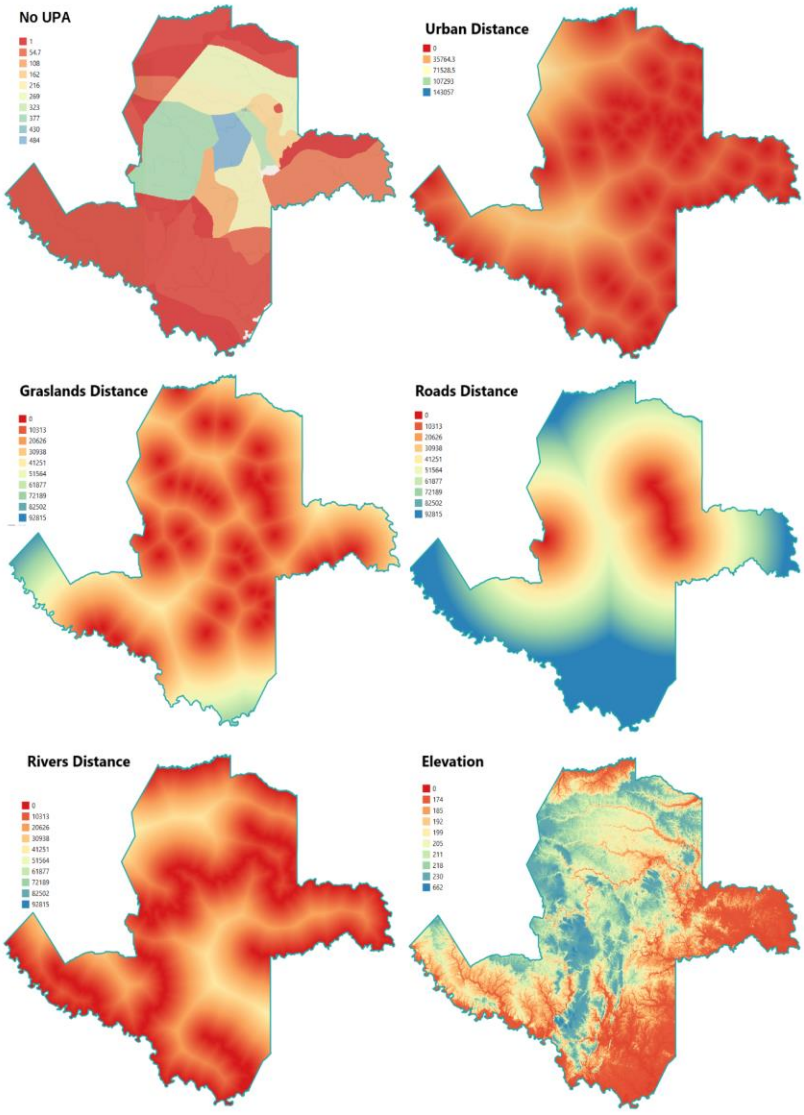
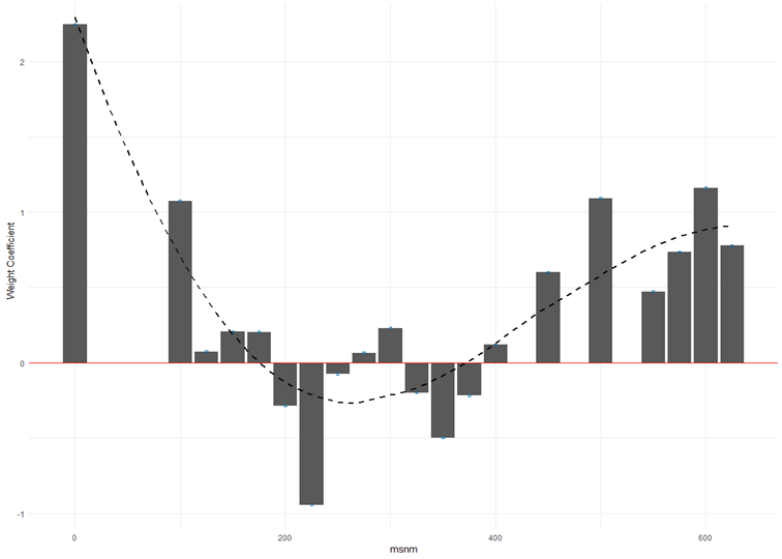
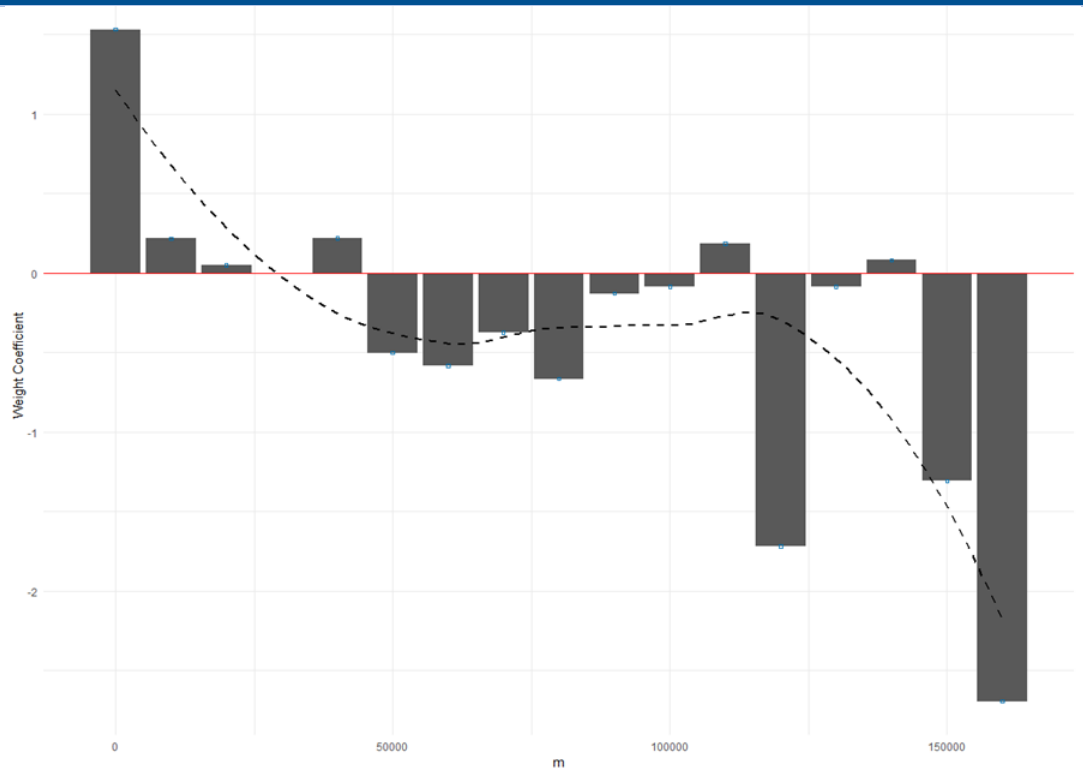


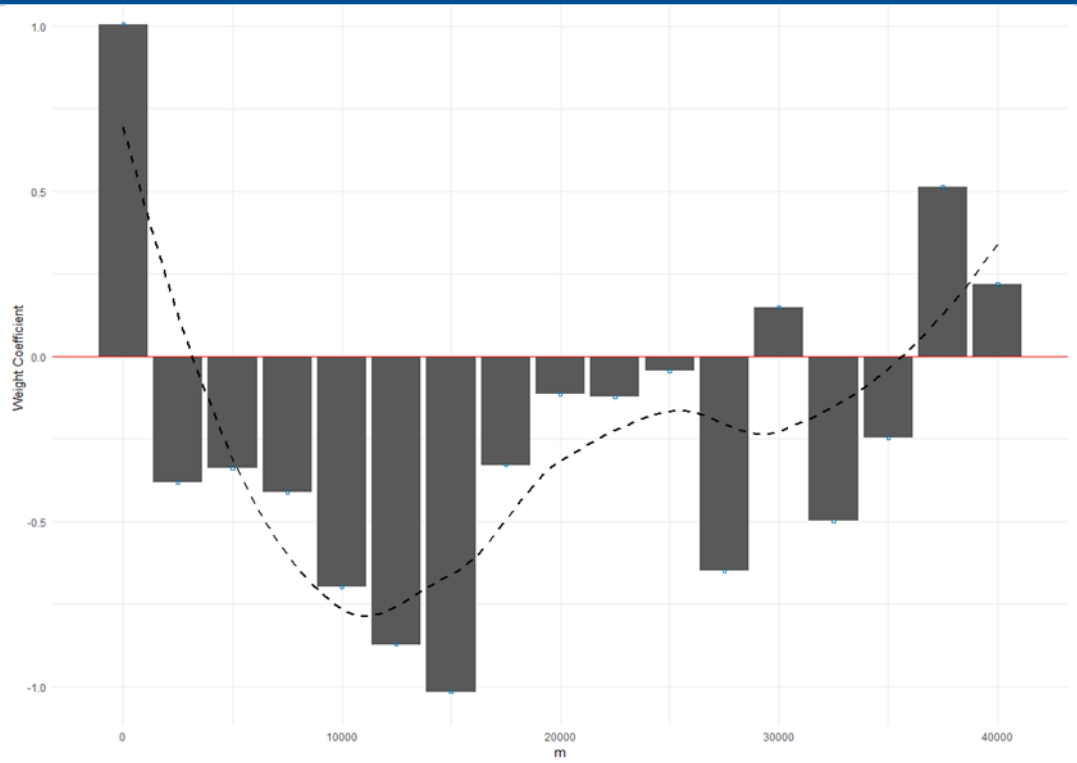
Figure 9. Statistically independent spatial deforestation factors for the Great Vaupés Indigenous Reservation, selected using DINAMICA-EGO

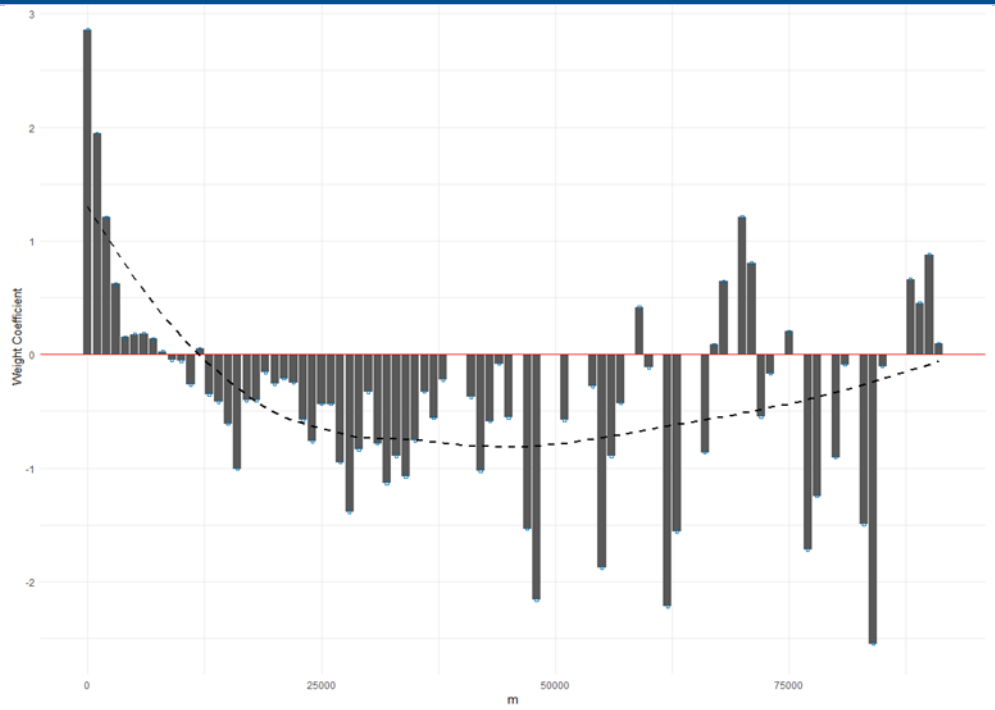
(Source: Prepared by South Pole, 2020)

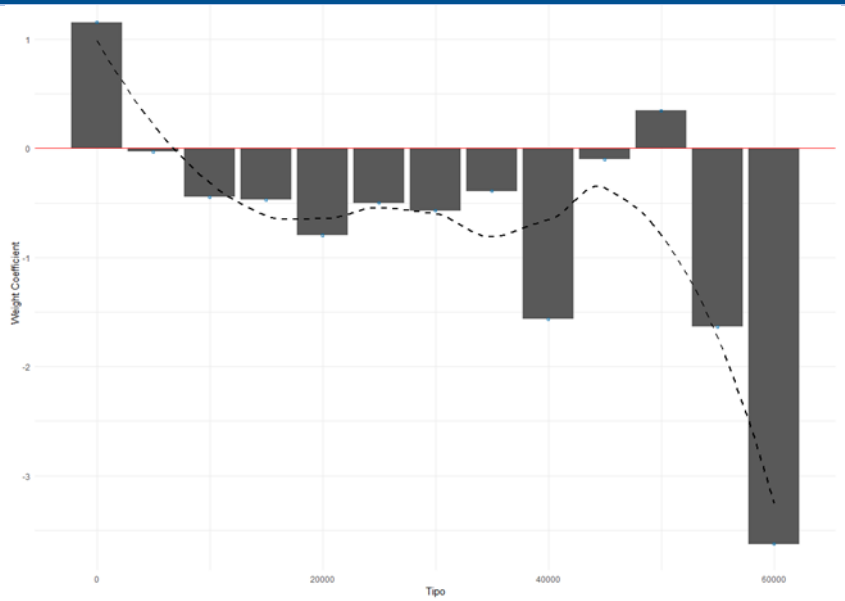
Table 15. Description of the factors that statistically explain deforestation

Variable or factor	Description
Agricultural Production Units (UPA) (No UPA)	In the case of the Great Vaupés Reservation, the variable presents evidence that a region above 50 agricultural production units has a positive effect on deforestation. This value could be considered a measure to separate subsistence agriculture from that which has commercial purposes and seeks to expand in the territory. Studies in the Latin American Amazon have shown how the market dynamics of the rural sector is an explanatory variable as a driver of deforestation(Larson *et al.*, 2008).
Elevation	For the Great Vaupés Indigenous Reservation region, the probability that lowlands, below 200 masl, experience deforestation is high; This is because most of the removed forest is found in low valleys, flooded areas, or flood plains. The elevation in this case is a variable that determines the accessibility to the forests. Deforestation model studies have shown that elevation is an explanatory factor that is directly related to high deforestation rates(Mas *et al*, 2004). 
Distance to primary and secondary	Accessibility, due to the proximity to primary and secondary roads, presents clear evidence for deforestation. In the case of the Great Reservation, the variable becomes important in the first 25 km of distance and quickly loses its influence after that distance. As expressed by Barber *et al.*, (2014), in the Amazon, this factor is catalogued as one of the main responsible for deforestation which is supported by Laurance *et al*., (2014).

Variable or factor	Description
communication roads (Road's distance)	
Distance to rivers (River Distance)	As well as the distance to the main roads, the rivers and creeks in the Vaupés constitute the main source of access to forest areas. For the Great Vaupés Reservation, accessibility by river has a positive effect in the first five kilometers of distance and in most cases, is conditioned by its proximity to areas that have already been cleared for pastures or farmland (Salonen *et al*, 2012).

Variable or factor	Description
	
Previously deforested areas (Grasslands Distance)	One of the most used and fastest practices of cleaning the forest for agricultural and livestock activities and increasing productivity in the short term in the Amazon has been burning it (Volckhausen, 2019). The clearing of the forest, in areas close to established grasslands, presents positive evidence for the Great Vaupés Reservation when it is within a range of 0-12.5 km. Studies in the Amazon carried out by SINCHI, shows the proportion of this phenomenon and the relationship with other economic activities (Murcia-García *et al.*, 2016).

Variable or factor	Description
	
Distance to buildings (Urban Distance);	In the case of the REDD Project of the indigenous peoples of Vaupés YUTUCU and Others, the variable presents evidence in the 0-7.5 km range where it has a positive effect on deforestation. This value could be considered a measure to separate the urban perimeter that separates the commercial area from the area that provides the forest resources that urban centers demand. Donovan *et al*., (2007), mention that the supply and demand market dynamics for forest goods and services influence the deforestation phenomenon in an urban dynamic in the Latin American Amazon, which is supported by Larson *et al*.,(2008).

Variable or factor	Description
	

(Source: Prepared by South Pole, 2020)

3.5.4 Chain of events of deforestation

An analysis that compares and combines the result obtained for the project; with the results, for the reference region in terms of agents, determinants and underlying causes of deforestation, it can be shown that the most important factors in the deforestation dynamics of Vaupés and the Indigenous Reservation are subsistence economies and other external factors derived from population growth, such as mining, illicit crops and the demand for forest goods and services, which triggers events that allow determining the baseline scenario characteristics.

In particular, the elevation, the distance to roads, rivers, grasslands and urban centers determine the suitability for deforestation processes to be triggered, but at the same time, determine the conditions of accessibility to the forest, so that in a series of events, fine wood is utilized (exploited), livestock and agriculture subsistence systems are established and later, gives way to praderization processes, for commercial purposes or to other processes that have higher profitability rates such as mining in its legal or illegal facet. The chain of deforestation events for the Great Vaupés Indigenous Reservation is described below.

Illegal logging

Illegal logging is the first link in the deforestation chain, in most cases, it is done for commercial purposes and is carried out by settlers, through the intrusion or invasion of areas without permission. It is related to the growing demand for fine or valuable woods, for the construction of houses, fixtures and furniture, in the municipal centers of the Department (Mitú and Carurú). The species used for the construction of the houses are *acaricuara, loiro, arrayán, baboso, carguero amarillo, aguacatillo* and *arenillo* and for the roofing, *uví* and *caraná*; the oars and canoes are constructed with *miratabá, mirapiranga*, yellow and black *loiro*; baskets, *balayes, matafríos*, colanders and sieves are made with *guarumá, fique* and *cumar*; the *yaré* vine is used to tie (fasten) housing, *yeraos, matapíes, cakuríes* and brooms (AZATRAIYUVA, 2008). In general, harvest volumes and harvested species exceed the limits allowed in regulatory restrictions.

Subsistence farming

The second link in the chain is the establishment of agricultural and livestock systems. After the extraction of fine woods in some areas, the indigenous people themselves and the settlers who surround the reservations implement livestock activities, increasing deforestation processes.

This expansion of the medium and low scale agricultural and livestock frontier by the settlers is a recent event and affects the conservation of the forests managed and administered by the communities. So far, population and grazing areas have been identified, with extensive cattle ranching, towards the interior of the Great Vaupés Reservation, which threaten to enter the interior of the AATI, through the establishment of activities on the banks of the main rivers and tributaries, as in AATIVAM and ASOUDIC and in road areas such as Ceima Cachivera (AATIAM.

On the other hand, indigenous communities that have had an economy based on subsistence activities, which include traditional productive activities such as itinerant agriculture in a *chagras* production system, look in the forests closest to their populated centers, and that do not have fine woods, the establishment of economic alternatives, such as new *chagras* (Amazon community production system) for subsistence purposes, marketing and livestock raising.

Mining and illicit crops

In an isolated way and in last place, mining and illicit crops have slowly influenced the deforestation dynamics and social cohesion loss processes. The mining that operates in its legal and illegal aspect is alluvial and terraced, mainly for gold extraction, in many cases, it is done in an uncontrolled way and without environmental permits. For the Amazon region, as of 2006, mining has been favored due to national economic growth strategies, which opened doors for new fronts for illegal mining to be established in the 2013-2015 period, as an example is the case of the mouth of the Cuduyarí river within the project area (Arenas et al. 2011). Some effects triggered by this type of activity are related to increased accessibility due to physical infrastructure such as road construction(Nepstad *et al.*, 2013).

Some mining cases, in the Great Vaupés Reservation, are observed in the area of the Mitú-Monforth highway, very close to AATIAM; AATIVAM evidence pressure for mining in the mountain territory (Tarairá) and AZATIAC, in the Waracapuri area, activities that have been fragmenting the collective property forests of the reservation.

On the other hand, illicit crops have a less visible thinning effect, but like mining, they trigger deforestation processes in areas far from indigenous reservations, where these crops are made up of lots that have an average size of 0.1 ha to 0.5 ha (UNODC, 2017). For the Amazon region, 286 ha of coca were detected in 2016 in Vaupés, 58% more than that detected in 2015. These illicit crops represent for forests not only a pressure during the stage of establishment and harvesting of crops, but also, in the abandonment stage due to the high probability of regeneration of invasive species. Additionally, the

conditions in which the soils remain can delay the establishment of plant species that protect the soil from erosive processes.

Because the project activities are only focused on controlling the measures of the indigenous communities, Sections 8 and 9 show how these processes will be addressed within the project.

3.5.5 Conclusion

In conclusion, the previous sections showed that small and medium farmers, ranchers, mining companies, armed groups, and indigenous communities are the agents of deforestation in the Great Indigenous Reservation of Vaupés. The determinants involved, and the underlying causes, explain the almost constant rate of deforestation and as evidenced in the literature, and the social evaluation of the project area, the determinants of deforestation are a combination of factors that occur simultaneously, but are more closely related in part by a subsistence economy on behalf of the indigenous communities, and by a medium-scale economy orchestrated by the colonists as intermediaries.

3.6 Description of the REDD+ Project Activity

The activities identified constitute initiatives of high interest to the communities in accordance with their territorial planning and cultural characteristics , as well as their needs to conserve the territories in a suitable ecological state for the provision of multiple ecosystem services. These were grouped into four final categories or strategic lines called F R E S[37] (As per its acronym in Spanish) in which the project actions will be focused on to conserve forest areas and reduce the risks of their degradation.

The strategic lines of the project are:

- **(F)** Local governance strengthening**.**
- **(R)** Ecological and cultural restoration.

[37] During the local consultation process, the AATI defined naming that way the strategic lines to group the initials of each one of these. The strategic lines are: Local governance strengthening; Ecological and cultural restoration; Own economy and productive systems; Traditional knowledge and own education.

- **(E)** Own economy and productive systems**.**
- **(S)** Traditional knowledge and own education**.**
- .

The following table details the information of each REDD+ activity in compliance with section 11 of the BCR Methodological Document for REDD+

Table 16: Project activities

Item			Línea estratégica			
			1: Local governance strengthening	2: Ecological and cultural restoration	3: Own economy and productive systems	4: Traditional knowledge and own education
ID indicator			F	R	E	S
Objective			Fortalecer las relaciones y trabajo colaborativo con los diferentes sectores y actores estratégicos del área de influencia, promoviendo las capacidades y liderazgo comunitario alrededor de la gestión en los procesos de gobernanza, para contribuir con el buen manejo del territorio.	Restaurar la dinámica ecológica y social del bosque Amazónico, de los ríos y los valores culturales asociados	Apoyar la formación de capacidades y proyectos locales que generen nuevas alternativas económicas para el beneficio comunitario	Avanzar hacia un modelo etnoeducativo propio que permita la recuperación de espacios tradicionales la identidad y los valores indígena.
Relationship between activity and direct (D) or underlying cause (U)[38]	**Expansión de la frontera agropecuaria**	**Actividades de ganadería**	U	D	D	U
		Actividades agrícolas	U	D	D	D
	Desarrollo de infraestructura	**Minería, vías, producción agropecuaria**	U	D	D	U

[38] A través de la implementación de actividades del proyecto, la iniciativa REDD+ Yutucu busca controlar las variables de pérdida de cobertura boscosa identificadas en el área de manejo del proyecto, de manera que aquí se muestra la relación de control para cada motor de deforestación identificada con respecto a la implementación de actividades, y su relación directo o subyacente.

	Extracción de madera y otros minerales	**Minería, vías y cultivos ilícitos**	U	U	U	U
Compliance with life plans or ethno-development plans or the interests of rural communities			The project activities were identified through A detailed analysis of the activities presented in the Integral Indigenous Life Plans (PIVI)[39] of each of the five AATIs and the ordering and management plan of the Cuduyarí basin			
Consultation mechanism for objectives identification and the definition of REDD+ activities			The project activities were identified through: • Meetings and gatherings held with AATI members in Mitú and the communities. • Communications with the leaders and legal representatives of the associations.			
Responsable			Local community, leaders of the community sector and owners of the initiative.			
Role of the actors involved in the implementation of the activity			• Initiative holder • Community participants • Institutional participants			
Implementation schedule			The monitoring plan for project activities will be implemented in its entirety for 2019 onwards. For the first monitoring period (10/29/2016 to 12/31/2018), the auditor will be presented with the information and supports available to the community at the time of project validation, trying to get as close as possible to this established plan.			
Type			Result	Result	Resul	Impact and Result
Goal			Evaluation of the project to be implemented	Evaluation of the project to be implemented and annual measurements on the recovered sites	Evaluation of the project to be implemented	Evaluation of the project to be implemented
Measurement unit			See indicators on Annex 9 for each activity			

[39] The life plans of each of the ATTIs can be found in folder: Soportes\Marcos_regulatorios\PIVI.

Monitoring methodology or data collection method	See Annex 9 for each activity
Monitoring Frequency	See Annex 9 for each activity

3.6.1 Strategic line 1: Local governance strengthening

The implementation of the project will provide favorable conditions for the development of joint actions among all the communities linked (associated) to the REDD+ Project, in Five AATIs of the Great Vaupés Indigenous Reservation. Therefore, activities aimed at strengthening local governance will provide technical and administrative capacities for the territorial ordering of the reservation,[40] the resolution of conflicts and the promotion of leadership and cultural expressions according to the uses and customs of the communities.[41]

Listed below are activities aimed at strengthening local governance, which will allow communities to take charge of resource management and implementation of the REDD+ project:

- Endogenous authorities strengthening (own government).
- Traditional leaders and authorities training in administrative decentralization, administrative processes, obtainment, and management of the nation's resources. Management and resources legalization training.
- Gender equality and human rights training for women of the reservation.
- Youth association organization (establishment) as part of internal strengthening.
- Cultural practices strengthening for territory management, conservation, and use.
- Construction of community and inter-community agreements and commitments to guide and control the use (exploitation), fruit harvesting sites conservation or natural resources use (exploitation) (for example: *Heteropsis flexuosa, bejuco yaré*), sacred, salty sites, wild fruit sites, fishing, and hunting sites, etc.

[40] The territorial ordering, in addition to the spatial context, must consider the indigenous culture, the worldview, the spirituality, the original myths, the laws and the agreements established for the management of the territory according to the decisions made in each of the AATIs.

[41] Organizational strengthening activities are not only limited to improving the administrative capacity of the reservation associations, but also, to promoting and supporting other organizational forms that allow the training of new leaders.

- Generate support and cooperation alliances between traditional and environmental authorities so that the management and use (exploitation) control decisions, transport and trade of natural resources determined by the AATIs are recognized and respected.
- Territorial, forest, and environmental indigenous planning.
- Leadership training as an alternative to promote women's entrepreneurship.
- Train *sabedores* (wise men) about their role as agents of good environmental management in the community.
- Leaders' training: Leadership training to form dynamic groups in dialogue processes with the Colombian institutions.
- Indigenous zonal territory recognition in accordance with established regulations.
- Legalization and regulation of the ATTIs (own government).
- Training for the application of the Life Plan.
- Permanently apply the exercise of community consultation for decision-making by captains or traditional authorities and the AATI presidencies.
- Construction of a corpus in traditional Cubeo law (own legislation).
- Training in indigenous legislation for Traditional Authorities.
- Association and the captaincies strengthening and endowment.
- Promote the ATTIs legalization process before the State and its recognition before the institutions that are present in the department and others.
- Management of subsequent alliances with public or private institutions.

The expected impact will be a community organized and strengthened in its governance processes, with a high decision-making capacity in its field of work and contribute to the good management of its territory.

3.6.2 Strategic line 2: Ecological and cultural restoration and recovery

This line aims to restore the ecological and social dynamics of the Amazon Forest, rivers and associated cultural values. The activities of this strategic line are aimed at the recovery of areas affected by the impacts of climate change, through the planting of timber and fruit trees, and endemic palms in the area. In addition, it is intended to promote the maintenance of connectivity, the ecological dynamics of river and creek water flows, the preservation of birds and animals in the culture of the communities. Additionally, to recover the culture that has been deteriorated by the violence of the

rubber era, the evangelization, and effects of the internal armed conflict and even drug trafficking. The activities to be carried out along this line are described below:

- Restoration of degraded areas through the implementation of agroforestry systems with native species of ecological importance.
- Protective plantations in water margins with native species.
- Implementation of a program for the sustainable utilization and recovery of fruit species of importance to the communities of the Caño Cuduyarí basin.
- Recovery of medicinal plants through the establishment of family nurseries to strengthen traditional practices.
- Culture recovery and strengthening.

According to the proposed activities, the expected impact for the communities is the creation of spaces for the exchange of traditional knowledge associated with the planting of species with cultural value and the repopulation of fauna and flora species.

3.6.3 Strategic line 3: Own economy and production systems

In order to take on the main cause of deforestation and forest degradation in the reservation territory, which coincides with the expansion of the agricultural frontier, the development of livestock activity and the use (exploitation) of commercial woods, it is proposed to provide alternative subsistence means that they are not based on the excessive wood extraction and through which indigenous communities can secure income without the need of cutting down more forests. The activities will involve the local community in the establishment and implementation of new production programs and the strengthening of existing ones, mainly focused on traditional practice related activities.

The own economy and production systems activities line are listed below:

- Support the strengthening and promotion of artisan projects for Yurutí women.[42]
- Search for methods to strengthen food security (assurance) with seeds from the region.

[42] Language of the Eastern Tucano linguistic family that gives its name to the ethnic group or indigenous group.

- Strengthening and support for the implementation of traditional chagras (Amazon community production system) through the integral recovery of their diversity, cultural and traditional management practices based on traditional knowledge.[43]
- Implementation of a good quality timber species recovery program near the communities based on traditional knowledge.
- Execution of a permanent technical assistance program for livestock and minor species production through sustainable production models.
- Encourage planting of plant species used in the production of handicrafts.
- Formation of alliances for tourist activities in indigenous territory.
- Establishment of a collection center for agricultural products in Mitú.
- Implement poultry programs in communities as an alternative to guarantee food security (assurance) and surpluses for commercialization.
- Training, implementation, and monitoring of productive activity through the establishment of fishponds with native species as alternatives to guarantee food (assurance) security.
- Community training on the proper management and use for the development and productivity of poultry programs.
- Construction and functioning set up of a *zoocriadero* (wildlife nursery/farming) pilot.
- Strengthening of both internal and external trade based on the development of community productive activities.

According to the activities proposed in this strategic line, the expected impact on the community will be the improvement in welfare conditions, the establishment of an own economy, and the recovery of traditional practices.

3.6.4 Strategic line 4: Traditional knowledge and own education

This line aims to advance towards an own ethno-educational model, promote the recovery of traditional spaces that strengthen indigenous identity and values, develop

[43] Activities related to traditional knowledge to generate bioproducts, may be of great interest given ancestral knowledge in cosmeceuticals or natural cosmetics with bioactive principles and the proliferation in some communities of products for the food industry such as chili.

permanent programs to promote sociocultural strategies for youth, women, older adults, and all groups within the reservation. In addition to making agreements with other institutions for the research and protection of traditional knowledge, it counts on ancestral knowledge on the use of plants and traditional *sabedores* (wise men) also called *payés* or *chamánes* (traditional doctors).

Additionally, this line will support workshops and campaigns to increase understanding about REDD, climate change, its scope, and benefits. In general terms, the impact on the community seeks to promote the construction of knowledge in intercultural environmental education of the communities, development of didactic material specific (proper) of the reservation and the good practice promotion.

The activities to be carried out along this line are described below:

- Development of a permanent orientation and training program on leadership processes (aimed at leaders and youth); It will start with the traditional *sabedores* (wise men) and subsequently involve the management and administration before the State issues.
- Integral training on issues related to mining and REDD+.
- Socialization of knowledge about our ecological calendar time.
- Search for support with other national and international institutions and foundations to give continuity to the ethno-educational process.
- Intercultural environmental training and education in communities and schools.
- Construction of medicinal plant gardens for educational, curative and research purposes.
- Development of own didactic (educational) material.
- Promote the training of recycling practices within our communities.
- Recovery of ancestral knowledge related to areas of environmental significance such as savannahs, sacred sites, wetlands, lagoons.

3.7 Data and Parameters

3.7.1 Data and Parameters Available at Validation

Data / Parameter	PA2016
Data unit	Hectare (ha)
Description	Project area on the start date

Source of data	Information on the forest surface area of Colombia and its changes is provided by IDEAM through the SMByC.
Value applied:	797,598.40
Justification of choice of data or description of measurement methods and procedures applied	Forest area within the REDD Project of the indigenous peoples of Vaupés YUTUCU and Others.
Purpose of Data	Calculation of baseline emissions Calculation of project emissions Projection of deforestation in the project area under the baseline scenario.
Comments	The definition of the project areas is based on the forest and non-forest (FNF) report generated by the IDEAM. For more details, see Annex 6.

Data / Parameter	TBe
Data unit	$tCO_2eq\ ha^{-1}$
Description	Carbon dioxide equivalent content in total biomass per hectare.
Source of data	For the Amazon Biome region, Colombia defined a forest reference emissions level (FREL) for emission reductions.
Value applied:	542
Justification of choice of data or description of measurement methods and procedures applied	Forest emission factor of the Amazon Biome within which the project area is located.
Purpose of Data	Calculation of baseline emissions Calculation of project emissions
Comments	By virtue of Decision 1/CP.16, Colombia presented its second Forest Reference Emissions Level (FREL) This new FREL provides much more robust and far-reaching information and, therefore, improves the precision of its results. This level has the exclusive purpose of generating the baseline that allows measuring the performance of the implementation of the activities indicated in paragraph 70 of Decision 1/CP.16 and obtaining results-based payments for REDD+ actions, following the guidelines of the Warsaw Framework on REDD+ (in accordance with decisions 9/CP.19, 13/CP.19, 14/CP.19 and others cited there, as well as Article 5 of the Paris Agreement). In this way, it goes from a sub-national scale to a national one made up of the five biomes. Therefore, they are homogeneous areas in biophysical terms, distributed in the Colombian continental territory.

Data / Parameter	$SOCeq$
Data unit	$tCO_2eq\ ha^{-1}$
Description	Carbon dioxide equivalent content in the soil
Source of data	Forest Reference Emissions Level (FREL) for emission reductions.
Value applied:	14
Justification of choice of data or description of	According to Article 21 of Resolution 1447 of 2018, the MADS will formally submit a national coverage reference level to the UNFCCC that includes,

measurement methods and procedures applied	at a minimum, deforestation reduction activity and carbon pools formed by above and below-ground biomass. This reference level will be used to account for the mitigation results of REDD+ projects, according to the provisions of Articles 29 and 40 of the same resolution.
Purpose of Data	Calculation of baseline emissions Calculation of project emissions
Comments	By virtue of Decision 1/CP.16, Colombia presented its second Forest Reference Emissions Level (FREL) This new FREL provides much more robust and far-reaching information and, therefore, improves the precision of its results. This level has the exclusive purpose of generating the baseline that allows measuring the performance of the implementation of the activities indicated in paragraph 70 of Decision 1/CP.16 and obtaining results-based payments for REDD+ actions, following the guidelines of the Warsaw Framework on REDD+ (in accordance with decisions 9/CP.19, 13/CP.19, 14/CP.19 and others cited there, as well as Article 5 of the Paris Agreement). In this way, it goes from a sub-national scale to a national one made up of the five biomes. Therefore, they are homogeneous areas in biophysical terms, distributed in the Colombian continental territory

Data / Parameter	ADRR 2005-2015
Data unit	Percentage (%)
Description	Deforestation rate in the reference region (2015-2015)
Source of data	Pyuvaraud deforestation rate with FREL activity data
Value applied:	-0.19
Justification of choice of data or description of measurement methods and procedures applied	In accordance with article 21 of Resolution 1447 of 2018, the MADS will formally submit to the UNFCCC a reference level of national coverage that includes, as a minimum, the activity to reduce deforestation and the carbon pools formed by aerial biomass and underground. This reference level, which has already been submitted to the UNFCCC, is used to account for the mitigation results of REDD+ projects, according to the provisions of articles 29 and 40 of the same resolution.
Purpose of Data	Calculation of baseline emissions Calculation of project emissions
Comments	The selection of this scenario is also consistent with the historical average approach proposed by the Methodology. Under this approach, it is assumed that the deforestation reference rate for the projection of deforestation is a continuation of the average annual rate measured during the historical reference period within the reference region. Therefore, the projection of deforestation in the project area under the baseline scenario was calculated taking into account the historical change analysis in land use made in the FREL

Data / Parameter	%DD
Data unit	Percentage (%)

Description	Projection of the deforestation decrease due to the implementation of REDD+ activities.
Source of data	Calculated by South Pole based on the results of deforestation monitoring from the first monitoring period of different REDD+ projects formulated in the country.
Value applied:	70%
Justification of choice of data or description of measurement methods and procedures applied	Based on the success of REDD+ mitigation activities in the country, a 70% decrease in deforestation projection was established. This data considered the real effectiveness of the following five REDD+ Projects registered in the country for the first monitoring period: Amazon Biome: Resguardo Indígena Unificado – Selva de Mataven REDD+ Project (REDD+ RIU-SM), and Proyecto de Mitigación Forestal Resguardo Indígena TICOYA in the Amazon Biome. Pacific Biome: Chocó-Darién Conservation Corridor REDD+ Project and Cajambre REDD+ Project. Andean Biome: Conservación del bosque Galilea-Amé emissions compensation project.
Purpose of Data	Calculation of baseline emissions Calculation of project emissions
Comments	NA.

Data / Parameter	$\%E_{lk}$
Data unit	Percentage (%)
Description	Percentage increase in emissions in the leakage area due to the implementation of REDD+ activities.
Source of data	*REDD+ BCR Methodological Document*: *Methodological Document AFOLU sector for the quantification of GHG Emission Reductions from REDD+ Projects BCR0002 Version 3.1 of September 15, 2022*
Value applied:	10%
Justification of choice of data or description of measurement methods and procedures applied	The methodology accepts a default value of 10% for the increase in emissions in the leakage area due to the implementation of REDD+ activities.
Purpose of Data	Calculation of baseline emissions Calculation of project emissions
Comments	NA.

3.8 Management of Uncertainty

For the activity data, the information on the forest area of Colombia and its changes provided by the IDEAM through the SMByC was used, using the precision of 9.0%, as a result of obtaining the Forest-Non-Forest layers detailed by these entities, and for the emission factors, an uncertainty of 2.1% was used in the carbon contents of the above-

ground biomass and 2.0% of the below-ground biomass.[44] In other words, it complies with the 10% accepted by the BCR Standard, as indicated in the *REDD+ BCR Methodological Document*, and at the same time, it respects the principle of conservatism described by the standard.

3.9 Leakage and non-permanence

In the project area, natural disturbances and catastrophic events are not expected. If they were to occur during the life of the project, they would be reported, evaluated according to the guidelines of the BCR Standard, in accordance with what is indicated in the *REDD+ BCR Methodological Document* and the respective monitoring will be carried out. In this case, the project communities will be responsible for identifying significant disturbances in the forest and recording them in the monitoring forms provided for this purpose. For each disturbance event, the following information must be minimally identified and recorded:

- Type of disturbance: fires, pests and diseases, extreme weather events such as hurricanes, blizzards, prolonged droughts, floods, or geological events such as earthquakes.
- Location of the disturbance: GPS georeferencing and indicate sector and community.
- Date of the disturbance.
- Estimated area: number of hectares that could be affected by the disturbance.

Similarly, witnesses should be photographed and interviewed to identify the causes and those responsible. It should be noted that, through the reference points (location) of the disturbance, GIS procedures will be used to estimate the affected area.

Finally, if the area affected by natural disturbances or man-made events generated mitigation results in previous verifications, the total net change in carbon stock and GHG emissions in the area that generated these results will be estimated and an equivalent amount of Verified Carbon Credits (VCCs) will be assigned as payment from the reserve of emissions due to non-permanence risk.

[44] Data obtained and reported for the Amazon biome in the National FREL. Available at https://redd.unfccc.int/files/18-08-2020_nref_colombia_v8.pdf

The permanence risks of the project will be evaluated with the risks associated with the project analyzed in Section 7. According to the guidelines of the *Permanence and risk management standard tool version 1.0 of March 7, 2023*, where a description of the risk, the mitigation measures and qualification is made according to a known methodology. Biophysical and socioeconomic risks such as fires,[45] floods, land tenure disputes, conflicts between project stakeholders, non-appropriation of project activities and governance deficits will be analyzed for each monitoring period. Natural and anthropogenic disturbances affecting carbon stocks will also be assessed to deduct from the 20% stock%.

3.10 Mitigation results

3.10.1 Eligible areas in the GHG project boundary

The areas in the geographical limits of the project correspond to the land cover/use categories, obeying the requirements established in the applied methodology, in accordance with what is described in Section 3.2 and Annex 6, cartographic procedure to define the project area and quantify the change in forest cover in the monitoring period. The procedures are described in the mentioned sections.

3.10.2 GHG emission reductions in the baseline scenario

Baseline emissions were estimated following the steps of the methodology *Methodological Document AFOLU sector for the quantification of GHG Emission Reductions from REDD+ Projects BCR0002 Version 3.1 of September 15, 2022*.

Emission factor

In accordance with resolution 1447 of 2018, the project is applying the emission factor defined for the 2018-2022 period for the Amazon biome as part of the reconstruction of the FREL and this in turn uses the Intergovernmental Panel on Climate Change (IPCC) values.

[45] It is expected to identify the affected area in case of occurrence, in addition, estimate the emission of CO_2 and CH_4 to include the emissions in the quantification of the project's emissions in the monitoring period.

Table 17 presents the FREL emission factors for the Amazon biome used to estimate the GHG emission reductions from the REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others.

Table 17: Carbon emission factors in total biomass and natural forest soil in the Amazon biome

Aboveground biomass	Belowground biomass	Total biomass	Carbon content in TB	CO_2 equivalent content in TB	Soil organic carbon content		
AG (t/ha)	BG (t/ha)	TB (t/ha)	TB (tC/ha)	TBeq (tCO_2eq/ha)	SOC (tC/ha)	$SOC_{20years}$ (tC/ha)	SOC_{eq} (tCO_2eq /ha)
257.86	56.97	314.83	147.97	542	73.76	3.69	13.52

(Source: MADS & IDEAM, 2019)[46]

Annual historical deforestation in scenario without REDD+ project

3.10.2.1.1 Estimating historical rate of deforestation based on historical average

This project uses a national reference level, where the location of deforestation is not considered in the quantification of emission reductions by having a single emission factor associated with above, belowground and soil biomass storage.[47]

The subnational baseline scenario is consistent with the historical average approach proposed by the BCR methodology for projecting future deforestation (Section 13.2.1 of the BCR methodology). Under this approach, the change data in the surface covered by forest (FSC) for the estimation of deforestation were made from the reference deforestation rate of the Amazon biome, considering for the projection of future deforestation that said data behavior is a continuation of the average annual rate,

[46] MADS & IDEAM. (2019). *Proposal for a forest reference emission level from deforestation in Colombia for results-based payments for REDD+ under the UNFCCC. https://redd.unfccc.int/files/18-08-2020_nref_colombia_v8.pdf.* https://redd.unfccc.int/files/18-08-2020_nref_colombia_v8.pdf

[47] For Colombia, resolution 1447 decrees that every REDD+ project must use the baseline for the quantification and estimation of emissions. Colombia's FREL defines an average change factor that includes aboveground biomass, belowground biomass, and soil organic carbon; whose estimates were made in the national jurisdiction and separately for each of the biomes. In the case of the Amazon biome, the estimated forest emission factor is 553 tCO2eq /ha year (see Section C, Emissions Estimation). The FREL assumes that all carbon contained in above and belowground biomass pools is emitted in the same year as the deforestation event and does not consider the increase in average carbon stocks in the cover following deforestation.
The mitigation project considers the same assumptions when quantifying changes in carbon pools in the project area and in the baseline scenario. The selection of activity data and emission factors in the baseline scenarios is done to comply with the provisions of MADS Resolution 1447 of 2018 on national mitigation actions

measured during the historical reference period (2005-2015) within the reference region. This rate is -0.19%, estimated from the historical average of the region, obtained with the Puyravaud equation. This formula expresses the annual percentage of forest area decreased, with the following equation:

$$ADRR_t = \left(\frac{1}{t_2 - t_1}\right) \times \ ln\left(\frac{A_2}{A_1}\right) \times 100$$

Where

$ADRR_t$: *Annual deforestation reference rate; %*

t_1: *Initial year of the reference period; yr*

t_2: *Final year of the reference period; yr*

A_1: *Forest surface in the reference region in the initial moment; ha*

A_2: *Forest surface in the reference region in the final moment; ha*

3.10.2.1.2 Annual historical deforestation in the reference region, project area, and leakage (belt) area

The annual base deforestation area applied in year t within the project area is calculated through the historical approach of the BCR methodology for the reference region, the project area, and the leakage (belt) area respectively, from the following way:

$$FSC_{bl,RRt} = RR_{t-1} * ADRR_t$$

Where:

$FSC_{bl,RR}$: *Annual deforested area in time t within the project's reference region (in ha)*

RR_{t-1}: *Forest area in the reference region in time t-1 (in ha)*

$ADRR_t$: *Annual deforestation reference rate applicable in the reference region in year t (%)*

t: *1. 2. 3... T years of the project's credit generation period (20 years), without dimensions.*

$$FSC_{bl} = PA_{t-1} * TDRR_t$$

Where:

FSC_{bl}: *Annual deforested area in time t within the project area (in ha)*

PA_{t-1}: *Forest area in the project area in time t-1 (in ha)*

$ADRR_t$: *Annual deforestation reference rate applicable in the reference region in year t (%)*

t: *1. 2. 3... T years of the project's credit generation period (20 years), without dimensions.*

$$FSC_{bl.lk} = Lk_{t-1} * ADRR_t$$

Where:

$FSC_{bl.lk}$: *Annual deforested area in time t within the leakage area (in ha)*

LK_{t-1}: *Forest area in the leakage area in time t-1 (in ha)*

$ADRR_t$: *Annual deforestation reference rate applicable in the reference region in year t (%)*

t: *1. 2. 3... T years of the project's credit generation period (20 years), without dimensions.*

Additionally, the reference level incorporates an adjustment for national circumstances. According to the UNFCCC guidelines, in the case of Colombia, it was defined as 10.4% of the deforestation average value for the mitigation calculation results in the Amazon region. This adjustment is based on the sociopolitical scenario of the end of the armed conflict in Colombia that allows entry to previously inaccessible areas due to the negotiation process and the resulting agreement between the Colombian State and the FARC, which would stimulate deforestation.[48] However, for the project, the adjustment for national circumstances is omitted until the guidelines for its application in subsequent verifications are determined.

The annually deforested area in the reference region according to the historical average deforestation rate of the reference period is presented on Table 18. Based on the historical average of deforestation, the projected deforestation for the period 2016-2036 is presented in the reference region (Table 18), project area (Table 19) and the leakage area (Table 20), respectively.

Table 18. Deforested areas per year in the reference region under baseline scenario

Projected year		Projected stable forest (ha)	Annual historical deforestation (ha/year)	Cumulative deforestation (ha/year)
Project year (t)	Calendar year	RR_{t-1}	$FSC_{bl,RRt}$	$FSC_{bl,RR}$
-1	2015	39,729,132.00	75,525.89	75,525.89
0	2016	39,653,606.11	75,525.89	151,051.78
1	2017	39,578,223.80	75,382.31	226,434.09

[48] Institute of Hydrology, Meteorology and Environmental Studies. Estimation of the adjustment due to national circumstances for the Forest Reference Emissions Level of 2018-2022, presented at: https://redd.unfccc.int/files/31122019_anexo_circunstancias_nref_nal_v7.pdf

Projected year		Projected stable forest (ha)	Annual historical deforestation (ha/year)	Cumulative deforestation (ha/year)
Project year (t)	Calendar year	RR_{t-1}	$FSC_{bl,RRt}$	$FSC_{bl,RR}$
2	2018	39,502,984.79	75,239.01	301,673.10
3	2019	39,427,888.81	75,095.98	376,769.08
4	2020	39,352,935.59	74,953.22	451,722.29
5	2021	39,278,124.86	74,810.73	526,533.03
6	2022	39,203,456.35	74,668.51	601,201.54
7	2023	39,128,929.78	74,526.57	675,728.11
8	2024	39,054,544.89	74,384.89	750,113.00
9	2025	38,980,301.40	74,243.48	824,356.48
10	2026	38,906,199.06	74,102.35	898,458.83
11	2027	38,832,237.58	73,961.48	972,420.31
12	2028	38,758,416.71	73,820.87	1,046,241.18
13	2029	38,684,736.17	73,680.54	1,119,921.72
14	2030	38,611,195.70	73,540.47	1,193,462.19
15	2031	38,537,795.03	73,400.67	1,266,862.86
16	2032	38,464,533.90	73,261.13	1,340,123.99
17	2033	38,391,412.04	73,121.86	1,413,245.85
18	2034	38,318,429.18	72,982.86	1,486,228.71
19	2035	38,245,585.07	72,844.11	1,559,072.82
20	2036	38,172,879.43	72,705.64	1,631,778.46

(Source: Prepared by South Pole, 2020)

Table 19 Presents the annual projected area that would be deforested in the crediting period of the first instance area, in the absence of mitigation activities. Under the proposed baseline scenario and in the absence of the project, the expected average net deforestation in the period 2016-2036 is 1,489 ha per year.

Table 19. Deforested areas per year in the first instance of the project under the baseline scenario

Projected year		Projected stable forest (ha)	Annual historical deforestation (ha/year)	Cumulative deforestation (ha/year)
Project year (t)	Calendar year	PA_{t-1}	$FSC_{bl,t}$	FSC_{bl}
-1	2015	797,598.40	1,516.25	1,516.25
0	2016	796,082.15	1,516.25	3,032.50
1	2017	794,568.78	1,513.37	4,545.87

Projected year		Projected stable forest (ha)	Annual historical deforestation (ha/year)	Cumulative deforestation (ha/year)
Project year (t)	Calendar year	PA_{t-1}	$FSC_{bl,t}$	FSC_{bl}
2	2018	793,058.29	1,510.49	6,056.36
3	2019	791,550.67	1,507.62	7,563.98
4	2020	790,045.91	1,504.75	9,068.74
5	2021	788,544.02	1,501.89	10,570.63
6	2022	787,044.98	1,499.04	12,069.67
7	2023	785,548.79	1,496.19	13,565.86
8	2024	784,055.45	1,493.34	15,059.20
9	2025	782,564.94	1,490.51	16,549.70
10	2026	781,077.27	1,487.67	18,037.38
11	2027	779,592.43	1,484.84	19,522.22
12	2028	778,110.41	1,482.02	21,004.24
13	2029	776,631.20	1,479.20	22,483.45
14	2030	775,154.81	1,476.39	23,959.84
15	2031	773,681.23	1,473.59	25,433.42
16	2032	772,210.44	1,470.78	26,904.21
17	2033	770,742.45	1,467.99	28,372.19
18	2034	769,277.26	1,465.20	29,837.39
19	2035	767,814.85	1,462.41	31,299.80
20	2036	766,355.21	1,459.63	32,759.43

(Source: Prepared by South Pole, 2020)

Table 20 presents the annual projected area that would be deforested in the crediting period of the leakage area, under the proposed baseline scenario and in the absence of the project. The average net deforestation in the period 2016-2036 is 908 ha per year.

Table 20. Deforested areas per year in the project's leakage area under baseline scenario

Projected year		Projected stable forest (ha)	Annual historical deforestation (ha/year)	Cumulative deforestation (ha/year)
Project year (t)	Calendar year	LK_{t-1}	$FSC_{bl,ft}$	$FSC_{bl,f}$
-1	2015	80,700.19	153.41	153.41
0	2016	80,546.78	153.41	306.83
1	2017	80,393.66	153.12	459.95
2	2018	80,240.83	152.83	612.78
3	2019	80,088.29	152.54	765.32

Projected year		Projected stable forest (ha)	Annual historical deforestation (ha/year)	Cumulative deforestation (ha/year)
Project year (t)	Calendar year	LK_{t-1}	$FSC_{bl,ft}$	$FSC_{bl,f}$
4	2020	79,936.04	152.25	917.57
5	2021	79,784.08	151.96	1,069.53
6	2022	79,632.41	151.67	1,221.20
7	2023	79,481.03	151.38	1,372.58
8	2024	79,329.93	151.10	1,523.67
9	2025	79,179.12	150.81	1,674.48
10	2026	79,028.60	150.52	1,825.00
11	2027	78,878.37	150.23	1,975.24
12	2028	78,728.42	149.95	2,125.19
13	2029	78,578.75	149.66	2,274.85
14	2030	78,429.37	149.38	2,424.23
15	2031	78,280.28	149.10	2,573.33
16	2032	78,131.47	148.81	2,722.14
17	2033	77,982.94	148.53	2,870.67
18	2034	77,834.69	148.25	3,018.92
19	2035	77,686.72	147.97	3,166.88
20	2036	77,539.04	147.68	3,314.57

(Source: Prepared by South Pole, 2020)

Identification of forest classes in the areas that will be deforested under the baseline scenario and of post-deforestation land-use classes in the project area

In the reference region, the Amazonian Biome, there is only one single life zone (TRF) tropical very humid forest (which is equivalent to having an initial forest class. For this, a level of stratification was used based on the bioclimatic classification of Holdridge et al. (1971), the climatological averages for the 1981-2010 period and the digital NASA (SRTM) model of 30 m. From the results it was determined that the tropical rainforest is the most representative (UNFCCC, 2014), and therefore, the biomass contents were used for this type of forest.

Estimation of changes in carbon pools in the baseline scenario

Taking into account the following national FREL considerations, the use of different emission factors is not necessary:[49]

- The reference level does not include the carbon content in litterfall and dead wood debris since the country currently does not have enough information to estimate these pools. In summary, the only carbon pool considered per reference level is above-ground biomass, below-ground biomass, and organic carbon in soils.

- The carbon contained in the above and below ground biomass of the forest is released in its entirety at the time of deforestation. Which equal the factor of change in the carbon stock after deforestation ($\Delta Cp_{z,t}$) to zero.

- The carbon contained in the soil is emitted in equal proportions for 20 years, once deforestation occurs.

- The reference level for the Amazon Biome defines the carbon contents in the above and below-ground biomass of the Tropical rainforest (bh-T) and organic carbon in soils. In the aboveground biomass (AGB), a value of 258 (tm.s/ha) was considered, and in the belowground biomass (BGB), a value of 57 (tm.s/ha)for a total biomass (TB or CB) of 315 (tm.s/ha). Thus, by multiplying the TB by the carbon fraction (0.47), the estimated average carbon content in the total biomass (TB) is 148 tC/ha.[50] In the case of the soil organic carbon (SOC), the estimate is 74 tC/ha. To estimate carbon stocks in units of carbon dioxide equivalent (CO_2eq), the amount of carbon contained in the reservoirs was multiplied by the constant of the molecular ratio between carbon (C) and carbon dioxide (CO_2), equal to 44/12, resulting in an average change factor of 542 tCO_2eq/ha (CT, or TCO_2).

[49] In line with Colombian regulations, Resolution 1447 of 2018, emission reduction projects, which are developed in the country, must use the values established by the most recent FREL.

[50] The carbon contents in the aboveground and belowground biomass are the product of the biomass per compartment and its carbon fraction, which was assumed to be 0.47, in accordance with the IPCC Guidelines for National Greenhouse Gas Inventories in 2006. Available at: https://www.ipcc-nggip.iges.or.jp/public/2006gl/spanish/vol4.html

Considering that the uncertainty of carbon stocks is 2%, less than 10%. it is possible to use the average carbon values proposed by the FREL in the quantification of project mitigation results (MADS, 2018c).

Annual emissions from deforestation in the baseline scenario

3.10.2.1.3 *Ex-ante* estimates of annual emissions (changes in current carbon pools) in the project area

The quantification of the emission reduction associated with changes in carbon values within the project area for the year t was carried out following the guidelines of Section 13.4 of the *Methodological Document AFOLU sector for the quantification of GHG Emission Reductions from REDD+ Projects BCR0002* Version 3.1 of September 15, 2022. The values and assumptions used to calculate carbon stocks correspond to those provided in the FREL described in the previous section. The change in carbon stocks was calculated by multiplying the annual deforested area by the proposed exchange factors by the sub-national reference level for each stratum (Total biomass and soils), to conservatively obtain the values associated with each type of stock (see Table 21).

$$AE_{bl\,t} = AE_{bl\,TB} + AE_{bl\,SOC}$$

Where:

$AE_{bl\,t}$:	*Annual emission in the baseline scenario in time t; tCO_2eq.*
$AE_{bl\,TB}$:	*Annual emission associated to total biomass in the baseline scenario; tCO2eq.*
$AE_{bl\,SOC}$:	*Annual emission associated to soil organic carbon in the baseline scenario; tCO2eq.*

$$AE_{bl\,TB} = AD_{bl,yr} \times TBeq$$

$$AE_{bl\,SOC} = AD_{bl,yr} \times SOCeq$$

Where:

$AE_{bl\,TB}$: *Annual emission associated to total biomass in the baseline scenario in time t; tCO2eq.*

$AE_{bl\,SOC}$: *Annual emission associated to soil organic carbon in the baseline scenario in time t; tCO2eq.*

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

$TBeq$: *Carbon dioxide equivalent contained in total biomass; $tCO_2eq\ ha^{-1}$.*

$SOCeq$: *Carbon dioxide equivalent contained in organic soils; $tCO_2eq\ ha^{-1}$.*

Table 21. Change in carbon stocks of the project area under the baseline scenario

Projected year		Annual Pool Emissions: Total Biomass (tCO_2eq)	Annual Pool Emissions: Soils (tCO_2eq)	Annual Emissions (tCO_2eq)
Project year (t)	Calendar year	$AE_{bl\,TB}$ Stratum 1	$AE_{bl\,SOC}$ Stratum 2	$AE_{bl\,t}$
-1	2015	822,652.53	20,503.75	843,156.28
0	2016	822,652.53	41,007.51	863,660.03
1	2017	821,088.65	61,472.28	882,560.93
2	2018	819,527.74	81,898.16	901,425.90
3	2019	817,969.80	102,285.20	920,255.00
4	2020	816,414.82	122,633.48	939,048.31
5	2021	814,862.80	142,943.09	957,805.89
6	2022	813,313.73	163,214.08	976,527.81
7	2023	811,767.61	183,446.54	995,214.15
8	2024	810,224.42	203,640.54	1,013,864.96
9	2025	808,684.17	223,796.14	1,032,480.31
10	2026	807,146.84	243,913.43	1,051,060.28
11	2027	805,612.44	263,992.48	1,069,604.92
12	2028	804,080.95	284,033.36	1,088,114.31
13	2029	802,552.38	304,036.14	1,106,588.52
14	2030	801,026.71	324,000.89	1,125,027.60

Projected year		Annual Pool Emissions: Total Biomass (tCO_2eq)	Annual Pool Emissions: Soils (tCO_2eq)	Annual Emissions (tCO_2eq)
Project year (t)	Calendar year	$AE_{bl\,TB}$ Stratum 1	$AE_{bl\,SOC}$ Stratum 2	$AE_{bl\,t}$
15	2031	799,503.94	343,927.69	1,143,431.63
16	2032	797,984.07	363,816.61	1,161,800.68
17	2033	796,467.09	383,667.72	1,180,134.80
18	2034	794,952.99	403,481.09	1,198,434.07
19	2035	793,441.76	423,256.80	1,216,698.56
20	2036	791,933.41	442,994.91	1,234,928.32

(Source: Prepared by South Pole, 2020)

3.10.3 GHG emission reductions in the project scenario

Annual historical projected deforestation in scenario with REDD+ project

3.10.3.1.1 Activity data in the scenario with project

3.10.3.1.1.1 Annual projected deforestation in the scenario with REDD+ project

To estimate ex-ante changes in the project area, the equation presented in Section 13.2.1 in the *Methodological Document AFOLU sector for the quantification of GHG Emission Reductions from REDD+ Projects BCR0002 Version 3.1 of September 15, 2022,* was used. It is estimated an effectiveness or projection of the decrease in deforestation due to the implementation of the REDD+ activities (%DD) of the project of 70%, a value that was determined considering the behavior of deforestation in the project area and the success of the mitigation related to REDD+ in other previous initiatives implemented in Colombia[51]

$$FSC_{REDD+project,yr} = FSC_{yr}\ x\ (1 - \%DD)$$

[51] To estimate the Projection of the decrease in deforestation due to the implementation of REDD+ activities (%DD), the real effectiveness of five REDD+ Projects registered in the country for the first monitoring period was reviewed. The projects reviewed were REDD+ Project Resguardo Indígena Unificado–Selva de Mataven (REDD+ RIU-SM) and Forest Mitigation Project Resguardo Indígena TICOYA in the Amazon Biome, Chocó-Darién Conservation Corridor REDD+ Project and Cajambre REDD+ Project in the Pacific Biome and the Project of emissions compensation Conservation of the Galilea-Amé forest in the Andean Biome.

Where:

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

FSC_{yr}: *Annual change in the surface covered by forest in the without-project scenario; ha*

$\%DD$: *Projected decrease in deforestation due to the implementation of REDD+ activities*

3.10.3.1.1.2 Projected annual deforestation in the leakage area in the scenario with project

$$FSC_{lk,p,yr} = FSC_{lk,lb} \times (1 + \%E_{lk})$$

Where:

$FSC_{lk,p,yr}$: *Annual change in the surface covered by forest in leakage area in the project scenario; ha*

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

$\%E_{lk}$: *Percentage of emissions increase in leakage area due to the implementation of REDD+ activities. A default value of 10% is used in accordance with BCR guidelines.*

Table 22 and (Source: Prepared by South Pole, 2020)

Table 23 show the projected deforestation in the project and leakage areas under the projected scenario with the implementation of the REDD+ initiative.

Table 22. Deforested areas per year in the first instance of the REDD+ project under the projected scenario

Projected year		Annual projected deforestation (ha/year)	Cumulative projected deforestation (ha/year)
Project year (t)	Calendar year	$FSC_{proy,year}$	FSC_{proy}
-1	2015	454.88	454.88
0	2016	454.88	909.75
1	2017	454.01	1,363.76
2	2018	453.15	1,816.91
3	2019	452.29	2,269.19
4	2020	451.43	2,720.62
5	2021	450.57	3,171.19
6	2022	449.71	3,620.90
7	2023	448.86	4,069.76
8	2024	448.00	4,517.76
9	2025	447.15	4,964.91
10	2026	446.30	5,411.21
11	2027	445.45	5,856.67
12	2028	444.61	6,301.27
13	2029	443.76	6,745.03
14	2030	442.92	7,187.95
15	2031	442.08	7,630.03
16	2032	441.24	8,071.26
17	2033	440.40	8,511.66
18	2034	439.56	8,951.22
19	2035	438.72	9,389.94
20	2036	437.89	9,827.83

(Source: Prepared by South Pole, 2020)

Table 23. Deforested areas per year in the leakage area of the REDD+ project under the projected scenario

Projected year		Annual projected deforestation (ha/year)	Cumulative projected deforestation (ha/year)
Project year (t)	Calendar year	$FSC_{proy,lk,year}$	$FSC_{proy,lk}$
-1	2015	168.75	168.75
0	2016	168.75	337.51
1	2017	168.43	505.94
2	2018	168.11	674.05
3	2019	167.79	841.85
4	2020	167.47	1,009.32
5	2021	167.16	1,176.48
6	2022	166.84	1,343.32
7	2023	166.52	1,509.84
8	2024	166.20	1,676.04
9	2025	165.89	1,841.93
10	2026	165.57	2,007.50
11	2027	165.26	2,172.76
12	2028	164.94	2,337.71
13	2029	164.63	2,502.34
14	2030	164.32	2,666.66
15	2031	164.01	2,830.66
16	2032	163.69	2,994.35
17	2033	163.38	3,157.74
18	2034	163.07	3,320.81
19	2035	162.76	3,483.57
20	2036	162.45	3,646.02

(Source: Prepared by South Pole, 2020)

Ex ante estimate of annual emissions (changes in current carbon pools) due to deforestation in the project area in the projected scenario of the initiative

To estimate *ex-ante* changes in the project area, the guidelines of the *REDD+ BCR methodological document* equation in Section 13.4 were implemented. The annual emissions of the REDD+ initiative REDD+ Project of the indigenous peoples of Vaupés

YUTUCU and Others corresponds to the changes due to deforestation that cannot be avoided, taking into account the deforestation behavior in the PA and the success of the contemplated mitigation activities in the strategic project lines.

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

Where:

$AE_{REDD+project,yr}$: *Annual emission in the project scenario; tCO_2eq.*

$AD_{REDD+project}$: *Annual projected deforestation with REDD+ project activities; ha.*

$TCeq$: *Total carbon dioxide equivalent; $tCO_2eq\ ha^{-1}$.*

$$TCeq = TBeq \times SOCeq$$

Where:

$TCeq$: *Total carbon dioxide equivalent; tCO2eq ha^{-1}.*

$TBeq$: *Carbon dioxide equivalent contained in total biomass; $tCO_2eq\ ha^{-1}$.*

$SOCeq$: *Carbon dioxide equivalent contained in organic soils; $tCO_2eq\ ha^{-1}$.*

In the case of the project, the analysis was carried out conservatively for each of the carbon pools associated with the total biomass and soil organic carbon, and therefore, the previous equation was subdivided as follows:

$$AE_{REDD+project,yr} = AE_{REDD+project,TB,yr} + AE_{REDD+project,SOC,yr}$$

Where:

$AE_{REDD+project,yr}$: *Annual emission in the project scenario in time t; tCO_2eq.*

$AE_{REDD+project,TB,yr}$: *Annual emission associated to biomass in the project scenario in time t; tCO_2eq.*

$AE_{REDD+project,SOC,yr}$: *Annual emission associated to soil organic carbon in the project scenario in time t; tCO2eq.*

$$AE_{REDD+project,TB,yr} = AD_{REDD+project} \times TBeq$$

$$EA_{REDD+proy,SOC,yr} = AD_{REDD+project} \times SOCeq$$

Where:

$AE_{REDD+project,TB,yr}$: *Annual emission associated to biomass in the project scenario in time t; tCO_2eq.*

$AE_{REDD+project,SOC,yr}$: *Annual emission associated to soil organic carbon in the project scenario in time t; tCO2eq.*

$AD_{REDD+project}$: *Annual projected deforestation with REDD+ project; ha.*

$TBeq$: *Carbon dioxide equivalent contained in total biomass; $tCO_2eq\ ha^{-1}$.*

$SOCeq$: *Carbon dioxide equivalent contained in organic soils; $tCO_2eq\ ha^{-1}$.*

Table 24. *Ex-ante* estimates of changes in carbon pools in the project area under the simulated project scenario

Projected year		Annual Pool Emissions: Total Biomass (tCO_2eq)	Annual Pool Emissions: Soils (tCO_2eq)	Annual Emissions (tCO_2eq)
Project year (t)	Calendar year	$AE_{REDD+project,TB,yr}$ Stratum 1	$AE_{REDD+project,SOC,yr}$ Stratum 2	$AE_{REDD+project,yr}$
-1	2015	246,795.76	6,151.13	252,946.88
0	2016	246,795.76	12,302.25	259,098.01
1	2017	246,326.59	18,441.69	264,768.28
2	2018	245,858.32	24,569.45	270,427.77
3	2019	245,390.94	30,685.56	276,076.50
4	2020	244,924.45	36,790.04	281,714.49
5	2021	244,458.84	42,882.93	287,341.77
6	2022	243,994.12	48,964.22	292,958.34
7	2023	243,530.28	55,033.96	298,564.24
8	2024	243,067.33	61,092.16	304,159.49
9	2025	242,605.25	67,138.84	309,744.09
10	2026	242,144.05	73,174.03	315,318.08
11	2027	241,683.73	79,197.74	320,881.48
12	2028	241,224.29	85,210.01	326,434.29
13	2029	240,765.71	91,210.84	331,976.55
14	2030	240,308.01	97,200.27	337,508.28
15	2031	239,851.18	103,178.31	343,029.49
16	2032	239,395.22	109,144.98	348,540.20
17	2033	238,940.13	115,100.32	354,040.44
18	2034	238,485.90	121,044.33	359,530.22
19	2035	238,032.53	126,977.04	365,009.57
20	2036	237,580.02	132,898.47	370,478.50

(Source: Prepared by South Pole, 2020)

Ex-ante estimates of annual emissions (decrease in carbon stocks and increase in GHG emissions), due to leakage prevention measures

3.10.3.1.2 Changes in carbon stocks due to activities carried out in leakage management areas

According to the FREL, the above and belowground carbon content in non-forest areas (those that do not meet the definition of Forest for Colombia) is zero, because at the time that the change from forest to non-forest occurs, all of the carbon stored is emitted. It is assumed that soil organic carbon (SOC) is emitted in equal proportions for 20 years once the deforestation event occurs. For this reason, it is considered that the activities implemented in the leakage management areas will not contribute to the increase in emissions or decrease in carbon content, since they are artisanal and do not include the use of agrochemicals.

3.10.3.1.3 Methane (CH_4) and nitrous oxide (N_2O) emissions from livestock intensification (involving a change in the animal diet and/or animal numbers)

Livestock farming is not part of the traditional economic activities of the project proponents. The little livestock activity that occurs is of a very small scale. However, in the deforestation reduction monitoring activities (including their displacement), the emissions will be reported and quantified according to the methodology guidelines.

Ex-ante estimates of the annual emissions (decrease in carbon stocks and increase in GHG emissions), due to activity displacement leakage

The *ex-ante* deforestation in the leakage belt was calculated following the *Methodological Document AFOLU sector for the quantification of GHG Emission Reductions from REDD+ Projects BCR0002 Version 3.1 of September 15, 2022*. Which mentions in Section 13.2.1 that ex-ante deforestation in the leakage area is the multiplication of the baseline estimates of carbon stock changes by the increased emissions factor in the leakage area due to the implementation of REDD+ activities, a value that represents the percentage of the deforestation that is expected to be displaced outside the project. In accordance with the methodological document, this factor assumed for the project corresponds to 10%, and therefore, the quantification of leakage emissions due to displacement of the deforestation activity of the REDD+ initiative was estimated using a 10% discount following the equations of the *REDD+ BCR Methodological Document* in Section 13.4.1.

$$AE_{lk,yr} = AD_{lk,yr} \times TCeq$$

Where:

$AE_{lk,yr}$: *Annual emission per displacement in the leakage area in the simulated scenario with project in time t; tCO_2eq.*

$AD_{lk,yr}$: *Annual projected deforestation in the leakage area; ha.*

$TCeq$: *Total carbon dioxide equivalent; $tCO_2eq\ ha^{-1}$.*

In the case of the REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others, the analysis was carried out conservatively for each of the carbon pools associated with the total biomass and soil organic carbon and therefore, the previous equation was subdivided as follows:

$$AE_{lk,yr} = AE_{f,TB,yr} + AE_{lk,SOC,yr}$$

Where:

$AE_{lk,yr}$: *Annual emission per displacement in the leakage area in the simulated scenario with project in time t; tCO_2eq.*

$AE_{lk,TB,yr}$: *Annual emission associated to biomass per displacement in the leakage area in the project scenario in time t; tCO_2eq.*

$AE_{lk,SOC,yr}$: *Annual emission associated to soil organic carbon per displacement in the leakage area in the project scenario in time t; tCO_2eq.*

$$AE_{lk,TB,yr} = AD_{lk} \times TBeq$$

$$AE_{lk,SOC,yr} = AD_{lk} \times SOCeq$$

Where:

$AE_{lk,TB,yr}$: *Annual emission associated to biomass per displacement in the leakage area in the project scenario in time t; tCO_2eq.*

$AE_{lk,SOC,yr}$: *. Annual emission associated to soil organic carbon per displacement in the leakage area in the project scenario in time t; tCO_2eq.*

AD_{lk}: *Annual projected deforestation in the leakage area; ha.*

$TBeq$: *Carbon dioxide equivalent contained in total biomass; $tCO_2eq\ ha^{-1}$.*

$SOCeq$: *Carbon dioxide equivalent contained in organic soils; $tCO_2eq\ ha^{-1}$.*

Table 25. *Ex-ante* estimation of changes in actual carbon pools in the leakage area under the same scenario

Projected year		Annual Pool Emissions: Total Biomass (tCO_2eq)	Annual Pool Emissions: Soils (tCO_2eq)	Annual Emissions (tCO_2eq)
Project year (t)	Calendar year	$AE_{lk,TB,yr}$ Stratum 1	$AE_{lk,SOC,yr}$ Stratum 2	$AE_{lk,yr}$
-1	2015	91,558.66	2,282.00	93,840.66
0	2016	91,558.66	4,564.01	96,122.67
1	2017	91,384.60	6,841.67	98,226.28
2	2018	91,210.88	9,115.01	100,325.89
3	2019	91,037.49	11,384.02	102,421.51
4	2020	90,864.42	13,648.72	104,513.15
5	2021	90,691.69	15,909.12	106,600.81
6	2022	90,519.28	18,165.22	108,684.50
7	2023	90,347.20	20,417.03	110,764.23

Projected year		Annual Pool Emissions: Total Biomass (tCO_2eq)	Annual Pool Emissions: Soils (tCO_2eq)	Annual Emissions (tCO_2eq)
Project year (t)	Calendar year	$AE_{lk,TB,yr}$ Stratum 1	$AE_{lk,SOC,yr}$ Stratum 2	$AE_{lk,yr}$
8	2024	90,175.45	22,664.56	112,840.01
9	2025	90,004.02	24,907.81	114,911.84
10	2026	89,832.92	27,146.80	116,979.73
11	2027	89,662.15	29,381.54	119,043.69
12	2028	89,491.70	31,612.03	121,103.73
13	2029	89,321.58	33,838.27	123,159.85
14	2030	89,151.77	36,060.29	125,212.06
15	2031	88,982.29	38,278.08	127,260.37
16	2032	88,813.14	40,491.65	129,304.79
17	2033	88,644.30	42,701.02	131,345.32
18	2034	88,475.79	44,906.19	133,381.97
19	2035	88,307.59	47,107.16	135,414.75
20	2036	88,139.72	49,303.95	137,443.67

(Source: Prepared by South Pole, 2020)

Estimates (ex-ante) of GHG emission reductions in the scenario with project

3.10.3.1.4 Reduction of net GHG emissions in the scenario with project (*ex-ante* total net)

The estimates of the net GHG emission reductions attributed to the project are made following the equation presented in Section 13.5.1 of the *REDD+ BCR Methodological Document*.

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

Where:

$ER_{DEF,REDD,+project}$: *Net emission reduction due to avoided deforestation in the project scenario; tCO_2eq.*

t_1: *Initial year of the reference period; yr.*

t_2: *Final year of the reference period; yr.*

$AE_{DEF,bl,yr}$: $EA_{lb\ t}$ *Annual emission by deforestation in the baseline scenario; tCO₂eq.*

$AE_{DEF,REDD+project,yr}$: $EA_{REDD+proy,año}$ *Annual emission by deforestation in the project scenario; tCO₂eq*

$AE_{DEF,lk,yr}$: $EA_{f,año}$ *Annual emission by deforestation in the project scenario in the leakage area; tCO₂eq*

Table 26 presents the total net annual and cumulative emission reductions per year in accordance with the requirements of Section 13 of the *REDD+ BCR Methodological Document*. Over the total crediting period of the REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others, an average annual net reduction of 618,381 tCO_2eq is expected.

Table 26. *Ex-ante* estimates of the net emission reductions attributed to the mitigation actions of the project in year t

Projected year		Estimated baseline emissions (tCO_2eq)	Estimation of projected emissions in the project scenario (tCO_2eq)	Estimated leakage emissions (tCO_2eq)	Estimated net GHG emission reductions (tCO_2eq)	
Project year (t)	Calendar year	$AE_{Def,bl,yr}$	$AE_{Def,REDD+project,y}$	$AE_{Def,lk,yr}$	$ER_{Def,REDD,+pr}$	$RE_{Def,REDD,+proje}$
-1	2015	843,156.28	252,946.88	93,840.66		
0	2016	863,660.03	259,098.01	96,122.67	508,439.36	508,439.36
1	2017	882,560.93	264,768.28	98,226.28	519,566.37	1,028,005.73
2	2018	901,425.90	270,427.77	100,325.89	530,672.24	1,558,677.97
3	2019	920,255.00	276,076.50	102,421.51	541,756.99	2,100,434.96
4	2020	939,048.31	281,714.49	104,513.15	552,820.67	2,653,255.63
5	2021	957,805.89	287,341.77	106,600.81	563,863.32	3,217,118.94

Projected year		Estimated baseline emissions (tCO_2eq)	Estimation of projected emissions in the project scenario (tCO_2eq)	Estimated leakage emissions (tCO_2eq)	Estimated net GHG emission reductions (tCO_2eq)	
Project year (t)	Calendar year	$AE_{Def,bl,yr}$	$AE_{Def,REDD+project,y}$	$AE_{Def,lk,yr}$	$ER_{Def,REDD,+pr}$	$RE_{Def,REDD,+proje}$
6	2022	976,527.81	292,958.34	108,684.50	574,884.97	3,792,003.91
7	2023	995,214.15	298,564.24	110,764.23	585,885.67	4,377,889.59
8	2024	1,013,864.96	304,159.49	112,840.01	596,865.46	4,974,755.05
9	2025	1,032,480.31	309,744.09	114,911.84	607,824.38	5,582,579.43
10	2026	1,051,060.28	315,318.08	116,979.73	618,762.46	6,201,341.89
11	2027	1,069,604.92	320,881.48	119,043.69	629,679.75	6,831,021.65
12	2028	1,088,114.31	326,434.29	121,103.73	640,576.29	7,471,597.94
13	2029	1,106,588.52	331,976.55	123,159.85	651,452.11	8,123,050.05
14	2030	1,125,027.60	337,508.28	125,212.06	662,307.26	8,785,357.31
15	2031	1,143,431.63	343,029.49	127,260.37	673,141.77	9,458,499.08
16	2032	1,161,800.68	348,540.20	129,304.79	683,955.68	10,142,454.76
17	2033	1,180,134.80	354,040.44	131,345.32	694,749.04	10,837,203.80
18	2034	1,198,434.07	359,530.22	133,381.97	705,521.88	11,542,725.68
19	2035	1,216,698.56	365,009.57	135,414.75	716,274.24	12,258,999.92
20	2036	1,234,928.32	370,478.50	137,443.67	727,006.16	12,986,006.08

(Source: Prepared by South Pole, 2020)

3.10.3.1.5 Calculation of *ex-ante* Verifiable Carbon Credits

In order to ensure the permanence of the mitigation activities for the duration of the project, a reserve of 20% of the total quantified emission reductions (known as reversal risk) was established, which cannot be commercialized. This percentage will cover aspects related to the permanence and risk of the activities, in case the replacement of credits placed in the market is required and partly guarantee the uncertainty in the quantification of emission reductions, in accordance with the requirements of the methodological guidelines of the BioCarbon Registry Standard in its document *Standard for the voluntary carbon market - BCR Standard - from differentiated responsibility to common responsibility. BioCarbon Registry, Version 3.2 of september, 2023*, in Section 13.1 Reversal risk management.

Thus, the results of mitigation or tradeable emission reductions (REC, as per its acronym in Spanish) to be generated by the project were calculated considering the equations shown below:

$$TER_{DEF,REDD+project} = ER_{DEF,REDD+project} \times (1 - RF_{yr})$$

Where:

$TER_{DEF,REDD+project}$:	*Tradable emission reductions in the project scenario; tCO_2eq.*
$ER_{DEF,REDD+project}$:	*Net emission reduction due to avoided deforestation in the project scenario; tCO_2eq.*
RF_{yr}:	*Discount factor for non-permanence risks; without dimensions*

(Source: Prepared by South Pole, 2020)

4 Compliance with applicable legislation

The activities associated with the project are developed in accordance with the existing forest governance structures related to the zoning and management plans of the National Forest Reserves and of the areas associated with the National System of National Parks (SINAP), the environmental determinants defined by the departmental and regional environmental authorities, and the territory management agreements and regulations defined by indigenous reservations (Life Plans) and some formal instances of articulation with the National Government, such as the National Climate Change System (SISCLIMA), the Intersectoral Commission for Deforestation Control and Integral Management for the Permanent Board of Indigenous Agreement, the Amazon Regional Board and the Indigenous Environmental and Climate Change Board (MIAACC).

In order for the mitigation results of the project to be subject to national accounting, it recognizes and is governed in all its phases (feasibility, formulation and implementation) by the guidelines of Resolution 1447 of 2018 of the Ministry of Environment and Sustainable Development, regarding the articulation with the Monitoring, Reporting and Verification System of mitigation actions at the national level and the registration of the initiative in the National Registry of Programs and Projects of actions for the *Reduction*

of emissions due to the Deforestation and Forest Degradation of Colombia (RENARE by its acronym in Spanish).[52]

4.1 Laws and decrees

Project articulation with national laws, statutes and other regulatory frameworks implies to have knowledge of the rules supporting the steps to analyze, formulate, and implement the Colombian regulatory framework regarding climate change issues and REDD+ projects:

- Political Constitution of Colombia, Articles 2, 13, 20, 38, and 80.
- Law 2 of 1959 – whereby the Amazonia Forest Reserve is created.
- Decree Law 2811 of 1975, whereby the National Code of Renewable Natural Resources and Protection of the Environment is issued.
- Law 99 of 1993 – whereby the Ministry of Environment and the National Environment System (SINA) are created.
- Decree 1791 of 1996 – Forestry Exploitation Regime.
- CONPES 2834 of 1999 – whereby the Forest Policy is adopted.
- Law 388 of 1997 –Law 9ª of 1989 and Law 3ª of 1991 are modified, and other provisions on land-use planning are issued.
- Decree 1397 of 1996 – It creates the National Commission of Indigenous Territories and the Permanent Committee for Concerting with Indigenous Peoples and Organizations.
- Decree 3012 of 2005 – It creates the Amazonian Regional Committee for the Indigenous Peoples of the Colombian Amazon region, and other provisions are issued.
- CONPES 3700 of 2011. Institutional Strategy for the Articulation of Policies and Actions on Climate Change in Colombia. It creates an Interdisciplinary REDD+ Working Group, as an instance to support the development of REDD+.

[52] The project is registered in RENARE in the formulation phase

- Decree 3750 of 2033 – whereby the goals and structure of the Ministry of Environment and Sustainable Development are modified, and the Administrative Sector of Environment and Sustainable Development is integrated.
- Decree 2372 of 2010 – It regulates the National System of Protected Areas.
- Decree 298 of 2016 – Whereby the organization and operation of the Climate Change National System are established, and other provisions are issued.
- Law 1819 of 2016. Structural Tax Reform. It pursues to reduce polluting emissions from the burning of fossil fuels by implementing economic instruments that make it easier to reach the goals set forth in the Paris Agreement (Article 221). The tax consists in paying a fee related to the carbon content produced by the national industrial activity. The fuels subject to this tax are gasoline, kerosene, jet fuel, diesel fuel, and fuel oil, provided they are used for combustion. Natural gas is also taxed, but also to be used in the hydrocarbon refining and petrochemical industries, and liquid petroleum gas (LPG) for sell to industrial users.
- Decree 298 of 2016 - Whereby the organization and operation of the Climate Change National System (SISCLIMA) are established, and other provisions are issued.
- Law 1844 of 2017 – Whereby the Paris Agreement is approved. As Colombia is a country especially vulnerable to the impacts of climate change, measures for action are established.
- Decree 926 of 2017. No causation of the National Carbon Tax. Whereby the procedure to encourage the implementation of major mitigation initiatives is established to activate the carbon credit market and to promote the implementation of GHG projects.
- Decree 1655 of 2017. Forest Information National System. Whereby, new five sections are added to Book 2, part 2, title 8, chapter 9 of Decree 1076 of 2015, that establish the organization and operation of the Forest Information National System, the National Forest Inventory, and the Forest and Carbon Monitoring System, which make part of the Environmental Information System for Colombia, and other provisions are issued.
- Decree 1257 of 2017 – Whereby the Intersectoral Commission for Deforestation Control and Comprehensive Management to Protect Natural Forests is created, and other decisions are made.

- Decree 870 of 2017. Payment for environmental services. Whereby the payment for environmental services and other incentives for conservation are established.
- Law 1931 of July 27, 2018. Climate Change Law. Whereby guidelines to manage climate change are established, stating that information from the Forest and Carbon Monitoring System (SMBYC) prepared by IDEAM, as well as the Forest Emissions Reference Levels will be employed, and they will serve as model for the implementation of REDD+ initiatives.
- Resolution 1447 of 2018. Monitoring Reporting and Verification System to manage climate change information and provide inputs for decision making by the actors involved in managing climate change, according to the National Climate Change Policy. These include the creation of RENARE, a technological platform aimed to manage —at national level— the information from the GHG mitigation initiatives.
- National Development Plan 2014-2018 – "All for a new country."

4.2 Constitutional rules

Colombia recognizes a set of relevant rules in the framework of REDD+ projects that, in general, are complied with throughout the national territory and, therefore, in line with the REDD+ Project of Indigenous Peoples from Vaupés, YUTUCU and Others, which directly and indirectly relate to the project activities in the first instance area; with their rights as indigenous communities, and in which the collective ownership of the land and the ecological and social function of their territories are recognized. Among some rules are those described by the Political Constitution of 1991 (Table 27).

Table 27. Major constitutional rules in the framework of the REDD+ Vaupés project

Article	Scope	Implications	Validity (2019)
Article 8	Protection of the natural and cultural endowment of the Nation	The Amazon biome and Vaupés jungle have been experiencing an accelerated change caused by deforestation, which deserves the attention from the State and the indigenous communities residing in the area.	In force
Article 21	Legal status of indigenous reservations as collective property	Indigenous territories are a special legal and socio-political institution, comprised of one or several indigenous communities that enjoy private-property guarantees, whose management is ruled by an autonomous organization protected by indigenous privilege and its own regulatory system	In force

Article	Scope	Implications	Validity (2019)
Article 49	Right to health protection and a healthy environment	The indicators for Vaupés regarding the coverage of basic services and health are very low because population is widely dispersed. It entails to pursue alternative and preventive actions in Vaupés for the protection, care for the environment and the health of the population.	In force
Article 58	The social and ecological role of the property.	Although indigenous reservations are not strictly conservation entities, they have played an important role preserving nature	In force
Article 63	Unalienable nature of the land of ethnic groups and their archeological heritage	Planning and protecting legitimately acquired land, in line with the rights of collective territories.	In force
Article 80	Planning the territory, to control, sanction, and pursue cooperation strategies for the environmental damage caused.	The region and the reserves need to develop strategies that combine public and private for the implementation of the territorial Life Plan.	In force
Article 81	Protection of genetic resources	The extensive biodiversity of the region needs actions to regulate and protect their natural and cultural heritage.	In force

(Source: South Pole (2020), based on information on Colombian legislation applicable to the sector)

Other enforceable laws —in the national framework for the project relate to Colombia's international and institutional agreements and arrangements, as Member State of the United Nations and as signatory party of United Nations Framework Convention on Climate Change (Law 164 of 1994)— are: the Paris Agreement, officially signed on April 22, 2016, on the Day of the Earth, whereby Colombia committed to reduce its GHG emissions by 20% in respect to projections until 2030; and, by which, Colombia developed, among others, the Comprehensive Strategy for Deforestation Control and Forest Management (EICDBC), and the Colombian Low-Carbon Development Strategy (ECDBC), as key instruments for achieving the goals of "Action for the sake of Climate" and "Life of Terrestrial Ecosystems."

Other conventions related to biodiversity and climate change at international level include: United Nations Framework Convention on Climate Change (UNFCCC), Convention on Biological Diversity (CBD), United Nations Forum on Forests (UNFF), Convention to Combat Desertification and Drought (CCD), Ramsar Convention on Wetlands, International Tropical Timber Agreement (ITTA) and the Convention on

International Trade in Endangered Species of Wild Fauna and Flora (CITES). Besides, the government's National Development plan for the 2014-2018 period compiles by obligation all national environmental policies, which include a Comprehensive Policy to Fight Deforestation (PILCD), and its action plan corresponding to the EICDGB, that recognize as pillars: The National Strategy for Reducing Emissions from Deforestation and Forest Degradation (REDD+), the National Forest Monitoring System (SNMB), the Construction of the Forest Reference Emission Level (FREL), and the implementation of social and environmental safeguards as the means to realize the Cancun and Paris Agreements from the UNFCCC.

4.3 Strategic arrangements for the management of climate change in Colombia

The National Policies that have forestalled the management of forests and the fight against deforestation framing the development of REDD+ projects in the country, and the activities of the REDD+ Vaupés project are the Forest Policy (MMA, 1996) that pursued to achieve the sustainable use of forests in order to preserve them, to consolidate the incorporation of the forest sector in the national economy, and to improve the quality of life of population (MMA, 1996); as well as the National Plan for Forest Development (PNDF) of 2000 (MMA, 2000), which aimed to establish a strategic framework to incorporate the forest sector in the national development, optimize comparative advantages, and promote the competitiveness of timber and non-timber forest products in the market, from the sustainable management of natural and planted forests. Based on the Forest Policy, other instruments were created both for the public administration and individuals regarding the use, management, exploitation and conservations of forests, and wild flora (Decree 1791 of 1996, compiled in the Decree 1076 of 2015-Single Regulatory Decree of the Environment and Sustainable Development Sector (MADS, 2015a).

As to climate change in Colombia, the CONPES 3700 of 2011 articulated the institutional basis for climate change and formalized the development of the first national GHG mitigation strategy: the Colombian Low-Carbon Development Strategy (ECDBC) (DNP, 2011) which also complements fulfilling the conservation and sustainable development goals of the country is Decree 2372 of 2010 (MAVDT, 2010a) that regulates elements of the National System of Protected Areas (SINAP) and that for its consolidation receives the CONPES 3680 of 2010 (MAVDT, 2010b) to advance towards a complete, representative, and effectively managed SINAP that contribute to the environmental management and land use planning, and the goals of conservation and sustainable development.

4.4 National policies

Based on the background of the National Development Plan (PND) 2014-2018 "All for a New Country,"[53] in which national efforts to honor the commitments undertaken at international level were articulated, are, in order of importance, the Colombian Low-Carbon Development Strategy (ECDBC), National Plan for Adaptation to Climate Change (PNACC), National REDD+ Strategy "Forest Territories of Life," currently called Comprehensive Strategy for Deforestation Control and Forest Management, that included the Green Growth Strategy 2012-2014, which recognized climate-compatible growth as a fundamental approach, proposing necessary actions in the area of climate change, such as the reduction of GHG emissions by the sectors and the abatement of deforestation and degradation. Apart from the Financial Protection Strategy in the event of disasters, the National Disaster-Risk Management Plan and, finally, the National Strategy for Climate Financing.

The ECDBC is a program aimed to decoupling national economic growth from GHG emissions to maximize carbon efficiency in the economic activity and contribute to economic and social development. This program is led by the Ministry of Environment and Sustainable Development through the Climate Change Directorate, and with support from the National Planning Department (DNP) and the sectoral ministries of Commerce, Industry and Tourism; Housing, City, and Territory; Mining and Energy; Transport and Agriculture, and Rural Development. The ECDBC is one of the National Government strategies to address climate change that were included in the CONPES 3700 of 20111, the National Development Plans 2010-2014 and 2014-2018, and the Decree 298 of 2016 on the Climate-Change National System (Ministerio de Ambiente de Colombia, 2016). This strategy, adopted by the National Government in 2012, pursues to contribute to mitigation and adaptation to climate change and, to that end, it has developed Sectoral Mitigation Plans (PAS) and Nationally Appropriate Mitigation Actions (NAMAS).

The EICDGB called "Forests Territories of Life" (2014) is a cross-sectoral policy instrument aimed to curb deforestation and forest degradation, addressing the complexity of the root causes and the strategic meaning of these ecosystems on account of their importance (sociocultural, environmental, and economic); besides, it contributes to mitigation and adaptation to climate change, as it is a potential development option in

[53] For further details, see: Soportes\Marcos_regulatorios\PND_2014_2018.

the framework of the peacebuilding process (MADS & IDEAM, 2017). The strategy promotes sustainable forest management, under an integrated forest management and rural development approach, the development of inter-sectoral actions that help to the good living of local communities, contribute to local growth, and increase eco-system resilience fostering climate change mitigation (*MADS*, n.d.-b). This policy is the REDD+ National Strategy of Colombia submitted before the agencies of the UNFCCC and, therefore, is one of the pillars required by this Convention for REDD+ which, apart from the National Strategy or REDD+ Action Plan, it requires the Forest and Carbon Monitoring System (SMByC),[54] the Construction of the Forest Reference Emission Level (FREL)[55] and the National Safeguards Information System (SIS).[56] [57] The EICDGB is developed according to the Action Plan of the National Policy to Fight Deforestation (PNLCD), in compliance with the emission-reduction national strategy, mandated by CONPES 3700 and the instruments above mentioned.

The National Plan for Adaptation to Climate Change, provided for in Law 1450 of 2011, and CONPES 3700 OF 2011, considers —since 2012— a permanent construction process led by the National Planning Department (NPD) supported by the Ministry of Environment and Sustainable Development (MESD) and the National Unit for Disaster-risk Management (UNGRD), with the participation of productive sectors, the population and territories (DNP, 2012). This plan, aimed to reduce the vulnerability of the country and increase its responsiveness to the threats and impacts of climate change, presents the basic concepts about the adaptation to climate change, it describes the reasons why sectors and territories must develop strategies and plans to adapt to climate change, in addition to establish action mechanisms such as the Territorial and Sectoral Nodes of Climate Change (NSTCC).

Another policy of major regulatory importance to help offsetting the effects of deforestation and, especially, instrumental to implement the environmental public policy

[54] http://smbyc.ideam.gov.co/

[55] Documents submitted the Ministry of Environment and Sustainable Development before the UNFCCC, REDD+ Web Platform. Available at: https://redd.unfccc.int/submissions.html?country=col. Nivel de Referencia de Emisiones Forestales (Forest Reference Emissions Level): https://redd.unfccc.int/files/frel_amazon_colombia_english_19_12.14_en.pdf (It also may be found in: Soportes\Marcos_regulatorios\Nivel de referencia\NREF)

[56] https://redd.unfccc.int/files/salvaguardas_en_colombia.pdf (It may be found in: Soportes\Marcos_regulatorios\Salvaguardas_Nacionales)

[57] Social and Environmental Safeguards for REDD+ in Colombia. Available at: http://d2ouvy59p0dg6k.cloudfront.net/downloads/cartilla_interpretacion_nacional_de_salvaguardas_final_web.pdf (It also may be found in: Soportes\Marcos_regulatorios\Salvaguardas_Nacionales)

in Colombia is the National Policy for Comprehensive Management of Biodiversity and its Ecosystem Services (PNGIBSE) issued in 2012. It has six thematic axes and pursues to promote the integrated management of biodiversity and its ecosystem services in such a way that the resilience of socio-ecological systems is maintained and improved, at national, regional, local, and across border level, considering scenarios of change, through joint and coordinated action concerted by the State, the productive sector, and the civil society (MADS, 2012). Besides the PNGIBSE, the country has a National Biodiversity Strategy and Action Plan (EPANB) developed by the Ministry of Environment and Sustainable Development and the authorities from the National Environmental System (SINA) to implement the PNGIBSE, with the participation of multiple actors in response to the commitments set forth in the Convention on Biological Diversity (CBD), in the vision of the CDB Strategic Plan 2011-2020, and the Aichi Goals[58] (MADS, n.d. a). Furthermore, the National Plan for Ecological Restoration, Rehabilitation, and Recovery of Degraded Areas of 2015 (PNR), aimed to address the restoration of degraded natural ecosystems through activities to regenerate, rehabilitate and recover the ecology depending on the type of intervention, the level of degradation of the area, and the restoration objective. This plan proposes restoration as a compensation alternative and operating mechanism to finance the processes and projects related to the Manual to Allocate Compensations for Biodiversity Loss (MADS, 2015b) the Sustainable Soil Management Policy, issued in 2016, that pursues to promote sustainable soil management in an integrated context that joins together the conservation of biodiversity, water, air, land-use planning, and risk management, highlighting that degradation can be anthropogenic caused by deforestation, that is, for a bad practice of soil management that destroys its cover, exposing to a high risk of degradation from erosion, loss of biodiversity, loss of organic matter, biota, and water in the soil (MADS, 2016).[59]

4.4.1 Subnational reference level

By virtue of Decision 1/CP.16, Colombia presented its second Forest Reference Emissions Level (FREL), which provides much more robust and far-reaching information and, therefore, improves the precision of its results. This level has the exclusive purpose of generating the baseline that allows measuring the performance of the implementation of the activities indicated in paragraph 70 of Decision 1/CP.16 and obtaining results-

[58] These are 20 goals grouped into five strategic objectives set out by the representatives of 196 countries —all signatories to the Convention on Biological Diversity (CBD)— during the COP 10 on biodiversity, held in the Aichi province, Japan, in 2010 (WWF, 2018).
[59] See in: Soportes\Marcos_regulatorios\NREF

based payments for REDD+ actions, following the guidelines of the Warsaw Framework on REDD+ (in accordance with decisions 9/CP.19, 13/CP.19, 14/CP.19 and others cited there, as well as Article 5 of the Paris Agreement).

In this way, it goes from a sub-national scale to a national one made up of the five biomes. Therefore, they are homogeneous areas in biophysical terms, distributed in the Colombian continental territory.

For this new FREL the reference period is 2008-2017 and its projection is five years (2018-2022); and includes CO_2 emissions caused by deforestation from above and below-ground biomass pools, and organic carbon contained in the soil. Likewise, it assumes that all the carbon contained in the above and below-ground biomass deposits is emitted in the same year that the deforestation event occurs. In the case of the soils deposit, a gross emission is assumed whose soil carbon content is emitted in equal proportions for 20 years, once the deforestation event occurs.

The activity to reduce emissions from deforestation (gross deforestation) in the Amazon Biome of Colombia is based on the information generated by the Forest and Carbon Monitoring System (SMByC), specifically on the biennial forest cover changes maps resulting from the monitoring of forest cover carried out every two years, between 2000 and 2012; and annually, starting in 2013.

4.4.2 National safeguards

In order to meet the commitments, set forth in the United Nations Framework Convention on Climate Change, the Colombian government defined the REDD+ safeguards that apply to the national strategy, the initiatives, REDD+ projects, and any action directed to reduce deforestation emissions. In order to show how circumstances and national sovereignty are addressed and respected. These guidelines offer general principles for REDD+ implementation, they also include how to address transparency, participation of stakeholders, biodiversity protection, and ecosystem services, respect for the rights of local and indigenous communities, and leakages, as well as other risks to the integrity of the environment (Camacho & Guerrero, 2017).

The safeguards are considered means that prevent affecting essential social, economic and environmental rights, and the occurrence of negative impacts from the design and implementation of REDD+ Actions and Measures. Enforcing them implies that the people and institutions involved share the commitment to protect environmental and social values which, when formulating and implementing programs and projects to reduce deforestation are not usually complied with (Camacho Henao et al., 2017). In this sense,

the structure of the National Safeguard System for the EICDGB is defined, it has Structural Components (national interpretation of safeguards, regulatory framework, institutional framework, compliance framework, and measures and instruments that promote the application and its enforcement), and Monitoring Components (Citizen service mechanism [MAC], Safeguard Information System [SIS], and Guide to Prepare Information Summaries on REDD+ Safeguards.

Annex 10 presents the project Safeguards analysis in accordance with the *No net harm environmental and social safeguards (NNH) tool version 1.0 of March 7, 2023*, and the REDD+ safeguards compliance tool version 1.1 of January 26, 2023. The following is a summary of the document.

Compliance with national safeguards

A. Complementarity or compatibility of measures with the objectives of national forest programs and international conventions and agreements on the subject

The project activities are developed according to the existing forest governance structures related to the zoning and management plans of the National Forest Reserves and the areas associated with the National System of National Parks (SINAP), the environmental determinants defined by the departmental and regional environmental authorities and the land management agreements and regulations defined by the indigenous reservations (Life Plans), and some formal articulation instances with the National Government such as the National System of Climate Change (SISCLIMA), the Intersectoral Commission for the Control of Deforestation and Integral Management for the Permanent Board of Indigenous Concertation, the Amazon Regional Board and the Indigenous Environmental and Climate Change Board (MIAACC). This articulation implies the knowledge of some norms (regulations) that sustain the analysis, formulation and establishment stages of the Colombian legal framework against climate change issues and REDD projects.

B. The transparency and effectiveness of national forest governance structures taking into account national legislation and sovereignty

- Transparency and access to information

All the information related to the REDD+ project is in the public domain and is held by the five legal representatives of the AATIs. Documents are available physically (hard copies) and digitally.

Since the design phase of the project, the representatives of the AATI have guaranteed the availability of information through the appropriate channels and means of information for the specified context of the communities, which correspond to community assemblies and ordinary meetings, as well as writings (reports) of the essential operating documents of each Association.

Additionally, previous meetings were held in each community and a general socialization meeting to give specific information about:

- The benefits that communities receive in the territory.
- The commitments acquired by the communities involved in the implementation of the project activities; and
- The complaints claim and petitions mechanism (PQRS, as per its acronym in Spanish) and the benefits distribution system (see Annex 2).[60]

In these socialization spaces, there were always interpreters from the predominant dialects (Cubeo, Yurutí, Tucano), as well as adequate printed material to achieve the highest level of understanding by all attendees. The public institutions of the Vaupés department were considered in the project's socialization process.

The project has a communications committee (Figure 10) that will serve as a link between the communities involved and the project management committee.

[60] See in: Soportes\Anexos\ Anexo 2_Informe de socialización

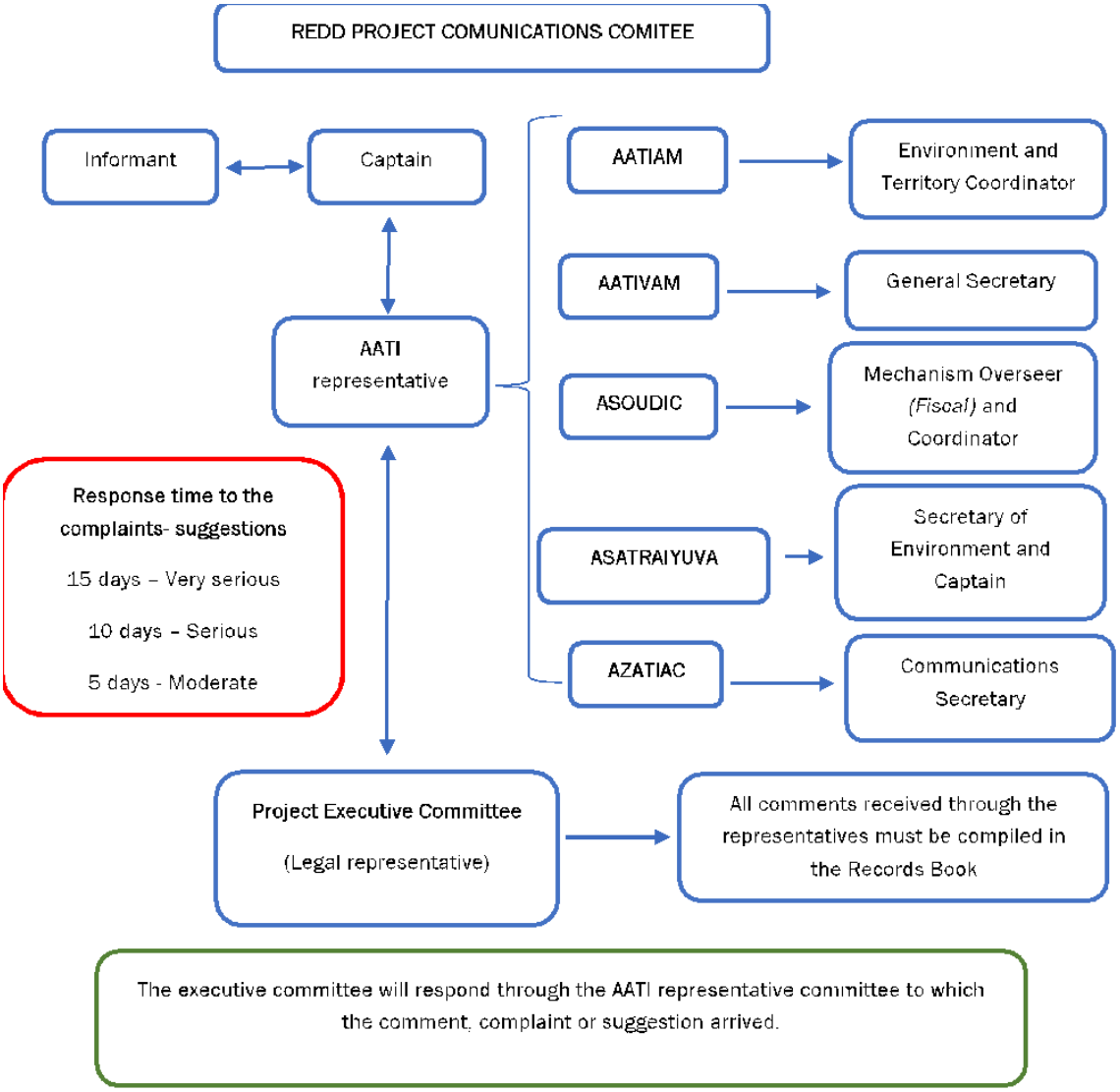


Figure 10. Complaints and claims mechanism agreed by the zonal areas (zones) for project management [61]

[61] It is based on the posters made by the communities whose photo was taken. See folder: Soportes\Consulta local\Fotografias\PQR

Accountability

In accordance with the agreements and statutes of the AATIs, accountability and reporting to the community must be done in a Public Assembly in each AATI, and later, in an Assembly with representation of at least five people from each AATI to reveal information about the management and destination of the resources derived from the project or any related plan or program. The discussions will be recorded in a Minutes Book that will be owned by the Executive Committee of each AATI.

The accounting status must be reported, and an annual report must be rendered to the General Community Assembly regarding the allocation of resources and the management of the monies derived from the Project. The mechanism overseer and supervisory committees of each executive committee will ensure the proper management of resources and will ensure that financial and accounting operations are in accordance with the regulations and the respective legal provisions. These reports, together with the Minutes, will be consolidated as Management Reports and will be available to be consulted by any stakeholder or person from the community through the complaints and claims PQRS mechanism. The AATIs monitoring committee will oversee the project's resource expenditure and will support accountability to the community.

Recognition of governance structures

The Project has recognized the role of the Executive Committee or Board of Directors, as well as the Great Indigenous Reservation and the own decision-making structures considered (contemplated) in the Statutes of each AATI.

The recognition of the traditional indigenous authorities of the AATIs and their participation in the organizational structure, responsibilities and competencies are focused on the fulfillment of the project activities that were agreed in the socializations, priority will be given to those previously carried out.

Capacity strengthening

Through the Project Executive Committee and in accordance with the commitments established in each community and previously informed by the Traditional Authority, priority issues will be assigned related to training for the development of the project activity prior to the implementation of the activities. In this way, each project activity that is implemented has an initial training component to demonstrate its purpose, methods used, and benefits and importance. From this training, each community participates

differentially in the execution of the activities and assigns the participants or members of the families that will lead the process.

The trainings and preparation in each topic of the activities to be developed and basic training topics of the project will be carried out periodically according to necessity (need), while the development of activities by the communities in the project area will be verified. The entire community will be progressively involved in the themes and activities of the project so that they all incorporate (absorb) the concepts discussed there. Each AATI selects a time in the year to share their development experiences with representatives of the other AATIs and community members.

Through the project, the representatives of each AATI will present the training needs regarding technical aspects of REDD+ and climate change, laws, statutes and other regulations related to the project to the traditional authorities, Colombia's Monitoring, Reporting and Verification System and tools for monitoring, resource management and accountability. The solution of these needs will be articulated with the strategic line of the project: Local Governance Strengthening and Environmental Education and Training.

The topics that will guide the training of the communities focus on the following:

- Resource management, finance, and accounting.
- Territorial governance.
- Projects management.
- Leadership.
- Environment and Climate Change.

Free, prior and informed consent

The associations representatives, through the traditional reservation authorities, have guaranteed the effective participation of the communities in decision-making and in the design of the project by validating important issues such as the project management committee, monitoring committee, benefits distribution system, complaints and claims mechanism and prioritization of project activities. Socialization meetings were held prior to the validation and verification of the project as information, dialogue, and joint construction strategies with the communities; In addition to recognizing and articulating

the decision-making spaces of AATIs within the Project's organizational structure, the autonomy of the communities in the management of their territories has been respected.

Respect for traditional knowledge

As part of the project activities and the action mechanisms, respect for traditional knowledge has been established as a principle, for this reason, *sabedores* (wise men) and *Payés* have always participated to ensure that all project decisions always incorporate, recognize, and respect the knowledge of the communities, their traditional practices, and their traditional knowledge systems. For this reason, the final line of own education and traditional knowledge has as its pillar the education and transmission of knowledge and practices by the *sabedores* (wise men) to the youngest and children.

Through socializations, the risk of imposing restrictions on the traditional uses and practices of the communities was reduced and it was discussed how these activities were always articulated with the Life Plan, the Statutes, and local needs, according to the traditional knowledge of the communities in the management of their territory. Traditional knowledge maintains its diversity character by considering (contemplating) the difference in practices between ethnic groups and peoples present in the project area and the participation and equitable decision making.

Distribution of project benefits

A Benefit Distribution System was built and agreed upon, which clearly establishes who, how and when the monetary benefits derived from the project will be invested and the commitments that this implies in terms of administration. The additional intangible social and ecological benefits of the project and the need to invest the greatest number of resources in the development of activities for the long-term permanence of the project were evidenced; as well as savings programmed to generate additional earnings. Principles of justice, equity and efficiency were applied in the design of this System and an organizational structure for the management, administration, and execution of resources (see Annex 3).[62]

Territorial rights

[62] See in: Soportes\Anexos\ Anexo 3_Sistema de distribución de beneficios.

Since their feasibility phase, the AATIs have demonstrated that they have jurisdiction over the territory in which the project activities are carried out and for the duration of the project's crediting; so that the project can demonstrate that it recognizes and respects the communities' rights to the territory (see Section 5.4). It should be said that the Traditional Indigenous Authorities Associations have as their objective: "[...] *defend, rescue, strengthen and preserve the fundamental rights of: unity, territory, culture, autonomy and community self-management and traditional authorities.*"[63]

Due to the way in which deforestation control activities and measures were defined, the participants will not establish exclusions in the use and management of the collective territory at any time and if this occurs it must be agreed and signed by the legal representatives.

C. The full and effective participation of stakeholders, in particular that of indigenous peoples and local communities

- Participation

The effective participation of traditional authorities and their representatives in the feasibility and project design phases has been guaranteed. Participation in the project can be done directly with the traditional representatives and authorities and through the PQRS system.

As mentioned above, socialization meetings were held prior to the validation and verification of the project, such as information strategies, dialogue, and joint construction of the Project with the communities.

Additionally, the project has a Mechanism for complaints, claims and petitions.

D. The compatibility of the measures with the conservation of natural forests and biological diversity are not used for the conversion of natural forests, but instead, serve to incentivize the protection and conservation of these forests and the services derived from their ecosystems and to promote other social and environmental benefits

[63] Resolution 0016 of February 7, 2008.

The Project is a financial instrument that will contribute to the development of measures to promote conservation processes and the maintenance of ecosystem services at the local level.

The activities considered (contemplated) in the project have the ultimate goal of reducing deforestation in the Amazon Forest, strengthening traditional initiatives for the conservation and use of local biodiversity, and continuing support for the provision of the associated ecosystem services, as well as regulated access by the communities that depend on them.

The implementation of the activities will at no time encourage the replacement of natural forests with plantations or agricultural crops, nor the introduction of exotic species that threaten local biodiversity.

The project makes an important contribution to the Sustainable Development Goals (SDGs) as it seeks to guarantee the conservation, restoration and sustainable use of terrestrial and freshwater inland ecosystems through the administration of protected areas and strategic ecosystems and the incorporation of policies and regulations in the indigenous internal ordinance (bylaws) related to the control and management of natural resources; and intensify efforts to protect and safeguard the cultural and natural heritage through investment in project activities. To guarantee the success of the project, forestry monitoring and surveillance are foreseen with the monitoring of changes in forest cover in each verification period, so that the effectiveness of the activities carried out can be established and make adjustments in their design and implementation from primary information.

E. Actions to deal with reversal risks

The REDD+ project recognizes and respects the environmental determinants defined by the departmental and regional environmental authorities and the agreements and regulations of land management defined at the regional level:

- Amazon Forest Reserve.
- Territorial Planning Scheme of the municipality of Mitú (2005).
- PIVI of each of the five AATIs.

The Project seeks to be articulated with the PIVI, therefore, it is considered to be in harmony with the existing environmental and territorial planning instruments in the territory (environmental determinants), which helps to ensure the permanence of the activities.

F. Actions to reduce displacement of emissions

The REDD+ project foresees for forest monitoring and surveillance by monitoring changes in forest cover in each verification period to ensure that productive activities or deforestation agents do not move to other neighboring AATIs not yet included in the project and thus, avoiding a negative impact on other areas of the Great Vaupés Indigenous Reservation. It is proposed to implement community monitoring actions in the territory such as patrolling, control and surveillance of forests and their tributaries and social mapping against deforestation.

These activities contribute to strengthening the governance exercise in the Great Vaupés Indigenous Reservation and support the identification of alternatives that end the pressures associated with deforestation at the local level.

4.5 Sectoral and territorial policies

The National Climate-Change Policy (PNCC) establishes implementation instruments as reference, including the comprehensive territorial and sectoral climate change management plans (PAS), and the Territorial and Sectoral Nodes of Climate Change as mechanisms for information flow and coordination, between the national government and the territories.

Among these mechanisms for the REDD+ Project of Indigenous Peoples of Vaupés, YUTUCU and Others, the Indigenous Amazonian Environmental and Climate Change Committee stands out as a dialogue space between indigenous representatives, their organizations, and government entities that pursues to include an integrated view of the territory and all environmental matters from indigenous people cultures into the National Safeguard System.

In the case of the REM/Visión Amazonía Program which —along with the GEF Corazón de la Amazonía project, the Joint Statement of Intent (DCI) or Memorandum of Understanding (MoU) signed between the government of Colombia and the government of Norway, the United Kingdom, and Germany, and the Sustainable Forest Landscapes initiative— is part of the actions proposed to achieve the Nationally Determined contributions NDC[64] from the Conference of Parties, COP 21, aimed to reduce 20% in

[64] See in: Soportes\Marcos_regulatorios\NDC

emissions below the of NDC projected for 2030. In 2013, the governments of Colombia, Norway, the United Kingdom, and Germany engaged in a dialogue about a REDD+ financial cooperation program results-based payments; a process embodied in the REDD+ for Early Movers Program (REM), developed in the context of the Amazonia Vision Initiative, the "Investment Portfolio for the Government of Colombia's Amazonia Vision Program and the National REDD+ Strategy" (MADS, 2018a).

The Amazonia Vision Program is a results-based payment scheme created by the MADS as an early implementation strategy of the National REDD+ Strategy, that is, a strategy pilot at subnational level. The Amazon Biome program (458,961 km^2) aims to reduce net deforestation in the Colombian Amazon region by 2020 and, to that end, it pursues to promote a new regional development model that allows reducing deforestation, maintaining the natural base that sustains biodiversity and supports production, as well as to improve living conditions of local populations. The program sets forth five pillars: improving forest governance, sustainable sectoral development and planning, agro-environmental development, environmental governance of indigenous territories, and enabling conditions (MADS, 2018a).

The program is planned to be implemented in steps, the first ones have advanced in departments as Caquetá and Guaviare, with subsequent interventions in the other departments, including Vaupés (MADS, 2018b). In particular, some progress has been made in the Integral Indigenous Life Plans (PIVA),[65] specifically regarding the components of territory and environment, own-government, economy and production, women and family, and cross-cutting matters. Of the ten projects chosen to be delivered in 2018, three of them are in the Vaupés Departments —in the Associations of Traditional Indigenous Authorities of ACAIPI (Association of Captains and Traditional Indigenous Authorities of the Pirá Paraná River), ACIYAVA (Association of Indigenous Captains of Yaigojé Apaporis Vaupés), and AATIZOT (Association of Traditional Indigenous Authorities of the Tiquié Zone), they pursue to strengthen both the environmental governance of indigenous peoples and their Life Plans, promote the integrated protection of sacred sites, fortify government systems, ensure food self-sufficiency, strengthen and empower indigenous women, among other lines of action (MADS, 2018b). Although the REDD+ Vaupés project is not included in the PIVA's results-based payment activities, the project strategic lines are considered in the lines of action: (1) Strengthening of own-

[65] See document in: Soportes\Marcos_regulatorios\PIVA)

government systems, indigenous institutions and spaces and instances for participation, coordination, and consensus building; (2) local production, sovereignty, and food security; (3) education, conservation, and transmission of indigenous knowledge, (4) indigenous land-use planning.

4.6 Local policies

The 99.99% of Vaupés Department is a Forest Reserve, such status was granted through Law 2nd of 1959, whose fundamental purpose is to protect soils, water and wildlife, as well as the economic development of the country on account of the innumerable assets and services it offers. This conservation status includes a set of decisions, such as the subtraction areas and the indigenous reservations, among which are the following ones:

- Areas stolen from the Amazonia Forest Reserve (Law 2nd of 1959).
- Resolution 1006 of June 16, 2008 (Mitú Municipality).
- Resolution 1426 of August 12, 2008 (Carurú Municipality).
- Indigenous reservations.
- Vaupés Indigenous Reservation (0086 of 27-07-82 INCORA).
- Arara – Bacatí – Lagos de Jamaicurú Indigenous Reservation (080 of 14-04-93 INCORA).
- Yaigojé Apaporis Indigenous Reservation (035 of 6-05-88 INCORA and 06 of 11-05-98 INCORA).

Likewise, the CDA issued the following administrative-law actions to reduce and control deforestation:

- Resolution No. 067 of February 23, 2018, which temporarily suspends the use, transportation, employment of power saws and blade discs for scythes, as well as other provisions for the marketing, use, and transportation of lubricating oils used in the Guaviare Department.
- Resolution 182 of May 28, 2018, which mandates the temporary registration of power saws, and the use, transportation, employment of blade discs for scythes is temporarily suspended in the CDA Jurisdiction; and Resolution No. 067 of February 23, 2018, is repealed and other decisions are made.

Furthermore, for the Colombian Amazon region, the Ministry of Environment and Sustainable Development (MADS) along with the Ministry of Agriculture and Rural

Development (MADR) developed the *Action Plan to Reduce Deforestation Rate in the Amazonia and Address the Effects of Climate Change*, in coordination with SINA sectors, and the participation of concerned communities, and plaintiffs. This Plan sets forth the roadmap and methodology employed to enforce the STC 4360 Judgement of the Supreme Court of Justice (SCJ), which shows the main causes of deforestation in the Amazonia and establishes that —since deforestation produces short-medium-and-long term imminent and serious harm to children, adolescents and adults, who filed a guardianship (called plaintiffs)— measures must be implemented so that the State protects collective rights and stops thinking about its own interests. The Supreme Court of Justice mandated the Presidency of the Republic and other municipal, regional and national authorities involved in this responsibility to adopt a short-medium-and-long term action plan to protect the Colombian Amazon region (Rojas, 2018).

The CDA Action Plan is considered in the Comprehensive Strategy for Deforestation Control and Forest Management (EICDBC), it comprises 8 steps for the formulation of the so-called PIVAC (Intergenerational Pact for Life of the Colombian Amazon region), and it generated 5 lines of action for the Amazonia: Sociocultural management of forests and public awareness; development of a forest economy and closure of the agro-livestock frontier; articulation and cross-sectoral and territorial management to reduce deforestation and forest degradation in the Amazonia; permanent control and monitoring; and generation and strengthening of financial, institutional, and legal capabilities (MADS & MADR, 2018).

In turn, the REDD+ Vaupés project is part of the lines that pursue consolidating territorial governance of indigenous groups, promoting a forest economy based on goods and services associated to carbon, and strengthening inter-agency articulation that helps to promote life plans of indigenous communities pursuing the conservation of the Amazon biome (MADS & MADR, 2018)..

4.6.1 Regional Environmental Management Plan (PGAR)

The Regional Environmental Management Plan (PGAR) 2012-2023 aims to implement and harmonize environmental planning instruments to promote, support and strength sustainable processes of regional development and occupation of the territory, according to the biodiversity, population, and culture (CDA, 2012).

The goal in the vision of the PGAR 2012-2023 and the REDD+ Project of Indigenous Peoples from Vaupés, YUTUCU and Others is to advance in the environmental management and land-use planning for the sustainable use of the inhabitants in their territories and improve their quality of life. These include strategic lines related to

environmental management, the inclusion of environmental determinants, protected areas, conservation strategies, life plans, forest management, the rescue of traditional knowledge, the conservation and recovery of natural resources.

4.6.2 Institutional Action Plan 2016-2019

This Action Plan aims planning measures that enable to implement strategies for achieving the sustainable development goals, pursuing to harmonize national, departmental, and municipal policies with the environmental system. It was created as provided for in the National Environmental Policy, Law 1753 of 2015, National Development Plan 2014-2018; the pillars of Peace, Equity and Education are the development axis as well as its cross-cutting strategies; among the latter, Green Growth is the starting point to consolidate the tasks of the Action Plan (CDA & SINA, 2016).

The 2016-2019 Action Plan was developed in agreement with indigenous leaders; community leaders; political, economic, and education sectors; and different organizations present in the region, reflecting the environmental forward-looking goal pursued in the northern and eastern Amazon region of Colombia (CDA & SINA, 2016). Some of the strategies relate to the REDD+ Project of Indigenous Peoples from Vaupés, YUTUCU and Others, the indigenous communities, the activities to be carried out in the project and the national development plan are focused on advancing towards a low-carbon sustainable growth, to protect and ensure the sustainable use of natural capital, to improve environmental quality and governance; to achieve a resilient growth and reduce the vulnerability to the risks of disasters and climate change; to protect and preserve ecosystems and territories, mitigation and adaptation to climate change; environmental management in the territories of indigenous peoples.

4.6.3 Cuduyarí River POMCA [66]

Through the POMCAS, the planning of the sustainable use and management of the renewable natural resources of a hydrographic basin is made, so that an adequate balance between its economic utilization and physical-biotic structure and its water resources can be maintained or restored. Thanks to these plans, specific programs and projects are managed and executed aimed at conserving, preserving or preventing the deterioration of hydrographic basins.

[66] See in the folder: Soportes\Marcos_regulatorios\POMCA_Cuduyarí

In the specific case of the POMCA of the Cuduyarí River basin, its objective consists of the formulation of programs and projects that have the participation of indigenous communities and state institutions to induce changes in the current natural and environmental resources use and management processes, in order to establish the economic utilization balance.

In addition, the fulfillment of the following specific objectives is proposed:

- Contribute to the improvement of the quality of life of the indigenous communities settled in the basin through the implementation of sustainable productive programs and projects that guarantee, on a permanent basis, the availability of natural and environmental resources, basic sanitation, and environmental education.
- Preserve areas with high fragility and ecosystem value, such as protected areas, promoting knowledge, conservation, and sustainable utilization of biodiversity.
- Establish mechanisms for monitoring and evaluating the POMCA, in a concerted and participatory manner between State institutions and indigenous communities, in order to guarantee its sustainability within the planned time horizon (20 years).
- Support the implementation of agroforestry systems in degraded areas and/or with restrictions for the development of agricultural activities, reducing the risk in the communities settled in the basin.

Considering the above, the joint work that was carried out with the ASOUDIC communities in the construction of this POMCA is a relevant activity, which joins their efforts for the conservation of the natural resources of their territory.

4.7 Integral Indigenous Life Plans (PIVI)

in the exercise of autonomy, indigenous communities prepare and adopt, in a concerted manner, the Integral Indigenous Life Plans (PIVI) as planning and management instruments as internal development guides that are elaborated from a collective diagnosis of the main components and with a strategic focus. The PIVI constitute a political instrument, in which the particular vision of each town or community about their history is consigned, understood as the origin that sustains their identity (being); its present, seen in terms of internal and external relationships (having and being); and daily activity organization that guarantees a future in accordance with its knowledge systems and social and territorial organization (doing). This is a planning tool aimed at strengthening government instances and dialogue with the other State sectors and

society, which is part of the indigenous peoples' efforts to publicize (inform about) their ways of conceiving the world, everyday life thinking and the future, to organize themselves in the doing (carrying out) of its resources and to control and evaluate their processes (OPIAC, 2014).

Regarding territorial competence, protected by ILO Convention 169 (Articles 13-15) which recognizes indigenous peoples' rights to land and territory, as a space for collective management, and the handling of transfers. On one side, the PIVI challenge the concept of development and, on the other, they reassert planning as a tool regulating relationships between ethnic societies and the institutional apparatus of the Colombian society, serving as articulating strategy of traditional indigenous institutions and those of the National State.

The Life Plans of the five Associations of Traditional Indigenous Authorities (AATIs) are a formal requirement in the field of ethnic customary law, provided for in the political constitution and in Law 016 of 2003. Furthermore, they constitute a repository of the ethnic vision, such as it exists in the Amazon narrative and oral tradition, in the internal dynamics of their communities and organizations in charge of managing —before different institutions— rights such as autonomy, culture, identity, and self-government. Although the Associations of Traditional Indigenous Authorities of the project have PIVIs formulated, socialized, and endorsed by the communities and competent authorities, only the Association of Traditional Indigenous Authorities of Acaricuara (AZATIAC) presents an updated plan, and the other four associations require an update. These documents were prepared through community participatory workshops that included three phases: diagnosis, strategic component, and investment plan.

The Integral Indigenous Life Plans (PIVI)[67] consider as cross-cutting the environmental component because, in the indigenous worldview, economy, social organization, health, education, and other key dimensions are closely related to the territory and the collective management of resources by understanding nature and its functioning. In this sense, the

[67] An Indigenous Life Plan is a planning instrument that is built from a participatory self-diagnosis process and the project development exercise. It is an instrument of policy and government, and as such, a social agreement that must arise from consensus. The Life Plan is consolidated as a document that contains information about the community, its resources and its needs; Information about the changes that the community wants to achieve, and the projects to achieve those changes and live better; The positioning of the community with respect to the relationship between the indigenous government and government actors, and other actors; The long-term political vision of the community.

activities proposed in the REDD+ Vaupés project are —in turn— a small part of the Life Plans related to the problems identified with the territory, traditional economy, education, and own-government.

The respect for the traditional knowledge of the communities in the reserve is taken into account in the following instruments:

- Law 397 of 97, Article 4 – Cultural heritage of the Nation. It consists of all the cultural assets and values that express the Colombian nationality: tradition, customs, habits.
- United Nations Declaration on the Rights of Indigenous Peoples – Law 21 of 1991, Articles 7, 8, 63, 90, 246, 330 regarding the constitutional rights of indigenous peoples in Colombia.
- Decree 2941 of 2009 – It partially regulates Law 397 of 1997 regarding the intangible cultural heritage.
- Judicial decrees 004 and 005 – Regarding the plans to safeguard traditional knowledge.

5 Carbon ownership and rights

5.1 Project holder

The project proponent is a group of Associations of Traditional Indigenous Authorities (ATTIs), located within the Great Vaupés Indigenous Reservation. In this sense, the ownership and rights over the land that makes up the associations AATIVAM, AATIAM, AZATIAC, ASOUDIC and ASATRAIYUVA correspond to the indigenous communities that have traditionally occupied the territory demarcated in the boundaries of each association. Consecrated within an indigenous territory, the Great Indigenous Reservation of Vaupés, granted by Resolution Number 0086 of July 27, 1982 of INCORA and Agreement 304 of April 17, 2013 of INCODER.

Here below the presidents of the 5 AATI[68] they lead the communities

[68] See current legal representative: Información adicional/Certificados rte leg 2023

Organization name	Association of Traditional Indigenous Authorities Yurutí of Vaupés ASATRAIYUVA
Contact person	Gonzalo Suárez
Title	Legal Representative
Address	Community: Santa Rosalia Reservation: Vaupés Municipality: Mitú Department: Vaupés
Telephone	+57 314 2658220
Email	gsuarezrodriguez51@gmail.com

Organization name	Zonal Association of Traditional Indigenous Authorities of Acaricuara - AZATIAC
Contact person	Rubiano Alfonso Rubio Mantilla
Title	Legal Representative
Address	Community: Acaricuara Reservation: Vaupés Municipality: Mitú Department: Vaupés
Telephone	+57 312 2590205
Email	azatiac.redd@gmail.com

Organization name	Association of Traditional Authorities - PAMIJABOVA of the Cuduyarí River for an Own Government - ASOUDIC
Contact person	Gaudencio Martínez
Title	Legal Representative
Address	Community: Puerto Golondrina Reservation: Vaupés Municipality: Mitú Department: Vaupés
Telephone	+57 311 2827465
Email	gaudencubeo75@hotmail.com

Organization name	Association of Middle Vaupés Authorities - AATIVAM
Contact person	Jose Luis Hernandez
Title	Legal Representative
Address	Community: San Pablo de Mandí Municipality: Mitú Department: Vaupés
Telephone	+57 313 455 0808
Email	asociacionaativam@gmail.co

Organization name	Association of Traditional Indigenous Authorities - AATIAM
Contact person	Cesar Guitierrez
Title	Legal Representative

Address	Community: Seima Cachivera Municipality: Mitú Reservation: Vaupés Department: Vaupés
Telephone	+57 313 4509139
Email	aatiamel1@gmail.com

5.2 Other project participants

Organization name	South Pole Carbon Asset Management S.A.S (South Pole)
Contact person	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 commercializing the mitigation results verified by the project.
Title	José Luis González
Address	REDD+ project manager in Colombia
Telephone	Carrera 46 # 7-59, Medellín, Antioquia, Colombia
Email	+57 (604) 520 5000
	j.gonzalez@southpole.com, info@southpole.com; nbs_latam@southpole.com

5.3 Agreements related to carbon rights

Indigenous peoples, through their indigenous representative organizations (the Associations of Traditional Indigenous Authorities), have legal ownership over the Verified Carbon Credits (VCCs). Since, under the provisions of Decree 1088 of 1993, the Associations of Indigenous Traditional Authorities that make up the large reservation of Vaupés, have the status of entities of Public Law of special character, with legal personality, own assets and administrative autonomy, therefore, they are autonomously and voluntarily that make the decision to be part of the project. Thus, the legal representative of each association has the legal powers to sign commercial agreements such as the one described in Annex 14, which was signed on September 26, 2018 by the legal representatives of that time[69], and whose validity and knowledge lasted in the current legal representatives[70]. From South Pole, different informative assemblies, accompanying meetings, visits to the territory, general assemblies, communiqués and other procedures related to the constant communication between South Pole, AATI and the community have been carried out, in order to ensure that the information provided

[69] See legal representativa that signed ERPA 2018: Información adicional/Certificados rte leg 2018

[70] See current legal representative: Información adicional/Certificados rte leg 2023

since the signing of the ERPA in 2018 is disseminated and fully known to the new newly elected authorities.

For this project, carbon rights are combined with land tenure rights. Annex 14 describes the trade agreements related to carbon rights for the Yutucu REDD+ project.

5.4 Land tenure

Ownership of the project is demonstrable as granted under a law, regulation and decree issued by law enforcement authorities, since in accordance with Articles 329 and 330, states that indigenous authorities are empowered and independent to rule their territories and freely manage their natural resources, they are also in charge of protecting and preserving the renewable natural resources according to the customs, traditions, and culture of the communities.

The indigenous peoples and through their indigenous representative bodies, one of them the Associations of Traditional Indigenous Authorities (AATIs), can implement and develop activities that allow the preservation and conservation of forests, such as the different activities planned by the REDD+ project, because they are located in the indigenous territory Great Indigenous Reservation of Vaupés, granted by Resolution number 0086 of July 27, 1982 issued by INCORA , and the Agreement 304 of April 17, 2013 by INCODER.[71]

The AATIs are entities of a special public nature that constitute organizational and political subjects and have constitutional origins in transitory Article 56[72] as a tool to promote the organization and administration of indigenous territories. The Associations of Traditional Indigenous Authorities are recognized as indigenous representation organizations according to Decree 1088 of 1993.[73] For this reason, in addition to their legal status as an organization, they can act as institutions not only for traditional activities, but also for those not necessarily traditional, as could be, the carrying out of carbon credit marketing projects or REDD+ projects (ISA & FOREST TRENDS, 2010).

[71] See supports at: Soportes\Prueba de derecho\ Resolución 304 de 17-04-2013
[72] Political Constitution of Colombia
[73] See supports at: Soportes\Prueba de derecho\ DECRETO 1088 DE 1993

5.5 Origin of prior consultation

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

However, although Decree 1320 of 1998 establishes a procedure for the development of prior consultation, it is quite limited and is not correctly applied to projects of this nature, since this Decree regulated prior consultation for activities that require environmental license; and until now, the country does not have a clear and homogeneous mechanism that guarantees such consultation nor with regulations on the way in which Free, Prior and Informed Consent (FPIC) proceeds in mitigation projects.

Considering the above, the REDD+ Project has carried out and will carry out socialization processes in the five AATIs considering the methodological guidelines of the BioCarbon Registry Standard in its document Standard for the voluntary carbon market - BCR Standard - from differentiated responsibility to common responsibility. BioCarbon Registry, Version 3.2 of September 23, 2023, Section 16, for stakeholder consultation (see Section 10), in order to inform about the project design and maximize stakeholder participation, assess impacts and establish mitigation measures, and establish permanent communication mechanisms with communities so that they can raise concerns about potential negative impacts during project implementation.

Regarding the need for prior consultation, it is important to mention that after an extensive legal review and the construction of a concept[74] on the exhaustion of the Prior Consultation mechanism to advance REDD+ projects with Indigenous Reservations or Associations of Traditional Indigenous Authorities, it was concluded that REDD+ projects that are implemented with the participation of the ethnic community, and with their acquiescence supported by documents that account for the socialization and decision-making process by their traditional authorities, do not require the involvement of the Colombian State, so that through of a Prior Consultation (as understood by the State) a

[74] See attached document: soporte Concepto Jurídico sobre Mecanismo de Participación en Proyectos REDD+.

legal transaction between private parties is validated, developed through the principle of the autonomy of the freedom of the parties.

This contractual autonomy, common to all persons (legal and natural), is of greater significance in relation to ethnic communities, regardless of whether other fundamental rights of equal constitutional protection are at stake, such as the autonomy and self-determination of peoples, especially, the freedom to decide their socioeconomic future and their priorities. To expect the State to act as a kind of guarantor or validator is equivalent to ignoring the aforementioned freedoms and fundamental rights of the indigenous communities and, therefore, would constitute discriminatory treatment against them, and a violation of their communal right to privacy, by having to provide information regarding a legal transaction (of interest between the parties) to third parties (all State agencies participating in a prior consultation).

Additionally, the existing regulations on Prior Consultation and Free, Prior and Informed Consent (FPIC) in Colombia are being reviewed by the government at the request of ethnic groups; however, prior consultation is not required at this time for REDD+ projects that are formulated jointly with ethnic communities, but the participation of the communities must be ensured and minutes must be drawn up to record the work agreed upon with them, and for this, the REDD+ Project has been implementing its Participation strategy (see Section 10).

6 Climate change adaptation

Projects with climate change mitigation initiatives must propose actions and measures to reduce or mitigate current and future impacts arising from climate change and climate variability.[75] For the REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others, Section 10.8 of the BCR Standard was analyzed to evaluate its application in the framework of the project development. This *Adaptation to climate change* section is subdivided into two items, the first one, composed of five parts where actions related to adaptation to climate change are demonstrated and the second one, composed of four parts, which highlights the development of actions and measures.

[75] BCR Standard: *Standard for the voluntary carbon market – BCR Standard – from differentiated responsibility to common responsibility*. BioCarbon Registry, Version 3.2

Compliance with the project's climate change adaptation criteria is supported by REDD+ activities framed in strategic lines (SL), in the Safeguards and Sustainable Development Goals (SDGs), in the processes of socialization and consultation with stakeholders, and in the Standard Operating Procedures (SOP). This section develops the description of the criteria proposed by the BCR Standard for Adaptation to Climate Change,[76] where in each section, the activity that allows corroborating compliance is mentioned.

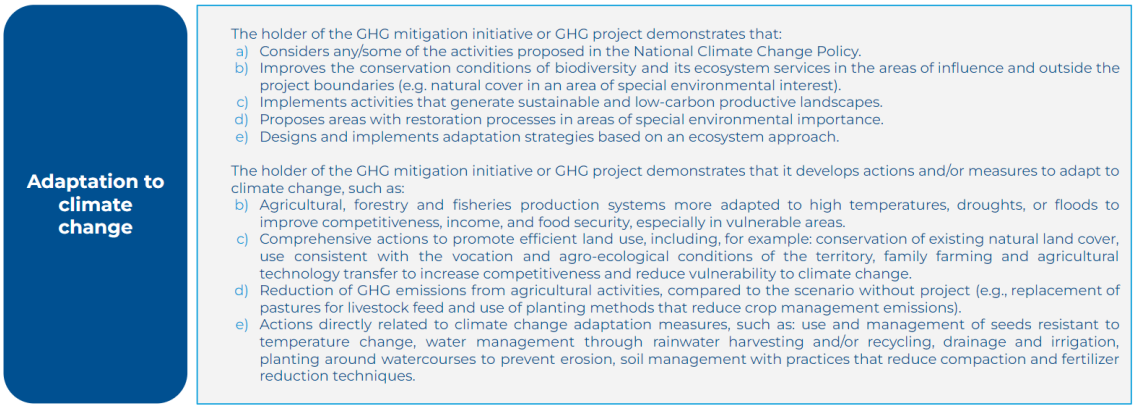


Figure 11: Components in which adaptation to climate change is framed

(Source: Biocarbon Registry, 2022)

Table 28 shows the analysis of the project activities in tune with climate change adaptation.

[76] BCR Standard 3.2.

Table 28. Project actions related to climate change adaptation

Actions	Description	Compliance	Indicator	Monitoring
I. GHG Project holder demonstrates that:				
a) Considers one or more of the strategic lines proposed in the National Climate Change Policies and/or focuses aspects outlined in the regulations of the country where the project is implemented	The objective of the National Climate Change Policy is to incorporate climate change management into public and private decisions in order to advance on a climate-resilient and low-carbon development path that reduces the risks of climate change and allows taking advantage of the opportunities it generates (National Climate Change Policy).[77] Therefore, the implementation of the Policy is developed under five strategic lines and four instrumental lines (Table 29). The activities developed in the REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others are framed in three of the five strategic lines: Low carbon rural development, Management and conservation of ecosystems, and Ecosystem services for low-carbon and climate-resilient development. The activities that comply with the strategic lines of the National Climate Change Policy, as well as the instrumental lines	The project supports local employment and economic diversification of communities through project activities.	• Number of families involved in the FRES • Percentage of local services and products suppliers	**F** - Local governance strengthening See Section 17.4.1
		The project carries out monitoring and conservation activities in the dry forests.	Number of monitoring activities carried out during the period	NA
		The project strengthens relationships and collaborative work with the different sectors and strategic stakeholders in the area of influence, promoting community capacities and leadership around local environmental management and education.	• Number of sector trainings and workshops carried out within the framework of the FRES projects • Number of workshops with educational sector	**F** - Local governance strengthening **S** - Traditional knowledge and own-education **E** - Own economy and

[77] National climate change policy / Luis Gilberto Murillo, minister (2016 - :) ; [Eds.] Climate Change Directorate: Florián Buitrago, Maritza; Pabón Restrepo, Giovanni Andrés; Pérez Álvarez, Paulo Andrés; Rojas Laserna, Mariana; Suárez Castaño, Rodrigo. ----Bogotá, D. C.: Colombia. Ministry of Environment and Sustainable Development, 2017.

Actions	Description	Compliance	Indicator	Monitoring
	that the policy evokes are described here (Table 29).			production systems See Section 17.4.1
b) Improves conditions for the conservation of biodiversity and its ecosystem services, in the areas of influence, outside the project boundaries; i.e., natural cover on environmentally key areas, biological corridors, water management in watersheds, among others	The project's conservation activities demonstrate the environmental and social commitment of the communities that are part of the project. It is also important to highlight that the activities framed within the conservation of biodiversity and its ecosystem services seek to mitigate the impact of neighboring productive activities related to the expansion of the agricultural frontier, which is the main direct cause of deforestation or degradation in the project area and the region of reference.	The project performs maintenance and monitoring in the forests. In addition, carries out community relations and collaborative work with different sectors and strategic stakeholders in the area of influence.	• Number of monitoring reports • Number of fauna sighting reports • Number of trainings • Number of workshops with educational sector	**F** - Local governance strengthening **S** - Traditional knowledge and own-education **E** - Own economy and production systems See Section 17.4.1
c) Implements activities that generate sustainable and low-carbon productive landscapes	These types of activities are characterized by facilitating economic development while minimizing the production of Greenhouse Gases (GHG). The REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others	The project carries out actions framed in the REDD+ guidelines through the integral conservation of the natural forest and joint management of biodiversity. These actions are aimed at restoring the	• Number of hectares restored • Implementation of agroforestry systems with native species of ecological importance	**R** - Ecological and cultural restoration

Actions	Description	Compliance	Indicator	Monitoring
	has a line of activities called: Ecological and cultural restoration and recovery, from which are developed activities that generate the recovery of the landscape in a sustainable and low-carbon way.	ecological and social dynamics of the Amazon Forest, rivers and associated cultural values, as well as recovering areas affected by the impacts of climate change by planting timber, fruit, and palm trees endemic to the area.	• Number of monitoring reports • Number of species planted • Products associated with the sustainable use program and quantity of monthly production • Nurseries established based on traditional practices	See Section 17.4.1
d) Proposes restoration processes in areas of specific environmental importance	The project conserves areas of additional forest within the framework of the reservation territory, in addition to the forest areas framed in the REDD+ project with the purpose of reducing emissions resulting from deforestation, thus reducing deforestation pressure in the area and promoting restoration processes in deforested and/or degraded territories.	The Project carries out conservation activities in forest relicts with the implementation of passive restoration processes. In addition, 797,598.40 hectares of forest in the Colombian Amazon region are being conserved in the project area.	• Number of monitoring reports • Number of hectares with areas under restoration	**F** - Local governance strengthening
e) Designs and implements adaptation strategies based on an ecosystem approach	This action does not apply to the first monitoring period of the project; however, the project seeks to implement adaptation measures based on high value ecosystems, through the monitoring of early deforestation alerts and biodiversity follow-up	NA	NA	NA

Actions	Description	Compliance	Indicator	Monitoring
f) Strengthens the local capacities of institutions and/or communities to take informed decisions to anticipate negative effects derived from climate change (recognition of conditions of vulnerability); as well as to take advantage of opportunities derived from expected or evidenced changes	Through the 4 strategic lines, the project seeks to build resilience and prevention capacities in the face of the effects derived from climate change, in turn generating local opportunities for sustainable entrepreneurship.	The project supports local employment and the economic diversification of communities based on the activities of the strategic lines and promotes prevention of adverse effects of climate change with the implementation of the strategic lines as control measures against the risk of deforestation and other adverse climate effects	Project implementation reports within the FRES framework	**F** - Local governance strengthening **S** - Traditional knowledge and own-education **E** - Economy and production systems See Section 17.4.1
II. GHG project holder demonstrates that develop either actions or measures to adapt to climate change, such as				
a) Agricultural, forestry, and fisheries production systems better adapted to high temperatures, droughts, or floods, to improve competitiveness, income, and food security, especially in vulnerable areas	These types of activities are characterized by facilitating economic development while minimizing the production of Greenhouse Gases (GHG). In order to address the main cause of deforestation and forest degradation in the reservation's territory, which coincides with the expansion of the agricultural frontier, the development of cattle ranching and the harvesting of commercial timber, the proposal is to provide alternative livelihoods that are not based on the excessive extraction of timber and through which the indigenous communities can ensure income without the need to cut down more forests. The activities will involve the local community	The project carries out actions aimed at restoring the ecological and social dynamics of the Amazon Forest, rivers and associated cultural values, as well as recovering areas affected by the impacts of climate change by planting timber, fruit and palm trees endemic to the area.	• Number of hectares restored • Implementation of agroforestry systems with native species of ecological importance. • Number of seeds from the region that have been used in the nursery restoration and creation processes • Number of *chagras* intervened for the integral recovery of their biodiversity	**F** - Local governance strengthening See Section 17.4.1

Actions	Description	Compliance	Indicator	Monitoring
	in the establishment and implementation of new productive programs and the strengthening of existing ones, focusing mainly on activities related to traditional practices.		• Number of fishponds adapted to adverse conditions • Products associated with the sustainable use program and quantity of monthly production • Nurseries established based on traditional practices	
b) Integrated actions that assist in the efficient use of soil, including, i. e., the conservation of existing natural cover, land use consistent with land vocation and agroecological conditions, family farming, and agricultural technology transfer that increases competitiveness by reducing vulnerability to climate change	To stop the loss of diversity, and more in a strategic ecosystem such as the tropical rainforest, the REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others, preserves areas with natural vegetation in the Amazon biome, from relatively old forests and gallery forests, to degraded and eroded areas product of natural regeneration, territories which are not necessarily part of the project area, but are framed in the management areas of the project proponents. Thus, the project activities present a use consistent with the vocation of the land, destined in the territory, and has several integral actions that help with the efficient use of the land within the framework of the FRES	The project monitors the natural forest areas and implements lines of activities with the objective of conserving the forested territory and promoting the increase of forest reserves.	• Number of monitoring reports • Monthly production of products generated under the project • Annual partnership conservation activities	**F** - Local governance strengthening **R** - Ecological and cultural restoration **E** - Own economy and production systems **S** - Traditional knowledge and own-education See Section 17.4.1
c) Reduction of GHG emissions from agricultural activities, compared to the non-project scenario (i. e., replacement of pastures for	This action does not apply to the mitigation project	NA	NA	NA

Actions	Description	Compliance	Indicator	Monitoring
livestock feed and use of planting methods that reduce emissions from crop management)				
d) Actions causally related to climate change adaptation measures, such as use and management of seeds resistant to temperature change, water management through rainwater harvesting, recycling, drainage, and irrigation, reforestation of watersheds to prevent erosion, soil management with practices that reduce compaction, and techniques to reduce fertilizer use	Through the 4 strategic lines, the project seeks to build resilience and prevention capacities in the face of the effects derived from climate change, in turn generating local opportunities for sustainable entrepreneurship.	The project supports local employment and the economic diversification of communities based on the activities of the strategic lines and promotes prevention of adverse effects of climate change with the implementation of the strategic lines as control measures against the risk of deforestation and other adverse climate effects.	Project implementation reports within the FRES framework	**F** - Local governance strengthening **R** - Ecological and cultural restoration **E** - Own economy and production systems **S** - Traditional knowledge and own-education See Section 17.4.1

(Source: South Pole, based on information provided by the initiative holder, 2022).

Table 29. Paragraph a, numeral I

National Climate Change Policy	Requirement	Compliance	Indicator	Support (SL)	SDG
Strategic Line: 1. Low-carbon rural development	Considers some of the activities proposed in the National Climate Change Policy	The project supports local employment and economic diversification of communities through the implementation of project activities.	• Number of families involved in the FRES • Percentage of suppliers of local services and products	F - Local governance strengthening See Section 17.4.1	-
Strategic Line: 2. Low-carbon and climate-resilient urban development	Considers some of the activities proposed in the National Climate Change Policy	Not Applicable	-	-	-
Strategic Line: 3. Low-carbon and climate-resilient mining-energy development	Considers some of the activities proposed in the National Climate Change Policy	Not Applicable	-	-	-
Strategic Line: 4. Low-carbon and climate-resilient infrastructure development	Considers some of the activities proposed in the National Climate Change Policy	The project supports local employment and economic diversification of communities through the implementation of project activities.	• Number of families involved in the FRES • Percentage of suppliers of local services and products	**F** - Local governance strengthening	11. Sustainable cities and communities
Strategic Line: 5. Management and conservation of ecosystems and ecosystem services for low-carbon and climate-resilient development	Considers some of the activities proposed in the National Climate Change Policy	The project carries out monitoring and conservation activities of tropical rainforests in the Amazon biome in Colombia.	Number of community monitoring activities	**F** - Local governance strengthening **E** - Own economy and production systems **S** - Traditional knowledge and own-education	15. Life on Land
Instrumental Lines: a. Climate change management planning	Considers some of the activities proposed in the National Climate Change Policy	Not Applicable	-	-	-
Instrumental Lines:	Considers some of the activities proposed in	Not Applicable	-	-	-

National Climate Change Policy	Requirement	Compliance	Indicator	Support (SL)	SDG
b. Information and Science, Technology and Research	the National Climate Change Policy				
Instrumental Lines: **c. Education**	Considers some of the activities proposed in the National Climate Change Policy	The project seeks to strengthen relationships and collaborative work with the different sectors and strategic stakeholders in the area of influence, promoting community capacities and leadership around local environmental management and education.	Number of people who have participated in the learning workshops within the FRES projects	**F** - Local governance strengthening	4. Quality Education
Instrumental Lines: **c. Financing and economic instruments**	Considers some of the activities proposed in the National Climate Change Policy	The project supports local employment and economic diversification of the communities through activities that seek sustainability and environmental conservation	Number of families involved in the FRES	**F** - Local governance strengthening **R** - Ecological and cultural restoration **E** - Own economy and production systems **S** - Traditional knowledge and own-education	11. Sustainable cities and communities

(Source: South Pole, based on information provided by the initiative holder, 2022).

7 Risk management

For the risk assessment of the project, the Risk Tool designed by South Pole to perform a comprehensive risk assessment of the projects was used, which meets the criteria established in the tools of the *No net harm environmental and social safeguards (NNH) standard Version 1.0 of March 7, 2023*, and the *Permanence and risk management version 1.0 of March 7, 2023*.

The tool designed by South Pole provides an overall risk measurement that can be incorporated into the contingency funds of each of the financing instruments linked to these projects. This function allows the strategies designed and implemented to tend towards permanence and long-term sustainability.

The methodology is focused on identifying adverse situations that may arise in the execution of a project, which prevent the development of activities or the achievement of the proposed objectives. This methodology covers from the identification of risks to the management, monitoring, and feedback process. The methodology is summarized in the following steps (see Figure 12):

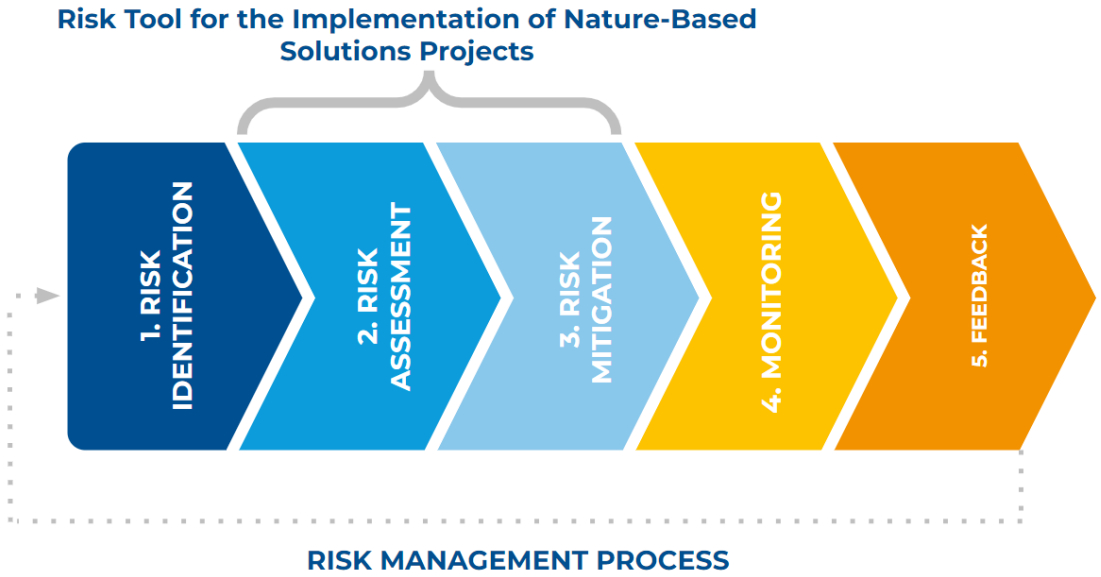


Figure 12. Risk management process

(Source: South Pole, 2022)

part of the first stage in the risk management process, threats are identified based on the judgment and expertise of those responsible for South Pole's environmental projects.

The second stage of the process is risk assessment, which is a function of two main variables: probability and impact. A framework was established to assess and quantify these variables to determine the level of inherent risk or pure risk, i.e., the risk in the absence of any mitigation measures. The importance of this stage lies in the fact that it provides a baseline to show the evolution of the risk throughout the management process.

A third stage in the risk management process is mitigation, which aims to avoid, reduce, and manage risks. If, even when managed, the risks persist, the residual risk is obtained, i.e. the risk that remains even after the necessary controls have been applied. This is based on the premise that risk can never be zero and that the intention of risk management is to generate a reasonable degree of confidence in the fulfillment of project objectives, bringing risks to an acceptable level. Figure 13 shows the process flow that leads to the residual risk.

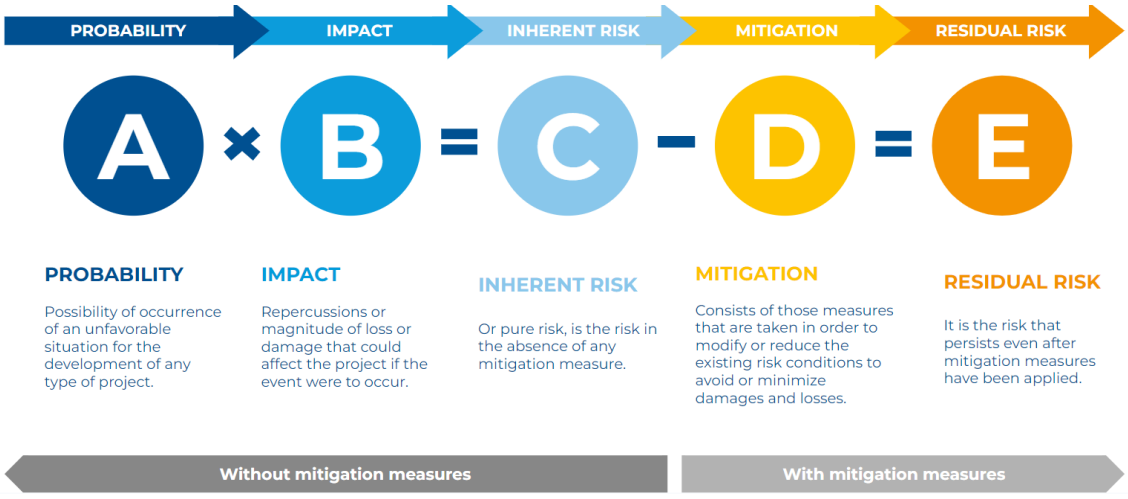


Figure 13. Risk process flow
(Source: South Pole, 2022)

For the evaluation of risks related to the implementation of the REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others, the requirements of the *Permanence and Risk Management tool, version 1.0 of March 7, 2023*, and according to section 11.3 of the methodologic BCR V3.2 were considered, where natural and anthropic risks were evaluated, and the assessment of the project's permanence risks

due to natural events was taken into account after analyzing the risks due to fires, landslides, floods, pests and diseases, volcanic eruptions or extreme events to which the project is exposed,[78] and financial and stakeholder participation risks, among others, were also evaluated. The description, mitigation measures and application that seek to keep the benefits of the project, by using the Risk Tool were carried out to obtain the results.

In this order of ideas, a description of the mitigation measures that help preserve the benefits of the project was made by applying the Risk Tool to reduce the uncertainty of the results, given that identifying the risks that could potentially put the carbon reserves at risk in the short or long term or the permanence of the owners of the initiative during the accredited period, allows the proponent to build strategies that minimize the impact and reduce the possibility of occurrence of the risk, maintaining over time the greatest possible amount of benefits. Additionally, each verification is intended to re-evaluate the categories and to monitor and follow up on the measures formulated in each monitoring report, in addition, according to the level of risk, a 20% is deducted from the projected emissions, so that the potential risks are reflected in terms of results (carbon credits).

On the other hand, risk management in the leakage zones is intended to be managed through the implementation of FRES activities, as these are aimed at implementing reforestation activities, strengthening productive value chains, income diversification for the communities, among other actions that improve the proponent's quality of life, in order to reduce the agents and drivers of deforestation in the area, minimizing the risks of deforestation and its causes. Likewise, the methodology establishes a 10% reduction because of the risk in the leakage zone, which would be equivalent to the projected deforestation of the project

The complete description of the methodology and risk analysis can be found in Annex 11 Risk Management.[79]

[78] According to Section 14.4: Monitoring of the REDD+project permanence of the REDD+ methodology document.
[79] See in: Soportes\Anexos\ Anexo 11_Risk Tool _Proyecto REDD_YUTUCU y Otros.

Tabla 30. Environmental, financial and social risk mitigation measures for the REDD+ YUTUCU project.

Type of risk	Risk	Mitigation measures	Monitoring period
Enviorenmental risk	Fire risk	In the project region, IDEAM recorded only 1 fire during the 2011-2018 monitoring period that affected 0.1 ha. Therefore, this risk is not more frequent; however, given the response capabilities of the competent entities in the region and the project owners. In the medium and long term, it is intended to include campaigns on response and mitigation in the event of a fire event within the community, as well as periodically include informative risk management notices. In addition, geospatial identification of hot spots in the project area will be carried out for each monitoring and warnings will be issued in these areas.	Each verification period
	Earthquake risk	No seismic events have been reported since 1970. However, as a preventive measure, it is necessary to review the IRIS and Desinventar databases to obtain real results and estimates of the risk and thus monitor it.	annual report presented at each verification
	Pest and disease risk	In the Colombian Amazon forests there have been no reported studies related to phytosanitary problems that cause the massive death of trees and lead to the loss of large areas of forest, so the risk of infestation by insect pests that affect carbon stocks is assumed to be very low.	Once the Environmental Management Plan or the Forestry Management Plan is released

		As a mitigation measure, it is intended to incorporate the results related to the state of the forests and potential phytosanitary diseases once the Environmental Management Plan or Forestry Management Plan for the project area is formulated by the competent entities. In this way, the risk will be reevaluated.	
	Wind risk	The risk of wind will be managed according to the annual review of IDEAM's contributions to the department to establish potential alerts for increased winds in the area to the extent of removing vegetation areas and strengthening degraded areas in those zones.	The monitoring will be carried out every year. According to IDEAM contributions
	Water risk	The project area is based on the hydrographic zone of the Amazon, the department of Vaupés includes 12 hydrographic subzones and 1,390 basins of the sub-level subsequent to the hydrographic subzone, all of these subzones have high water retention capacity (CDA; ASONOP, 2013). Therefore, although the risk has a low possibility of occurring, given the water richness of the area, the mitigation measure is focused on two fronts: 1.Monitor every year the deforestation patches that occur in areas surrounding water sources in the project area. 2.Execute in the implementation phase the strategic line R focused on the activity of	Monitoring will be conducted annually Action 2. To be evaluated and monitored once the F line activity is implemented.

		protective plantations in water margins with native species.	
Financial risk	Project stablishment budget Project maintenance budget Project holder financial capicity	The financial risk mitigation measure is primarily related to the strategic alliances achieved by the owner of the initiative with different governmental entities and NGOs in the region have been able to achieve funding for the activities, which has allowed the project to reach economic stability in the fourth year, only in this case (first verification period). Likewise, it is necessary to constantly seek future funding for the implementation of the project's strategic lines of action. The search for financing will be given both by the condition and privilege of the indigenous community and the developer within its networking with companies.	According to financial needs
Social risk	Land disputes	The 5 AATIS have legal support for the adjudication of their lands through defined boundaries. However, due to outdated cadastral information and the precariousness of boundary delimitation, the associations adjacent to the project area have occupied areas that belong to the association. Therefore, in order to avoid double counting, a geospatial study was conducted to define these overlapping areas and recategorize them as ineligible and not quantify the emission reductions as credits. See Annex 15. Additionally, as a long-term measure, it is stipulated that the owner convene a meeting with the associations that present this situation and reach zonification agreements.	Every two years* * Delimitation agreements or processes involving a land conflict can take years due to the magnitude of the complexity of the conflict.

	Political risk	The mitigation measure seeks to generate contact with local authorities, law enforcement and environmental authorities in the project area, as well as the strengthening of community governance, for which the project expects to generate community impacts related to the improvement of social welfare, territorial governance in the project area and the strengthening of the organizational structure of the AATI; it also promotes the development of capacities for the management of the own economy system, collaborative and alternative biological products, which contributes to generate supply chains for the region with low impact on deforestation and high associated social and environmental benefits.	Every two years
	Opportunity cost	Since the indigenous economy is based on the chagra, the project's strategic lines of action include the Economy and Production Systems line, which aims to strengthen chagras activities, prioritize the most relevant productive value chains for the community and thus diversify its economic income.	It will be reviewed annually, however, the results will be presented for each verification performed.

7.1 Reversal risk management

The project has designed a relationship and communication strategy for knowledge appropriation, with the objective of reducing environmental and social risks, as well as ensuring participation, clear communication and adequate implementation and

monitoring through a participatory baseline. Additional details of the strategy are described in Annex 13.

8 Environmental Aspects

The existing conditions prior to the project are a set of biophysical aspects and historical conditions that make up the project baseline. For the REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others, the lack of productive alternatives and a growing demand for agricultural territories and the intervention of extractive policies configure the conditions prior to the start of the project, which are described in Section 3.3 of this document as the Baseline Scenario.

Next, the conditions prior to project initiation of the biophysical aspects and the historical conditions that make up the baseline of the project's first instance area are presented.[80]

8.1 Physical characteristics

8.1.1 Climate

The Vaupés department territory corresponds to the warm thermal ground. The Koeppen classification indicates that it has an always humid Af [81] equatorial climate, that is, precipitation throughout the year, lack of a truly dry period and average relative humidity of 84% with variations of more or less than 5%(CDA, 2014).

For the AATIVAM, ASATRAITUVA and ASOUDIC life plans, indigenous communities describe the climate with typical characteristics of humid tropical forest areas, with an average rainfall of 3,254 mm and a rainy season from April to August. The period of least precipitation extends from December to the end of February and March. The average region temperature is 25.7°C with some variations throughout the year and the relative humidity presents figures close to 84% in an annual average and an average annual solar radiation of 104.55 hours / month and the highest is 135.7 hours / month.

[80] For details of the expansion region see Annex 1.
[81] (Af) A-main climate group (Rainy tropical climates. Every month, the average temperature is above 18º C. There is no winter season and the rains are abundant). f- seasonal precipitation distribution (rainy weather all year long, without a dry season) (Inzunza, 2007).

Temperature

WorldClim data indicates that the average annual temperature in the first instance project area varies between 24.4 and 26.2°C (See Figure 14). The highest temperature values are found in the northwest region of the project and the lowest values are found in this same region in the mountainous area of the denudative structural massif in AATIVAM. Data taken from ASOUDIC's Pituna station indicate an average annual temperature for the basin of 26.2°C (minimum of 25°C in July and maximum of 27.6°C in February annually) (CDA, 2014).

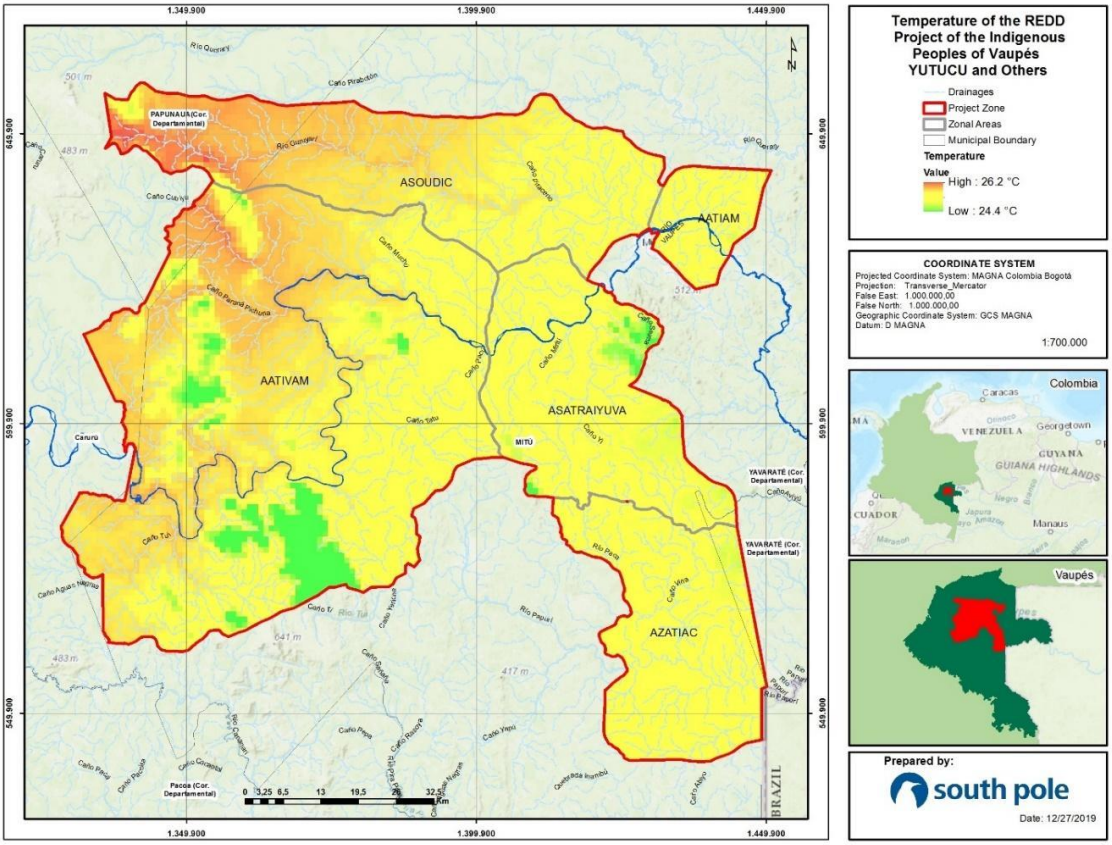


Figure 14. Temperature in AATI territory of the REDD+ project of the indigenous peoples of Vaupés YUTUCU and Others

(Source: WorldClim. Fick, S.E., and R.J. Hijmans, 2017. Worldclim 2: New 1-km spatial resolution climate surfaces for global land areas. International Journal of Climatology. http://www.worldclim.org/bioclim)

Precipitation

The precipitation distribution in the regions of the first instance project area is presented in Figure 15. The average annual precipitation (Figure 16) in the project area varies between 2,949 mm to 3,379 mm of annual rainfall, with the highest precipitation values towards the east of the area (AZATIAC and AATIAM) and the lowest values towards the southwest zone (AATIVAM). According to meteorological stations records in Mandí, the annual precipitation is 3,419.6 mm and in Yuruparí, it is 3,881.9 mm.

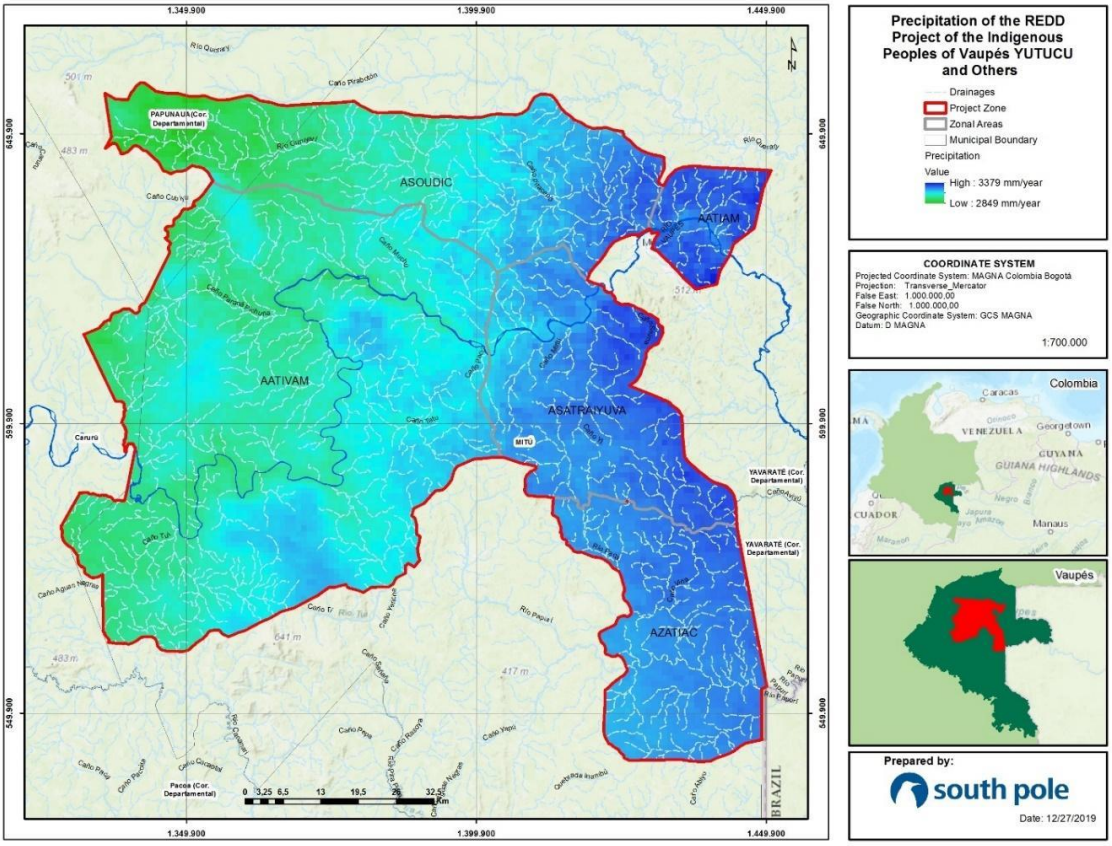


Figure 15. Precipitation in AATI territory of the REDD+ project of the indigenous peoples of Vaupés YUTUCU and Others

(Source: WorldClim. Fick, S.E. and R.J. Hijmans, 2017. Worldclim 2: New 1-km spatial resolution climate surfaces for global land areas. International Journal of Climatology. http://www.worldclim.org/bioclim)

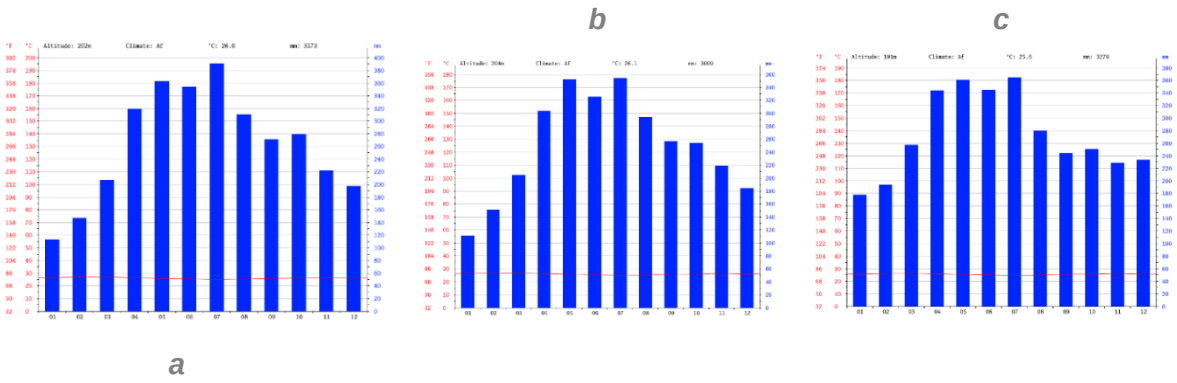


Figure 16. Precipitation distribution in: a. Cubeos ASOUDIC, b. Pucarón, AATIVAM and c. Acaricuara, AZATIAC

(Source: https://es.climate-data.org/america-del-sur/colombia/vaupes/vda-union-indigenas-zona-de-acar-466555/)

Evapotranspiration

The actual monthly evapotranspiration [82] in the first instance area varies between 45 mm and 149 mm, with the highest values in the northeast zone of the project area and the lowest values towards the southeast zone (see Figure 17).

[82] Evapotranspiration is the combination between the transpiration of vegetation and evaporation from the ground.. SSEBop Evapotranspiration Products. (Version 4.0, June 2017). Available at: https://earlywarning.usgs.gov/fews/product/460.

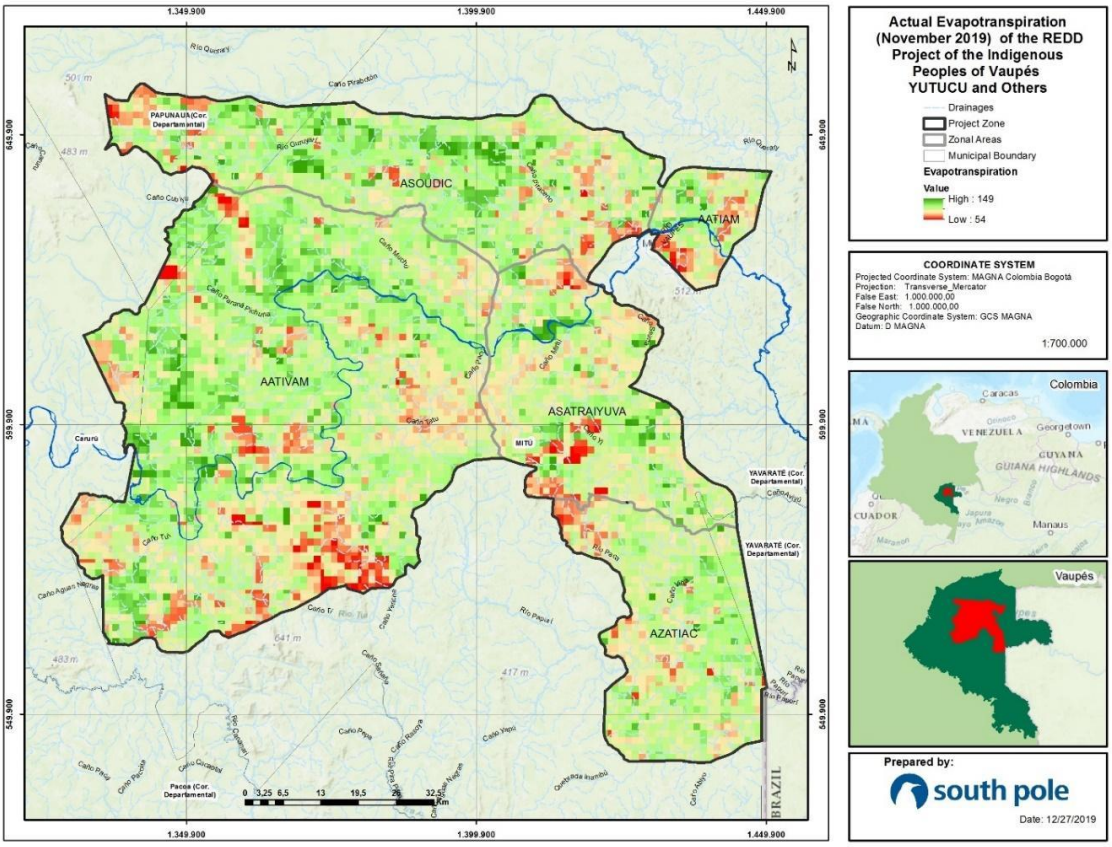


Figure 17. Evapotranspiration in AATI territory of the REDD+ project of the indigenous peoples of Vaupés YUTUCU and Others

(Source: SSEBop Evapotranspiration Products 2017 https://earlywarning.usgs.gov/fews/product/460)

8.1.2 Hydrology

The first instance project area is located in the territory of two large hydrographic sub-zones defined by IDEAM (Figure 18), that of lower Vaupés (area) (4207-02)[83] in AATIAM, AATIVAM, ASATRAIYUVA and ASOUDIC and that of the Papurí River (4209) in AZATIAC territory. This last river is a main tributary of the Vaupés River. The Cuduyarí river is one of the main tributaries of the Vaupés River with an approximate route of

[83] Hydrography code defined by IDEAM

148.41 kilometers to its mouth at the Vaupés River near the urban area. This river has dark waters with high tannin content and low concentrations of nitrates and dissolved oxygen, which indicates low fish production (CDA, 2016).

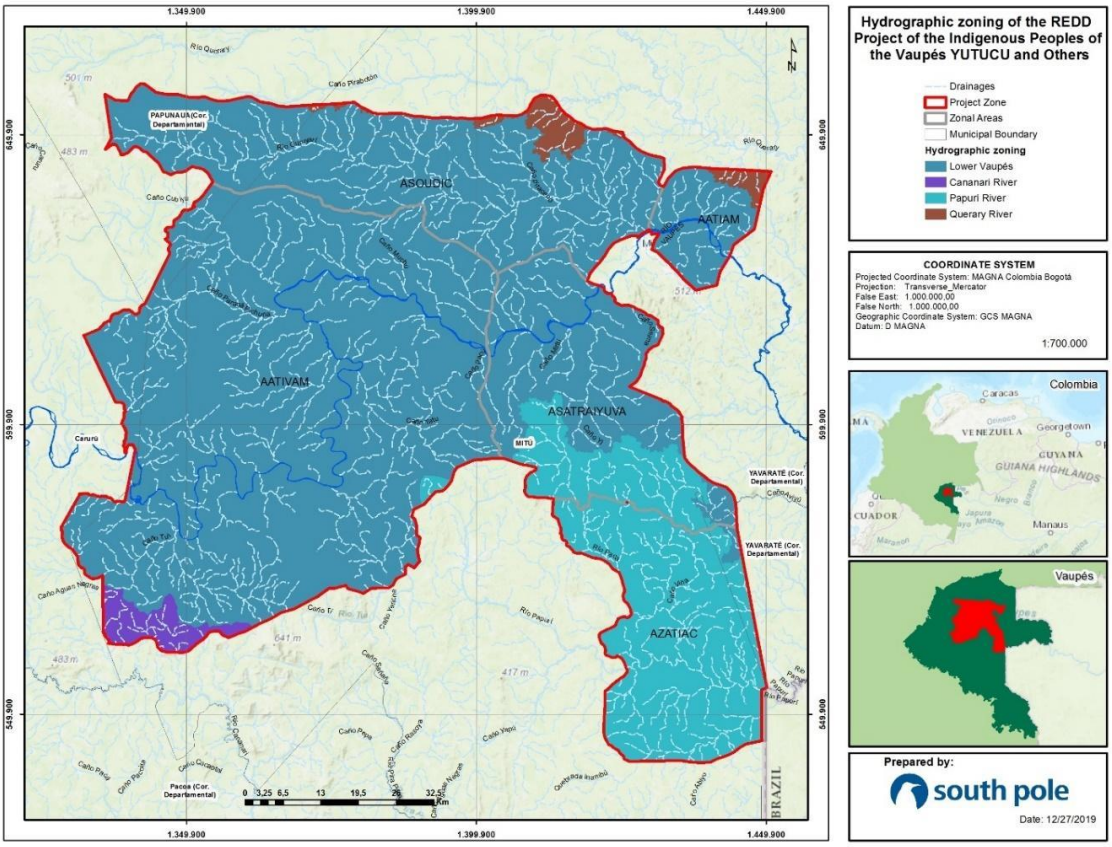


Figure 18. Hydrographic zoning in AATI territory of the REDD+ project of the indigenous peoples of the Vaupés YUTUCU and Others [84]

(Source: IDEAM, 2013)

[84] This map represents the analysis units for the environmental planning of the territory defined by the IDEAM in agreement with the Geographical Institute Agustín Codazzi (IGAC), at a scale of 1: 500,000 called hydrographic zoning of Colombia, some modifications have been made to the hydrographic zoning map 2010, in accordance with the observations made by the regional autonomous corporations (IDEAM, 2013).

The rivers constitute the main access and communication arteries between the communities and the municipality of Mitú, since most of the populations are settled within populations associated with rivers or the basins they occupy. This occupation is not only due to physical conditions (water availability, supply, use of hydrobiological resources for consumption, ritual practices), but also, due to the cultural distribution of human groups that determined an allocation of specific populations places and ethnic groups according to the travel (journey) that the so-called "*Anaconda Ancestral*"[85] made. However, despite the fact that rivers are characterized by being the main means of communication, the existence of *cachiveras* (river rapids) limits navigability for large vessels, so in some sectors, the vessel must be dragged in the so-called dry docks or make transshipment to other vessels (CDA, 2014). The origin of the different ethnic groups is common from a "*laguna de leche*" (myth) traveling in an ancestral anaconda and that is why they are in an area of their own culture that corresponds to the Tucano-oriental family.

Additionally, in the first instance project area, the different AATI and communities of the reservation highlight, in the life plan, the importance of some creeks and other bodies of water such as lagoons and rapids.[86]

8.1.3 Topography

Information from the ASTER Digital Elevation Model developed jointly between NASA (US National Aeronautics and Space Administration) and METI (Japan's Ministry of Economy, Trade and Industry[87] shows that within the project region the heights are distributed between 47 masl and 637 masl (Figure 19), which corresponds to a geomorphology of valleys and some low hills and hills.

[85] This account of the origin of the Great Vaupés groups that takes place in the sacred universe of the waters, indicates that the Anaconda, the aquatic animal par excellence, is the creator of the cultural and social order. From the *Puerta de las Aguas* in the east, went up the mythical river until Vaupés, center of the world. During its travel (journey), the Ancestral Anaconda, which for some groups is an Anaconda-Canoe, periodically emerged from the river to leave the inhabitants of the place on the shore where the groups were located, and their hierarchies were assigned to them: in the mouths of the river the older brothers remained and in the headers, the younger siblings. The Ancestral Anaconda taught each group their language and gave them their identity marks: the coca, yucca, tobacco and *yajé* plants, body painting designs and ritual instruments. Taken from: http://proyectos.banrepcultural.org/museo-etnografico/es/naturaleza/la-anaconda-ancestral

[86] See documentation in the information management path: Soportes\Actividades de proyecto\Actividades_2019\Drenajes priorizados

[87] NASA/METI/AIST/Japan Spacesystems, and U.S./Japan ASTER Science Team (2009). ASTER Global Digital Elevation Model [Data set]. NASA EOSDIS Land Processes DAAC. doi: 10.5067/ASTER/ASTGTM.002. Disponible en: https://gdex.cr.usgs.gov/gdex/

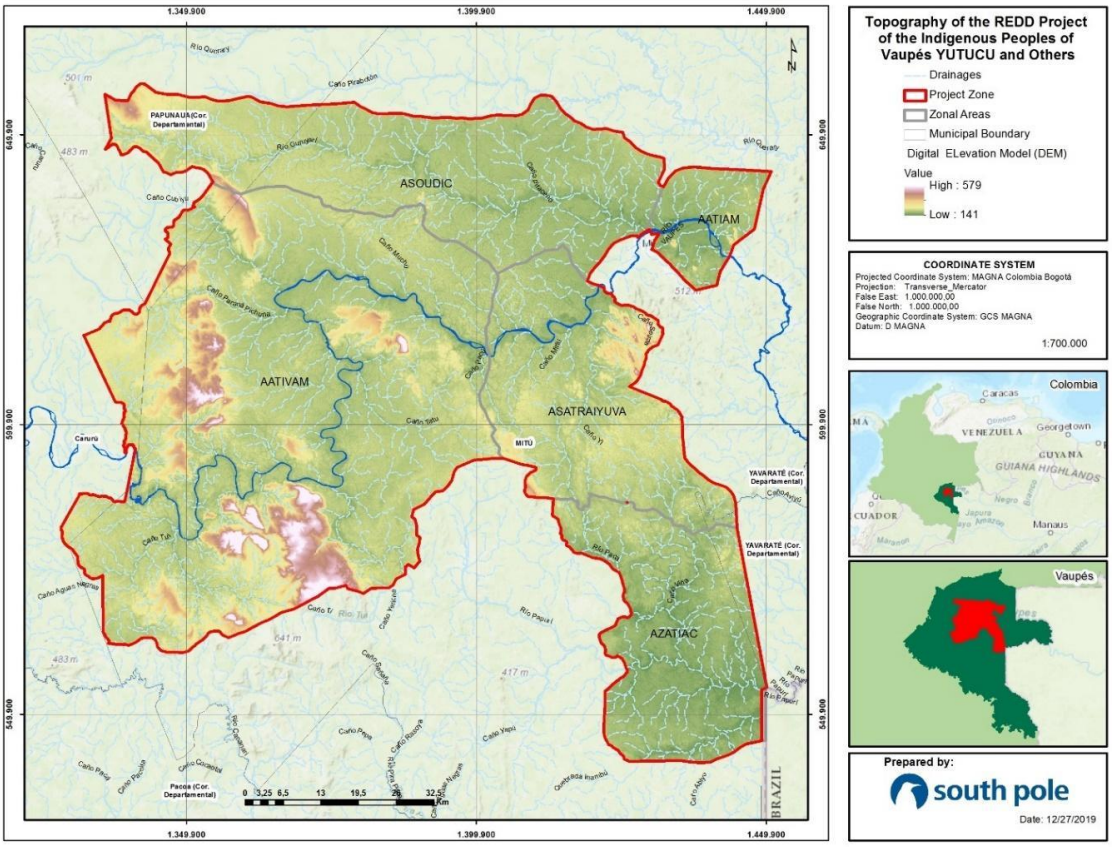


Figure 19. Digital elevation model in AATI territory of the REDD+ project of the indigenous peoples of Vaupés YUTUCU and Others

(Source: ASTER-Global DEM (NASA et al. 2009))

8.1.4 Geomorphology and Geology

Vaupés is part of the Guayanas massif, formation of the Precambrian era and Paleozoic formation of Araracuara and the geological units of the Mitú Migratory Complex (CMM), the Pirá-Paraná formation, the Araracuara formation, sediments of the tertiary era are recognized Upper Amazon and Quaternary-era deposits are recognized (CDA, 2014).

Landscape

The project area has a denudative plain landscape unit predominance in AZATIAC, AATIAM and ASATRAIYUVA, while in ASOUDIC, the denudative structural hills prevail. For its part, AATIVAM has denudative structural massif areas, in addition to the predominance of denudative structural hills, see Table 31 y Figure 20.

Table 31. Landscapes in the AATI territory of the REDD+ project of the indigenous peoples of Vaupés YUTUCU and Others

Landscape	Area (ha)	%
Waterbody	6,491.18	0.76
Denudative structural hills	423,023.82	49.58
Denudative structural massif	175,084.24	20.52
Denudative peneplains	201,870.63	23.66
Alluvial valley	46,610.41	5.4637
Total	**853,080.28**	**100**

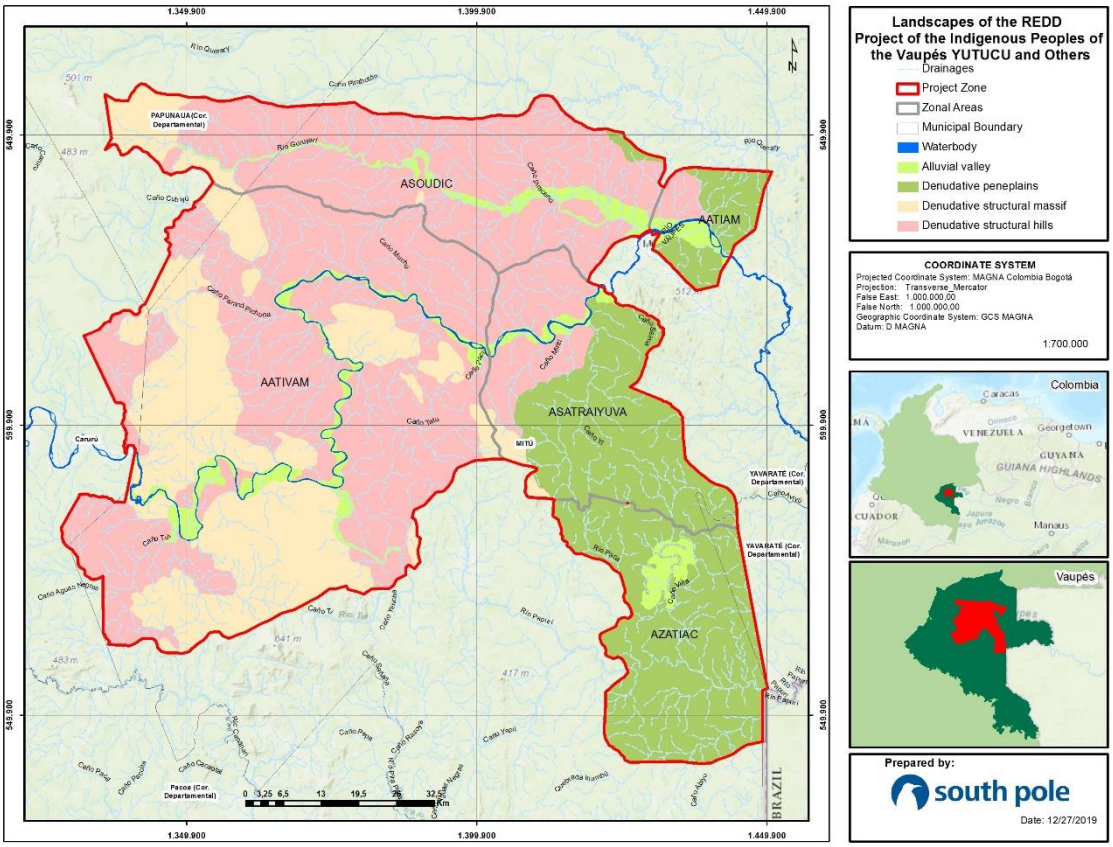


Figure 20. Landscapes in AATI territory of the REDD+ project of the indigenous peoples of Vaupés YUTUCU and Others

(Source: IGAC Colombian Territory Soil Map at a scale of 1: 100,000. Department: Vaupés https://geoportal.igac.gov.co/es/contenido/datos-abiertos-agrologia)

Relief

The predominant relief in the first instance project area is of hills and low mountains (ASOUDIC, AATIVAM, ASATRAIYUVA), while in the southeastern region of AZATIAC, it is of peneplains followed by residual hills and low mountains (Table 32 and Figure 21). For its part in AATIAM the type of relief is more diverse and has hills and low mountains, peneplains, residual hills and medium terraces.

Table 32. Relief in AATI territory of the REDD+ project of the indigenous peoples of Vaupés YUTUCU and Others

Type of relief	Area (ha)	%
Residual hills	11,604.70	1.36
Waterbody	6,491.18	0.76
Hills and low mountains	632,326.98	74.12
Peneplains	128,019.82	15.01
Floodplain	18,686.19	2.19
High terrace	13,026.98	1.53
Medium terrace	14,897.25	1.75
Small valleys	28,027.19	3.29
Total	**853.080.28**	**100.00**

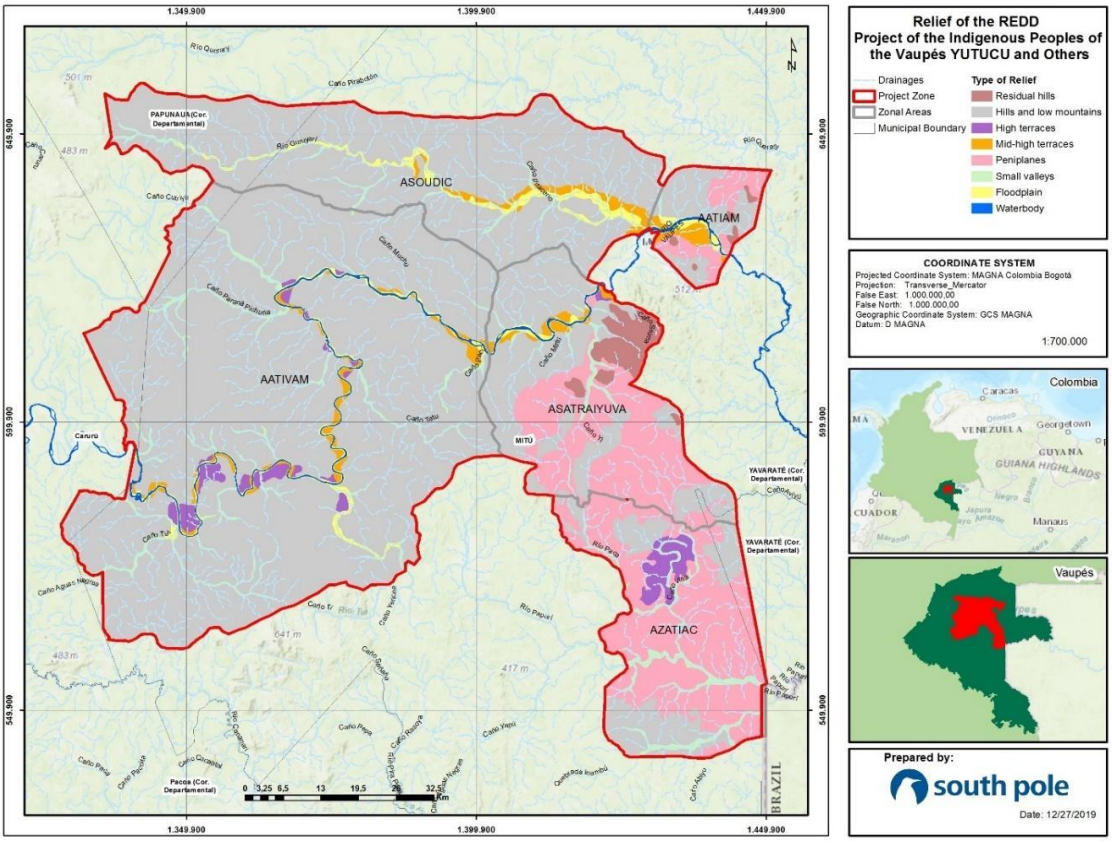


Figure 21. Relief in AATI territory of the REDD+ project of the indigenous peoples of Vaupés YUTUCU and Others

(Source: IGAC Colombian Territory Soil Maps at a scale of 1: 100,000. Department: Vaupés https://geoportal.igac.gov.co/es/contenido/datos-abiertos-agrologia)

Lithology

In the first instance project area, a predominantly clay sedimentary lithology predominates (ASOUDIC, center of AATIVAM and north of ASATRAIYUVA), followed by an alternation of sandstones and white and gray clay stones towards the south-west of the region (AATIVAM) (Table 33 y Figure 22). The lithology is quite different towards the east of the interest area with predominance of sand deposits and reworked clays from the Guiana Shield and residual materials from the shield (granite gneiss) in AZATIAC and a similar composition in AATIAM, with the presence of alluvial sediments constituted mainly by clays, some silts, and sands. In ASATRAIYUVA, the lithological composition is a transition between sand deposits and reworked clays from the Guiana Shield and sedimentary rocks, predominantly clays.

Table 33. Lithology in the first instance area

Lithology	Area (ha)	%
Alternation of white and gray sandstones and clays	170,145.19	19.94
Recent predominantly fine alluvium	18,686.19	2.19
Waterbody	6,491.18	0.76
Deposits of reworked sands and clays from the Guiana Shield	128,019.82	15.01
Residual materials from the shield (granite gneiss)	51,072.18	5.99
Gneiss and little altered migmatites	11,604.70	1.36
Predominantly clayey sedimentary rocks	411,109.61	48.19
Alluvial sediments made up of kaolinitic clays and quartz sands	13,026.98	1.53
Alluvial sediments consisting mainly of clays, some silts and sands	14,897.25	1.75
Alluvial and colluvial sediments with clays, silts and sands	4,939.05	0.58
Colluvial and alluvial fine quartz sediments	23,088.15	2.71
Total	**853,080.28**	**100.00**

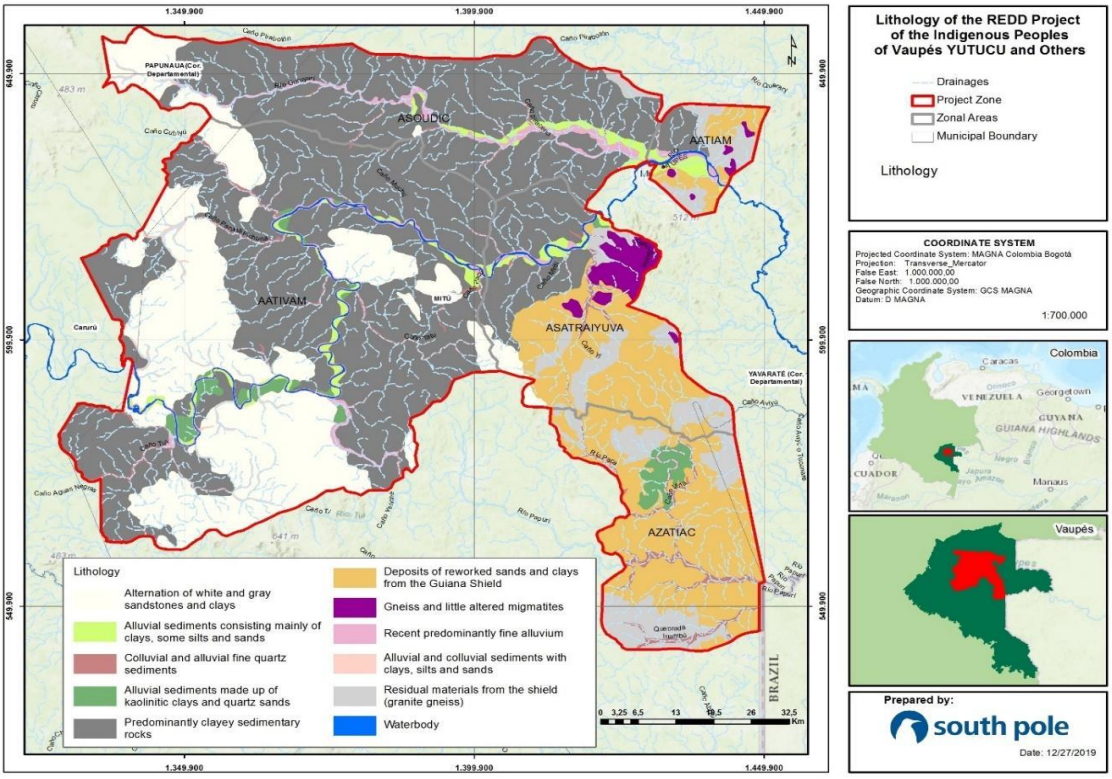


Figure 22. Lithology in the first instance area

(Source: IGAC Colombian Territory Soil Maps at a scale of 1: 100,000. Department: Vaupés https://geoportal.igac.gov.co/es/contenido/datos-abiertos-agrologia)

Geology

Regarding geology, it is possible to recognize three predominant types of rocks in the first instance project area (Table 34, Figure 23). First, the 66% conglomerates and little consolidated sandstone and ferruginous matrix (N1-Sc) present in the ASOUDIC, AATIVAM and ASATRAIYUVA. This is followed by the quartzophelpathic, amphibolite, migmatite, quartzite, quartz gneiss and granite (PP-Mmg1) gneiss, known as the Mitu Migmatitic Complex (CMM) dominant in AZATIAC and ASATRAIYUVA. The formation belonging to the Ordovician, from the Paleozoic era, composed of sedimentary rocks, such as lodolites, shales, silt limotes, metalimolites, feldspathic metarenites and muddy metarenites with marble lenses (O-Sm), is present in the high areas of the reservation of the AATIVAM zonal.

Table 34. Geology in first instance territory of the project

Lithology	Description	Area (ha)	%
N1-Sc	Conglomerates and sandstones, poorly consolidated with ferruginous and clay matrix. Also clays with intercalations of limolites, sandy lodolites and sandstones.	568,996.60	66.68
NP-Pm	Alkaline gabbros	290.98	0.03
NP-VCc	Conglomerates, rhyodacytic tuffs, quartz-sandstone and feldspathic sandstone.	7,323.18	0.86
O-Sm	Lodolites, shales, siliceous siltstones, metalimolites, feldspathic metarenites and muddy metarenites with marble lenses.	97,741.22	11.45
PP-Mmg1	Quartzofelpathic gneiss, amphibolites, migmatites, quartzites, quartz gneiss and granites with variations to alaskites and monzonites.	162,418.79	19.03
Q-al	Alluvial and floodplain deposits	16,509.22	1.93
Total		**801,828.46**	**100.00**

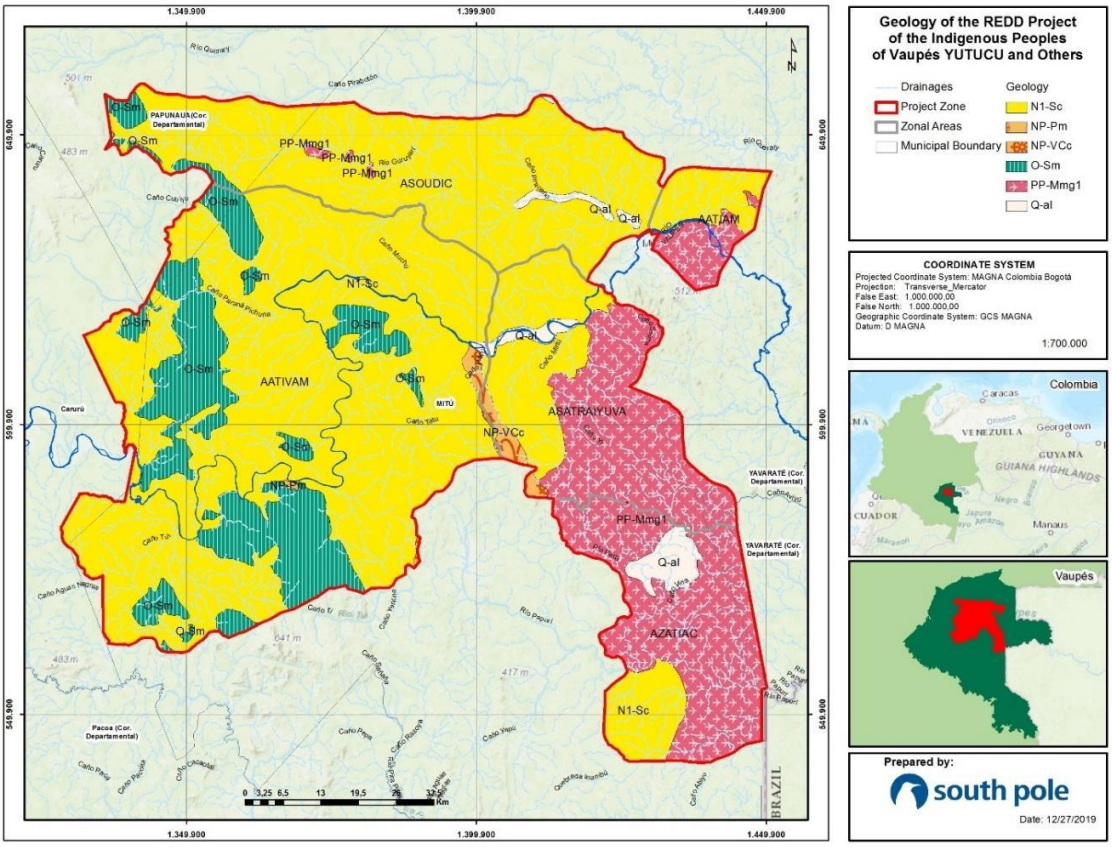


Figure 23. Geology in AATI territory of the REDD+ project of the indigenous peoples of Vaupés YUTUCU and Others

(Source: IGAC Colombian Territory Lands Use Capacity Maps at a scale of 1: 100,000. Department: Vaupés. https://geoportal.igac.gov.co/es/contenido/datos-abiertos-agrologia)

8.1.5 Soils

The first instance project area soils are characterized by being of forest aptitude, belong to a dissected plain and have undulating slopes between 8% and 15%. They are moderately well-drained soils, with 10-50 g/kg of organic carbon, and clay content of 14% to 35% and apparent density of 1.11 to 1.45 g/cm^3 and the predominant sandstones parent material, SC2 lithology units. (Table 35 y Figure 24). In general, they are considered low fertility soils, shallow with very low saturation of bases, acids and low to high content of organic matter depending on the position in the relief. The soils are susceptible to erosive processes given their little evolution, low depth, high rainfall conditions, high humidity and high solar radiation (Gobierno Municipal de Mitú, 2016).

Table 35. Soils in the first instance territory of the of the REDD+ project

Unit - Characteristic	3	4
Slope (%) *	15	15
Relief **	SP	SP
Lithology ***	SC2	SC
Drainage****	W	M
Clay content (%)	30	29
Apparent density (g cm-3)	1.11	1.45
CEC (cmolc Kg-1)	11.3	11.47
Soils FAO 1988*****	FRh	ACh
Soil reaction (PH)	4.9	4.53
Organic carbon (g kg-1)	35	15.91
Number of soil components	3	3
Relative dominant land unit area (%)	45	60
Area (ha)	**409,641.71**	**63,478.84**

* Wavy (5-8%), Laminar (8-15%);
**LP: Plain, SP: Dissected Plain, LL: Plateau;
***MA2: Gneiss, migmatite SC: Clastic sedimentary rock SC2: Sandstone, greywacke, arkose;
****W: Well drained, M: Moderately well drained;
*****ACh: Haplic ACRISOLS, FRh: Haplic FERRALSOLS, LPd: Dystric LEPTOSOLS.[88]

(Source: Soil and Terrain Database for Latin America and Caribbean (SOTERLAC, version 2). Available at: http://data.isric.org/geonetwork/srv/eng/catalog.search#/metadata/436bd4b0-7ffc-4272-be57-686b7d7eea7d.)

[88] Fuente: Soil and Terrain Database for Latin America and Caribbean (SOTERLAC, version 2). Available at: http://data.isric.org/geonetwork/srv/eng/catalog.search#/metadata/436bd4b0-7ffc-4272-be57-686b7d7eea7d.

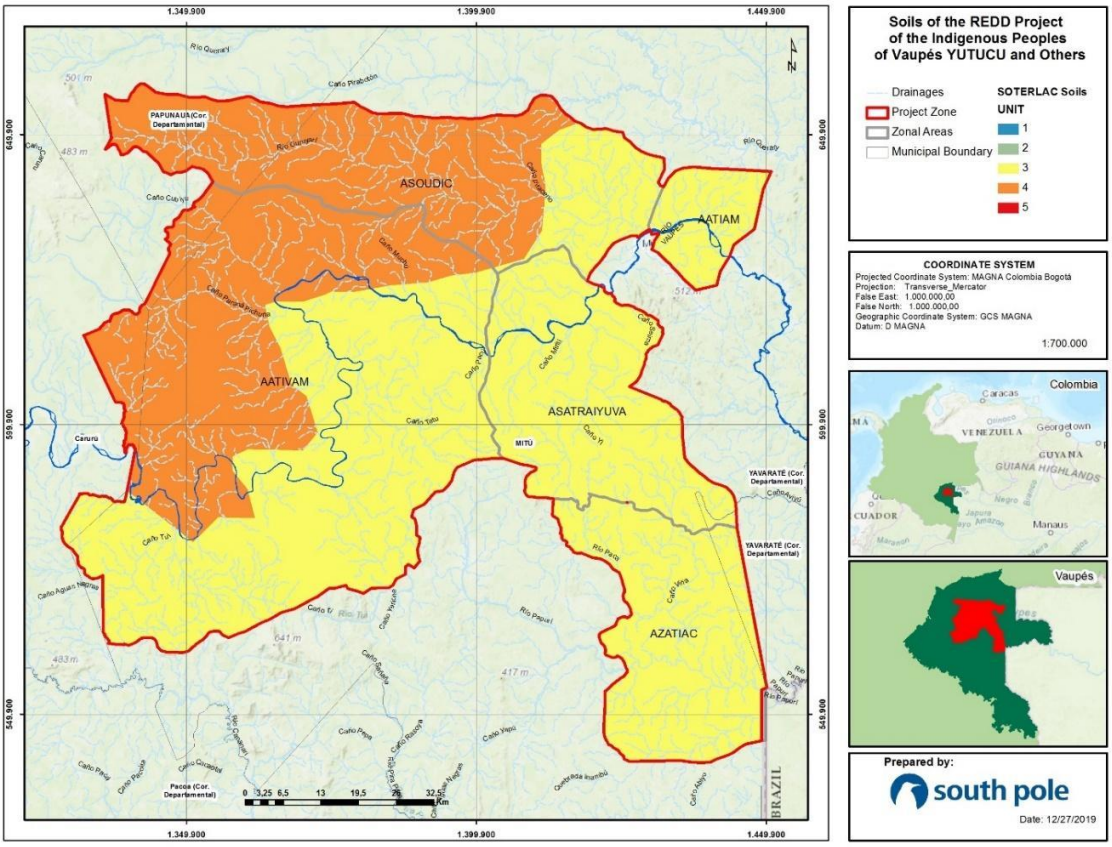


Figure 24. Soils in AATI territory of the of the REDD+ project of the indigenous peoples of Vaupés YUTUCU and Others

(Source: Soil and Terrain Database for Latin America and Caribbean (SOTERLAC, version 2). Disponible en: http://data.isric.org/geonetwork/srv/eng/catalog.search#/metadata/436bd4b0-7ffc-4272-be57-686b7d7eea7d)

According to IGAC land classification map for soil (vocation) utilization, the most appropriate use that each of the soils in the project area can support are: Forest use for protection and production, and agroforestry use (Figure 25 y Figure 26).

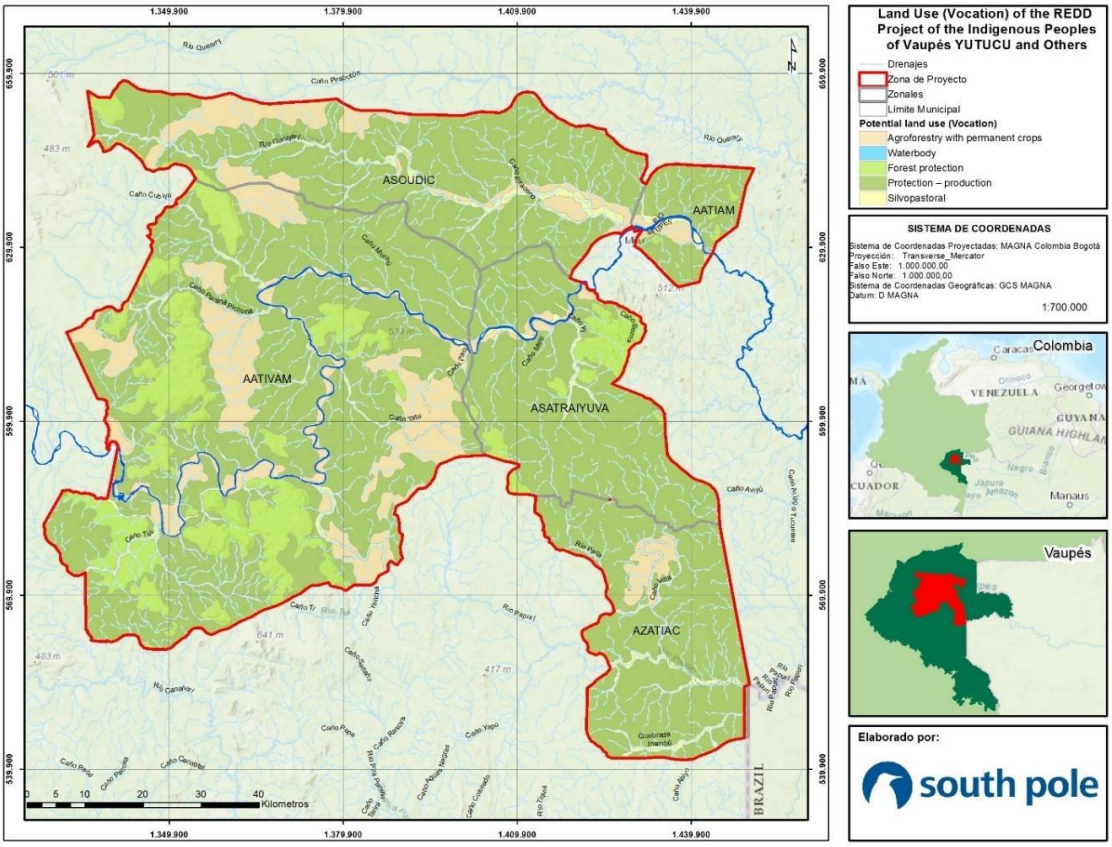


Figure 25. Potential land use for the five AATIs of the REDD+ project of the indigenous peoples of Vaupés YUTUCU and Others at a scale of 1: 100,000

(Source: IGAC Colombian Territory Soil Maps at a scale of 1: 100,000. Department: Vaupés https://geoportal.igac.gov.co/es/contenido/datos-abiertos-agrologia)

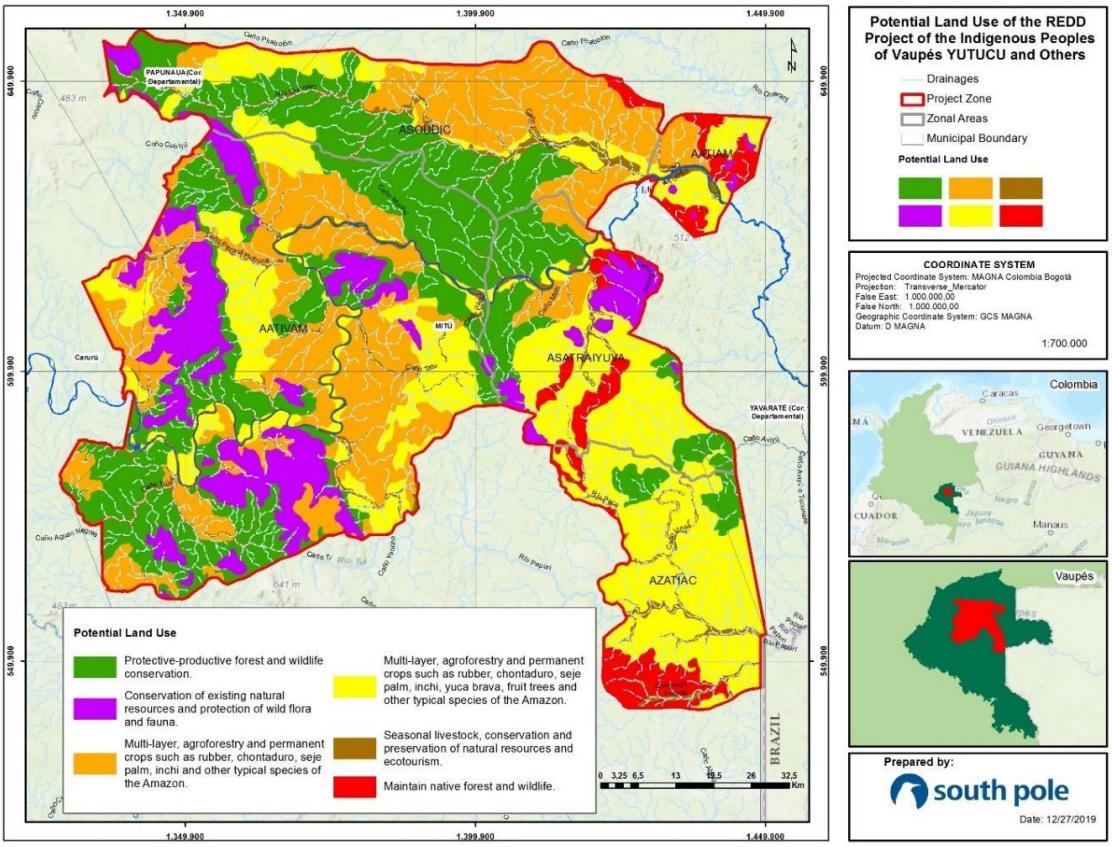


Figure 26. Potential use in AATI territory of the REDD+ Vaupés project

(Source: IGAC Colombian Territory Soil Maps at a scale of 1: 100,000. Department: Vaupés https://geoportal.igac.gov.co/es/contenido/datos-abiertos-agrologia)

8.2 Biotic characteristics

8.2.1 Ecosystems

According to the Continental, Coastal and Marine Ecosystems Map of Colombia [89] the first instance project area counts has a mainly high dense humid basal forest (which means a high dense forest on the mainland) (Table 36 y Figure 27). The entire region belongs to the Zonobiome of the Tropical Humid Forest and the Tropical Forest Biome of the Amazon and Orinoquia and to a lesser extent, Helobiomas of the Amazon, Amazonian Peinobiomas and Amazonian Orobiomes.

Table 36. Ecosystems in the first instance project area

Ecosystem	Area (ha)	%
Crop and grasslands mosaic agroecosystem	2,808	0.33
Crops, grasslands and natural space mosaic agroecosystem	8,849	1.04
Grasslands and natural space mosaic agroecosystem	9,988	1.17
Livestock agroecosystem	970	0.11
Wet basal bush	329	0.04
Basal floodplain brush	231	0.03
Humid basal forest	584,059	68.45
Fragmented forest with grasslands and crops	2,443	0.29
Fragmented forest with secondary vegetation	1,446	0.17
Basal floodplain forest	49,715	5.83
Rocky mountainous area complexes	161,740	18.96
Basal floodplain grassland	1,052	0.12
Black water rivers	9,888	1.16
Seasonal savanna	319	0.04
Transformed transitional	7,426	0.87
Secondary vegetation	12,015	1.41
Total	**853,280**	**100.00**

[89] Retrieved from: http://www.ideam.gov.co/documents/11769/222663/E_ECCMC_Ver21_100K.pdf/addc175f-3ac6-415b-9b9e-a1c4368b5b3e See information in the path: http://www.ideam.gov.co/documents/11769/222663/E_ECCMC_Ver21_100K.pdf/addc175f-3ac6-415b-9b9e-a1c4368b5b3e

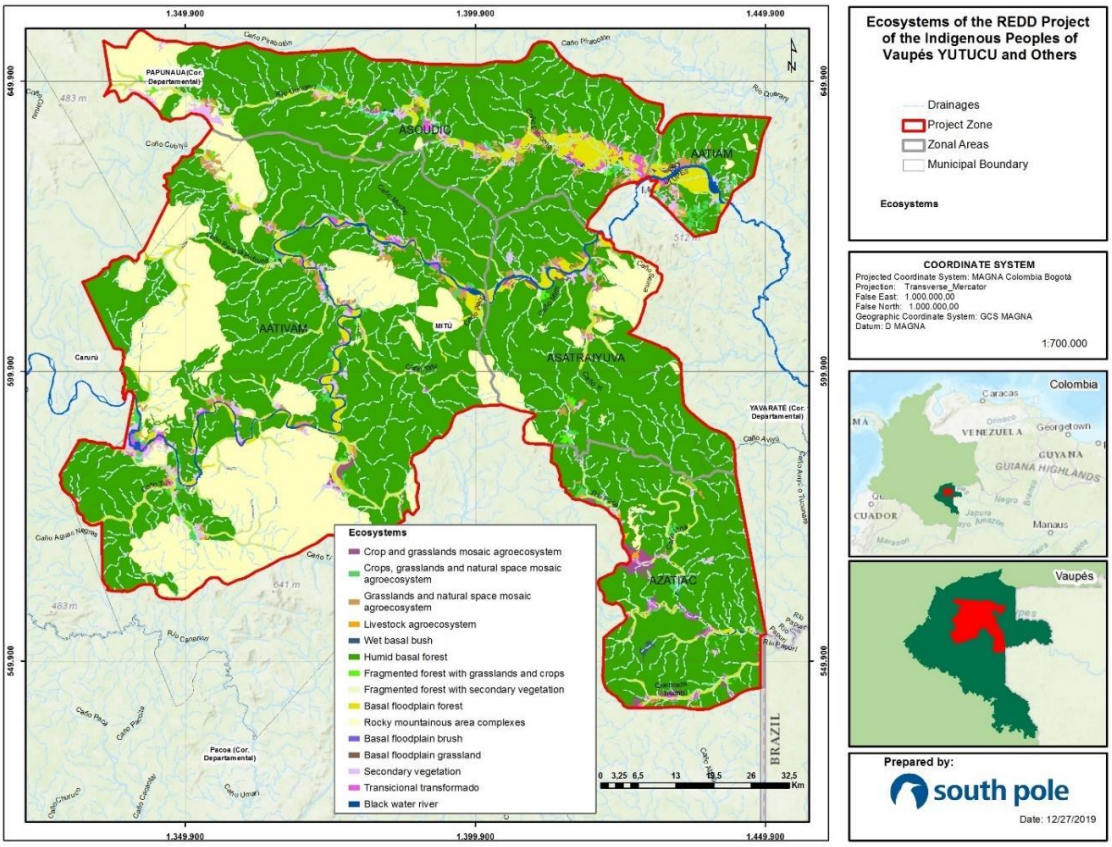


Figure 27. Ecosystems in the first instance project area

(Source: Colombian Continental, Coastal and Marine Ecosystems Map (MEC) [map], Version 2.1, scale 1: 100. 000.IDEAM, 2017. Taken from: http://geoservicios.ideam.gov.co:8080/geonetwork/srv/api/records/0684d637-5b6a-40e8-80f4-bdf915b3e3da/attachments/E_ECCMC_Ver21_100K.jpg)

8.2.2 Vegetation

In the first instance of the project, according to the Colombian Amazon Land Cover Monitoring System (SIMCOBA), the covers present in the project area following the Corine Land Cover methodology for Colombia, 80.66% correspond to high dense firm land forests, 5.89% to low dense firm land forests and the rest have other covers (Figure 28 y Table 37).

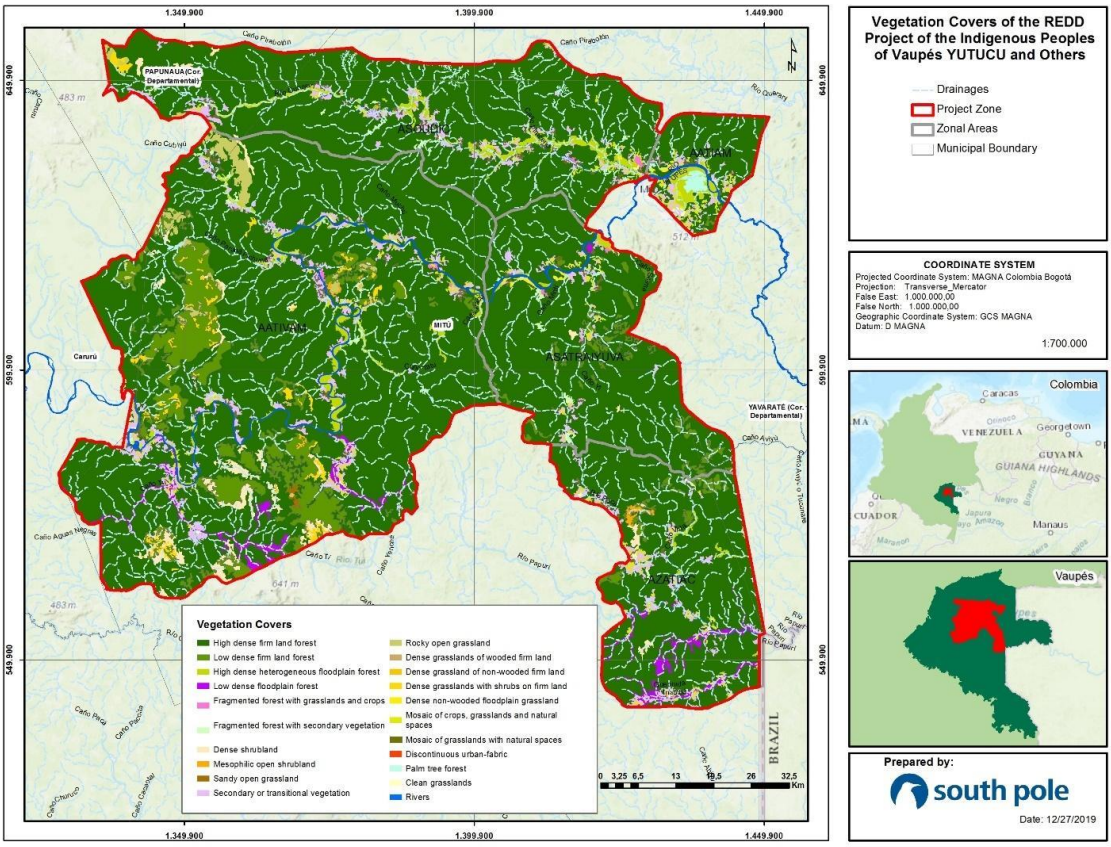


Figure 28. Vegetation cover map in the REDD+ project area

(Source: Colombian Amazon Land Cover Monitoring System (SIMCOBA))

Table 37. Corine Land Cover in the AATIs

Class	Cover	Description
1	Mesophilic open shrubland	Natural cover dominated by regularly distributed shrub elements, which form a discontinuous canopy layer, and whose cover represents between 30% and 70% of the total area of the unit.
2	Dense shrubland	Cover consisting of a plant community dominated by typically shrubby elements, which form an irregular canopy, but which may have scattered tree elements whose cover represents more than 70% of the total area of the unit.
3	High dense firm land forest	Arboreal type vegetation characterized by a more or less continuous stratum whose tree cover area represents more than 70%, with a canopy height greater than 15 meters and is located in areas that do not present periodical flooding processes.
4	High dense heterogeneous floodplain forest	Arboreal type vegetation characterized by a more or less continuous stratum whose tree cover area represents more than 70% of the total area of the unit, with canopy height greater than 15 meters and is located in the areas adjacent to bodies of water (lotic and lentic).
5	Low dense firm land forest	Vegetation dominated by typically arboreal elements, which form a more or less continuous crown layer (canopy), whose tree cover area represents more than 70% of the total area of the unit, with canopy height greater than 5 meters, but less than 15 meters and is located in areas that do not have periodic flooding processes.
6	Low dense floodplain forest	Arboreal type vegetation characterized by a more or less continuous stratum whose tree cover area represents more than 70% of the total area of the unit, and with a canopy height between 5 to 15 meters and is located in the areas adjacent to the water bodies (lotic).
7	Fragmented forest with grasslands and crops	Natural forests with human intervention that maintain their original structure. It includes completely transformed areas inside the cover, which cause patches due to the presence of other covers that suggest land use, which should represent between 5% and 30% of the area of the natural forest unit.
8	Fragmented forest with secondary vegetation	Natural forests with evidence of human intervention that maintain their original structure. Completely transformed areas may occur where there was presence of anthropic covers such as grasslands and crops, but which have been abandoned to give way to a natural regeneration process of the forest in the first stages of plant succession.
9	Sandy open grassland	Vegetation typically dominated by herbaceous plants developed naturally on different substrates, which form an open cover (30% to 70% occupancy).

Class	Cover	Description
10	Rocky open grassland	Areas dominated by natural open herbaceous vegetation that have a cover between 30% and 70%. There are no tree elements.
11	Dense grasslands of wooded firm land	Cover consisting of a plant community dominated by typically herbaceous elements developed naturally on different substrates, which form a dense cover (> 70% occupancy),
12	Dense grasslands with shrubs on firm land	Vegetation dominated by typically herbaceous elements developed naturally in different substrates, which form a dense cover (> 70% occupancy). Generally, at altitudes between 300 masl to 800 masl.
13	Dense grassland of non-wooded firm land	Vegetation dominated by typically herbaceous elements developed naturally in different substrates, which form a dense cover (> 70% of occupation), which develops in areas that are not subject to periods of flooding
14	Dense non-wooded floodplain grassland	Natural herbaceous vegetation with cover greater than 70%, in permanently supersaturated soils, which during rainy periods (4-8 months per year in the rainy season from April to November) may be covered by a layer of water
15	Mosaic of crops, grasslands and natural spaces	Vegetation occupied by crops and grasslands in combination with natural cover. The areas of crops and grasslands occupy between 30% and 70% of the total surface of the unit.
16	Mosaic of grasslands with natural spaces	Vegetation mainly occupied by grasslands covers in combination with natural spaces. The grasslands covers represent between 30% and 70% of the total surface of the mosaic.
17	Mosaic of grasslands and crops	Vegetation with an association of grasslands and crops, in which the size of the plots (parcels) is too small and the pattern of distribution of the lots is too intricate
18	Palms (Palm groves)	These are areas with arboreal vegetation characterized by a more or less continuous stratum whose tree cover area represents more than 70% of the total area of the unit, with a canopy height of over 15 meters and which is located in the areas adjacent to water bodies (lotic).
19	Weedy grasslands	This cover includes grasslands with weed species (considered by some producers as weeds for the main crop).
20	Clean grasslands	Lands occupied by grasslands with a cover percentage greater than 70%, are evident management practices such as cleaning, liming and / or fertilization, etc.
21	Rivers	Natural stream of water that flows continuously and has a considerable flow

Class	Cover	Description
22	Discontinuous urban-fabric	They are spaces made up of buildings and green areas. It constitutes buildings, roads and infrastructure.
23	Secondary or transitional vegetation	Vegetation cover caused by the succession process of natural vegetation that originates after the intervention or by the destruction of primary vegetation.

(Source: Land cover of the Colombian Amazon region, generated by the Amazonian Scientific Research Institute - Sinchi, according to Corine Land Cover (CLC) methodology at a scale of 1:100,000 for the years 2002, 2007, 2012, 2014 and 2016).

8.3 Environmental Impact

As described in Sections 3.6, 8.1, and 8.2, the potential activities of the project were identified through meetings and gatherings held with AATI members in Mitú and the communities. The activities presented in the Integral Plan of Indigenous Life of each of the five AATIs were analyzed in detail in relation to the biotic component, for which it is highlighted that, historically, the communities have focused the development of their activities in a sustainable way aimed at conservation of biodiversity and natural resources. In this sense, the financing received through the project is considered a positive mechanism and incentive, since it helps to overcome the financial difficulties that the reservation territory has faced in order to achieve the goals established in said life plans, promoting the achievement of the same objectives of conservation and protection of the biodiversity that communities have historically maintained.

The activities identified in the PIVI were grouped into four strategic lines in which the actions of the project will focus in order to conserve forest areas and reduce their degradation and deforestation risks. According to the proposed activities, the expected impact will be an organized and strengthened community in its governance processes, with a high decision-making capacity in its field of work and to contribute to the good management of its territory. In this regard, with the purpose of addressing the main cause of deforestation and degradation of the reservation territory forests (i.e. expansion of the agricultural frontier, development of livestock activity and exploitation of commercial woods), it is proposed to provide alternative means of subsistence that are not based on the wood extraction and through which indigenous communities can secure income without the need to cut down forests or generate a considerable deterioration of biodiversity. In this case, the income that some families no longer receive from the use of forest areas and wood extraction are offset by the income derived from the sale of carbon bonds and the activities in which they participate, which provide additional monetary benefits to the resources required for family subsistence.

Activities related to the lines of own economy and production systems and Ecological and cultural restoration are listed in Section 3.6.3. The interest of these activities focuses on the sovereignty of indigenous communities (by strengthening the capacity of action and implementation of the objectives of the PIVI of each AATI) and in the maintenance of the biotic conditions of the region and the conservation of the biodiversity. For such conservation, in general terms, the activities focus on strengthening food security, technical assistance for the generation of sustainable production models, recovery of timber species and ecological restoration of transformed areas. The potential positive and negative impacts on biodiversity from the project activities are described below, with

the consequences that these impacts would have on the assessment of net damage on biodiversity.

Table 38. Expected positive and negative impacts on biodiversity from project activities, with considerations to avoid generating net damage

Activity	Potential positive impact on biodiversity	Potential negative impact on biodiversity	Expected result
Food security strengthening	Allows the optimization of ancestral and traditional planting and harvesting activities. Optimizes and reduces the area of impacted natural cover for cultivation purposes.	No negative impact on biodiversity is anticipated by stimulating traditional planting and harvesting methods, which from the beginning, are aligned with sustainable development.	No net damage to biodiversity
Technical assistance: generation of sustainable production models	It favors production alternatives in addition to those traditionally maintained. Optimizes and reduces the area of impacted natural cover for cultivation purposes.	These productive alternatives are not contrary to the ecological and ecosystem processes of the area and a negative impact is not expected. The entry of new sustainable production systems (e.g. poultry, wildlife breeding) provides a more robust own economy, avoid the search for other resources that would stimulate extractive economies, and therefore, with proper management, constitute appropriate alternatives for the conservation of biodiversity by avoiding excessive hunting, increase in wild production crops, decrease (forest) cover transformation pressure, among others.	No net damage to biodiversity
Recovery of timber species	Promotes timber purpose plant populations recovery and their sustainable use (exploitation).	No negative impact is anticipated as a consequence of the spread of timber species. This is in order for future uses (exploitations) to be sustainable and for the specie population dynamics to recover.	No net damage to biodiversity
Ecological recovery and restoration of transformed areas	Allows locating, delimit and plan the restoration and recovery of degraded areas, with the interest of promoting the conservation of biodiversity in the territory.	There are no negative impacts on biodiversity as a consequence of the generation of restoration and recovery strategies, since the areas will be restored and recovered with native species in the areas selected by the communities without affecting the productive areas (*chagras*) that would compromise the food security of the	No net damage to biodiversity

Activity	Potential positive impact on biodiversity	Potential negative impact on biodiversity	Expected result
		communities, instead, both farming systems and natural systems are being optimized.	

(Source: Prepared by South Pole (2019). From the Integral Plans of Indigenous Life of the communities)

The expected impact on biodiversity is mainly related to changes in land cover, especially in the conservation of forest areas through the development of project activities. With this, the anthropic impact on fauna and flora is reduced by keeping the cover stable and guaranteeing connectivity between the forest fragments and patches in regions that have been affected by agricultural frontier expansion processes. Conservation values are maintained, ensuring a net positive impact on biodiversity. In the areas that have been subject to extraction and degradation, the project activities contribute to the delimitation and recovery of the minimum ecological conditions to allow natural recovery and, in some cases, assist this process. This with the objective of establishing connectivity with other areas and recovering the ecosystem functions and future benefits for the communities.

As described, caring for biodiversity is part of community awareness by carrying out activities that promote the use of traditional practices in balance with the environment. Additionally, to reduce possible biodiversity deterioration, community members will establish conservation agreements that will guarantee the sustainable management of fauna and the permanence of the most appropriate techniques to obtain economic benefits, considering the ecological balance and the species reproduction and growth cycles in the territory. Therefore, the importance and concern for maintaining fauna species as food sources and ecological sustenance of natural areas in the jurisdiction of the project is recognized.

9 Socio-economic aspects

9.1 Historical conditions[90]

Among the historical characteristics found, is the participation of the indigenous communities of the Great Reservation with a rubber (collection/working) dynamic, especially the Wananos, Cubeos, Barasanos, Tatuyos, Tuyucas, Piratapuyos and

[90] The area of the first instance has historical conditions equal to those of the reservation and those of the department.

Desanos peoples; also, they had influence of a coca and gold extraction period that affected some part of the territory, especially, in the limits with neighboring municipalities. Recently, a colonizing dynamic has determined some deforestation fronts and has defined population areas, praderization with extensive livestock, expansion of the agricultural and livestock frontier, as well as the natural resources extraction areas such as wood. These activities threaten to penetrate the interior of the AATIs by establishing activities on the banks of the main rivers and tributaries (as in AATIVAM and ASOUDIC) and in road areas as in the case of Ceima Cachivera (AATIAM).

One of the main forest uses within the Vaupés indigenous communities is the use of forest land for agricultural conversion and livestock; in some cases, for the domestic use of the communities and in others, due to external pressure from non-indigenous people such as settlers or peasants (farmers). In some areas, the settlers surrounding the reservations implement a livestock use of the territory, increasing deforestation processes. This agricultural frontier expansion by the settlers is affecting the forest conservation managed and administered by the communities.

Communities have had a subsistence-based economy, which includes traditional productive activities such as itinerant agriculture in a *chagras* production system, hunting, gathering wild fruits and fishing. The relationship between man and nature has been important in the daily life of the communities, their activities are related to the behavior of the stars (constellations), which is why they built their *Yurutí* "*Wajiara cuma Queoro*" ecological and cultural calendar. This calendar brings together the most important aspects of community life, from how the cosmos is formed, daily life, the singing of animals and traditional festivals.

The socioeconomic characterization of the project area is described in Annex 4, which analyzes the political-administrative components of the Project owner, education, health, demographic aspects, access to public services, cultural and community aspects of the indigenous communities, food security, economy and illicit crops in the region, municipality and department where the project is being developed. The above as a basis for identifying the context of the project in social and economic terms, and thus, evaluate the possible impacts that would have within the area of the initiative the activities that would affect the social and economic spheres of the communities.

Activity	Potential positive impact on socio economic conditions	Potential negative impact on socio economic conditions	Expected result
Food security strengthening	Allows the optimization of ancestral and traditional	No negative impact on socioeconomic conditions is foreseen by stimulating	No net damage to

Activity	Potential positive impact on socio economic conditions	Potential negative impact on socio economic conditions	Expected result
	planting and harvesting activities. improving the quality of life of local residents	traditional methods of planting and harvesting, which from the beginning are aligned with the life plans and are seeds activities developed by the community itself based on the seeds historically planted in their chagras.	socio economic conditions
Technical assistance: generation of sustainable production models	It favors production alternatives in addition to those traditionally maintained. Diversifying the population's income, so as to reduce the possibilities of logging as an economic activity for the population.	These productive alternatives are not contrary to the traditional economic processes of the villagers, since the idea is to start with native seeds in traditional fields that the villagers themselves have historically cultivated but have not been able to benefit from technical assistance to improve the activity.	No net damage to socio economic conditions
Traditional knowledge and self-education	This line seeks to promote the recovery of traditional spaces that strengthen indigenous identity and values. It also seeks to build capacity on climate change and REDD+ projects in order to empower indigenous communities in their management and execution of the project.	No significant negative impacts are evident in the implementation of the line, given that the socio-cultural programs and strategies will be proposed by the community based on the cultural aspects of the life plans. In addition, capacity building for understanding REDD+ and climate change will have benefits for the operation of the project.	No net damage to socio economic conditions
Strengthening governance	The expected impact will be an organized and strengthened community in its governance processes, with a high capacity to make decisions in their area of work and contribute to the good management of their territory.	No negative impact is expected on the socioeconomic dynamics of the communities of the 5 AATIS, since from the beginning the activities of the line are aligned with the life plans and respect the autonomy and worldview of the ethnic community.	No net damage to socio economic conditions

10 Consultation with stakeholders

10.1 Signing of agreement to start the REDD+ project

On August 28, 2018, an agreement (Annex 5),[91] was signed between South Pole and the five AATIs as a result of the meetings held between August 17 and 28, 2018 in the communities of Pacuativa - ASOUDIC, Puerto Colombia –ASATRAIYUVA, Mandí-AATIVAM, Acaricuara - AZATIAC and Macaquiño - AATIAM. The objective of this meeting was the socialization of the potential REDD+ project in five zonal areas of the Great Vaupés Indigenous Reservation.

10.2 REDD+ project socialization process with communities

The socialization of the REDD+ project (Annex 2)[92] in the five AATIs of the Great Vaupés Indigenous Reservation was carried out by the legal representatives of the associations of traditional indigenous authorities proposing the REDD+ project. During these meetings, the presidents of the AATIs informed in each of their communities about the agreement for the development of a REDD+ project in their territory, an agreement validated by the assembly, considering that, as territory and own government, decision making is done in general assemblies.

Additionally, the South Pole technical team held meetings on May 18 and 19 of 2019 in order to: i) collect the conclusions of the socialization meetings with the communities; ii) construct the mechanisms required for the proper management of the project with the AATI presidents; iii) support the AATIs in the socialization of the project with the environmental and territorial authorities of Vaupés and Mitú; and iv) finalize the socialization process of the project with the communities.

10.3 Complaints, claims, suggestions, and denunciations mechanism

For the establishment of the Complaints, Claims, Suggestions and Denunciations Mechanism, it was initially inquired about the procedure that is followed when a community complaint is filed. Considering the procedures that each association presented regarding the handling of complaints in accordance with the provisions of the

[91] See in the folder: Soportes\Anexos\ Anexo 5_ Acuerdo para el desarrollo de un proyecto REDD+
[92] See in the folder: Soportes\Anexos\ Anexo 2_Informe de socialización

statutes and indigenous justice, the structure for the operation of the communication mechanism for the project was proposed (Section 4.4).

10.4 Project socialization with environmental and territorial authorities

On May 21, 2018, the meeting with environmental and territorial authorities of Vaupés in the municipality of Mitú was carried out. During the meeting, both the South Pole technical team and the AATI presidents presented the background of the project, mentioned the inconveniences that have come up with previous projects and the need to continue training (education) in these processes.[93]

10.5 Closure of socialization with communities

In order to close the socialization round and clarify doubts about the development of the project, three additional meetings were held on May 23, 24 and 26 of 2019 in Pituna (ASOUDIC), Ceima Cachivera (AATIAM) and in Acaricuara (AZATIAC), respectively. These meetings were led by the AATI presidents with the support of the South Pole technical team.

The call for the development of the meetings in the communities was in charge of the presidents of the associations, who, through the community captains, sent the meeting notification to the communities. The thematic content presented during the meetings with the community corresponds to the content presented in the working sessions with the presidents of the associations. In addition, the project design, complaints and claims mechanism and benefit distribution system advances, and preparation of validation and verification site visit were socialized with the community,[94] on March 15 and 24 of 2019.

10.6 Summary of comments received

10.6.1 Public comments

Public comments, updates and responses will be included in an annex to the project description document.

[93] To see the attendance lists of these meetings refer to the folder: Soportes\Consulta local\Reuniones de cierre de socialización\Autoridades ambientales y territoriales.

[94] To see the attendance lists of these meetings refer to the folder:Soportes\Consulta local\Reuniones de cierre de socialización\AATI.

The public comments made by stakeholders were collected during the implementation of the project's socialization, as each participation space had moments for the feedback of ideas.

10.7 Consideration of comments received

The project did not receive comments in the public consultation period.

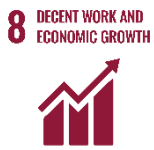
11 Sustainable Development Goals (SDGs)

The development of the REDD+ project of the indigenous peoples of Vaupés YUTUCU and Others has promoted the reduction of climatic risks, the increase of the protection of ecosystems, the improvement of the quality of life and the preservation of ecosystem services such as biodiversity and carbon capture.

The Sustainable Development Goals (SDGs) arise from the need to address environmental, political, and economic problems in the world that have been strengthened in recent years, generating greater gaps in inequality, poverty, education, basic needs and hunger, among others. Consequently, the 2030 Agenda, established in 2015, became a global roadmap for the achievement of 17 objectives and 169 goals and Colombia, as a participant in it, has intensified its efforts to implement actions that help to achieve prosperity, the well-being of people and the conservation of the environment (National Planning Department (Departamento Nacional de Planeación), 2018).

CONPES document 3918 of 2018 outlines the strategy for the implementation of the actions that will help Colombia achieve its objectives, prioritizing 147 goals and 156 indicators, based on which the country will measure its progress. Additionally, the Ministry of Environment and Sustainable Development (MADS) published an update of the proposed goals for the Nationally Determined Contribution (NDC) until the year 2030, with the objective that these were more congruent with the country's vision, and have synergy between national, regional, and local initiatives with respect to Colombia's priorities in the search for sustainable development. Table 39 shows the sustainable development goals and indicators of greatest relevance to the country, in relation to goals adopted by the NDC, grouped by priority sectors of the economy, which include climate change considerations.

Table 39. National goals and indicators for the Sustainable Development Goals

SDG	National indicator	NDC sectoral goals
	Multidimensional poverty index (%)	Protected areas Environment
	Zero hunger Mortality rate due to malnutrition in children under 5 years of age (per 100,000 children under 5 years of age)	Health Agriculture and rural development 10 agricultural subsectors Agroclimatic technical working groups
	Maternal mortality rate (per 100,000 live births)	Health
	Coverage rate in higher education (%)	NA
	Women in executive positions in the Colombian State (%)	NA
	Adequate access to drinking water (%)	Management of water resources Housing, Water and Basic Sanitation Health Agriculture and rural development Environment
	Electricity coverage (% of homes)	Transport Management and environmental control of projects (ANLA) Mines and Energy
	Labor formality rate (% of the employed population)	Transport Mines and Energy

SDG	National indicator	NDC sectoral goals
	Households with internet access (%)	Transport Mines and Energy Industry, commerce, and tourism
	GINI coefficient	NA
	Urban households with a quantitative housing deficit (%)	Housing city and territory Transport Management and environmental control of projects (ANLA) Monitoring network of the early warning system Environment
	Solid waste recycling and new use rate (%)	Industry, commerce and tourism Transport 10 agricultural subsectors Agroclimatic technical working groups Agriculture and rural development
	Reduction of total GHG emissions (%)	It is linked to all the goals of the NDC: Housing city and territory Water and Basic Sanitation Health Industry, commerce, and tourism Transport Agriculture and rural development Environment
	Thousands of hectares of marine protected areas	Mines and Energy Protected areas Environment
	Thousands of hectares of protected areas	Management of water resources Mines and Energy Transport Delimitation of moors Protected areas Environment
	Homicide rate (per 100,000 inhabitants)	NA

SDG	National indicator	NDC sectoral goals
17 PARTNERSHIPS FOR THE GOALS	Monitoring scheme of all resources, public and private, national and international, that contribute to the achievement of the proposed goals	NA

(Source: Prepared by South Pole (2020), based on the CONPES 3918 document of 2018 and the national goals and indicators regarding the SDGs proposed by the National Planning Department from the Technical Secretariat of the SDG Commission).

Considering the national sustainable development objectives and indicators, the project has proposed its activities so that at the local level, progress is made in meeting the 2030 goals of the Sustainable Development Goals (SDGs) (Table 40); in regards to quality education, sustainable cities and communities, climate action and terrestrial ecosystems life. The SDGs identified for the project have been strengthened since the year 2016 to the present with the actions carried out by the different AATI leaders in the project activities implementation framework and considering the goals set in the Integral Indigenous Life Plans. To identify the SDGs to which the initiative will contribute, the *Tool for the determination of contributions to the fulfillment of the Sustainable Development Goals (SDGs) of the Greenhouse Gas (GHG) projects*, of the BCR Standard[95] was applied, and Table 40 presents the description and indicators of the project contributions to the priority activities for sustainable development (SDGs), whose follow-up will be carried out in an articulated manner with the monitoring of project activities and deforestation.

[95] For more information, go to the attached BCR TOOL ODS_Vaupes Excel .xls document, located in: Soporte\Herramienta ODS

Table 40. Sustainable development goals and indicators considered by the project

Sustainable Development Goals (SDGs)		Achievement expected from the project	Goal associated with the SDG	Indicator	Expected contribution of the project
	Quality Education: Ensure inclusive, equitable, quality education and promote lifelong learning opportunities for all.	Achieve inclusive, quality education for all.	*4.7 Ensure that students acquire the theoretical and practical knowledge necessary to promote sustainable development, including through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and the appreciation of cultural diversity and the contribution of culture to sustainable development.*	4.7.1 Extent to which i) global citizenship education and ii) education for sustainable development, including gender equality and human rights, are incorporated at all levels in: a) national education policies, b) study plans, c) teacher training and d) student evaluation. Number of people benefited.	Increase
	Clean water and sanitation: Guarantee the availability of water and its sustainable management and sanitation for all.	Promote the care of water sources as a tool to preserve and protect the territory. The project will contribute to the conservation of water resources, on the effluents that circulate in the area of influence, avoiding interventions by third parties.	*6.6 Protect water ecosystems* Protect and restore water-related ecosystems, including forests, mountains, wetlands, rivers, aquifers, and lakes.	6.6.1 Change in the extent of water-related ecosystems over time. Number of water sources on which the project area has influence.	Maintain
	Sustainable cities and communities: Make cities and human settlements more inclusive, safe, resilient, and sustainable.	Protect and safeguard the cultural and natural heritage of the territory.	*11.4 Increase efforts to protect and safeguard the world's cultural and natural heritage*.	11.4.1 Total per capita expenditures allocated to the preservation, protection, and conservation of all cultural and natural heritage, broken down by funding source (public and	Increase

Sustainable Development Goals (SDGs)		Achievement expected from the project	Goal associated with the SDG	Indicator	Expected contribution of the project
				private), type of heritage (cultural and natural) and level of government (national, regional and local/municipal). Number of people benefited.	
	Climate Action: Adopt urgent measures to combat climate change and its effects.	Advance in the recovery and maintenance of forest covers in the territory, especially in areas degraded by natural or anthropogenic agents, as a mitigation and adaptation measure to climate change. Through conservation activities, the project will achieve a reduction in GHG emissions, gradually contributing to the national goal of reducing them by 20% by 2030, in accordance with the commitments of the Paris Agreement.	*13.1 Strengthen resilience and adaptive capacity to climate-related disasters:* *Strengthen resilience and adaptive capacity to climate-related risks and natural disasters in all countries.*	13.1.2 Number of dead, missing and directly affected people attributed to disasters per 100,000 people. This indicator is associated with the implementation of the activities of the FRES lines, which aim to control the risk of deforestation in the territory, which generates an improvement in territorial conditions, and helps reduce the vulnerability and occurrence of events. catastrophic events, including climate-related disasters, and therefore avoiding disappearances, deaths and injuries of people in these events.	Reduce
			13.2 Integrate climate change measures: Incorporate measures related to climate change into national policies, strategies, and plans.	13.2.1. Total greenhouse gas emissions per year. Reduction of total Greenhouse Gas emissions.	Reduce

Sustainable Development Goals (SDGs)		Achievement expected from the project	Goal associated with the SDG	Indicator	Expected contribution of the project
			13.3 Improve education and skills: *Improve education, sensitivity and human and institutional capacity regarding climate change mitigation, adaptation, reduction of its effects and early warning.*	13.3.1. Extent to which i) education for global citizenship and ii) education for sustainable development are incorporated into a) national education policies, b) study plans (curricula), c) teacher training and d) student evaluation. Number of people benefited.	Increase
	Life on land: Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.	Strengthen environmental management activities through local governance through the management of financial resources to carry out forest conservation and restoration activities. The project is an initiative to adapt to climate change where, thanks to the implementation of conservation activities and sustainable practices, it protects and promotes the increase of forest masses in the region.	*15.1 Conserve and Restore Terrestrial and Freshwater Ecosystems:* *Ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular, forests, wetlands, mountains, and arid areas, in line with obligations under international agreements.*	15.1.1. Forest area as a proportion of the total area. Protected hectares.	Increase
			15.2 Sustainable management: *Promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and significantly increase afforestation and reforestation globally.*	15.2.1 Progress in sustainable forest management.	Increase
			15.A Increase Financial Resources to Conserve and Sustainably Use the Ecosystem and Biodiversity.	15.a.1 a) Official development assistance specifically aimed at the conservation and sustainable use of biodiversity and b) income generated and finance mobilized	Increase

Sustainable Development Goals (SDGs)		Achievement expected from the project	Goal associated with the SDG	Indicator	Expected contribution of the project
			Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems.	through economic instruments relevant to biodiversity.	

(Source: Prepared by South Pole (2020), based on the CONPES 3918 document of 2018 and the national goals and indicators regarding the SDGs proposed by the National Planning Department from the Technical Secretariat of the SDG Commission)

12 REDD+ Safeguards

The National REDD+ Strategy is part of the actions on Climate Change foreseen in the National Development Plan 2010-2014, by the National Government at the head of the Ministry of Environment and Sustainable Development. This seeks to reduce the impacts of climate change produced by deforestation and forest degradation in Colombia.

REDD+ projects are a strategy for mitigating climate change by improving forest governance, forest conservation and sustainable management; actions that are carried out in light of international, national and local policies.

The REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others reduces GHG emissions by avoiding deforestation and generates benefits for communities and the environment. To this end, compliance with the 7 REDD+ safeguards proposed by the BCR Standard tool is presented, aimed at preventing the impact of social, economic, or environmental rights and the negative impacts identified in the formulation and implementation of REDD+ activities. The complete Safeguards document is found in Annex 10: Safeguards.[96]

12.1 AFOLU-Specific Safeguards

The procedure carried out to execute the process of socialization and participatory construction of the project design is presented below. The actions taken to comply with the national safeguards for REDD+ under the project framework are described in Section 4.4 and in Annex 10, following the guidelines of the BCR Standard.

12.1.1 Local stakeholder identification process

The general environment where the REDD+ project is located is made up of different local stakeholders: municipal, regional, and national authorities, environmental authorities and rural and urban civil organizations.

For stakeholder identification, the project's area of influence was established, as well as the communities and stakeholder groups that may be directly or indirectly affected by it.

[96] See in: Soportes\ Anexo 10.

Likewise, the environmental and governmental entities that could have a potential interest in knowing or participating in the project were identified.

The stakeholder identification process was initially carried out based on secondary information and according to the stakeholders present in the territory who may have some type of interest in the development of the REDD+ Project in the area. This information was confirmed and complemented during socialization meetings with communities and municipal authorities.

According to this identification, it was determined which of the identified stakeholders had the most relevance in the development of the REDD+ Project to be called to the project's socialization processes, and later, a complete description describing the rights, interests and relevance of each stakeholder was constructed. The complete description of each identified stakeholder is presented in Table 41

Table 41. Stakeholder description

Main stakeholders	Rights, interests, and general relevance for the REDD+ Project
Communities that make up each of the zones (see Table 4)	• Relevance • Direct participation in project activities. • Work together with communities for the social and economic growth of the territory. Rights • Develop an environment that guarantees the minimum conditions of well-being and safety. • Have equal rights to participate and apply for employment opportunities in their environment. Interests • Contribute to the social and organizational development of the communities. • Develop youth work capacity of the communities. Improve the economic and social conditions of the indigenous Reservation Relevance • Direct participation in project activities. Work together with the communities for the social and economic growth of the territory.
Municipal government agencies (Planning and Education Secretaries and Social Development	Rights • Regulation of land use in the project area. Interest • Ensure compliance with current regulations on land use.
Office of the ombudsman	
Colombian National Army: Thirty-First Jungle Brigade	

Main stakeholders	Rights, interests, and general relevance for the REDD+ Project
Police Inspector Legal representative of the Great Vaupés Indigenous Reservation	• Safeguard the rights of the indigenous communities that make up the Great Vaupés Reservation. • Safeguard the security of the territory. Relevance • Local, national and regional authorities in charge of territory planning where the project is carried out. • Political representation entities of the indigenous peoples of the territory before National and International order institutions.
Association of Traditional Indigenous Authorities of Lower Vaupés – ASATRIBVA *(Asociación de Autoridades Tradicionales Indígenas del Bajo Vaupés - ASATRIBVA*) Departmental Assembly, Association of Traditional Indigenous Authorities near the MCH - AATICAM (*Asociación de Autoridades Tradicionales Indígenas aledañas a la MCH - AATICAM*)	Rights • Regulation of land use in the project area. Interest • Ensure compliance with current regulations on land use. • Safeguard the rights of the indigenous communities that make up the Great Vaupés Reservation. • Safeguard the security of the territory. Relevance • Political representation entities of the indigenous peoples of the territory before National and International order institutions.
Municipal Unit for Agricultural Technical Assistance (UMATA) Corporation for the Sustainable Development of the North and East Amazon (CDA)	Rights • Regulate interventions in associated ecosystems and ensure compliance with environmental regulations related to the development of environmental projects developed in the territory • Provide recommendations about the project environmental management. Interest • Ensure the sustainable development of its jurisdiction by verifying compliance with current environmental regulations for different interventions in ecosystems and associated resources. • Ensure compliance with current regulations on land use and environmental care Relevance • Local and regional environmental authority
Association of Natural Resource Managers, Agricultural and Livestock Production of Vaupés - AGRENAP Association of Women Heads of Families of the Municipality of Mitú – AMCAFAMI	Rights • Know the project activities aimed at research and conservation of the ecosystem Interest • Generate possible alliances for the benefit of both parties Relevance • Local associations present in the project's influence area.

Main stakeholders	Rights, interests, and general relevance for the REDD+ Project
Vaupés Department Women's Association	
Amazon Institute of Scientific Research - SINCHI National Learning Service (SENA) University Corporation Minuto de Dios Superior School of Public Administration Educational Institution Inem José Eustasio Rivera - IEIJER María Reina Normal Indigenous School - ENOSIMAR	Rights • Provide recommendations about the project environmental management. • Receive information about activities carried out to generate possible alliances for environment conservation. Interest • Share knowledge for the joint development of management plans. Relevance • Regional and national educational and research institutions.

(Source: South Pole (2020), based on sector information)

12.1.2 Risks to local stakeholders and mitigation measures

The project does not show negative community impacts, which are expected after implementation; However, some issues were recognized that could be potential sources of conflict (seetable 42).

Table 42. Community risks and mitigation measures

Risk	Mitigation measure
Hiring of personnel for the development of activities without the minimum-security parameters and affiliation to the health and social security system.	It was agreed with the communities to establish hiring practices in accordance with Colombian regulations regarding social security conditions, and care and protection procedures in the development of activities in the field.
Income reduction derived from the exploitation of forest areas for the sale of wood and commercialization in Mitú.	The income that some families cease to receive from the exploitation of forest areas and the extraction of wood will be partly compensated by the income derived from the sale of carbon bonds and the activities in which they participate, which provide additional monetary benefits to the resources required for family subsistence.
The improper management of the monetary resource derived from the sale of carbon credits.	The presidents of the AATI will promote the creation of a Project Management Committee that executes the resource and a Supervision Committee that will monitor the expenditure of this resource.

(Source: prepared by South Pole, 2019. Based on the results of the stakeholder consultation)

12.1.3 Source of communication risks

The main aspects of the project strategic lines are related to the increase in territorial governance in the area and the strengthening of the organizational structure of the AATIs, as well as leadership in the creation of initiatives, programs and projects that have an integral management component of natural resources that are subject to administration by the communities. Strengthening governance also makes it possible to obtain guarantees for the distribution of the income and benefits derived from the project, as well as the expected control of deforestation and forest degradation. The organization will apply continuous adjustments to the internal operating regulations and agreements to ensure that all the procedures surrounding the REDD+ project effectively contribute to the stated purposes of the AATIs for the operation of its structures and the relationship with other entities.

The project complements the already established organizational structures and does not impose new forms of organization, since it only promotes the formation of Committees around the main concerns and expected progress of the project. Said decisions and processes carried out by these internal working groups in each AATI must always be endorsed and agreed with the traditional authorities and must go through the review and knowledge of the legal representative, in addition to the perception concepts issued by the *Payé* or *Sabedores* (traditional wise men or experts).

This project allows the creation of a support network between the five AATIs that are involved in key aspects of ordering and planning of the common territory of the Great Reservation and that act at times as observers (overseers) of other neighboring AATIs processes; and in turn, they share the successful experiences of implementing activities with neighboring representatives and communities, increasing the community development baseline through the exchange of experiences and knowledge regarding projects, benefits and impacts

12.1.4 Ongoing communication and consultation with local stakeholders

REDD+ National Safeguards are described in Section 4.4 and in document Annex 10, following the guidelines of the BCR Standard.

12.1.5 Short- and long-term community benefits

The distribution of benefits is generally understood as the allocation, administration, and provision of non-monetary benefits that the project contemplates; they are those that are made in kind or through investment in social programs. They support the community and indirectly seek to improve the living conditions of the beneficiaries, providing public

goods that increase the possibilities of sustainable development, motivating the use of market opportunities, strengthening culture and sport, among other social aspects.

These benefits are mostly intangible and are based on externalities of the REDD+ project that cannot be monetized or allocated in kind. They generally represent improvements in multiple aspects of the private and social life of community members and are not quantified in money[97] (although there are techniques to assess the impact of each externality, but they are not the objective of the project). Table 43 shows the main intangible benefits of the project with a brief description.

Table 43. Community benefits based on externalities of the REDD+ project

Type of benefits	Description
Economic	New employment opportunities, market-related benefits, such as the opening of new markets or the avoidance of intermediaries, the diversification of livelihoods and access to financing and credit. The strengthening of the *chagras* (Amazon community production system) areas generates a positive effect on food security through the diversification of crops and the improvement of the food consumed in the diet of the communities, as well as the constant provision of these to guarantee adequate food for all family members. At the product level, the creation of management capacities for own and collaborative economy and alternative biological base products system, contributes to generate supply chains to the region with low impact on deforestation.
Social	Improvements in social organization, such as the formation of women's groups, transparency in accountability, empowerment, and the union of different areas (zones) to pursue common goals. They may be closely linked to economic benefits (as in the case of women's savings groups). The benefits of the project allow the participation of all the members of the communities, including women, thanks to its organizational structure and the agreement with its traditional authorities about the project activities, so that more and more individuals are involved in the decision-making regarding land use and local development. Additionally, the project resources can be used in meetings for participation and decision-making in community management

[97] There are techniques to assess the impact of each externality, but they are not the objective of the project.

Type of benefits	Description
	processes, as well as for the operation and functioning of the Executive Boards or Executive Committee of each zonal (zone) in terms of the PIVI objectives.[98] Women will be actively involved in decision-making and the management of derived resources to combat low participation rates for the dedication that they have in *chagras* (Amazon community production system) and household activities. Among the project activities, is the promotion of traditional crafts, mainly those that are developed by women.
Environmental	Reestablishment of biological productivity and protection of species and important habitats for subsistence resources.
Cultural	Strengthening or revitalization of cultural traditions and cultural identity, the protection of traditional values, the construction of community cohesion, and the protection of historical and heritage resources.

(Source: Own elaboration based on Berkes, 2014)

As for the monetary benefits, they are those that are made directly to individuals or families through a money payout. This direct payment scheme is very similar to that offered by the Payment for Environmental Services (PES) projects, where monetary disbursements are made to each individual or family within the community and the choice on how to invest or spend those resources depends solely on those that receive it. In addition, this scheme heterogeneously rewards users, depending on the services or resources within the area where the family retains ownership or use rights. Thus, a key consideration has to do with equity: some experiences with PES show results that disproportionately benefit wealthy landowners when transaction costs served as a barrier for smallholders, especially in areas with lower opportunity costs.

The PES Scheme has several limitations to be applied in the context of the REDD+ project with five AATIs from the Great Oriental (Eastern) Vaupés Indigenous Reservation. In these communities, the land is common property, therefore, an unequal distribution of resources among the owners would be inequitable and would violate an important point of the definition of the BDS and of the internal regulations of the traditional organizations of the indigenous reservations. Second, these incentives are sometimes perverse, as they modify the behavior of individuals against the objectives of the REDD+ project. Specialized literature warns that when direct payments (usually monetary

[98] Part of the project results contribute to the updating of the PIVI from an indigenous perspective of an own development model that ensures collective rights regarding the use and management of the territory.

subsidies) are made to small-scale farmers in developing countries, they tend to soften consumption in the short term, at the expense of productive investment that could, in the long run, improve their future income and increase the probability of overcoming the poverty traps in which they find themselves (Karlan et al., 2014).

Based on the estimates of the carbon bonds sales derived from the project activities, the Benefit Distribution System (BDS), available in Annex 3, was discussed and approved in meetings with representatives of the communities of the five AATIs, after gathering the concerns, questions and interests of all the communities during the socialization process. This system, defined in a participatory way, makes it possible to demonstrate the allocation and management of resources for different purposes and also contemplate additional environmental and social benefits of the implementation. For the preparation of this BDS, aspects such as: justice, effectiveness, efficiency, and equity were taken into account as criteria to distribute the benefits among the members of these communities. In the analysis of the distribution of direct economic benefits. The methodological basis was based on considering the possible incentives with which this community would offset the opportunity cost of maintaining and protecting forests.

12.2 No Net Harm

The identification of socioeconomic risks within the framework of the REDD+ Project requires the analysis of the internal conditions that occur in a territory and their interaction with the external conditions that the project and other social and natural factors contribute to said territory.

As established in the Not net harm environmental and social safeguards (NNH) V1.0 tool, the impacts and risks potentially generated from the implementation of REDD+ project activities should contain a series of requirements and theoretical bases to ensure no net harm in the social and environmental spheres;

a) The REDD+ YUTUCU project identifies the environmental and socioeconomic variables of the region where the initiative is located and performs a socio-environmental analysis of the characteristics of the project, as described in sections 8 and annex 9 of this document, in this way, section 8.3 and Section 9 concludes by determining the potential positive and negative impacts on the biodiversity-ecosystems and socioeconomic dynamics of the inhabitants within the project area, due to the activities of the FRES lines. It should be noted that these FRES lines were established in a participatory and joint manner with the Project holder based on the Integral Plans of Indigenous Life, therefore, the mitigation measures and identification of these impacts were compiled from local

instruments and documents characteristic of the communities. Review the tables in sections 8.3 and 9 in which the Not net harm environmental and social safeguards analysis is related.

b) The formulation of the REDD+ YUTUCU project was based on national environmental policies and indigenous regulations that govern the Project partner. The REDD+ YUTUCU project formulation was based on national environmental policies and indigenous regulations that govern the project partner, described in section 4 of the PDD, especially, it is aligned with local departmental documents such as the PGAR, Institutional Action Plan and the POMCA of the Cuduyari River, ensuring one of the requirements of the NNH V1.0 tool that requests that the development of the project is articulated with an environmental management plan and ensures its linkage with the corresponding legislation.
c) The financial and social environmental risks are described in annex 11 and section 7 of the PDD, as well as the mitigation measures proposed for the project.
d) The development of the REDD+ YUTUCU initiative is carried out within the framework of Colombia's national interpretation of the socio-environmental safeguards for REDD+, which includes the Safeguards V1.1 standard tool, described in section 12.1 and described in more detail in Annex 10.

All of the above, converge in the methodological establishment of the weighting of impacts and their minimization, presented in the following analysis in accordance with the requirements of the *No net harm environmental and social safeguards (NNH) tool version 1.0 of March 7, 2023.*

12.2.1 Methodological aspects

Methodologically, the Integrated Risk-Vulnerability Approach is taken to carry out the analysis within the framework of adaptation to climate change. This approach reflects and criticizes the traditional risk-threat approach to climate change focused on natural systems, formulating that both social or inherent vulnerability and biophysical or resulting vulnerability must be differentiated and understood to understand the risk. The justification focuses on the fact that, by recognizing climate change as a problem, its understanding and solution concerns both social and natural systems (Lampis, 2013). This approach allows not only to identify and manage risk within the framework of probable or predicted scenarios but also to include a perspective of promoting adaptation in the face of uncertain scenarios (Lampis, 2013).

In an articulation process, the Integrated Approach is proposed (Figure 29), which combines the characteristics of the internal (social) vulnerability of a population or a place

with its exposure to external biophysical risk factors and correlates it with a potential for threat or threatening situations. This potential is influenced by risks and actions and their mitigation effects, which influence territorial processes and, at the same time, result from the existing vulnerability in the territory. Likewise, the feedback arrows indicate that vulnerability and risk are understood as a social construction process (Lampis, 2013).

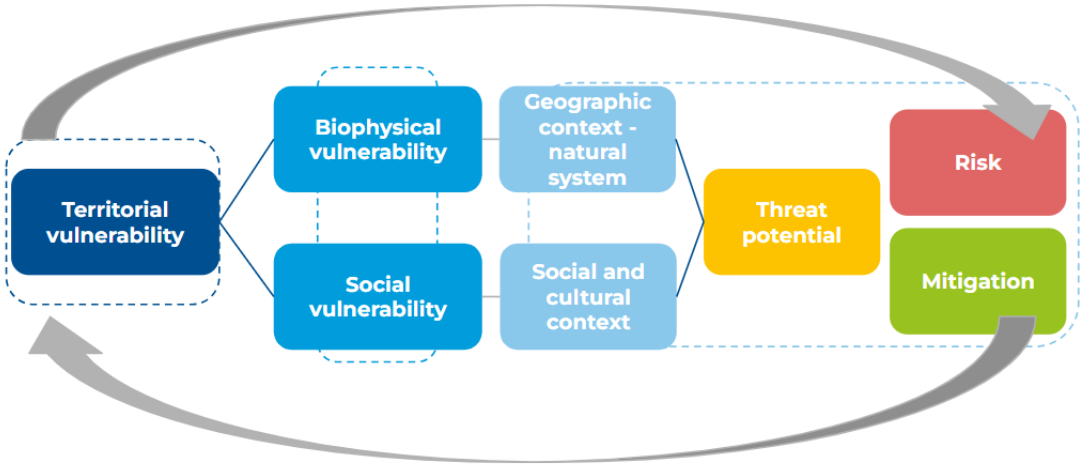


Figure 29. Threat-territory model scheme adaptation

(Source: adapted from Lampis (2013) and Cutter (2003))

To carry out the risk analysis from this approach and have clarity of its scope, results, and relevance for the REDD+ project, the following methodological stages were consolidated:

- Socio-environmental characterization or construction of a participatory baseline in socialization spaces.
- Compilation and triangulation with various sources of threat situations for REDD+ projects.
- Assessment of socioeconomic risks and vulnerability based on the information collected; primary and secondary.
- Review and validation with the technical development team and representatives of the community sector of the vulnerability factors, their qualification, and the inventory of threatening situations.
- Risk analysis matrix.

12.2.2 Identification of threatening situations

At the community level and for REDD+ projects, threatening situations have been documented that may be a risk for some stakeholders according to their level of vulnerability. These documented situations are related to (1) difficulties of implementing measurement, reporting, and verification systems, (2) leakage control, (3) permanence of financial mechanisms and distribution of benefits, (4) some limitations in participation, and (5) rights of local communities (Angelsen et al. 2009, Kanninen et al. 2010).

These difficulties are defined in various studies as challenges of REDD+ projects due to lack of multilevel governance, since this type of projects requires action articulation at various levels; local, subnational and national, or other multiple scales, to ensure the flow and coherence of information and the management of different interests at different levels (Angelsen et al, 2013). The multi-level governance approach in REDD+ projects shows that the various stakeholders such as: policy makers, negotiators, state agencies and non- stakeholders, project proponents and local organizations, must understand that this type of governance contributes to making REDD+ more effective, efficient, and equitable, by achieving a vertical integration. This type of integration is only possible through broad participation processes articulated with the communication and appropriation of knowledge related to climate change mitigation as a central axis, this means going beyond consultation with stakeholders. In this sense, within the framework of the project, the evaluation of threatening conditions related to the implementation of the initiative is considered of special relevance, such:

- The participation of community stakeholders.
- REDD+ project design.
- REDD+ project consultation process.
- Concessions (trade-offs) in food security.
- Land losses.
- Loss of income in economic activities.
- Reduction of climate adaptation.

Likewise, through the execution of the socialization and participation processes,[99] from which the participatory baseline of the project was built, some of these threatening situations were identified that can contribute to triggering socioeconomic risks in the project scenario. These threats were evaluated based on three criteria:

1) Manifestation: current (5), past (3), potential (1)
2) Frequency: usual (5), occasional (3), none (0), and
3) Dynamic: increasing (5), stable (3) and decreasing (1).

The threat level rating was placed in the following categories: Very high, high, medium, low, very low. In cases where the manifestation is past or potential, it is assumed that the dynamic criterion does not apply and is qualified as zero. Table 44 summarizes the findings.

Table 44. Synthesis of the threatening situations identified to be assessed in the REDD+ Project

Threatening situation	Manifestation	Frequency	Dynamic	Result threat level	Source of identification
High monetary expectations at the local level.	Current	Usual (Habitual)	Stable	High	Socialization spaces
Internal conflicts.	Current	Usual (Habitual)	Stable	High	Socialization spaces
Corruption.	Current	Usual (Habitual)	Stable	High	Academic literature, socialization spaces.
Difficult leakage control.	Current	Usual (Habitual)	Increasing	Very high	Academic literature.
Difficulties in the design of the REDD+ Project	Current	Occasional	Decreasing	Medium	BCR standard.
Difficulties in the REDD+ Project consultation process.	Current	Usual (Habitual)	Decreasing	High	BCR standard.
Lack of governance and territorial impact by productive activities and development projects (deforestation drivers).	Current	Usual (Habitual)	Increasing	Very high	Academic literature, socialization spaces.

[99] See Annex 2 located at: Soportes\Anexos\ Anexo 2_Informe de socialización

Threatening situation	Manifestation	Frequency	Dynamic	Result threat level	Source of identification
Limitations on participation.	Current	Occasional	Decreasing	Medium	Academic literature.
Permanence of financial mechanisms and benefit distribution (misdirected efforts and investments).	Current	Usual (Habitual)	Stable	High	Academic literature, socialization spaces.
Loss of rights of local communities: property rights (ownership) (land).	None	None	Not Applicable	Very low	Academic literature, BCR Standard.
Reduction of climate adaptation.	None	None	None.	Very low	BCR standard.
Difficulties in implementing measurement, reporting, and verification systems.	Potential	Occasional	Not Applicable	Very low	Academic literature.
Loss of income from economic activities - food security.	Potential	Occasional	Not Applicable	Very low	BCR standard.

(Source: Prepared by South Pole, 2023)

The threat degree classification shows the situations that, when related to the vulnerability degree, can trigger a risk for communities. These high-level threats are related to structural problems and in most cases, due to factors external to the territory, such as territorial control and surveillance and resource investments from public and private entities with an interest in the Amazon region.

Also, with processes that require capacity strengthening and social and community appropriation of new knowledge, as is the case of the design of the REDD+ Project, for which participation and education activities must be undertaken from a long-term and continuous indigenous vision. On the other hand, since REDD+ projects generate monetary resources for investment in conservation and territorial governance processes, they are very susceptible to threatening situations, which already occur throughout the national, indigenous, and non-indigenous territories, such as internal conflicts, corruption, and the generation of high monetary expectations. These highly complex threats, often outside the scope of the REDD+ project, will be addressed through mitigation measures that promote participation, communication, transparency in information and allocation of resources, all framed within the support of traditional, equitable and sustainable government.

Likewise, there are threatening conditions that do not represent a risk to the community and the territory as a whole, such as the loss of territorial rights, since these are protected by the country's legislation. Also, the impact on food sovereignty and reduction of adaptation to climate change, since traditional productive activities have been and continue to be compatible with forest conservation processes.

12.2.3 Territorial vulnerability

In the indigenous territory where the REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others is located, both the inherent conditions, those linked to the social system, such as the socioeconomic, cultural and political characteristics of the stakeholders in the territory (inherent vulnerability) as its relationship with biophysical conditions and threats from various sources, natural and anthropic phenomena (resulting vulnerability) were analyzed, where the emphasis is focusing in terms of impacts. Understanding these two dimensions or two types of vulnerability leads to analyzing and integrating the vulnerability, threat potential, and risks of the territory, and formulating a mitigation strategy.

Inherent vulnerability is that which refers to the ways in which a sociocultural system or a population uses, manages, and adapts to the environment or territory it inhabits. It is closely related to those economic, social, cultural forms or activities, belief systems, mainly. The resulting vulnerability: refers to those conditions or biophysical characteristics such as the incidence of natural phenomena and threat situations that result from the society-nature interaction (natural and anthropic threat phenomena).

table 45 shows the factors that characterize inherent and resulting vulnerability taking into account social and natural factors: response capacity, assimilation capacity and assimilation capacity of the natural environment.

Table 45. Factors evaluated for vulnerability assessment

Component/ Description	Indicator	Indicator classification	Vulnerability degree classification
Response capacity: social, political, administrative, and territorial capacity to adapt to possible damage, take advantage of opportunities or face the consequences.	**Response capacity:** knowledge of the territory, awareness of problems and threats and communication strategies.	**Very high:** most of the community, elders, adults, women, and young people, have knowledge of the territory, its problems, threats and the constant means of communication, not just assemblies, are clear. (Value 1).	Very low: 1
		High: social capacity is channeled through traditional authorities, so that knowledge is replicated throughout the community in collective spaces such as assemblies several times a year. (Value 2).	Low: 2

Component/ Description	Indicator	Indicator classification	Vulnerability degree classification
		Medium: social capacity is concentrated in leaders, traditional authorities and some community leaders, and assemblies are held only annually; the dissemination of knowledge, communication, inclusion of women, young people and older adults must be strengthened. (Value 3).	Medium: 3
		Low: there is knowledge of the territory, its problems, threats, but for the most part it is restricted to a few people, with administrative leadership that is not always traditional; communication is directed without influencing women and young people. (Value 4).	High: 4
		Very low: there are age or gender groups in the community that do not participate, it could be said that there is concentration of knowledge, there is no dialogue of knowledge and there are members of the community who are not included and marginalized. (Value 5).	Very high: 5
Assimilation capacity: assimilation capacity resulting from threatening activities or situations.	**Complementarity and replaceability of use spaces associated with subsistence:** it is evaluated taking into account whether there are several cultural-productive use spaces such as *chagras* that provide benefits to the community, and if they are affected, there are others, or if there are other spaces that can replace them if they are lost.	**Very high:** there is a large number of places that provide sustenance, but many may not be used for years, or the frequency of use is less than annual. (Value 1).	Very low: 1
		High: there is a large number of places that provide sustenance, and all places are used at least annually. (Value 2).	Low: 2
		Medium: there are enough places for sustenance, and they are used several times a year, but if any are affected, the community may suffer shortages. (Value 3).	Medium. 3

Component/ Description	Indicator	Indicator classification	Vulnerability degree classification
		Low: use spaces have been lost and their replacement has required access to services from economic dynamics and external monetary exchanges. (Value 4).	High: 4
		Very low: there are communities within the reservation with a lack of use spaces for their livelihood and with food security problems. (Value 5).	Very high: 5
Assimilation capacity of the natural environment: capacity of the natural environment to assimilate negative effects.	Cover transformation (%)	Assimilation capacity Less than 10%: Very high (Value 1)	Very low: 1
		10 to 30 %: High (Value 2)	Low: 2
		30 to 50%: Medium (Value 3)	Medium: 3
		50 to 80%: Low (Value 4)	High: 4
		More than 80%: Very low (Value 5)	Very high: 5

(Source: adapted from IPCC (2021) and WWF (2018))

Vulnerability factors were also qualified based on the information collected for the baseline of socio-environmental conditions and participation spaces (Table 46).

Table 46. Assessment of territorial vulnerability in the REDD+ Project management area

Component	Indicator	Manifestation in the REDD+ Project management area	Indicator classification	Vulnerability degree classification
Response capacity	Social capacity.	Much of the social capacity is concentrated in leaders, traditional authorities and some community leaders, and assemblies are held only annually; the dissemination of knowledge, communication, inclusion of women, young people and older adults must be strengthened.	Medium	Medium
Assimilation capacity	Complementarity and replaceability of spaces.	Use spaces have been lost and their replacement has required access to services from economic dynamics and external monetary exchanges.	Low	High

Assimilation capacity of the natural environment	Percentage of transformed cover (%).	10 to 30% of the native forest has been transformed.	High	Low
Total vulnerability degree				Medium

(Source: prepared by South Pole, 2023)

As a result of the assessment, as detailed in the table above, there is a medium vulnerability associated with some territorial strengths, mainly in forest conservation and maintenance of cultural and natural subsistence use spaces. This is also due to the diverse and extensive ecosystem inhabited by the different indigenous peoples. In social and political terms, the participation of all people (older adults, women, and youth) in decision-making and information dissemination spaces must be strengthened, so that the reflexive understanding of the positive and negative aspects of the projects, the awareness of dangers and problems, as well as the solutions, become collective processes and, consequently, reinforce territorial governance and cultural identity.

12.2.4 Risk analysis and mitigation measures

The risk analysis adopts the Integrated Approach for the identification of vulnerabilities. To identify threats, it relies on various sources, such as secondary information for REDD+ projects (multilevel governance and BCR standard) and contextualizes and validates them through updated information collected through participation spaces. This qualitative risk analysis integrates the identified risks, whose classification was very high and high. Due to its correlation with vulnerability, the different levels of vulnerability remained (Table 47), even though the evaluation showed a medium vulnerability in general. The objective was to point out in the analysis how the risk level is always present at high and medium levels, due to the frequent and increasing incidence of many threats.

Table 47. Qualitative analysis matrix of the no net harm risk derived from the REDD+ Project and mitigation measures

Threat	Threat degree	Vulnerability level	Risk level	Mitigation measure
High expectations at the local level.	High	Very high to high	High	Communications strategy with clear, intercultural, and continuous communication channels and means.
		Medium	Medium	
		Low-very low	Medium	
Internal conflicts.	High	Very high to high	High	Strengthening of collective and ancestral spaces to mediate the problem, identify the cause, generate transformational change, and negotiate.
		Medium	Medium	
		Low-very low	Medium	
Corruption.	High	Very high to high	High	Governance structure with social control through the community assembly, and

Threat	Threat degree	Vulnerability level	Risk level	Mitigation measure
		Medium	Medium	clear and permanent communication channels. Consolidation of an oversight committee.
		Low-very low	Medium	
Difficult leakage control and lack of governance and territorial impact due to illegal activities and development projects (deforestation drivers).	Very high	Very high to high	Very high	Governance strengthening, and information and leadership democratization.
		Medium	High	Economic and technical support for greater territorial control
		Low-very low	Medium	Dialogue and agreement (cooperation) strategies to improve state action to control illegal activities that drive deforestation
Difficulties in the REDD+ project consultation process.	High	Very high to high	High	Capacity strengthening and training with a continuous ethnic focus. Consolidation of the carbon market training committee.
		Medium	Medium	
		Low-very low	Medium	
Permanence of financial mechanisms and benefit distribution (misdirected efforts and investments).	High	Very high to high	High	Participation strategy with a knowledge appropriation component focused on emissions reduction and climate change mitigation as the central axis.
		Medium	Medium	
		Low-very low	Medium	

(Source: Prepared by South Pole, 2023)

12.2.5 Other considerations

This qualitative risk analysis is constantly updated and expanded, given that the relationship with the stakeholders is continuous. Additionally, it is related to the determination of the vulnerability levels of the stakeholders in the study area. The sociocultural and territorial baseline shows that, within the indigenous reservation, leadership is mainly concentrated in traditional leaders and authorities. These groups are made up of adult men; therefore, young people, older adults who are not considered wise, and women are classified as highly vulnerable.

Likewise, one of the concerns identified so far by the community is related to the use and conservation of the *chagras*, which, in addition to being a source of sustenance and community self-consumption, play an important role in the transmission and production of knowledge, behaviors and traditional practices that represent the relationship with nature, animals, the ecosystem and the spiritual world of the community. However, it has been clarified to the community that the *chagras*, as a fundamental element for the

sustainability and social, cultural and ancestral reproduction of the communities, are contemplated in the project area under the sustainable use category since the *chagras*, in addition to containing an important part of community and traditional life, and due to the diversity of crops they house, contribute to preventing soil erosion and reducing exposure to pests, among other benefits (Gaia Amazonas, 2019).

The *chagras*, according to what was stated by the communities, are usually renewed based on the ecological calendar, as a governing element of agriculture, and although individuals in the different spaces of participation have identified the occurrence of alterations in the cycles that govern their productive activities, during the dissemination days, the participants have also discussed the process of preparing the land on which the *chagras* are and will be established, and evidenced the need to avoid a greater impact on the cover that precedes the preparation of the land. In addition, clarifications have been made regarding the felling of trees for commercialization, as an activity incompatible with the objectives of the project if it is not carried out in a sustainable manner.

Finally, in the implementation of the project there is no expected negative impact on the community and biological diversity; although in Sections 8.3 and 12.1 some issues that could be a possible source of conflict were identified, such as mitigation measures.

The expected community impacts are related to the improvement of social well-being, given the conservation of forest areas that provide ecosystem services to communities, as well as the availability of resources to execute programs and projects agreed in the PIVI and the activities prioritized for the continuity of the project.

13 Special categories, related to co-benefits

According to the BCR Standard Document, co-benefits refer to the additional positive benefits to climate change mitigation initiatives, such as GHG emissions reduction

projects.[100] [101] These co-benefits are framed in three components: 1) Biodiversity conservation of; 2) Community benefits and 3) Gender equity, where, depending on the co-benefits presented, the project may be supported by a special category of recognition; Orchid, Wax Palm or Andean Condor.

The project will evaluate for verifications subsequent to the first, if applicable, compliance with the requirements for the demonstration of any of the special categories defined by the BCR standard in its most current version, evidencing each of the additional actions that have been executed within the framework of the REDD+ project, on the social and environmental components. Likewise, it will establish an appropriate criteria and indicators model to monitor and verify compliance with the benefit categories. In this sense, in subsequent verifications, the project monitoring plan (Section 16) will be adjusted, so that it can contemplate the measurement and monitoring of the co-benefits to be demonstrated by the initiative.

Thus, from each component, the fulfillment of each co-benefit framed in the REDD+ activities specified in the activity reports and in the activity implementation status update for each verification period will be described, and the project will analyze the compliance with co-benefits according to the special categories in each verification. In this way, it will be determined if the activity continues in the same category or if, on the contrary, it applies to another one on a later date.

14 Grouped Project

The project uses a programmatic approach (grouped project). The first instance includes five AATIs, made up of 74 indigenous communities (including *caseríos*) of the Great Vaupés Indigenous Reservation. During the project accreditation period, the inclusion of

[100] Smith P., Bustamante, H., Ahammad, H., Clark, H., Dong, E. A., Elsiddig, H., Haberl, R., Harper, J., House, M., Jafari, O., Masera, C., Mbow, N. H., Ravindranath, C. W., Rice, C., Robledo, A., Romanovskaya, F., Sperling, & Tubiello. (2014). Agriculture, Forestry and Other Land Use (AFOLU). In: *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schl mer, C. von Stechow, T. Zwickel and J.C. Minx (eds.)]. Cambridge University Press, Cambridge.

[101] Stickler, C. M., Nepstad, D. C., Coe, M. T., McGrath, D. G., Rodrigues, H. O., Walker, W. S., & Davidson, E. A. (2009). The potential ecological costs and cobenefits of REDD: a critical review and case study from the Amazon region. *Global Change Biology, 15*(12), 2803-2824.

other instances located in the area of the Great Vaupés Indigenous Reservation with a 15 km *buffer* around it in the northwest and southeast sectors is expected.[102]

14.1 Eligibility Criteria

The new areas that are annexed[103] to the REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others must, at a minimum, meet technical, methodological, and administrative criteria based on the project baseline. Additionally, it is expected that the expansion of the project will occur during the monitoring and verification of previously validated instances.

Thus, the new instances of the project must meet the following characteristics

Location	The new areas must be located within the Great Vaupés reservation, including the area within a buffer of the 15 km reservation, defined as the expansion area of the project, which has the same ethnoterritorial characteristics.
Forest	Demonstrate the presence of forest in a period of 10 years from the start date of project activities in the new instance.
Activities	The new instances must have a Life Plan that allows them to be adapted to the proposed strategic lines and the equivalence of the project activities specified in the project description (Section 3.6). New instances must implement at least one of the activities described (Section 3.6) before the verification period.
Stakeholder consultation	To include a new instance, a socialization process must be carried out and the risk of non-permanence will be evaluated for each instance.
Additionality	Taking into account the ethnoterritorial similarity that the expansion area shares, the new instances must face the same additionality barriers (at least one) as the initial instances of the project (Section 3.4).
Not be included in another GHG program	The new instances will not reduce GHG emissions under any other emissions trading program or any other mechanism that contemplates GHG transactions.

The technical, methodological, and administrative criteria to be considered are listed in detail below.

[102] KML is available at : 03_Soportes\Cartografía\2_Límites del proyecto\0_Zona del proyecto (ZP)\KML
[103] New instances that want to be included.

14.1.1 Technical criteria

- Areas located in the project expansion zone, within the jurisdiction.
- Areas that comply with the definition of forest adopted by Colombia before the United Nations Framework Convention against Climate Change (UNFCCC), according to which the forest is essentially a tree cover that presents 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 (MAVDT, 2002).
- Areas where deforestation occurs in an way due to activities such as livestock, agriculture, or mining, or any other related to risk factors caused by deforestation agents and drivers on the territory.

14.1.2 Methodological criteria

- The area eligible to generate Verified Carbon Credits (VCCs) must have been stable forest for a minimum period of 10 years before the date of inclusion in the project (i.e., before the date on which the project activity instance began to reduce GHG emissions).
- Must demonstrate that additionality considerations, deforestation/degradation causes and agents, land tenure and the line scenario of the new areas are consistent with the characteristics validated for the initial areas, this includes ensuring that the project and activities are not required by any law as well as specifying the conservation barriers that said activities will help eliminate, among others, thus certifying that the GHG emission reductions would not have occurred in the absence of the mitigation initiative, and that they generate and/or will generate a net benefit to the atmosphere with respect to their baseline.
- The start date of the new instances must demonstrate that said date is later than the start date of the GHG removal activities in the areas included in the validation.
- If necessary, the leakage belt should be updated to include possible deforestation displacements due to the implementation of REDD+ project activities.
- The project activities for the new areas must be framed in one of the strategic lines proposed and defined for the first instance, and the equivalence of the project activities specified in the project description (Section 3.6), thus guaranteeing the inclusion of the emission reductions for validated REDD+ project activities that are being implemented. In the case of including an activity outside these lines of action, the proposals must be duly supported.
- The activities to avoid deforestation or degradation described in the validated project document (PDD) must be implemented).

- The project may not be included in another project or program related to the reduction of GHG emissions.
- The project must comply with the applicability criteria of the Methodology proposed by the BioCarbon Registry Standard (BCR) in its most current version, as well as comply with the guidelines of the BCR Standard, in its most current version; and comply with all provisions of the applicable methodological documents.

14.1.3 Administrative criteria

- The holders of the new areas to be included must demonstrate that they have the right to use the property, as well as ownership of carbon rights and land tenure.
- The new instances should be subject to stakeholder consultation processes, similar to those carried out for the first instance, as well as comply with the prior, free and informed consultation process and with the REDD+ safeguards for Colombia.
- The holder must be able to carry out the documents processing procedures and comply with the requirements for the registration of the area in the National Registry for the Reduction of Greenhouse Gas Emissions (RENARE) of Colombia.
- The holder must be able to demonstrate that the properties are not in the Single Registry of Abandoned Properties and Territories (RUPTA) or in the Registry of Dispossessed and Forcibly Abandoned Lands (RTDAF) of the National Land Agency of Colombia.
- The new instances must include areas where deforestation occurs in an unplanned manner (agriculture, grazing, fuelwood, wood, charcoal), as long as they comply with the most current guidelines of the BCR standard.
- Can include multiple forest types, ages, successional status, agroforestry, natural, planted.
- Must meet a minimum forest definition of 10 years prior to start date.
- May include wetland forests, unless grown in peatlands (at least 65% organic matter, with a minimum thickness of 50 cm).
- Must have the same baseline scenario defined in the project design (Section 3.3).
- The new areas must be articulated within the proposed governance structure of the project. (see Section 12).

- The new areas must be subject to socialization processes similar to those carried out for the first instance, including compliance with the free, prior and informed consultation process (see Section 12).
- The new areas must have sufficient information to develop or implement the proposed monitoring plans for each of the project components with respect to climate, community, and biodiversity (see Section 16).

The new instances will only be validated within the framework of the verification of the instances already validated, as long as it has enough information to demonstrate compliance with the elements mentioned above.

15 Other GHG programs

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

The project initiated a registration process with the VERRA standard, however, given the delays in responses from the standard and the delays generated in the schedule socialized with the initiative holder, it would have prevented the holder from implementing additional project activities related to mitigation of deforestation and the generation of better living conditions for communities, activities that were planned to be implemented with the REDD+ project. This caused an increase in the risk of permanence in the initiative on the part of the holders, which is why the 5 AATIS decided to request the withdrawal before the VSC (Verra Project Withdrawal Letter)[104] processed registration with the VCS on November 25, 2022, requested its withdrawal and at this time it is in a withdrawn status.[105]

On the other hand, the project is registered in the BioCarbon Registry standard as a new project since the initiative was not able to issue credits or complete the verification phase in the old standard. Registration with BCR took place at the end of 2022. However, it should be clarified that the project start date, October 28, 2016, complies with the conditions of applicability of the standard and retroactivity period -5 years- (table 5 and

[104] See in : anexos/Soporte anexo 15/ Carta de retiro proyecto VERRA
[105] This information can be evidenced and corroborated on the VERRA Standard page. For more information, go to the following web address: https://registry.verra.org/app/projectDetail/VCS/2251

11), given that the BCR criteria stipulates that "Validation begins once a commercial agreement is signed with the OEC or with the first party auditor" and the validation of the initiative begins on June 12, 2020[106] under the formulation with the VERRA standard. Therefore, the start date complies with BCR requirements.

15.2 Projects Rejected by Other GHG Programs

The project has not requested or received another form of environmental credit related to GHG.

15.3 Other Forms of Credit

15.3.1 Trading Programs and Other Binding Limits

The area of the first instance of the project is within the reference region of the Visión Amazonía program, a strategy of the Colombian Government that seeks to promote a low-deforestation development model in the Colombian Amazon region as part of national efforts to fight against climate change and the loss of biodiversity. This Program is one of the strategies of the Government of Colombia to fulfill the commitments before the UNFCCC to reduce net deforestation by the year 2020. Visión Amazonía covers different projects, plans and programs developed within this jurisdiction, financed with resources from the National Government, international cooperation, some private resources and from local governments.

The most relevant program is REDD+ Early Movers (REM) – REDD+ Early Initiatives, based on results of reducing emissions from deforestation and degradation in the Colombian Amazon Biome; in line with the provisions agreed under the UNFCCC. The REM program generates incentives for deforestation reduction policies at the regional level, through the payment y results scheme; and this way rewards the reduction of emissions, because of the decrease in gross deforestation. The payment under this agreement contemplates the reductions in the period (2013-2017).

In the first instance project area, there is an incompatible overlap in the first year of the established crediting period (2016), for the months of October, November and

[106] This validation was initiated with OVV ICONTEC for the project registered under the VERRA standard.

December, therefore, in compliance with article 40[107] of Resolution 1447, the emission reductions generated by the project in the period between October 29, 2016 (project start date) and December 31, 2016, will not be issued as verifiable carbon credits, and consequently, will not be subject to national accounting, nor will they be eligible for results-based payments or similar compensation established by the national Government, such as, for example, for the non-causation of the National Carbon Tax. However, the REM Program did not receive results-based payments in 2017,[108] therefore, starting in 2017, for project accreditation, it is planned to offer the accounted mitigation results in the voluntary market, according to the provisions established by the Ministry of Environment.

15.3.2 Other Forms of Environmental Credit

The project has not requested or received another form of environmental credit related to GHG, including renewable energy certificates.

16 Monitoring plan

The development of this section is carried out in accordance with the requirements of the *REDD+ BCR Methodological Document of Biocarbon Registry*, which incorporates the monitoring of project limits, REDD+ initiative emissions, REDD+ activities execution, compliance with safeguards and the permanence of the project.

The following will also include:

a) Verification of compliance with the applicability conditions listed in Section 4 of the *REDD+ BCR Methodological Document of Biocarbon Registry.*

b) Verification of carbon stock changes in the selected deposits and GHG emissions for the verification period within the established baseline, according to Table 5 and Table 6.

c) Verification of project emissions and leakage.

[107] For the purposes of national reduction and removal of GHG emissions accounting, only those GHG mitigation results that have been verified, registered in RENARE and included in the maximum GHG mitigation potential object of said national accounting will be valid.

[108] See in: Soportes\Marcos_regulatorios\Vision

d) Monitoring of key parameters in the baseline to review the baseline again at the end of the fixed line period.

This procedure is detailed in the following sections.

16.1 Data and parameters for quantifying emission reductions

Data / Parameter	$FSC_{project,yr}$
Data unit	Hectare (ha)
Description	Annual change in forest covered area in the project area (PA), or deforested area attributed to the implementation of project activities; ha
Source of data	Information about the Colombian forest surface area and its changes provided by the IDEAM through the SMByC
Description of measurement methods and procedures applied	South Pole will quantify the areas of forest that suffered deforestation based on the data reported by IDEAM for non-forest forest. See Annex 6
Frequency of monitoring/recording	Every year
Value applied:	The value depends on the results of the monitoring. These values are reported in the ex-post estimates
Monitoring equipment	Data from remote sensors (supplied by IDEAM) GIS software.
QA/QC procedures applied	The IDEAM generates the annual report of changes in forest cover at the national level. This report is considered a QA / QC of the process (see Annex 8)
Purpose of data	These data are the basis for the calculation of the project's emissions.
Calculation method	See Annex 6
Comments	N/A

Data / Parameter	$FSC_{lk,yr}$
Data unit	Hectare (ha)
Description	Annual change in forest covered area in the leakage area (LA), or deforested area attributed to the implementation of project activities; ha
Source of data	Information about the Colombian forest surface area and its changes provided by the IDEAM through the SMByC
Description of measurement methods and procedures applied	South Pole will quantify the forest areas that suffered deforestation based on the data reported by IDEAM for non-forest forest. See Annex 6.
Frequency of monitoring/recording	Every year
Value applied:	The value depends on the results of the monitoring. These values are reported in the ex-post estimates

Monitoring equipment	Data from remote sensors (supplied by IDEAM) GIS software.
QA/QC procedures applied	The IDEAM generates the annual report of changes in forest cover at the national level. This report is considered a QA / QC of the process (see Annex 8)
Purpose of data	These data are the basis for the calculation of the project's emissions.
Calculation method	See Annex 6
Comments	N/A

16.2 Monitoring REDD+ initiative project boundaries

The project boundaries made up of the Project Area (AP) and Leakage Area (LA), defined in Section 3.2, will have emission reductions from deforestation monitoring in accordance with Section 13.4 GHG emissions in the analysis period of *REDD+ BCR Methodological Document* and developed for the first monitoring period in Section 3.10.3 and 17

The decrease in deforestation as a consequence of the implementation of project activities will be verified through periodical forest cover monitoring, in each monitoring period. This monitoring will be carried out using the information available from the Forest and Carbon Monitoring System (SMByC),[109] or otherwise, by satellite image processing mediated by a forest classification process. In this way, the proponent will use the generated layers and/or the information provided by the SMByC (according to the availability of the source information) to evaluate and identify forest losses in the project area during the implementation period and according to each verification period, for the calculation of deforested areas, both for the project area and leakage management areas.

16.3 Monitoring of actual carbon stock changes and GHG emissions within the project area

For each monitoring period, activity data and emission factors will be monitored in accordance with the most updated IPCC and FREL, formally submitted by Colombia and evaluated by the UNFCCC. The data and parameters described in Sections 3.7.1 and 16.1, will be verified in each period. The procedure to follow for project emissions

[109] It is responsible for generating information about the forest area of Colombia and its changes over time..

monitoring will be carried out in accordance with what is described in Sections 16 and 3.10.

16.4 Monitoring the execution (implementation) of REDD+ activities

To mitigate events of deforestation in the project area, the communities have established activities based on their life plans that help prevent forest losses (see Sections 8, 9 and 3.6). The AATIs will be responsible for the implementation and monitoring of the activities. The project proponent will monitor and control to ensure that these activities are carried out.

The project will monitor the development of activities focused on:

- Oversight and control of the financial resources invested: aspect that will be carried out at the end of each year through the accountability that the administrative team will do before the AATIs general assembly and the project overseeing team (For more details see Sections 4.4 and 12 specifically on National Safeguards, of this document).
- Monitoring and registration of activities developed with the support of other institutions.
- Impact monitoring and recording of activities carried out with the support of other institutions.
- Social and environmental impact of the project activities in the territory: in order to maintain minimum social and environmental risk standards and improve the quality of life of the communities present in the project territory, compliance with national Safeguards and guidelines of Resolution 1447 of 2018 will be monitored and evaluated. For this, in Annex 9.[110] the descriptions of the indicators for measuring the impacts of project activities can be found.
- The project activities implemented should record the number of families involved in each one of these activities. In order to guarantee gender equity, the number of men and women should also be registered.

[110] See in: Soportes\Anexos\ Anexo 9_Plan de monitoreo

- The basis of the communications committee is made up of all the members of the AATIs, that is, all the inhabitants that are part of each of the AATIs, who must ensure the effective development of the activities and report any inconsistencies presented in these; they are also in charge of carrying out control and surveillance in the territories, since they travel through them on their daily tasks such as fishing and hunting. If required, a forest monitoring and patrolling committee will be established as an activity that is part of the project as established by the general assembly.
- All records (including photographs, testimonies, additional specific reports, etc.) generated during the execution of initiatives related to the project activities will be compiled by the AATIs, prior to the next verification of the project and will be made available to the audit body for inspection.
- South Pole monitors deforestation alerts with Global Forest Watch and shares weekly reports with AATIs. If the deforested area reported by Global Forest Watch is greater than five hectares, the communicator or territory managers should visit the site. At the site the occurrence of the deforestation event should be validated, if confirmed the agent of deforestation should be recorded, a photographic record should be generated, and the coordinates of the site should be provided.

The monitoring plan for project activities will be fully implemented for the validity of 2019 onwards. For the first monitoring period (10/29/2016 to 12/31/2018), the information and support that the community has at the moment of the validation of the project will be presented to the auditor, trying to get as close as possible to this established plan.

Monitoring of REDD+ activities will be carried out taking into account the activities described in Annex 9 and include the following information:

Table 48. Monitoring plan for the execution of REDD+ activities

Title	Description
Strategic line	REDD+ project activities are related and subdivided into 4 strategic lines (see Section 3.6). Each strategic line has different activities associated with it in order to achieve the project's objectives.
Activity	The activity developed within the framework of a strategic line is named.
Indicator ID	Code to reference the activity. (FRES) • Strategic line 1: **F** - Local governance strengthening. • Strategic line 2: **R** - Ecological and cultural restoration. • Strategic line 3: **E** - Own economy and production systems.

Title	Description
	• Strategic line 4: **S** - Traditional knowledge and own-education.
Type	According to the execution of the activity, it is described as: Impact – Result – Product.
Goal	Objectives to develop.
Unit of measurement	Parameter by which the indicator will be measured.
Monitoring methodology	Description of how the activity will be developed.
Monitoring frequency	Time in years.
Responsible for measurement	Communities, AATIs or stakeholders.
Result of the indicator in the reporting period	According to the monitoring period that is being developed.
Documents to support the information	Location of the information or values obtained in the monitoring period.

(Source: South Pole, based on information from communities and life plans, 2020)

The results of the activity monitoring plan for the first verification period are presented in Section 17.

16.4.1 Strategic line 1: Local governance strengthening

Activities aimed at local governance strengthening will enable communities to take charge of resource management and REDD+ project implementation.

Table 49. Strategic line 1

Strategic line	Local governance strengthening				
Objective	Strengthen relationships and collaborative work with the different sectors and strategic stakeholders in the area of influence, promoting community capacities and leadership around management in governance processes, to contribute to the good management of the territory.				
Responsible[111]	Local community, community sector leaders and initiative holders.				
Role	Implementation schedule	Indicator ID	Type[112]	Goal[113]	Unit

[111] Responsible and role of the stakeholders who participated in the activity
[112] Type: Result (R), Product (P) or Impact (I)
[113] Goal: Expected Value (EV) and Time (t) for its fulfillment

• Initiative holder • Community participants • Institutional participants	The monitoring plan for project activities will be implemented in its entirety for 2019 onwards. For the first monitoring period (10/29/2016 to 12/31/2018), the auditor will be presented with the information and supports available to the community at the time of project validation, trying to get as close as possible to this established plan.	**F** - Local governance strengthening.	Result	Evaluation of the project to be implemented	See indicators on Annex 9 for each activity

(South Pole, based on information from the initiative holder)

Table 50. Type - Impact generated – Strategic line 1

Positive	Negative
• Sustainable forest management with community participation. • Strengthen forestry and territorial governance. • Promotion of environmental education spaces.	• Poorly articulated perception of public-private environmental competencies.

(South Pole, based on information from the initiative holder)

16.4.2 Strategic line 2: Ecological and cultural restoration and recovery

Table 51. Strategic line 2

Strategic line	**Ecological and cultural restoration and recovery**				
Objective	Restore the ecological and social dynamics of the Amazon Forest, rivers and associated cultural values.				
Responsible[114]	Local community, community sector leaders and initiative holders.				
Role	**Implementation schedule**	**Indicator ID**	**Type**[115]	**Goal**[116]	**Unit**

[114] Responsible and role of the stakeholders who participated in the activity
[115] Type: Result (R), Product (P) or Impact (I)
[116] Goal: Expected Value (EV) and Time (t) for its fulfillment

• Initiative holder • Community participants • Institutional participants	The monitoring plan for project activities will be implemented in its entirety for 2019 onwards. For the first monitoring period (10/29/2016 to 12/31/2018), the auditor will be presented with the information and supports available to the community at the time of project validation, trying to get as close as possible to this established plan.	**R** - Ecological and cultural restoration	Result	Evaluation of the project to be implemented and annual measurements on the recovered sites	See indicators on Annex 9 for each activity

(South Pole, based on information from the initiative holder)

Table 52. Type - Impact generated – Strategic line 2

Positive	Negative
• Conservation of the tropical rainforest. • Habitat supply for fauna species. • Soil erosion reduction. • Greenhouse gases removal. • Protection of fauna and flora species. • Water regulation. • Tree biomass growth. • Decreased pressure on natural ecosystems.	Unidentified

(South Pole, based on information from the initiative holder)

16.4.3 Strategic line 3: Own economy and production systems

With the purpose of addressing the main cause of deforestation and forest degradation in the Reservation territory, the proposal is to provide alternative livelihoods that are not based on excessive timber extraction and through which the indigenous communities can secure income without the need to cut down more forests.

Table 53. Strategic line 3

Strategic line	**Own economy and production systems**
Objective	Support capacity building and local projects that generate new economic alternatives for community benefit.

Responsible[117]	Local community, community sector leaders and initiative holders.				
Role	**Implementation schedule**	**Indicator ID**	**Type[118]**	**Goal[119]**	**Unit**
• Initiative holder • Community participants • Institutional participants	The monitoring plan for project activities will be implemented in its entirety for 2019 onwards. For the first monitoring period (10/29/2016 to 12/31/2018), the auditor will be presented with the information and supports available to the community at the time of project validation, trying to get as close as possible to this established plan.	**E** - Own economy and production systems.	Result	Evaluation of the project to be implemented	See indicators on Annex 9 for each activity

(South Pole, based on information from the initiative holder)

Table 54. Type - Impact generated – Strategic line 3

Positive	Negative
• Generation of local employment. • Protection of native species. • Generation of local entrepreneurship through local projects. • Sustainable forest management with participation. • Contribution to the economic growth of the reservation.	Unidentified

(South Pole, based on information from the initiative holder)

16.4.4 Strategic line 4: Traditional knowledge and own-education

Table 55. Strategic line 4

Strategic line	**Traditional knowledge and own education**
Objective	Advance towards an own ethno-educational model that allows the recovery of traditional spaces, indigenous identity, and values.
Responsible[120]	Local community, community sector leaders and initiative holders.

[117] Responsible and role of the stakeholders who participated in the activity
[118] Type: Result (R), Product (P) or Impact (I)
[119] Goal: Expected Value (EV) and Time (t) for its fulfillment
[120] Responsible and role of the stakeholders who participated in the activity

Role	Implementation schedule	Indicator ID	Type[121]	Goal[122]	Unit
• Initiative holder • Community participants • Institutional participants	The monitoring plan for project activities will be implemented in its entirety for 2019 onwards. For the first monitoring period (10/29/2016 to 12/31/2018), the auditor will be presented with the information and supports available to the community at the time of project validation, trying to get as close as possible to this established plan.	**S** - Traditional knowledge and own-education.	Result and Impact	Evaluation of the project to be implemented	See indicators on Annex 9 for each activity

(South Pole, based on information from the initiative holder)

Table 56. Type - Impact generated – Strategic line 4

Positive	Negative
• Guidance and training on leadership processes • Community participation of young people, adults, elders and *sabedores* (wise men). • Recovery of ancestral knowledge and ecological calendar practices. • Institutional linkage. • Development of intercultural environmental education. • Development of own didactic material. • Recovery of ancestral knowledge related to areas of environmental significance such as savannahs, sacred sites, wetlands, lagoons. • Conservation of high cultural value sites.	Unidentified

(South Pole, based on information from the initiative holder)

16.5 Monitoring of land-use and land-cover change within the project

The project monitors the change of forest lands converted to non-forest lands (I). Categories II and III will not be monitored. The reasons are presented below.

Table 57. Applicability of the land use change monitoring type in the project area

[121] Type: Result (R), Product (P) or Impact (I)
[122] Goal: Expected Value (EV) and Time (t) for its fulfillment

N°	Type	Conditions under which monitoring is mandatory	Explanation	Applicability to the project
I	Forest land areas converted to non-forest land.	Mandatory in all project activities to prevent deforestation (AUD).		Applicable.
II	Forest land areas that experience a decrease in carbon stocks.	Mandatory only for AUD project activities that have planned forest use such as the collection of fuel-wood and charcoal production (on or above) of the baseline.	Changes in the carbon stock should be significant according to the ex-ante evaluation, otherwise, monitoring is not required.	Not applicable. The project has no planned deforestation activities. The areas in which requests or exploitation permits are identified for the benefit of the communities will be extracted from the project area.
III	Forest land areas that experience increase in stocks.	Mandatory for AUD project activities that wish to claim carbon bonds for an increase in the carbon stock	The increase must be significant according to the ex-ante evaluation and can only be accounted for in areas that will be deforested in the case of the baseline.	Not applicable since the project does not intend to claim VCCs for an increase in the carbon stocks because of the activities implemented.

(Source: South Pole, 2020)

At the national level, there is a mitigation actions monitoring system (MRV) administered by IDEAM, under the guidelines and orientations of the Department of Climate Change and Risk Management of the Ministry of Environment and Sustainable Development.

The Forest and Carbon Monitoring System (SMByC) is responsible for generating information about the forest surface of Colombia and its changes. According to Chapter 9 of Title 8 of Part 2 of Book 2 of Sole Decree 1076 of 2015, it is official information that allows decision making, formulating policies and standards for the planning and sustainable management of natural forests in the Colombian territory. For this, and to comply with Paragraph 2 of Chapter 1 of Resolution 1447 of 2018, which states: "*All GHG mitigation initiatives holders that intend to opt for payments for similar results or compensation or demonstrate compliance of national climate change goals established under the UNFCCC should monitor, report and verify their GHG mitigation actions in accordance with the principles of the MRV System of national mitigation actions and the accounting rules established in this resolution*" The project proponent assesses forest losses in the project area according to the information provided by IDEAM.

During the monitoring period, 10/29/2016-12/31/2018, project activities subject to monitoring have been carried out but, since the monitoring system (MRV) generates annual and not monthly reports, which prevents quantifying forest losses in the first three months of the monitoring period, effectiveness of project activities in GHG emission reductions will only be verified as of January 1, 2017. This in order to guarantee the use of recognized data that allows obtaining emissions estimates and calculations usable in Colombia and comparable with the Monitoring, Reporting and Verification system (MRV).

16.6 Monitoring of carbon stock and non-CO_2 emissions from forest fires

This monitoring is applicable if any of the cases presented in the methodology is fulfilled. Table 58summarizes and defines its applicability in the project to.

Table 58. Applicability in the project area of the carbon stock and non-CO_2 emissions from forest fires monitoring

Monitoring	Case	Subcase	Description	Applicability in the project
Mandatory carbon stock monitoring	Within the project area	a	Areas subject to a significant decrease in carbon stocks in the project scenario according to the *ex-ante* evaluation. These areas are subject to deforestation control and planned collection activities such as logging, fuel-wood collection, and charcoal production. In these areas, the change in the carbon stock must be estimated at least once after each harvest event.	It does not apply in the project. There will be no planned deforestation activities.
		b	Areas subject to a significant decrease in carbon stocks, for example, an uncontrolled fire and another catastrophic event. In these areas, carbon stock losses should be estimated as soon as possible after the catastrophic event.	In the project area, risks from fire or catastrophic events are not frequent. However, emissions from these events will be monitored and reported.
	Within leakage management areas	a	Areas subject to a planned and significant decrease in carbon stocks in the project scenario based on the *ex-ante* evaluation. In these areas, carbon stocks must be estimated at least once after the planned event that caused the carbon stocks to decline.	There is no planned deforestation in the project area, and given that there is a reference region, leakage management is contemplated by said reference region

Monitoring	Case	Subcase	Description	Applicability in the project
Optional carbon stocks monitoring	Within the project area	a	Areas subject to an increase in carbon stocks following planned extraction activities such as logging, fuel-wood collection, and charcoal production. In these areas, the increase in carbon stocks that occurs after the harvest event can be measured and accounted for when significant.	Carbon credits generated by forest regeneration will not be accounted for, therefore, this item does not apply to the project.
		b	Areas recovering from disturbances such as wildfires and other catastrophic events. In these areas, the increase in carbon stocks that occurs after the catastrophic event can be measured and accounted for when significant.	
	Within leakage management areas	a	Areas subject to carbon stocks increase due to leakage prevention measures. In these areas, the increase in carbon stock can be measured and accounted for only up to the amount necessary to offset any decrease in carbon stock caused by leakage prevention measures in other leakage management areas or in previous years.	It does not apply to the project since there is an MRV reference and leak management is contemplated by it.
	Within the leakage area	a	Areas experiencing significant carbon stocks changes can be measured at the end of each fixed reference period to update carbon stocks information for the subsequent period.	It does not apply to the project since there is an MRV reference and leak management is contemplated by it.

(Source: Prepared by South Pole. 2019)

16.7 Monitoring the permanence of the REDD+ project, natural disturbances impacts and other catastrophic events

Natural disturbances and catastrophic events are not expected to occur in the project area. If they do occur during the life of the project, they will be reported, evaluated according to the *REDD+ BCR Methodological Document* guidelines and monitored as described below:

Each of the AATI communities will be responsible for identifying significant disturbances in the forest and recording them in an electronic form provided for this purpose. Travel (route trips) will be made by boat or on foot depending on transportation facilities for surveillance and disturbances identification.

For each disturbance event, the following information must be identified and recorded at a minimum:

- Type of disturbance: fires, pests and diseases, extreme weather events such as hurricanes, blizzards, prolonged droughts, floods, or geological events such as earthquakes.
- Location of the disturbance: georeferenced with GPS and indicate sector and community.
- Date
- Estimated area: number of hectares that could be affected by the disturbance.

Likewise, witnesses must be photographed and interviewed to identify the causes and those responsible, and, in any case, the project coordinator should be informed so that the respective record can be made on the electronic form.

Project permanence risks will be evaluated with the risks associated with the project analyzed in Section 7. A description of the risk, mitigation and qualification measures will be carried out in accordance with a known methodology. Biophysical and socioeconomic risks such as fires,[123] floods, land tenure disputes, conflicts between project stakeholders, non-appropriation of project activities and governance deficits will be analyzed for each monitoring period. It will also be evaluated whether there are natural and anthropogenic disturbances that affect carbon stocks to deduct from the 20% reserve.

Finally, if the area affected by natural disturbances or man-made events generated mitigation results in previous verifications, the total net change in carbon stocks and GHG

[123] It is expected to identify the affected area in case of occurrence, in addition, estimate the CO_2 and CH_4 emissions (when applicable) to include them in the quantification of the project's emissions in the monitoring period.

emissions in the area that generated those results will be estimated and an equivalent number of credits will be paid from the emissions reserve for non-permanence risk.

16.8 Monitoring of relevant sections of the project

16.8.1 Monitoring of Sustainable Development Goals (SDGs) and REDD+ Safeguards

For each monitoring period, an evaluation of the SDGs will be carried out based on the Sustainable Development Priorities at the national level in accordance with what is described in Section 11, and the REDD+ Safeguards (Section 12.1).[124]

16.8.2 Monitoring of regulatory requirements

The regulatory requirements will be evaluated in each verification period, for this purpose, the following will be analyzed:

- Compliance with national legislation in accordance with Section 8 of the BCR Standard (Section 4)
- Project applicability conditions (Section ●)
- Ownership and rights of carbon credits in accordance with Section 12 of the BCR Standard (Section 5)

16.8.3 Risk management monitoring

The biophysical, financial, social and permanence risks of REDD+ activities will be assessed as discussed in Section 7 of this document.

16.9 Total *ex-post* estimates of actual net carbon stock changes and GHG emissions in the project area

The quantification of the ex-post estimates of the carbon stock changes in the project area will be carried out with the change measurements data in the carbon stock and GHG emissions in the monitoring period using the same calculations used in ex-ante (Section 3.10.3).

[124] For more information on the safeguards analysis, consult the evaluation document at: Soportes\Anexos\ Anexo 10.

16.9.1 Leakage monitoring

Leakage monitoring will be done periodically, before any verification is carried out. This project will monitor the following sources of leakage:

- **Decrease in carbon stock and increase in GHG emissions associated with leakage prevention measures:** The activities implemented in leakage management areas (non-forest areas on the start date) do not generate carbon stock losses, since they are traditional and do not include the use of agrochemicals.

Section 3.2 of the PDD, the activities to be implemented in the leakage management areas are described. Once the new projects associated with the prioritized activities have been formulated, the guidelines for monitoring the increases and decreases in carbon stocks will be updated.

If there is a significant increase in GHG emissions in relation to leakage management activities, this project will account for and monitor these emission sources.

- **Decrease in the carbon stock and increase in GHG emissions associated with leakage displacement activities:** If, during the monitoring process, a deforestation event greater than that predicted in the baseline scenario in the leakage belt is observed, the losses of stored carbon will be accounted for and reported. leakage will be calculated as the difference between *ex-ante* and *ex-post* evaluations of the forest area converted to non-forest in the leakage belt.

Monitoring will be carried out following the same approach used in monitoring land-use and land-cover changes within the project area. In addition, data generated by IDEAM will be collected and an analysis will be prepared that will provide information on the forest area converted to non-forest in the leakage belt.

On the other hand, emissions from forest fires were not included in the baseline, as they are not considered significant. However, it will be evaluated whether these emissions

are related to deforestation agents in the project area, for which a field report and analysis of satellite images[125] will be carried out.

16.9.2 Ex-post net anthropogenic GHG emission reductions

The results of the net ex post anthropogenic reductions of GHG emissions in the project area will be carried out following the guidelines of the *REDD+ BCR Methodological Document*.

16.10 Additional information to determine the baseline or reference scenario

It will be evaluated in accordance with the baseline update conditions when applicable, following BCR standard guidelines.

16.11 Information related to environmental impact assessment of GHG project activities

In relation to impacts, it is important to understand not only the benefits that an initiative generates in a territory, but also the possible risks to prevent or mitigate them if necessary. In that sense, the comprehensive impact analysis for the mitigation project will take into account the type of impact, whether positive or negative, the description of the impact and its action or mitigation measure, depending on whether it is positive or negative. It is proposed that risks, impacts and benefits can be classified according to REDD+ safeguards. These are the set of instruments, agreements, processes and tools that allow addressing REDD+ measures and actions in the best possible way, ensuring the respect and guarantee of the rights of the populations in the territories, as well as the integrity of the forests and ecosystems where such actions are implemented.

The monitoring plan for the environmental effects or impacts of the project will take into account environmental and socioeconomic aspects and will include corrective measures and/or mitigation measures as described in Section 8.3.

[125] In 2021, a meeting will be held with the traditional indigenous authorities located in the leakage belt to jointly define the monitoring measures to control the possible displacement of deforestation. To date, based on conversations with neighboring presidents, no leakage displacements have been identified.

16.12 Procedures established for the management of GHG emission reductions or removals and related to quality control

Los The procedures established for information management in this regard are detailed in Annex 8.

17 Monitoring of the implementation status of the REDD+ initiative (first verification period)

17.1 Data and Parameters Monitored

Data / Parameter	$FSC_{project,yr}$
Data unit	Hectare (ha)
Description	Deforested area at time t within the project area; ha
Value applied	

Projected year		Project area		
		Stable forest (ha)	Annual deforestation (ha/year)	Cumulative deforestation (ha/year)
Project year (t)	Calendar year	PA_{t-1}	$FSC_{project,t}$	$FSC_{project}$
0	2016	797,116.87	80.25*	80.25
1	2017	796,428.39	688.49	768.74
2	2018	796,133.20	295.18	1,063.92
Total			**1,063.92**	
Total 2017-2018			**983.67**	
Annual average			**491.83**	

Source of data	Information about the Colombian forest surface area and its changes provided by the IDEAM through the SMByC
Description of measurement methods and procedures applied	Based on data reported by IDEAM for non-forest forest. The areas of forest lost are quantified (See Annex 6). IDEAM generates the annual report of changes in forest cover at the national level. This report is considered a QA/QC (See Annex 8).
Purpose of data	These data are the basis for the calculation of the project's emissions.
Calculation method	See Annex 6
Comments	N/A

Data / Parameter	$FSC_{lk,t}$
Data unit	Hectare (ha)
Description	Deforested area at time t within the leakage area; ha

<table>
<tr><td>Value applied</td><td>
<table>
<tr><th colspan="2" rowspan="2">Projected year</th><th colspan="3">Leakage belt</th></tr>
<tr><th>Stable forest (ha)</th><th>Annual deforestation (ha/year)</th><th>Cumulative deforestation (ha/year)</th></tr>
<tr><th>Project year (t)</th><th>Calendar year</th><th>LK_{t-1}</th><th>$FSC_{lk,t}$</th><th>FSC_{lk}</th></tr>
<tr><td>0</td><td>2016</td><td>80,685.81</td><td>2.40</td><td>2.40</td></tr>
<tr><td>1</td><td>2017</td><td>80,635.87</td><td>49.94</td><td>52.34</td></tr>
<tr><td>2</td><td>2018</td><td>80,626.91</td><td>8.96</td><td>61.30</td></tr>
<tr><td colspan="3">Total</td><td colspan="2">61.30</td></tr>
<tr><td colspan="3">Total 2017-2018</td><td colspan="2">58.91</td></tr>
<tr><td colspan="3">Annual average</td><td colspan="2">29.45</td></tr>
</table>
</td></tr>
<tr><td>Source of data</td><td>Information about the Colombian forest surface area and its changes provided by the IDEAM through the SMByC</td></tr>
<tr><td>Description of measurement methods and procedures applied</td><td>Based on data reported by IDEAM for non-forest forest. The areas of forest lost are quantified (See Annex 6). IDEAM generates the annual report of changes in forest cover at the national level. This report is considered a QA/QC (See Annex 8).</td></tr>
<tr><td>Purpose of data</td><td>These data are the basis for the calculation of the project's emissions.</td></tr>
<tr><td>Calculation method</td><td>See Annex 6</td></tr>
<tr><td>Comments</td><td>N/A</td></tr>
</table>

17.2 Monitoring REDD+ initiative project boundaries

17.2.1 Monitoring changes in forest cover for the REDD+ project (deforestation)

The decrease in deforestation as a consequence of the implementation of project activities is verified through monitoring forest cover periodically, in each monitoring period. In the case of the 2016-2018 monitoring, it was achieved using the 2016, 2017 and 2018 forest and non-forest layers obtained in the processing from the IDEAM forest and non-forest information (Galindo et al., IDEAM, 2014)[126] taking into account two types

[126] http://smbyc.ideam.gov.co/MonitoreoBC-WEB/reg/indexLogOn.jsp

of land cover: forest [127] and non-forest. These layers will be crossed to obtain the areas that changed from forest to non-forest between the mentioned years.

A cartographic cross-referencing of the periods was carried out to delimit the changes in forest cover in the project area and the leakage area and to show the loss of the project area due to deforestation. The result of the crossing of the cartographic layers are multitemporal series with the following characteristics.

- **Stable forest:** Those areas with forest[128] on the start date of the project, which retain their forest cover during the analysis period (2016 - 2018).
- **Non-forest:** Corresponds to those forest areas that are eligible on the project start date and lost their forest vegetation during the analysis period (2016 - 2018) after a process of loss of cover. It is also classified as deforestation.
- **No information:** Corresponds to masked values such as clouds, cloud shadows and areas without information due to data loss in Landsat images.

With the resulting information, a post-processing was performed, which consisted of changing the projection system from the WGS84 geographic coordinate system to the WGS84-UTM 18N planar coordinate system, and subsequently, to MAGNA Colombia Bogotá, to transform the resulting layer (raster) to vector format, eliminate isolated polygons smaller than 1.0 ha, build an attribute table with categories: Stable forest (1), Deforestation (2) and No information (3), and cut the layer with the boundaries of the project area and the leakage area.

The change was evaluated in the leakage belt and in the project area, and according to the forest cover monitoring analysis results for the 2016-2018 period, 1,063.92 ha of the PA and 61.30 ha and the LA were deforested, which means that 983.67 ha of the project area and 58.91 ha of the leakage area ceased to be forest during the 2017 and 2018 period.

The monitoring process to obtain certification of the emission reductions generated by the project activities is based on the methodological proposal *Digital Image Processing*

[127] According to the definition of forest for Colombia, for afforestation and reforestation project activities, forest is defined as an area with a tree canopy cover of 30%, a minimum area of 1 ha and a minimum height of 5 m. (https://cdm.unfccc.int/DNA/index.html)

[128] Land occupied mainly by trees that may contain shrubs, palms, guadua (bamboo), grasses and lianas, in which tree cover predominates with a minimum canopy density of 30%, a minimum canopy height of 5 m and a minimum area of 1 ha. Tree cover in commercial forest plantations and urban parks is excluded (MAVDT, 2002).

Protocol for the Quantification of Deforestation in Colombia at the National Level.[129] The methodological proposal is aimed at the direct detection of changes, in which the satellite images of the two monitoring dates are simultaneously processed and compared, identifying changes in the spectral response that may correspond to a loss or gain of forest cover.

17.3 Monitoring of actual carbon stock changes and GHG emissions within the project area

The activity data and emission factors for the monitoring period correspond to the most updated IPCC and FREL factors, formally submitted by Colombia and evaluated by the UNFCCC.

17.4 Monitoring the execution (implementation) of REDD+ activities

17.4.1 Project activities implemented in the monitoring period 2016-2018

Since 2016, the ATTI have participated and developed activities that have allowed them to articulate elements of the cultural and environmental aspects (Table 59). At the same time, there have been actions to strengthen own government instances and of interaction with regulatory sectors such as the National Learning Service (SENA) and the Amazonian Research Institute (SINCHI). The development of these activities is the result of the participation of the ATTI in the project Pilot initiative on capacity building in climate change and REDD+ in indigenous communities of the Department of Vaupés (*Iniciativa piloto de creación de capacidades en cambio climático y REDD+ en comunidades indígenas del departamento del Vaupés)* developed by the Natura Foundation in 2015.[130]

As mentioned in Section 16.4, of the PDD, for the first monitoring period (10/29/2016 to 12/31/2018), the information and supports that the community had at the time of the project validation were presented to the auditor, seeking the closest possible approximation to the established monitoring plan. According to the worldview of indigenous peoples, their knowledge and know-how are transmitted orally during meetings and dialogues; and in the same way, most of their agreements and registration

[129] Work funded by the Gordon and Betty Moore Foundation project. Consolidation of a Forest and Carbon Monitoring System (SMBYC), as support for the environmental policy and management in Colombia. Institute of Hydrology, Meteorology and Environmental Studies (IDEAM), Ministry of Environment and Sustainable Development (MADS).
[130] See in: Soportes\Fecha de inicio\Antecedentes

of activities and projects developed in their communities are made orally. In addition to this, there is also little knowledge about appropriate protocols and tools for documenting the activities implemented, which limits the existence of their physical evidence in the communities. In this way, the existing documentation corresponds, for the most part, to that reported by the different organizations that have worked with the respective communities.

For this reason, the REDD+ project has established a communication mechanism and a monitoring plan that will allow the communities to have a documentary record in future verifications. Thus, in Section 2.3.4 of Annex 2, the different projects in which the communities have participated are listed, based on the historical reconstruction carried out by them. This information constitutes additional evidence to that presented ontable 59.

It is important to mention that each project implemented in the communities by the different organizations has followed the life plans guidelines. Therefore, they constitute their own initiatives that, due to the lack of resources, require the execution of third parties, as mentioned by the participants of the meeting held in the community of Puerto Nazaret between November 15 and 18, 2020.

It should be noted that the project activities will be fully implemented for 2019 and beyond. For the first monitoring period (10/29/2016 to 12/31/2018), As mentioned above, the auditor will be presented with the information and support available to the community at the time of validation of the project, trying to articulate these activities to the plan already established.

Table 59. Project activities implemented during the 10/29/2016-12/31/2018 monitoring period

Strategic line[131]	Project	Description	Supports	Implementation date	Indicators
Governance strengthening Ecological and cultural restoration Traditional knowledge and own education	Ancestral thoughts for times of change (*Pensamientos Ancestrales para Tiempos de Cambio*)[132]	The Ancestral Thoughts for Times of Change meeting was held in the community of Pacuativa, where the sabedores (wise men) and leaders of the 21 indigenous communities of ASOUDIC developed the social mapping around the chagra (crops/cultivation), as an indicator of the environmental, economic, social and cultural dynamics of indigenous communities, analyzing the main effects on crops such as the low quality of native products, the influence of climate on working hours, shortage of livestock products generated by hunting and fishing activities. This initiative was funded by the Corporation for Sustainable Development of the North and the Amazon East - CDA and was used as an example by other communities such as AZATIAC and AATIVAM that have advanced in this same purpose.	Soportes\Actividades de proyecto\Actividades_2016\CDA_Encuentros sabedores	October 29, 2016	Number of meetings held: 1 meeting Documents produced 1 Social mapping
Traditional knowledge and own education	Strengthening own education[133]	In 2017, AATIAM presented this project denominated one of the internal strategies to continue its activities, within the framework of the GEF Small Grants Program PPD, and the Global Initiative to support Territories and Areas Conserved by Indigenous Peoples and Communities (TICCA). This project was aimed at strengthening own education. Its objective was to strengthen the ancestral knowledge for the management of the territory and cultural survival of the peoples that inhabit the territory of AATIAM (Ceima, Cachivera, Macaquiño, Tucunaré and	Soportes\Actividades de proyecto\Actividades_2017 \Resultados-convocatoria-TICCA_2017_atiam.pdf Soportes\Actividades de proyecto\Actividades_201	July 2017 – December 2018	Number of support and cooperation alliances between traditional and environmental authorities 1 Alliance implemented

[131] Some of the activities carried out meet the objective of two or more strategic lines.
[132] See in: Soportes\Actividades de proyecto\Actividades_2016\CDA_Encuentros sabedores
[133] See in: Soportes\Actividades de proyecto\Actividades_2017 \Resultados-convocatoria-TICCA_2017_atiam.pdf

Strategic line[131]	Project	Description	Supports	Implementation date	Indicators
		Mituseño Urania), and therefore, it is emphasized that the Traditional Indigenous Authorities have the opportunity to convene the community for the teaching of language, rites and dances. Through the financing of this project, the *sabedores* and *sabedoras* (wise men and women) will help in the compilation of ancestral uses, customs and practices; children and youths will be the people who learn the teachings and be able to practice in their future daily lives to continue living as *Cubeos*	7\ Project Detail_ATIAM_GIZ		
Governance strengthening	Accompaniment and strengthening of the processes of Indigenous Life Plans, Department of Vaupés.[134]	Project carried out to adjust and complement AZATIAC's life plan, which had the following goals: Goal 1: Integral Indigenous Life Plans accompanied and strengthened in a collective and participatory manner. Goal 2: Positioning processes of the Integral Indigenous Life Plans, promoting and making them more dynamic within the institutional framework	Soportes\Actividades de proyecto\Actividades_2018\AZATIAC_2017.pdf	March 2018	Number of planning documents generated and adopted 1 AZATIAC Life Plan
Traditional knowledge and own education	Delimitation of the jurisdiction of the AATIAM territory.[135]	AATIAM identifies the importance of territorial planning, as this is not only of great importance for the resolution of conflicts and the promotion of leadership, but also, of vital importance for resource management and the implementation of the REDD+ project.	Soportes\Actividades de proyecto\Actividades_2018\Actividad_delimitacion_Jurisdiccion_ATTI	2018	Proceso de ordenamiento y saneamiento catastral realizados 1 Delimitación jurisdicción AATIAM

[134] See in: Soportes\Actividades de proyecto\Actividades_2018\AZATIAC_2017.pdf
[135] See in: Soportes\Actividades de proyecto\Actividades_2018\Actividad_delimitacion_Jurisdiccion_ATTI

Strategic line[131]	Project	Description	Supports	Implementation date	Indicators
Governance strengthening	Ethnic territories with well-being.[136]	During 2018, the ASTIRAIYUVA and ASOUDIC AATI participated in a *TEB* project in the "*Ethnic Territories with Wellbeing modality through the development of activities within the framework of the Family Encounters strategy with the objective of "Strengthening family ties and love for life in the communities through the community implementation of fish wells (ponds) with native species and recovering cultural identity through the construction of traditional musical instruments typical of Vaupés, as well as the cultivation of their seeds*"".	Soportes\Actividades de proyecto\Actividades_2018\CODESOIN PANURÉ 2018._ICBF.html	2018	Number of meetings held: 1 meeting
Governance strengthening	Participatory construction of indigenous territorial peace in Vaupés.[137]	Participatory Construction of Indigenous Territorial Peace in Vaupés (Colombia). (AATIAM, AATIVAM, ASATRAIYUVA and ASATIQ). Where the associations themselves created their peace proposals in their territories during post-conflict times. In addition to the family network strengthening processes and productive activities that have been developing in parallel in several communities, the leaders of AATIVAM, AATIAM and ASATRAIYUVA participated in the Project: "*Participatory Construction of Indigenous Territorial Peace in Vaupés*", presented before the Inter-American Foundation (IAF), with which they wish to strengthen their territorial management and reduce the impact on natural resources through the objective of informing about peace agreements and their implications for indigenous territories.	http://www.natura.org.co/subdireccion-desarrollo-local-y-cambio-global/proyecto-mitu/	2018	Number of projects developed to legitimize the recognition of the territory in the event that they are required. 1 Natura project Number of support and cooperation alliances between traditional and environmental authorities. 1 alliance made

[136] See in: Soportes\Actividades de proyecto\Actividades_2018\CODESOIN PANURÉ 2018._ICBF.html
[137] See in: Soportes\Actividades de proyecto\Actividades_2018\ Construcción participativa

Strategic line[131]	Project	Description	Supports	Implementation date	Indicators
Own economy and production systems	Ecological and traditional knowledge of the fauna for consumption with indigenous communities in the Department of Vaupés.[138]	Project developed by the communities of Tucunaré (AATIAM), Piracemo (ASOUDIC) and Wasay (AATIVAM), where the impact of bushmeat commercialization on the perception of the availability of the resource and on the cultural regulation designed to guarantee the supply of fauna for consumption and its use was evaluated. The results of this project contributed to the generation of information for environmental and traditional authorities to regulate this activity for the benefit of communities and wildlife populations and the need to continue working on data collection to support decision-making by traditional authorities. This project aimed to establish how commercialization affects the perception of the availability of wildlife used for the subsistence of indigenous communities. Evaluate the impact of commercialization on compliance with the standards established by the traditional authority for wildlife regulation.	Soportes\Actividades de proyecto\Actividades_2018 Informe-de-gestion-2018_sinchi	2018	Number of conservation-focused activities developed 1 Activity developed
Traditional knowledge and own education	Delimitation of the jurisdiction of the AZATIAC, ATIVAM, ASATRAIYUVA and ASOUDIC territory.[139]	AZATIAC, ATIVAM, ASATRAIYUVA and ASOUDIC identify the importance of the territorial planning for conflict resolution, leadership development, resource management and REDD+ project implementation.	Soportes\Actividades de proyecto\Actividades_2019\Actividad_delimitacion_Jurisdiccion_ATTI	2019	Cadastral reorganization and reorganization process carried out 4 Jurisdiction delimitation

[138] See in: Soportes\Actividades de proyecto\Actividades_2018 Informe-de-gestion-2018_sinchi
[139] See in: Soportes\Actividades de proyecto\Actividades_2019\Actividad_delimitacion_Jurisdiccion_ATTI

(Source: Prepared by South Pole, 2020)

Additionally, considering the results of the monitoring of forest and non-forest cover in the project area for the 2005-2018 period, it was possible to show that the activities carried out in the area have effectively reduced deforestation (see Figure 30). The following graph clearly shows that the deforestation trend decreases considerably starting in 2016, which coincides with the start date of the project.

Considering the historical behavior of deforestation in the reference region and the project area, the REDD+ initiative aimed to avoid deforestation of 2,293.60 ha. The results of the 2016-2018 monitoring period showed that the project had an efficiency of 67,5% in controlling deforestation between the years 2017 and 2018,[140] and, therefore, only 983.67 ha were deforested in the PA between 2017 and 2018.

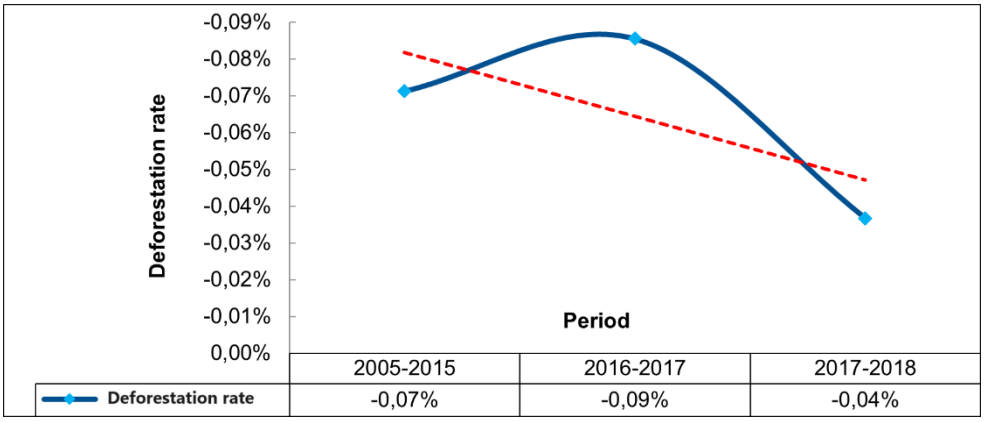


Figure 30. Deforestation rate in the project area in the 2005 – 2018 period

(Source: Prepared by South Pole. 2019.)

[140] Considering that the project start date corresponds to October 29, 2016, and that of the same year, it only covers a range of two months of implementation and control to give start and structure to the project activities, the effectiveness in the control of deforestation has been related from the following year, 2017. Therefore, the avoided deforestation mentioned here is analyzed for the 2017-2018 period, so that it is possible to account for the full annual period. The total deforestation data for the 2016-2018 period, from the project start date, correspond to those detailed in the table in Section 17.1, related in Section 17.2.1, and below in Table 64.

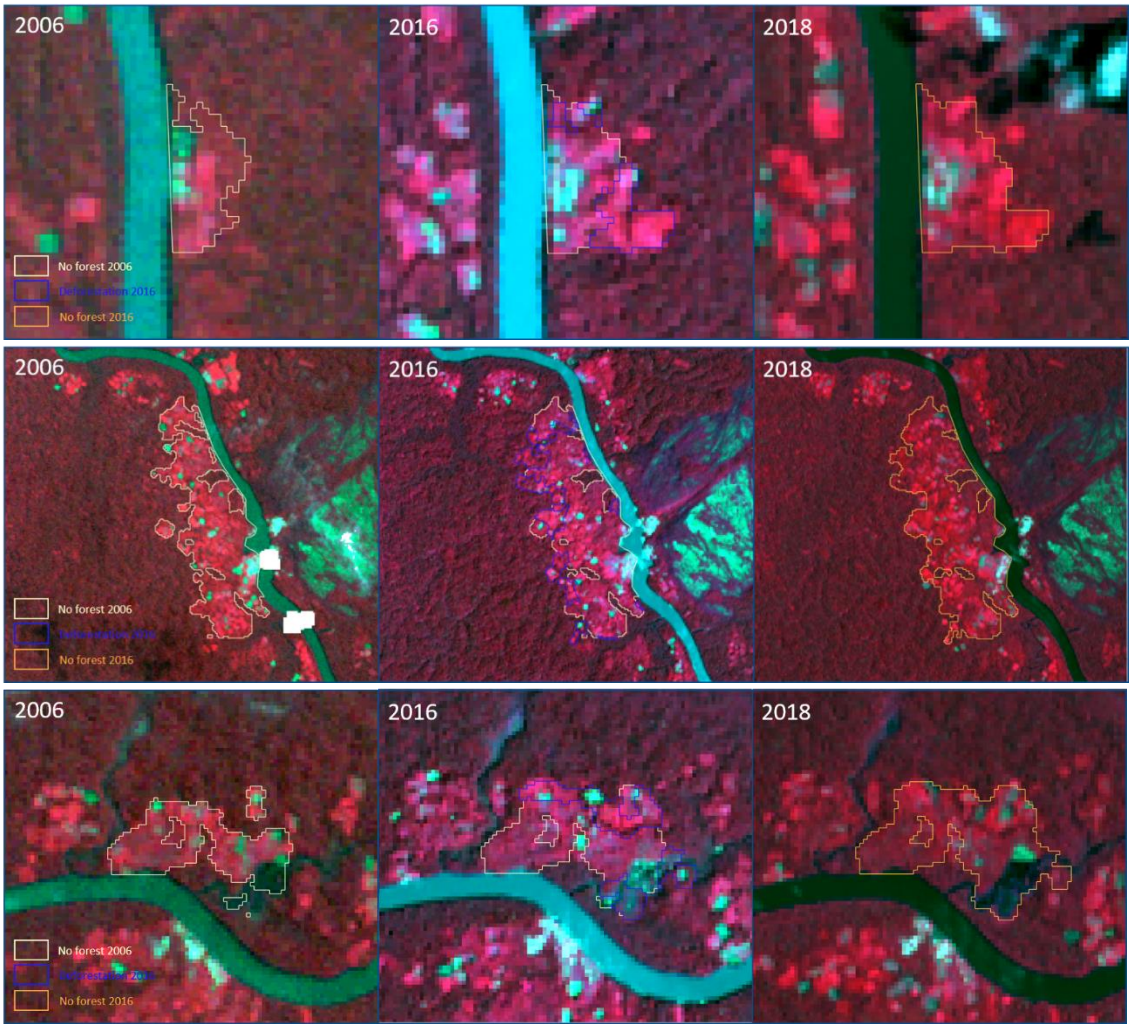


Figure 31. Deforestation trend in the 2005 – 2018 period

(Source: Prepared by South Pole. 2021)

17.5 Monitoring of land-use and land-cover change within the project

The project monitors the change from forest land converted to non-forest land (I). Categories II and III will not be monitored. Below are the changes for the project area (Table 60) and leakage area (Table 61), as well as the net changes due to deforestation processes (Table 60).

Table 60. Monitoring of land-use change in the project area (2016-2018)

Monitoring 2016	Monitoring 2017	Monitoring 2018	Area (ha)
Forest	Forest	Forest	796,133.20
Forest	Deforestation	Deforestation	983.67
Non-Forest	Non-Forest	Non-Forest	50,913.88
No information	No information	No information	5,250.0

(Source: Prepared by South Pole, 2020)

Table 61. Monitoring of land-use change in the leakage area (2016-2018)

Monitoring 2016	Monitoring 2017	Monitoring 2018	Area (ha)
Forest	Forest	Forest	796,133.20
Forest	Deforestation	Deforestation	983.67
Non-Forest	Non-Forest	Non-Forest	50,913.88
No information	No information	No information	5,250.0

(Source: Prepared by South Pole, 2020)

Table 62. Deforested areas per year in the monitoring period (2016-2018) of the REDD+ Project

Projected year		Project area			Leakage area		
		Stable forest (ha)	Stable forest (ha)	Stable forest (ha)	Stable forest (ha)	Annual deforestation (ha/year)	Cumulative deforestation (ha/year)
Project year (t)	Calendar year	PA_{t-1}	$FSC_{project,t}$	$FSC_{project}$	LK_{t-1}	$FSC_{lk,t}$	FSC_{lk}
0	2016	797,116.87	80.25*	80.25	80,685.81	2.40	2.40
1	2017	796,428.39	688.49	768.74	80,635.87	49.94	52.34
2	2018	796,133.20	295.18	1,063.92	80,626.91	8.96	61.30

*Values have been counted from the project start date, i.e. October 29 to December 31, 2016, for the 2-month deforestation estimate, and therefore, the table shows the emission reduction associated with these two months after project implementation.

(Source: Prepared by South Pole, 2020).

17.6 Monitoring of carbon stock and non-CO_2 emissions from forest fires

This monitoring does not apply to the project within the 2016-2018 monitoring period.

17.7 Monitoring the permanence of the REDD+ project,impacts of natural disturbances and other catastrophic event

No natural disturbances were identified in the 2016 2018 period.

17.8 Monitoring of relevant sections of the project

17.8.1 Monitoring of Sustainable Development Goals (SDGs) and REDD+ Safeguards

The REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others has proposed its activities in such a way that, at the local level, progress is made towards meeting the targets of the Sustainable Development Goals (SDGs) as mentioned in Section 11. In general, REDD+ type GHG mitigation projects are expected to contribute at least to the climate action (SDG 13) and life on land (SDG 15). The project's contribution to the aforementioned SDGs is presented below based on the scope of project activities.

Table 63. Monitoring of Sustainable Development Goals and Indicators - 2016-2018

SDG	Target associated with the SDG	Indicators	Contribution in the project monitoring period	Indicator Supports	Activity strategy line (FRES) that generated the contribution	Result
4. Quality Education 	*4.7 Ensure that students acquire the knowledge and skills necessary to promote sustainable development, including through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and nonviolence, global citizenship, and appreciation of cultural diversity and the contribution of culture to sustainable development.*	4.7.1 Extent to which (i) global citizenship education and (ii) education for sustainable development, including gender equality and human rights, are incorporated at all levels in: (a) national education policies, (b) study plans, (c) teacher training, and (d) student evaluation. Number of people benefited.	Carrying out the activities of the "Ancestral Thoughts for Times of Change (*Pensamientos Ancestrales para Tiempos de Cambio*)" project, in which the wise men (*sabedores*) shared their knowledge about fishing and hunting.	People who benefited from the "Ancestral Thoughts for Times of Change (*Pensamientos Ancestrales para Tiempos de Cambio*)" project. **Reference value**: 1 **Results**: 926 People[141] The results detailed here are indicative of the activity, however, this indicator will be considered for monitoring in the SDG Tool, starting from the second monitoring period.	Strategic line 1 (F): Local governance strengthening. Strategic line 2 (R): Ecological and cultural restoration and recovery Strategic line 4 (S): Traditional knowledge and own education	It will be monitored from the second monitoring periodperiod
6. Clean water and sanitation	*6.6 Protect water ecosystems.* Protect and restore water-related ecosystems, including forests,	6.6.1 Change in the extent of water-related ecosystems over time. Number of water sources over which	Through REDD+ project activities, deforestation of the tropical rainforest in the project area has been reduced between	Change in the extent of water-related ecosystems over time. **Reference value**: To be defined from the second monitoring period.	Strategic line 1 (F): Local governance strengthening	Remained stable. It will be monitored from the

[141] TheThe support for the activity is located in See in: Soportes\Actividades de proyecto\Actividades_2016\CDA_Encuentros sabedores. However, it is clarified that the data of the people who benefited from the processes of the meeting "Ancestral Thoughts for Times of Change", and the "Strengthening one's own education" project, were obtained through secondary information, through conversations with the AATI; However, there is no specific record of the attendance list of those involved and beneficiaries in the workshops in 2016 and 2017 beyond the historical knowledge of the representatives and the information provided verbally in the meetings and visits to the territory and by Therefore, although the SDG has been monitored, the contribution in the current monitoring period will not be reported in the REDD+ Excel tool Yutucu_SDG-Tool_EN due to the absence of physical supports. However, for subsequent monitoring periods, the tracking and management of information regarding these participation supports will be ensured, so that it is possible to clearly show the beneficiaries of the activities that generate contributions to the SDGs and others, and include the respective indicators in the SDG Tool of the BCR standard.

SDG	Target associated with the SDG	Indicators	Contribution in the project monitoring period	Indicator Supports	Activity strategy line (FRES) that generated the contribution	Result
	mountains, wetlands, rivers, aquifers, and lakes.	the project area has an influence.	the baseline and monitoring periods.	In relation to the area of water influence, -0.19%, representing the baseline deforestation rate of the project area. Which positively influences the Vaupés, Cananarí, Papurí and Querary river basins (see Section 17). For the year 2017, the deforestation rate over the project area was -0.09%, and for the year 2018 del -0,04% which generates a direct reduction in the loss pressure of the extension of the ecosystems present in the project area, including ecosystems associated with water sources. [142] The results detailed here are indicative of the activity, however, this indicator will be considered through monitoring the number and extension of ecosystems related to water in the territory, for monitoring in the SDG Tool, starting in the second monitoring period.	Strategic line 2 (R): Ecological and cultural restoration and recovery Strategic line 4 (S): Traditional knowledge and own education	second monitoring perio
11. Sustainable cities and communities	*11.4 Increase efforts to protect and safeguard the world's cultural and natural heritage.*	11.4.1 Total per capita expenditure on the preservation, protection and conservation of all cultural and natural heritage by source of	Execution of the "Own education strengthening" project, which made it possible to strengthen ancestral knowledge for territorial management and the	People who benefited from the "Own education strengthening" project. **Reference value**: 200 people, equivalent to 2.5% of the population censused in this study.[143]	Strategic line 4 (S): Traditional knowledge and own education	Increased

[142] The monitoring and follow-up results of the deforestation rate for the monitoring years can be consulted in the Excel .xlsx file REDD_YUTUCU_AreaBNB_Monitoring_2016-2018_ZP on the sheet "Deforestation 2005-2018". These results are attached in the project's information management folder (for more information see cartographic files in the path: 03_Soportes\Estimaciones).

[143] See in: Soportes/Herramienta ODS/ Soportes ODS

SDG	Target associated with the SDG	Indicators	Contribution in the project monitoring period	Indicator Supports	Activity strategy line (FRES) that generated the contribution	Result
		funding (public and private), type of heritage (cultural and natural), and level of government (national, regional, and local/municipal). Number of people benefited.	cultural survival of indigenous peoples.	**Results:** 649 people[144] The results detailed here are indicative of the activity, however, this indicator will be considered for monitoring in the SDG Tool, starting from the second monitoring period. The development of this project is associated with indicator 13.3.1 of the SDG 13. Climate action, which is indicated in the SDG Tool.		
13. Climate Action 	*13.1 Strengthen resilience and adaptive capacity to climate-related disasters: Strengthen resilience and adaptive capacity to climate-related risks and natural disasters in all countries.*	13.1.2 Number of people dead, missing, and directly affected by disasters per 100,000 people.	**Reference value:** According to the 2015 – 2025 Disaster Risk Management Plan "A Development Strategy,"[145] Colombia has a national mortality rate caused by disasters of 5.9 per 100,000 people.	**Reference value:** 2015 – 2025 Disaster Risk Management Plan "A development strategy."[146] Mortality of 5.9 people per 100,000 people. **Results:** 0 people died due to catastrophic events. No fatal events have been reported by the communities and official media during the execution of activities within the project area.	Strategic line 1 (F): Local governance strengthening Strategic line 2 (R): Ecological and cultural restoration and recovery	Decreased

[144] The support for the activity is located in: : Soportes\Actividades de proyecto\Actividades_2017. However, it is clarified that the data of the people who benefited from the processes of the meeting "Ancestral thoughts for times of change", and the "Strengthening of own education", were obtained through secondary information, through conversations with the AATI; However, there is no specific record of the attendance list of those involved and beneficiaries in the workshops in 2016 and 2017 beyond the historical knowledge of the representatives and the information provided verbally in the meetings and visits to the territory and by Therefore, although the SDG has been monitored, the contribution in the current monitoring period will not be reported in the REDD+ Excel tool Yutucu_SDG-Tool_EN due to the absence of physical supports. However, for subsequent monitoring periods, the tracking and management of information regarding these participation supports will be ensured, so that it is possible to clearly show the beneficiaries of the activities that generate contributions to the SDGs and others, and include the respective indicators in the SDG Tool of the BCR standard

[145] The 2015 - 2025 Disaster Risk Management Plan "A Development Strategy" is in the path: Soporte\Herramienta ODS\PNGRD-Informe-XII-2021

[146] The 2015 - 2025 Disaster Risk Management Plan "A Development Strategy" is in the path: PNGRD-Informe-XII-2021

SDG	Target associated with the SDG	Indicators	Contribution in the project monitoring period	Indicator Supports	Activity strategy line (FRES) that generated the contribution	Result
			REDD+ Project: During the monitoring period, the project area has not experienced any death causing disaster event. This indicator is associated with the implementation of the activities of the FRES lines, which aim to control the risk of deforestation in the territory, which generates an improvement in territorial conditions, and helps reduce the vulnerability and occurrence of events. catastrophic events, including climate-related disasters, and therefore avoiding disappearances, deaths, and injuries of people in these events.		Strategic line 3 (E): Own economy and production systems Strategic line 4 (S): Traditional knowledge and own education	
	13.2 Integrate climate change measures: Incorporate climate change measures into national policies, strategies, and plans.	13.2.1. Total greenhouse gas emissions per year. Reduction of total greenhouse gas emissions.	**Reference value:** Estimates of total **net emissions**, projected over the monitoring period in the GHG project area under the baseline scenario:	Forest conservation and project activities will contribute to achieving the goal of zero deforestation in Colombia.		Decreased

SDG	Target associated with the SDG	Indicators	Contribution in the project monitoring period	Indicator Supports	Activity strategy line (FRES) that generated the contribution	Result
			Total (2016-2018): 2,647,646 tCO_2eq. **Results of net emissions monitored:** Total (2016-2018): 603,106 tCO_2eq. The above represents a reduction of more than 90% of net emissions due to the implementation of project activities.	**For more detail**, review the projected estimates of the initiative and project estimates for the monitoring period.[147]		
	13.3 Improve education and capacities: Improve education, awareness, and human and institutional capacity with respect to climate change mitigation, adaptation, impact	13.3.1. Extent to which (i) global citizenship education and (ii) education for sustainable development is incorporated in:	• Carrying out the activities of the "Ancestral Thoughts for Times of Change (*Pensamientos Ancestrales para Tiempos de Cambio*)" project, in which the	• People who benefited from the "Ancestral Thoughts for Times of Change (*Pensamientos Ancestrales para Tiempos de Cambio*)" project. **Reference value:** 200 people, equivalent to 2.5% of the population censused in this study[143] [148] **Results:** 926 people[149]		Increased

[147] The projected estimates (ex-ante) and in the monitoring period (ex-post) are detailed in the Excel file .xlsx.xlsx "Calculo_emisiones_exante_expost_NREF_BIOCARBON_BCR_MR2016-2018" located in the path: 03_Soportes\Estimaciones

[148] See in: Soportes/Herramienta ODS/ Soportes ODS

[149]TheThe support for the activity is located in: Soportes\Actividades de proyecto\Actividades_2016\CDA_Encuentros sabedores. However, it is clarified that the data of the people who benefited from the processes of the meeting "Ancestral thoughts for times of change", and the project of " Strengthening one's own education", were obtained through secondary information, through conversations with the AATI; However, there is no specific record of the attendance list of those involved and beneficiaries in the workshops in 2016 and 2017 beyond the historical knowledge of the representatives and the information provided verbally in the meetings and visits to the territory and by Therefore, although the SDG has been monitored, the contribution in the current monitoring period will not be reported in the REDD+ Excel tool Yutucu_SDG-Tool_EN due to the absence of physical supports. However, for subsequent

SDG	Target associated with the SDG	Indicators	Contribution in the project monitoring period	Indicator Supports	Activity strategy line (FRES) that generated the contribution	Result
	reduction, and early warning.	(a) national education policies, (b) study plans, (c) teacher training, and (d) student evaluation. Number of people benefited.	wise men (*sabedores*) shared their knowledge about fishing and hunting. • Execution of the "Own education strengthening" project, which made it possible to strengthen ancestral knowledge for territorial management and the cultural survival of indigenous peoples.	• People who benefited from the "Own education strengthening" project. **Results:** 649 people[150] The results detailed here are indicative of the activity, however, this indicator will be considered for monitoring in the SDG Tool, starting from the second monitoring period. The development of this is associated with indicator 13.3.1 of SDG 13 Climate Action, which is identified in the SDG Tool.[151]		
15. Life on land	*15.1 Conserve and Restore Terrestrial and Freshwater Ecosystems:*	15.1.1. Forested area as a proportion of total area. Hectares protected.	Number of hectares of tropical rainforest that met Colombia's forest category during the	**Reference value:** 2005-2015: 797,598.40 ha of stable forest.[152]	Strategic line 1 (F): Local governance strengthening	Increased

monitoring periods, the tracking and management of information regarding these participation supports will be ensured, so that it is possible to clearly show the beneficiaries of the activities that generate contributions to the SDGs and others, and include the respective indicators in the SDG Tool of the BCR standard

[150] TheThe support for the activity is located at: Soportes\Actividades de proyecto\Actividades_2017\Resultados-convocatoria-TICCA_2017_atiam.pdf, it is clarified that the data of the people benefited in the processes of the meeting "Ancestral thoughts for times of change", and the "Strengthening one's own education" project, were obtained through secondary information, through conversations with the AATI; However, there is no specific record of the attendance list of those involved and beneficiaries in the workshops in 2016 and 2017 beyond the historical knowledge of the representatives and the information provided verbally in the meetings and visits to the territory and by Therefore, although the SDG has been monitored, the contribution in the current monitoring period will not be reported in the REDD+ Excel tool Yutucu_SDG-Tool_EN due to the absence of physical supports. However, for subsequent monitoring periods, the tracking and management of information regarding these participation supports will be ensured, so that it is possible to clearly show the beneficiaries of the activities that generate contributions to the SDGs and others, and include the respective indicators in the SDG Tool of the BCR standard

[151] See in: Soportes\ Herramienta ODS

[152] The stable forest values used can be consulted in the Excel workbook . xlsx Calculo_emisiones_exante_expost_NREF_BIOCARBON_BCR_MR2016-2018 on the sheet "Monitoreo_deforestación_anual" (for more information see calculation files in the path: 03_Soportes_Estimaciones). These results can be visually corroborated with the generated cartographic maps (.jpg and .pdf format) and with the spatial monitoring information in .shp format, which are attached in the project's information management folder (for more information see cartographic files in the path: Soportes\Cartografía\3_Monitoreo 2016-2018).

<table>
<tr><th>SDG</th><th>Target associated with the SDG</th><th>Indicators</th><th>Contribution in the project monitoring period</th><th>Indicator Supports</th><th>Activity strategy line (FRES) that generated the contribution</th><th>Result</th></tr>
<tr>
<td> 
</td>
<td>Ensure the conservation, restoration, and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains, and arid zones, consistent with obligations under international agreements.</td>
<td></td>
<td>2005-2015 period: 797,598.40 ha. Conservation and protection of tropical rainforest and project activities.</td>
<td>Stable forest projection:[153]
Year 0 (2016): 796,082.15
Year 1 (2017): 794,568.78
Year 2 (2018): 793,058.29
Results: In 2018, the project area conserves 796,133.20 ha.[154]

<table><tr><th colspan="2">Deforestation 2017-2018[155]</th></tr><tr><td>Projected</td><td>3,023.86</td></tr><tr><td>Real</td><td>983.67</td></tr><tr><td>Avoided</td><td>2,040.19</td></tr></table>
Increased control over deforestation in the project area resulted in avoided deforestation equivalent to 2,040.19 ha, which means an increase in forest conservation and protection measures, and an increase in the number of protected hectares that would have been deforested without the implementation of the REDD+ project.
The baseline deforestation rate was -0,19%.</td>
<td>Strategic line 2 (R): Ecological and cultural restoration and recovery

Strategic line 3 (E): Own economy and production systems

Strategic line 4 (S): Traditional knowledge and own education</td>
<td></td>
</tr>
</table>

[153] The projected stable forest values used can be consulted in the Excel workbook . xlsx Calculo_emisiones_exante_expost_NREF_BIOCARBON_BCR_MR2016-2018 on the sheet "Proyección_deforestaciónl" (for more information see the calculation file in the path: 03_Soportes_Estimaciones).

[154] The above values can be consulted in the Excel workbook . xlsx Calculo_emisiones_exante_expost_NREF_BIOCARBON_BCR_MR2016-2018 on the sheet "Monitoreo_deforestación_anual" (for more information see calculation files in the path: 03_Soportes_Estimaciones).

[155] The above values can be consulted in the Excel workbook . xlsx Calculo_emisiones_exante_expost_NREF_BIOCARBON_BCR_MR2016-2018 on the sheet "Reduccion_emisiones_expost" on cell AM16 (for more information see calculation files in the path: 03_Soportes_Estimaciones).

SDG	Target associated with the SDG	Indicators	Contribution in the project monitoring period	Indicator Supports	Activity strategy line (FRES) that generated the contribution	Result
	15.2 Sustainable management: Promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests, and significantly increase afforestation and reforestation globally.	15.2.1 Progress in sustainable forest management.	Conservation and protection of the forest and implementation of project activities.	Progress in sustainable forest management **Reference value**: -0.19%, which represents the baseline deforestation rate of the project area. Which represents the implementation of activities focused on sustainable forest management processes. **Result**: For 2017, the deforestation rate over the project area was -0.09% and for 2018, it was -0,04%[156]. In addition, social mapping (cartographic) exercises were carried out with the communities for forest management in the management and control of deforestation.		Increased
	15.A Increase Financial Resources to Conserve and Sustainably Use Ecosystems and Biodiversity. Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems.	15.a.1 a) Official development assistance specifically for biodiversity conservation and sustainable use; and b) revenues generated and financing mobilized through biodiversity-relevant economic instruments.		**Reference value:** An amount of 100,000,000,000 is defined, given that indigenous peoples need to participate in calls for proposals to access resources. **Result**: In the 2017-2018 period, activities carried out exceeded the reference amount, see Section 17.4.1.		Increased

* Increased, decreased, or remained stable.

[156] The monitoring and follow-up results of the deforestation rate for the monitoring years can be found in the Excel .xlsx file REDD_YUTUCU_AreaBNB_Monitoring_2016-2018_ZP on the sheet "Deforestación 2005-2018". These results are attached in the project's information management folder (for more information see map files in the path: 03_Soportes_Estimaciones).

(Source: Prepared by South Pole (2022), based on the CONPES 3918 of 2018 document and the national targets and indicators with respect to the SDGs set forth by the National Planning Department from the Technical Secretariat of the SDG Commission).

17.8.2 Monitoring of legislative regulations and territorial planning guidelines

The project development is framed in Colombian laws applicable to the forestry sector, as well as those associated with the implementation of carbon projects. The main laws, regulations and decrees that regulate this project are presented in Section 4 valid for the 2016-2018 monitoring period. For future project verifications, the compliance evaluation will be carried out periodically, in order to verify compliance with the information presented and provide the relevant regulatory updates in accordance with what is established in the regulatory framework and in the baseline.

17.9 Monitoring of project GHG emissions in the 2016-2018 period

17.9.1 Annual deforestation in the monitoring period

Deforestation in the project area in the monitoring period was reduced from 3,023.56 ha to 983.67 ha, that is, the efficiency of the REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others in controlling deforestation was 67.5%, maintaining the stable forest area of 796,133.20 ha.

The annual base deforestation area applied in year t within the project area was calculated through the BCR methodology for the project area and the leakage area (belt) respectively, as follows:

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

Where:

$FSC_{REDD+project,yr}$:	*Annual change in surface covered by forest in the project area; ha.*
t_1:	*Initial year of the monitoring period; yr.*
t_2:	*Final year of the monitoring period; yr.*
$A_{REDD+project,1}$:	*Forest surface in the project area at the beginning of the monitoring period; ha.*

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

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

Where:

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

t_1: *Initial year of the monitoring period; yr.*

t_2: *Final year of the monitoring period; yr.*

$A_{f,1}$: *Forest surface in the leakage area at the beginning of the monitoring period; ha.*

$A_{f,2}$: *Forest surface in the leakage area at the end of the monitoring period; ha.*

Table 64 shows the deforestation results for the project area and the leakage area.

Table 64. Deforested areas per year in the monitoring period (2016-2018) of the REDD+ project

Projected year		Project area			Leakage area		
		Stable forest (ha)	Stable forest (ha)	Stable forest (ha)	Stable forest (ha)	Annual deforestation (ha/year)	Cumulative deforestation (ha/year)
Project year (t)	Calendar year	PA_{t-1}	$FSC_{project,t}$	$FSC_{project}$	LK_{t-1}	$FSC_{lk,t}$	FSC_{lk}
0	2016	797,116.87	80.25*	80.25	80,685.81	2.40	2.40
1	2017	796,428.39	688.49	768.74	80,635.87	49.94	52.34
2	2018	796,133.20	295.18	1,063.92	80,626.91	8.96	61.30

*Values have been counted from the project start date, i.e. October 29 to December 31, 2016, for the 2-month deforestation estimate.

(Source: Prepared by South Pole, 2020).

17.9.2 GHG emissions in the monitoring period (2016-2018)

Ex-post estimate of annual emissions (changes in current carbon pools) due to deforestation in the project area

To estimate *ex-post* changes in the project area, the *REDD+ BCR Methodological Document* equation guidelines in Section 14.5.2 were implemented. The annual emission of the REDD+ Project initiative of the indigenous peoples of Vaupés YUTUCU and Others corresponds to the changes due to deforestation that could not be avoided during the 2016-2018 period after the implementation of project activities, contemplated in the project strategies lines. Thus, the annual emission due to deforestation in the project area is calculated following the equation:

$$AE_{REDD+project,yr} = AD_{REDD+project,yr} \times tCO_2eq$$

Where:

$AE_{REDD+project,yr}$: *Annual emission in the project area; tCO_2eq.*

$AD_{REDD+project,yr}$: *Annual deforestation in the project area; ha.*

$TCeq$: *Total carbon dioxide equivalent; $tCO_2eq\ ha^{-1}$.*

$$TCeq = TBeq \times SOCeq$$

Where:

$TCeq$: *Total carbon dioxide equivalent; $tCO_2eq\ ha^{-1}$.*

$TBeq$: *Carbon dioxide equivalent contained in total biomass; $tCO_2e\ ha^{-1}$.*

$SOCeq$: *Carbon dioxide equivalent in organic soils; $tCO_2e\ ha^{-1}$*

In the case of the project , the analysis was carried out conservatively for each of the carbon pools associated with the total biomass and soil organic carbon and therefore, the previous equation was subdivided as follows:

$$AE_{REDD+project,yr} = AE_{REDD+project,TB,yr} + AE_{REDD+project,SOC,yr}$$

Where:

$AE_{REDD+project,yr}$: *Annual emission in the project area; tCO_2eq.*

$AE_{REDD+project,TB,yr}$: *Annual emission associated to biomass in the project area in time t; tCO_2eq.*

$AE_{REDD+project,SOC,yr}$: *Annual emission associated to soil organic carbon in the project area in time t; tCO_2eq.*

$$AE_{REDD+project,TB,yr} = AD_{REDD+project,yr} \times TBeq$$

$$AE_{RDD+project,SOC,yr} = AD_{REDD+project,yr} \times SOCeq$$

Where:

$EA_{REDD+proy,BT\ año}$: *Annual emission associated to biomass in the project area in time t; tCO_2eq.*

$AE_{REDD+project,SOC,yr}$: *Annual emission associated to soil organic carbon in the project area in time t; tCO_2eq.*

$AD_{REDD+project,yr}$: *Annual deforestation in the project area; ha.*

$TBeq$: *Carbon dioxide equivalent contained in total biomass; $tCO_2e\ ha^{-1}$.*

$SOCeq$: *Carbon dioxide equivalent in organic soils; $tCO_2e\ ha^{-1}$.*

Table 65. Ex-post estimates of changes in carbon pools in the project area in the monitoring period

Projected year		Annual Pool Emissions: Total Biomass (tCO_2eq)	Annual Pool Emissions: Soils (tCO_2eq)	Annual Emissions (tCO_2eq)
Project year (t)	Calendar year	$AE_{REDD+project,TB,yr}$ Stratum 1	$AE_{REDD+project,SOC,yr}$ Stratum 2	$AE_{REDD+project,yr}$
0	2016	43,542.34	1,085.25	44,627.59
1	2017	373,544.18	10,395.45	383,939.63
2	2018	160,152.35	14,387.08	174,539.43

(Source: Prepared by South Pole, 2020)

Ex post estimate of the annual emissions (decrease in carbon stocks and increase in GHG emissions), due to leakage displacement of activity

Ex-post deforestation in the leakage belt was calculated following the *Methodological Document AFOLU sector for the quantification of GHG Emission Reductions from REDD+ Projects BCR0002 Version 3.1 of September 15, 2022*, in accordance with Section 14.5.2.

$$AE_{lk,yr} = \left(AD_{lk,yr} \times TCeq\right) - AE_{bl,lk,yr}$$

Where:

$AE_{lk,yr}$: *Annual emissions in the leakage area in time t; tCO_2eq.*

$AD_{lk,yr}$: *Annual deforestation in the leakage area; ha.*

$TCeq$: *Total carbon dioxide equivalent; $tCO_2eq\ ha^{-1}$.*

$AE_{bl,lk,yr}$: *Annual emission of deforestation in the leakage area in the baseline scenario in time t; tCO_2eq.*

Because project activities do not contemplate an increase in GHG emissions over the baseline, as activities have been carried out to prevent deforestation and disturbance events, the $AE_{bl,lk,yr}$ on carbon stocks change will only be subtracted in the event that emissions in the leakage area that have been monitored are greater than the baseline emissions.

Taking into account that the activities implemented in the leakage management areas do not contribute to the increase in emissions, the variation in stored carbon is zero, since emissions in the monitoring period did not exceed baseline emissions.[157]

Emissions in the leakage area are calculated following the equations below:

$$AE_{lk,yr} = AD_{lk,yr} \times TCeq$$[158]

Where:

$AE_{lk,yr}$:	*Annual emissions in the leakage area in time t; tCO_2eq.*
$AD_{lk,yr}$:	*Annual deforestation in the leakage area; ha.*
$TCeq$:	*Total carbon dioxide equivalent; $tCO_2eq\ ha^{-1}$.*

In the case of the REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others, the analysis was carried out conservatively for each of the carbon pools

[157] The estimates for the monitoring period (ex-post) are detailed in the Excel .xlsx file "Calculo_emisiones_exante_expost_NREF_BIOCARBON_BCR_MR2016-2018" localizado en la ruta: 03_Soportes\Estimaciones

[158] If $AE_{lk,yr} > AE_{bl,lk,yr}$ then the change in annual monitoring stock or emission in the leakage area will correspond to the following equation: $AE_{lk,yr} = \left(AE_{lk,TB,yr} + AE_{lk,SOC,yr}\right) - AE_{bl,lk,yr}$ Otherwise $AE_{lk,yr} = 0$

associated with the total biomass and soil organic carbon (see Table 66) and therefore, the previous equation was subdivided as follows:

$$AE_{lk,yr} = AE_{lk,TB,yr} + AE_{lk,SOC,yr}$$

Where:

$AE_{lk,yr}$:	*Annual emission in the leakage area in time t; tCO_2eq.*
$AE_{lk,TB,yr}$:	*Annual emission associated to biomass in the leakage area in time t; tCO_2eq.*
$AE_{lk,SOC,yr}$:	*Annual emission associated to soil organic carbon in the leakage area in time t; tCO_2eq.*

$$AE_{lk,TB,yr} = AD_{lk,yr} \times TBeq$$

$$AE_{lk,SOC,yr} = AD_{lk,yr} \times SOCeq$$

Where:

$AE_{lk,TB,yr}$:	*Annual emission associated to biomass in the leakage area in time t; tCO_2eq.*
$AE_{lk,SOC,yr}$:	*Annual emission associated to soil organic carbon in the leakage area in time t; tCO_2eq.*
$AD_{lk,yr}$:	*Annual deforestation in the leakage area; ha.*
$TBeq$:	*Carbon dioxide equivalent contained in total biomass; $tCO_2e\ ha^{-1}$.*

$SOCeq$: *Carbon dioxide equivalent in organic soils; $tCO_2e\ ha^{-1}$.*

Table 66. *Ex-post* estimates of changes in actual carbon stocks in the leakage area in the monitoring period

Projected year		Annual Pool Emissions: Total Biomass (tCO_2eq)	Annual Pool Emissions: Soils (tCO_2eq)	Annual Emissions (tCO_2eq)	Annual Emissions (tCO_2eq)[159]
Project year (t)	Calendar year	$AE_{lk,TB,yr}$ Stratum 1	$AE_{lk,SOC,yr}$ Stratum 2	$AE_{lk,yr}$	$AE_{lk,yr}$
0	2016	1,300.25	32.41	1,332.66	0
1	2017	27,097.27	707.78	27,805.05	0
2	2018	4,863.25	828.99	5,692.24	0

(Source: Prepared by South Pole, 2020)

17.10 Estimates (ex post) of GHG emission reductions achieved by the project

17.10.1 Calculation of total net ex-post estimates of GHG reductions

To quantify the emission reductions from the REDD+ Project of the indigenous peoples of Vaupés YUTUCU and Others, the analysis was carried out conservatively for each of the carbon pools associated with avoided deforestation in the 2016-2018 period, and it was performed under the criteria of Section 14.5.2 of the *REDD+ BCR Methodological Document of the standard Biocarbon registry.*

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

Where:

$ER_{DEF,REDD+project}$: *Emission reduction due to avoided deforestation in the monitoring period; tCO_2eq.*

[159] The carbon stock change is zero, as emissions in the monitoring period did not exceed baseline emissions. The projected (*ex-ante*) and monitoring period (*ex-post*) estimates are detailed in the Excel .xlsx file "Calculo_emisiones_exante_expost_NREF_BIOCARBON_BCR_MR2016-2018" located in the path: 03_Soportes_Estimaciones.

t_1:	*Initial year of the monitoring period; yr.*
t_2:	*Final year of the monitoring period; yr.*
$AE_{DEF,bl,yr}$: $EA_{lb\ t}$:	*Annual emission by deforestation in the project area in the baseline scenario; tCO_2eq.*
$AE_{DEF,REDD+project,yr}$: $EA_{REDD+proy,año}$:	*Annual emission by deforestation in the project area in the monitoring period; tCO_2eq.*
$AE_{DEF,lk,yr}$:	*Annual emission by deforestation in the leakage area in the monitoring period; tCO_2eq.*

Taking into account the data and parameters monitored during the progress of the REDD+ project, the baseline emissions and the emissions of the scenario with project, a net reduction of 2,044,540 tCO_2eq was achieved in the first monitoring period (2016-2018) and an average annual reduction of 681,513 tCO_2eq. These do not include the Reversal Risk of 20%[160] on the net emission reductions in accordance with Section 13.1: Reversal Risk of the *BCR Standard version 3.2.*

Table 67 presents the results of the total net emission reductions due to avoided deforestation of the project in the 2016-2018 period.

Table 67. *Ex-post* estimates of the net emission reductions attributed to the project's mitigation actions in year t

[160] In accordance with numeral 13.1: Reversal risk of the BCR Standard, the 20% discount is made on the total emission reductions for each verified period.

Projected year		Baseline emission estimates[161] (tCO_2eq)	Project area emission estimates (monitoring)[162] (tCO_2eq)	Leakage area emission estimates (monitoring) [163] (tCO_2eq)	Net emission reductions (tCO_2eq)	
Project year (t)	Calendar year	$AE_{DEF,bl,yr}$	$AE_{DEF,REDD+project}$	$AE_{DEF,lk,yr}$	$ER_{DEF,REDD+projec}$	$ER_{DEF,REDD+project}$
0	2016	863,660.03	44,627.59	0	819,032.44	819,032.44
1	2017	882,560.93	383,939.63	0	498,621.30	1,317.653.75
2	2018	901,425.90	174,539.43	0	726,886.47	2,044,540.21
Total		**2.647.644,86**	**603,106.65**	**0**	**2,044,540.21**	**-**
Average		**882.548,95**	**201,035.55**	**0**	**681,513.40**	**-**

*The corresponding emissions are subject to the determinations of MADS and the interpretations of Resolution 1447 2018.

(Source: Prepared by South Pole, 2020).

17.10.2 Calculation of ex-ante Verifiable Carbon Credits

Applying the reversal risks established in the BioCarbon Registry Standard guidelines in its *Standard for the voluntary carbon market – BCR Standard – from differentiated responsibility to common responsibility. BioCarbon Registry, 3.2 of september, 2023,* document, in Section 13.1 on Reversal risk, a 20% discount was applied to the total quantified net emission reductions.

Thus, the results of mitigation or reduction of marketable emissions (REC) generated by the project in the monitoring period (see Table 68) were calculated considering the equations shown below:

$$TER_{DEF,REDD+project} = ER_{DEF,REDD+project} \times (1 - RF_{yr})$$

Where:

[161] See details in Table 21 In Section 3.10.3.1.3
[162] See details in Table 65 In Section 17.9.2
[163] See details in Table 66 In Section 17.9.2

$TER_{DEF,REDD+project}$: *Tradable emission reductions of the project; tCO_2eq.*

$ER_{DEF,REDD+project}$: *Net emission reduction due to avoided deforestation in the project; tCO_2eq.*

RF_{yr}: *Discount factor for non-permanence risks; without dimensions.*

Table 68. Number of Verifiable Carbon Credits that can be traded in time t

Projected year		Estimated net GHG emission reductions (tCO_2eq)	Emission reserve for risk of non-permanence (tCO_2eq)	Tradable emission reductions (Verifiable Carbon Credits - VCCs) (tCO_2eq)	
Project year (t)	Calendar year	$ER_{DEF,REDD+project,t}$	$RED_{DEF,REDD+project,t}$	$TER_{DEF,REDD+project,t}$	$TER_{DEF,REDD+project}$
0	2016[164]	819,032.44	163,806.49	655,225.00	655,225.00
1	2017	498,621.30	99,724.26	398,897.00	1,054,122.00
2	2018	726,886.47	145,377.29	581,509.00	1,635,631.00
Total		2,044,540.21	408,908.04	1,635,631.00	-
Average		681,513.40	136,302.68	545,210.00	-
Total 2017-2018		**1.225.507,77**	**245,101.55**	**980,406.00**	

(Source: Prepared by South Pole, 2020)

[164] Due to what is mentioned in Section 15.3.1 on the compatibility of the project with the national REM Program, the tradable emission reductions associated with the year 2016 (between October 29 and December 31, 2016), and reported in this table, will not be issued as Verifiable Carbon Credits (VCCs) under project verification. Therefore, the first project verification will report the results of the 2017-2018 period as VCCs.

18 Double counting risk

In order to promote transparency and mitigate potential double counting risks, an analysis was conducted to identify mitigation initiatives and projects with overlaps in area, monitoring/verification periods and/or mitigation activities (avoided deforestation in this case) with the REDD+ Yutucu project. The overlaps in area were validated for the Project Zone, Eligible Area, and Leakage Area. The results of the analysis are presented in Annex 15.

In relation to the analysis presented in Annex 15, cartographic information from the CERCARBONO, VERRA, COLCX and BCR standards was used as a basis for identifying the GHG mitigation initiatives present in the region and following the requirements of the BCR V1.0 no double-counting guide. Likewise, the BCR standard provides an open database so that other developers can review the mapping information of this initiative and corroborate that it does not present double counting with other areas of other projects in the region, as described in section 8.1 of the no double counting tool V1.0

Del mismo modo, las zonas dentro del área del proyecto que se encontraron con algún tipo de traslape, se redefinieron como áreas no elegibles, por lo cual NO emitirán créditos ni se cuantificarán los resultados según las disposiciones de la herramienta No doble contabilidad V1.0. Ahora bien, las áreas elegibles contarán con criterios de transparencia, confianza y seguridad tecnológica brindado por Biocarbon Registry, lo que permitirá que la emisión de cada bono sea única y no repetible, puesto que cuenta con un sistema de identificación personalizado (código serial), Google recaptcha, sistema blockchain, identificación vía email, sistemas de contraseñas y seguridad, sistema cyber control de amenazas y demás herramientas tecnológicas cibernéticas de protección de datos.

On the other hand, the REDD+ project of the indigenous peoples of Vaupés YUTUCU and others is not registered in other platforms, in fact, the start of registration in the current standard corresponds to a new project without payment for results in other previous standards, as required by section 8.1 of the no double counting tool V.1. It should be noted that the project had previously been registered under the VCS VERRA standard, however the project was withdrawn from this standard without reaching the issuance of credits or completing the verification validation audit, these clarifications are detailed in section 15.1 and 15.3.

Finally, in order to comply with the provisions of Article 6.2 of the Paris Agreement, this project has the Host Country Attestation[165] which is a public document uploaded on the BioCarbon Registry platform.

[165] Ruta: REDD+ Yutucu – R2 Hallazgos/02_Anexos/Soportes anexo 15/Host Country Attestation

19 References

AATIAM. (2008). *Plan de vida indigena zona aatiam*.

AATIVAM. (s.f.). *Plan de Manejo Ambiental de la cuenca del río Pirá Paraná.* [Ponencia]. *ACAIPI. La Fundación Gaia y el Programa COAMA El Programa*.

Administración Departamental. (2012). *Plan de desarrollo departamento del Vaupés 2012-2015.* https://repositoriocdim.esap.edu.co/handle/123456789/472

AZATIAC. (2017). *Plan Integral de Vida Indígena AZATIAC*.

AZATRAIYUVA. (2008). *Plan integral de vida indígena Asociación de Autoridades Tradicionales Indígenas Yurutíes del Vaupés. ASATRAIYUVA.* https://repositoriocdim.esap.edu.co/bitstream/handle/123456789/237/12511-1.pdf?sequence=1&isAllowed=y

Angelsen, A., Brockhau, S., Kanninen, M., Sills, E., Sunderlin, W.D., Wertz-Kanounnikoff, S. (2009). Realising REDD+: national strategy and policy options, Realising REDD+: national strategy and policy options.

Angelsen, A., Rudel, T.K. (2013). Designing and implementing effective REDD+ policies: A forest transition approach. Review of Environmental Economics and Policy. 7 (1), 91–113.

Barber. C. P.. Cochrane. M. A.. Souza. C. M.. & Laurance. W. F. (2014). Roads. deforestation. and the mitigating effect of protected areas in the Amazon. *Biological Conservation*. *177*(2014). 203–209. https://doi.org/10.1016/j.biocon.2014.07.004

Benavides. A. (2019. 3 de agosto). Casi 47% de cultivos ilícitos está en Parques Naturales y resguardos indígenas. https://www.asuntoslegales.com.co/actualidad/casi-47-de-cultivos-ilicitos-esta-en-parques-naturales-y-resguardos-indigenas-2892764

Camacho. A.. y Guerrero. R. D. (2017). *Estructura del Sistema Nacional de Salvaguardas. Las disposiciones de Colombia para abordar y respetar las salvaguardas sociales y ambientales de REDD+ Salvaguar- das sociales y ambientales: las reglas de juego para REDD+ en Colombia*. https://www.un-redd.org/sites/default/files/2021-10/Estructura%20del%20SNS%20Colombia%202017%20-%20Digital%20.pdf

Camacho. A.. Lara De La Rosa. I.. y Guerrero Useda. R. D. (2017). *Interpretación Nacional de las Salvaguardas Sociales y Ambientales para REDD+ en Colombia*. http://d2ouvy59p0dg6k.cloudfront.net/downloads/cartilla_interpretacion_nacional_de_salvaguardas_final_web.pdf

CDA. (2012). *Plan de gestión ambiental regional 2012 - 2023.* http://cda.gov.co/es/politicas-y-planes/plan-de-gestion-ambiental-regional-2012-2023

CDA. (2014). *Guía para la presentación de proyectos de inversión presupuesto general de la nación*. https://cda.gov.co/es/2016/1-2-1-implementacion-de-politicas-sectoriales-en-recurso-hidrico-y-gobernanza-forestal-en-los-departamentos-de-guainia

CDA. (2016). *Plan de ordenación y manejo de la cuenca del Río Cuduyarí.*

CDA. y MADS. (2018). *Plan de acción para el control de la deforestación. Sentencia 43060 de 2018.* Corte suprema de justicia. file:///D:/proyectos/vaupes/pd/Soportes/plan-de-accion-para-el-control-de-la-deforestacion-sentencia-4360-de-2018..pdf

CDA. y SINA. (2016). Proyecto plan de acción 2016 - 2019*. Oferta Ambiental y Crecimiento Verde para el Norte y el Oriente Amazónico*. https://cda.gov.co/apc-aa-files/623330313231383539383736653233335/proyecto-plan-de-accion-cda-2016-2019-.pdf

CDB. y PNUMA. (2012). *Plan Estratégico para la Diversidad Biológica 2011-2020 y las Metas de Aichi.* Secretaría del Convenio sobre la Diversidad Biológica.

Cepal. y Patrimonio Natural. (2013). *Amazonia posible y sostenible*. https://www.cepal.org/sites/default/files/news/files/amazonia_posible_y_sostenible.pdf?origin=crossref

Cutter, S.L., Boruff, B.J., Shirley, W.L. (2003). Social vulnerability to environmental hazards. Soc. Sci. Q. 84, 242–261.

Dávalos. L. M.. Bejarano. A. C.. Hall. M. A.. Correa. H. L.. Corthals. A.. & Espejo. O. J. (2011). Forests and drugs: Coca-driven deforestation in tropical biodiversity hotspots. *Environmental Science and Technology*. *45*(4). 1219–1277. https://doi.org/10.1021/es102373d

Dávalos. L. M.. Holmes. J. S.. Rodríguez. N.. & Armenteras. D. (2014). Demand for beef is unrelated to pasture expansion in northwestern Amazonia. *Biological Conservation*. *170*. 64–73. https://doi.org/10.1016/j.biocon.2013.12.018

Defensoría Delegada para los Derechos Colectivos y Ambientales. (2014). *Informe defensorial Explotación minera en Taraira. Vaupés*.

DNP. (2011). *CONPES.* https://colaboracion.dnp.gov.co/CDT/Conpes/Económicos/3700.pdf

DNP. (2012). *Plan Nacional de Adaptación al Cambio Climatico. ABC: Adaptación Bases Conceptuales. Marco Conceptual y Lineamientos.* http://www.minambiente.gov.co/images/cambioclimatico/pdf/Plan_nacional_de_adaptacion/1._Plan_Nacional_de_Adaptación_al_Cambio_Climático.pdf

Donovan. D.. Jong. W. De. y Abe. K.-I. (Eds.). (2007). *Tropical Forests and Extreme Conflict*. Springer. https://doi.org/10.1007/978-1-4020-5462-4

Gobierno Municipal de Mitú. (2016). *Plan de Desarrollo Municipal 2016- 2019. Equidad y transparencia*.

González Arenas. J. J.. Cubillos Buitrago. Álvaro Chadid Hernández. M. A.. Cubillos González. A. G.. Arias Patiño. M.. Zúñiga Avirama. Edilneyi Joubert. F.. Pérez. I. R.. y Berrío Meneses. V. (2018). *Caracterización de las principales causas y agentes de la deforestación a nivel nacional período 2005-2015*. https://www.unredd.net/documents/un-redd-partner-countries-181/latin-america-the-caribbean-334/colombia-706/16766-caracterizacion-de-las-principales-causas-y-agentes-de-la-deforestacion-a-nivel-nacional-periodo-2005-2015.html

González. J.. Cubillos. A.. Arias. A.. y Zapata. M. (2014). *Resultados de la simulación de la deforestación para el ajuste del nivel de referencia del área subnacional A8*. https://redd.unfccc.int/files/anexo_c_resultados.pdf

IDEAM. (2013). *Zonificación y codificación de uniades hidrográficas e hidrogeológicas de Colombia*. Publicación aprobada por el Comité de Comunicaciones y Publicaciones del IDEAM. Bogotá. D.C.. Colombia.

Inzunza. J. (2007). Climas de la tierra. En J. Inzunza. *Meteorología Descriptiva* (pp. 31 -).

ISA. & Forest Trends. (2010). *Avoided Deforestation (REDD) and Indigenous Peoples*. https://www.forest-trends.org/wp-content/uploads/imported/avoided-deforestation_final-pdf.pdf

IPCC. (2021). Climate Change 2021. The Physical Science Basis.

Lampis, A. (2013). Vulnerabilidad y adaptación al cambio climático: debates acerca del concepto de vulnerabilidad y su medición. Cuad. Geogr. Rev. Colomb. Geogr. 22, 17–33.

Larson. A. M.. Cronkleton. P.. Barry. D.. & Pacheco. P. (2008). *Tenure Rights and Beyond: Community Access to Forest Resources in Latin America*. Occasional Paper no. 50. CIFOR. https://doi.org/10.17528/cifor/002631

Laurance. W. F.. Clements. G. R.. Sloan. S.. O'Connell. C. S.. Mueller. N. D.. Goosem. M.. … Arrea. I. B. (2014). A global strategy for road building. *Nature*. *513*(7517). 229–232. https://doi.org/10.1038/nature13717

MADS. (s.f. a). *Control a La Deforestación*. file:///D:/proyectos/vaupes/pd/Soportes/BIBLIOGRAFIA/Control a La Deforestación _ Ministerio de Ambiente y Desarrollo Sostenible.html

MADS. (s.f. b). *Estrategia y Plan de Acción de Biodiversidad (EPANB)*. http://www.humboldt.org.co/en/research/projects/executed-projects/item/356-estrategia-y-plan-de-accion-de-biodiversidad-epanb

MADS. (2012). *Política nacional para la gestión integral de la biodiversidad y sus servicios ecosistémicos (PNGIBSE)*. Ministerio de Ambiente y Desarrollo Sostenible. República de Colombia. http://www.humboldt.org.co/images/pdf/PNGIBSE_español_web.pdf

MADS. (2015a). *Decreto 1076 del 2015*. http://www.parquesnacionales.gov.co/portal/wp-content/uploads/2013/08/Decreto-Unico-Reglamentario-Sector-Ambiental-1076-Mayo-2015.pdf

MADS. (2015b). Plan Nacional de Restauración. Ministerio de Ambiente y Desarrollo Sostenible. http://www.minambiente.gov.co/images/BosquesBiodiversidadyServiciosEcosistemicos/pdf/plan_nacional_restauracion/PLAN_NACIONAL_DE_RESTAURACIÓN_2.pdf

MADS. (2016). *Gestión Sostenible del Suelo*. *Política Para La Gestión Sostenible Del Suelo*. http://www.andi.com.co/Uploads/Política_para_la_gestión_sostenible_del_suelo_FINAL.pdf

MADS. (2018a). *¿Qué es REM visión Amazonía? – Visión Amazonía*. http://visionamazonia.minambiente.gov.co/que-es-vision-amazonia/

MADS. (2018b). *Proyectos Pilar Indígena Visión Amazonía*. http://visionamazonia.minambiente.gov.co/content/uploads/2018/04/infografia-PIVA.pdf

MADS. (2018c). *Resolución número 1447 de 2018.* http://sidn.ramajudicial.gov.co/SIDN/NORMATIVA/TEXTOS_COMPLETOS/8_RESOLUCIONES/RESOLUCIONES 2018/MADS Resolución 1447 de 2018 (Reglamenta el Sistema de Monitoreo. Reporte y Verificación).pdf

MADS. & IDEAM. (2014). *Proposed Forest Reference Emission Level for deforestation in the Colombian Amazon Biome for results–based payments for REDD+ under the UNFCCC*. Bogota D.C.

MADS. y IDEAM. (2016). *Reporte de reducción de emisiones bajo el acuerdo REDD Early Movers (REM)*. https://visionamazonia.minambiente.gov.co/content/uploads/2019/01/Reporte_REs-REM2015_09262018.pdf

MADS. y IDEAM. (2017). *Estrategia Integral de Control a la Deforestación y Gestión de Los Bosques en Colombia*. https://redd.unfccc.int/files/eicdgb_bosques_territorios_de_vida_web.pdf

MADS. y MADR. (2018). *Plan de Acción para reducir la deforestación y hacer frente a los efectos del cambio climático en la Amazonía colombiana – STC*. http://bosquesterritoriosdevida.com/sites/default/files/plandeaccionsentencia4360.pdf

Mas. J. F.. Puig. H.. Palacio. J. L.. & Sosa-López. A. (2004). Modelling deforestation using GIS and artificial neural networks. *Environmental Modelling and Software*. *19*(5). 461–471. https://doi.org/10.1016/S1364-8152(03)00161-0

MAVDT. (2010a). *Decreto 2372-Sistema Nacional de Áreas Protegidas*. http://www.minambiente.gov.co/images/normativa/decretos/2010/dec_2372_2010.pdf

MAVDT. (2010b). *Documento CONPES 3680. Lineamientos para la consolidación del Sistema Nacional de Áreas Protegidas.* Consejo Nacional de Política Económica y Social Departamento Nacional de Planeación. http://cpps.dyndns.info/cpps-docs-web/planaccion/biblioteca/pordinario/Colombia/sinap.pdf

Mingorance. F.. Le DU. H.. y Olsen. V. (2008). *Cultivos ilícitos megaproyecto*.

Ministerio de Ambiente de Colombia. (2016). *Estrategia Colombiana de Desarrollo Bajo en Carbono*. http://www.minambiente.gov.co/index.php/component/content/article/469-plantilla-cambio-climatico-25#documentos

MMA. (1996). *Política de Bosques Documento CONPES No. 2834*. http://www.minambiente.gov.co/images/BosquesBiodiversidadyServiciosEcosistemicos/pdf/Normativa/Politicas/555_politica_de_bosques.pdf

MMA. (2000). *Plan Nacional de Desarrollo Forestal*. Diario Oficial. p. 63. http://www.minambiente.gov.co/index.php/component/content/article?id=426:plantilla-bosques-biodiversidad-y-servicios-ecosistematicos-21#documentos

Murcia-garcía. U.. Quintero. N.. Rodríguez. S.. Romero. H.. y Gualdrón. L. (2016). *¿Vamos a Detener La Praderización De La Amazonia ?* https://www.sinchi.org.co/files/publicaciones/revista/pdf/9/6 vamos a detener la praderizacin de la amazonia.pdf

Nepstad. D. C.. Bezerra. T.. Stickler. C.. y Mcgrath. D. G. (2013). *Deforestación en Colombia: aumentar la producción terrestre.*

ONUDC. (2014). *Cultivos de coca estadísticas municipales censo 31 de diciembre de 2013 agosto de 2014*.

ONUDC. (2016). *Monitoreo de territorios afectados por cultivos ilícitos 2015 Julio 2016*.

OPIAC. (2014). *El Respeto a la Palabra como Mecanismo de Acercamiento entre los Pueblos Indígenas de La Amazonía Colombiana y El Ministerio De Minas y Energía*. https://www.minenergia.gov.co/documents/10192/23873954/3.+Guia+de+Relacionamiento+Amazonia.pdf/66a11cd4-1a29-4ced-b4ad-945d57353ab6

Prem. M.. Saavedra. S.. & Vargas. J. F. (2019). End-of-Conflict Deforestation: Evidence from Colombia's Peace Agreement. *Households in Conflict Network*. (November). 1–113.

Rojas. G. G. (2018). *Corte Suprema ordena protección inmediata de la Amazonía Colombiana*. *Corte Suprema de Justicia*. http://www.cortesuprema.gov.co/corte/index.php/2018/04/05/corte-suprema-ordena-proteccion-inmediata-de-la-amazonia-colombiana/

Salonen. M.. Toivonen. T.. Cohalan. J. M.. & Coomes. O. T. (2012). Critical distances: Comparing measures of spatial accessibility in the riverine landscapes of Peruvian Amazonia. *Applied Geography*. *32*(2). 501–513. https://doi.org/10.1016/j.apgeog.2011.06.017

UNFCCC. (2014). *Report on the technical assessment of the proposed forest reference emission level of Colombia submitted in 2014*. https://unfccc.int/resource/docs/2015/tar/col.pdf

UNODC. (2017). *Monitoreo de territorios afectados por cultivos ilícitos 2016 Julio 2017*. Oficina de Las Naciones Unidas Contra La Droga y El Delito. http://www.odc.gov.co/Portals/1/publicaciones/pdf/oferta/censos/OF02012016_monitoreo_territorios_afectados_cultivos_ilicitos_2016.pdf

UNODC. (2019). *Informe Simci de las Naciones Unidas contra la droga y el delito*.

Vargas. D. M.. Guerrero. R. D.. Ortega. C.. Camacho. A.. y Mendoza. T. (2017). Anexo 3: Información de salvaguardas REDD+ en Colombia énfasis en la Amazonía. En *Primer Resumen de información de salvaguardas REDD+ en Colombia. Énfasis en la Amazonía con referencia a los años 2013-2014.* (pp. 1–69). https://unredd.net/documents/un-redd-partner-countries-181/latin-america-the-caribbean-334/colombia-706/16780-primer-resumen-de-informacion-de-salvaguardas-en-colombia-enfasis-en-la-amazonia-con-referencia-a-los-anos-2013-2014.html

Volckhausen. T. (2019). *Land grabbing. cattle ranching ravage Colombian Amazon after FARC demobilization*. Mongabay Series website: https://news.mongabay.com/2019/05/land-grabbing-cattle-ranching-ravage-colombian-amazon-after-farc-demobilization/?n3wsletter&utm_source=Mongabay+Newsletter&utm_campaign=c601ae9c53

WWF. (2018). *Glosario ambiental: ¿Qué son las metas AICHI? | WWF*. http://www.wwf.org.co/?uNewsID=338730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