REDD+ JIGRANTU PROJECT

Document prepared by Biotrade S.A.S

Name of the project	REDD+ JIGRANTU Project
Project proponent	La Grande Community Council Rio Jiguamiando Community Council Turriquitado Community Council Biotrade S.A.S
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Project participants	
Version	Version 6.1
Date	September 16, 2024
Project type	Reduction of Emissions derived from Deforestation and Forest Degradation (REDD+).
Grouped project	No
Applied Methodology	BioCarbon Registry Methodological document of the AFOLU sector Quantification of GHG Emissions Reduction REDD+ Projects BCR0002 Version 3.1 September 2022
Project location (City, Region, Country)	**Country:** Colombia **Department:** Choco **Municipalities:** Carmen del Darien and Riosucio

Starting date	01/02/2019
Quantification Period of GHG emissions reductions	(01/02/2019 to 01/01/2049); 30 years
Estimated total and average annual GHG emission reduction amount	**Deforestation:** 338,643.60 tCO_2e/year 10,159,307.91 tCO_2e (total for 30-year accounting period)
Sustainable Development Goals	SDG1, SDG 2, SDG 3, SDG 4, SDG 5, SDG 6, SDG 7, SDG 8, SDG 9, SDG 11, SDG 13, SDG 15 and SDG 16.
Special category, related to co-benefits	Biodiversity conservation

Content

REDD+ JIGRANTU PROJECT GLOSSARY

Acronyms:

AFOLU Agriculture, Livestock, Forestry and Other Land Use.
ASOMUJIGUA Women's Associations
ASOMUNUVITE Association of Women of Nueva Esperanza in Defense of Life and Territory.
ASOPESVIGRAN Association of fishermen of the community councils of Vigia de Curvarado, La Grande and Villanueva Montaño.
BCR BioCarbon Registry
bh-T tropical rain forest
CC Community Council
CCV Verified Carbon Credits
CH4 Methane
UNFCCC United Nations Framework Convention on Climate Change
CO2 Carbon dioxide
CODECHOCO Corporacion Autonoma Regional para el Desarrollo Sostenible del Choco (Regional Autonomous Corporation for the Sustainable Development of Choco)
DANE National Department of Statistics
DIAN National Customs and Taxes Directorate
ECDBC Colombian Low-Carbon Development Strategy
EICDGB Integrated Control of Deforestation and Forest Management Strategy named *"Forests Territories of Life"*
GHG Greenhouse Gases
GFW Global Forest Watch
GLAD Global Land Analysis and Discovery
IGAC Agustin Codazzi Geographic Institute
IDEAM Institute of Hydrology, Meteorology and Environmental Studies
IPCC Intergovernmental Panel on Climate Change
JEP Special Justice for Peace
MADS Ministry of Environment and Sustainable Development
MFS Sustainable Forest Management.
MO Operating Manual
m.a.s.l. meters above sea level
NREF forest emissions reference level
NV Green Business
N2O Nitrous oxide
SDG Sustainable Development Goals
NGO Non-Governmental Organization, non-profit institution that does not depend on the government and carries out activities of social interest.
PEC Special Characterization Plans
PDI Digital Image Processing
PdD (Project Design Document)
PDET Development Programs with a Territorial Approach (Programas de Desarrollo con Enfoque Territorial)
AOP Annual Operating Plan

PPS Sustainable Production Projects
PQRS Petitions, Complaints, Claims, Requests.
RFN National Forest Reserve
REDD Reducing emissions from deforestation and forest degradation.
REDD+ Reducing Emissions from Deforestation and Forest Degradation
RM Monitoring Report
SbN Solutions based on Nature.
SDB Distribution System Benefits
SENA National Learning Service
GIS Geographic Information System
SMByC Forest and Carbon Monitoring System
TCAFM. Compensatory Rate for Timber Forest Harvesting.
tCO2e unit of measurement in tons that calculates the emission of carbon dioxide equivalents.
ICT Information and Communication Technologies
UTCH protection measures.
VCUs: Verifit Carbon Units (VCUs)

1 Project eligibility

1.1 Scope

The scope of the BCR Standard is limited to:	
The following greenhouse gases, included in the Kyoto Protocol: Carbon Dioxide (CO2), Methane (CH4) and Nitrous Oxide (N2O).	
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

Type of project under which the project activities are developed.

Activities in the AFOLU sector, other than REDD+	
REDD+ Activities	X
Activities in the energy sector	
Activities in the transportation sector	
Activities related to Handling and disposing of waste	

1.3 Project scale

N/A

2 General description of the project

The REDD+ JIGRANTU Project is being developed in the Pacific region of Colombia in the northeast of the department of Choco in the municipalities of Carmen del Darien (86%) and Riosucio (14%), mainly within the boundaries of the Community Councils of La Grande (13,455.53 ha Resolution 2806 of 22 November 2000), Rio Jiguamiando (51,870 ha Resolution 2159 of 22 August 2007) and Turriquitado (9,255.80 ha Resolution 2806 of 22 Nov 2000), Rio Jiguamiando (51,870 ha Resolution 2159 of 24 August 2007) and Turriquitado (9,255.80 ha Resolution 2799 of 22 Nov 2000) with a total titled area of 77,836.23 hectares[1]. From the calculation of the areas that make up the project, an extension of 74,012.27 ha is obtained, of which 68,898.97[2] ha corresponds to eligible forest for the REDD+ project, i.e. the area in stable forest as of January 1, 2019. The quantification period of the GHG emission reductions is from 01/02/2019 to 01/01/2049, where an average annual reduction is expected of 338,643.60 tCO_2e and a total reduction over the thirty-year life of the project of 10,159,307.91 tCO_2e.

Most of the area is composed of the Truando Helobiome and the Truando Tropical Humid Zonobiome, covering more than 94% of the area. The most representative ecosystems correspond to the Humid Basal Forest and the Basal Flooded Forest, covering more than 93% of the project area.

The agents responsible for forest loss in the project area include subsistence communities with family farming practices, banana, yucca and corn monocultures, and dual-purpose cattle ranching for commercialization and self-consumption; other agents of deforestation are loggers, coca growers and miners, the latter are not entirely part of the communities; they are mostly external agents who enter the project area to carry out these activities illegally, These actions have been promoted by the armed conflict, which has led to the forced displacement of community members, migration of the young population in search of employment or study opportunities, weakening of government structures, invasions in the project area due to the loss of governance and low territorial control, which ultimately leads to the loss of the social fabric and ecosystemic biodiversity.

It is worth noting the generalized deficit in the coverage of public services, health and education, climatic events such as floods and mass movements that limit the means of

[1] The Shapefiles of the community councils used are from the National Land Agency and the area of each of the councils presents differences compared to the titled area related to the administrative acts.
[2] This area corresponds to the forest area at the beginning of the project, that is, the forest area as of 2019.

production, high incidence of diseases due to contamination of rivers due to poor waste management and illegal activities in the area that have changed the quality and supply of water and water regulation.

The project seeks to reverse this social and environmental situation through the implementation of four strategic lines of action: A) strengthening governance and culture, B) capacity building, C) actions for the sustainable development of the territory, and D) monitoring and control. The project is expected to generate positive impacts on biodiversity, integrity and the provision of ecosystem services through the conservation and protection of species present in the project area. In addition, the communities will benefit from the project through the strengthening of territorial governance and governance of the territory, the rescue of cultural values, and the improvement of the good living of the inhabitants, the project's actions will contribute to the fulfillment of the following SDGs 1, 2, 3, 4, 5, 6, 6, 7, 8, 9, 11, 13, 15 and 16.

Fulfilling the main objective of promoting sustainable integral development under the principles of participation, transparency, trust, justice and equity through the REDD mechanism in the community councils of the Jiguamiando, La Grande and Turriquitado rivers is expected:

- Formulate and execute the ethno-development plan promoting governance and the rescue of cultural practices within the Community Councils.
- Improve the social, cultural and productive infrastructure for the sustainable development of the communities living in the project area.
- Strengthen the technical capacities of leaders, young people and women to ensure the long-term sustainability of the project's actions.
- Design and implement the restoration, conservation and nature monitoring strategy, the participatory oversight and control mechanism.

As a special category, the project will focus on the conservation and recovery of the marshes as ecosystems highly vulnerable to the effects of climate variability. This will protect the populations of the Manatee *Trichechus manatus* and the hicotea *Trachemys callirostris*, species in a state of vulnerability, focusing actions on capacity building, community monitoring and ecosystem restoration, contributing to the increase of biodiversity and socioecological resilience and increasing community ownership within the project area.

2.1 GHG Project name

REDD+ JIGRANTU Project

2.2 Objectives

2.2.1 Main objective

The JIGRANTU REDD+ Project seeks to promote sustainable comprehensive development under the principles of participation, transparency, trust, justice, and equity through the REDD mechanism in the community councils of Rio Jiguamiando, La Grande and Turriquitado.

2.2.2 Specific objectives

- Formulate and execute the ethnodevelopment plan, promoting governance and rescue of cultural practices within the CCs.
- Improve the social, cultural, and productive infrastructure for the sustainable development of the communities that live in the project area.
- Strengthen the technical capabilities of leaders, young people, and women to provide long-term sustainability to the project's actions.
- Design and implement the nature restoration, conservation and monitoring strategy, the oversight mechanism and participatory control.

2.3 Project activities

To define the activities of the project scenario, the General Assembly (Figure 1) was held in each of the Community Councils of the Jiguamiando, La Grande and Turriquitado River, where the lines of action, programs and activities of each component were defined to consolidate the Benefit Sharing System (BDS) of the REDD+ JIGRANTU Project, which subsequently had specific work spaces to operationalize its implementation, through the Operational Manual (OM).

Figure 1. Participatory methodology for the construction of lines of action, programs, and activities

Source: Biotrade S.A.S (2023)

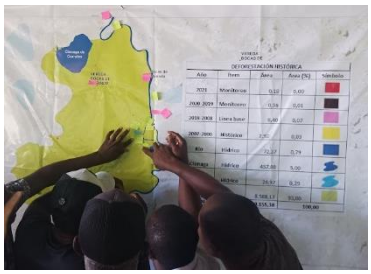
Formulation stage the project has undergone different stages of formulation, under the approach of free, prior, and informed consultation, for its participatory construction with the communities of the three Councils.

General community assemblies in the three Community Councils covered by the project, general community assemblies were held in which the project was socialized, and a vote was taken to determine whether the community agreed with the REDD project and its activities. The assemblies also included the construction of the Benefit Distribution System (BDS), socialization of the fiduciary mechanism, and territorial characterization workshops. The dates of the Assemblies were October 20-23, 2022, in the Community Council of the Rio Jiguamiando[3] on October 28-29, 2022, in parallel in the Community Councils of La Grande[4] and Turriquitado[5].

Photographic record of the assemblies

Community Council of the Rio Jiguamiando

Community Council of La Grande



Community Council of Turriquitado

In the three community councils covered by the project, we carried out walks to verify land cover and biodiversity sighting zones in order to have a field record of the ecosystem characteristics of the project area.

Photographic record of the tour

[3] Jiguamiando assembly minutes
[4] La Grande assembly minutes
[5] Turriquitado assembly minutes

Community Council of the Rio Jiguamiando

Community Council of La Grande

Community Council of Turriquitado

Project implementation The activities defined for project implementation are framed within the programs and strategies established in the SDB, as mentioned above. Therefore, each one of the forty-two (42) activities has been coded consecutively according to the strategy (A-D) and program (a-n) to which it is related. This makes it possible to organize the information for the construction of the schedule (see Table 1), which shows the projected execution of the activities in the short, medium, and long term, differentiating each of the verification periods. The stages of the formulation or planning period (gray), which is required for the proper development of the activity, and the implementation stage (green) are specified with colored stripes. Additionally, the actions that have been considered in the first monitoring report, which correspond to the retroactive period, are marked in yellow.

These activities were conceived based on the needs perceived by the community, with which they hope to improve their family economy and diversify their sources of income, considering previous analyses of the causes and agents of deforestation.

Table 1. Timeline for the implementation of REDD actions

Coding Strategies	Coding Programs
A. Strengthening Governance and Culture	**Aa.** Formulation and development of tools for governance. **Ab.** Strengthening the participation of women, youth and other minority groups in the Community Councils. **Ac.** Strengthening of Afro culture and knowledge. **Ad.** Equipment for social development.
B. Capacity building	**Be.** Capacity building for REDD project implementation. **Bf.** Capacity building for the implementation of actions. **Bg.** Scholarship plan for professionals.
C. Sustainable development	**Ch.** Improvement of social, cultural and productive infrastructure for sustainable development. **Ci.** Sustainable Productive Projects.
D. Conservation and Monitoring	**Dj.** Biodiversity conservation and ecosystem services. **Dk.** Control, surveillance and monitoring of REDD project actions. **Dl.** PQRDS. **Dm.** Monitoring of social and environmental safeguards. **Dn. Nature-based** solutions (SbN).

Activities	Short term (8 YEARS)			Medium term (18 YEARS)					Long term (30 YEARS)					
	2019 2022	2023 2024	2025 2026	2027 2028	2029 2030	2031 2032	2033 2034	2035 2036	2037 2038	2039 2040	2041 2042	2043 2044	2045 2046	2047 2048
	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14
Aa1. Formulation of the Ethno-Development Plan														
Aa2. Construction of the Environmental Management Plan of the Community Councils.														
Aa3. Articulation in the execution of REDD actions with the Ethnodevelopment Plan and Environmental Management Plan of the Community Councils.														
Ab4. Design and implementation of a participation, empowerment and governance strategy for women, youth, elderly, disabled and other minority groups.														
Ac5. Formulation and implementation of the strategy for the rescue and multiplication of ancestral knowledge.														
Ac6. Strengthening of cultural events with the participation of different generations.														
Ad7. Facilities for recreation and sports, health, education and culture.														
Be8. Strengthening of REDD technical capacities with emphasis on increasing socio-ecosystemic resilience for climate change adaptation.														
Be9. Capacity building for REDD project administration														
Be10. Capacity building for project formulation and implementation.														
Bf11. Capacity building in sustainable productive actions led by women.														
Bf12. Capacity building in sustainable productive actions with emphasis on increasing socio-ecosystemic resilience.														
Bf13. Capacity building in ecosystem restoration and conservation actions.														
Bf14. Capacity building in social infrastructure														
Bf15. Capacity building in governance and cultural actions.														
Bf16. Capacity Building in Community Monitoring														
Bg17. Formulation and implementation of the plan for undergraduate and graduate scholarships, courses or training programs.														
Bg18. Formulation of a strategy for special quotas for women in the scholarship plan.														
Ch19. Home improvement														
Ch20. Improvement of educational infrastructure														
Ch21. Basic Sanitation Infrastructure														
Ch22. Health infrastructure														
Ch23. Communications infrastructure														
Ch24. Infrastructure for sustainable productive alternatives with emphasis on climate change adaptation.														
Ch25. Adequacy of waterways														
Ch26. Construction and maintenance of bridges and roads														
Ch27. Construction of recreational scenarios (such as parks, etc.).														
Ch28. Infrastructure for alternative energies														
Ci29. Diagnosis of the environmental and social supply for the implementation of PPS.														
Ci30. Technical and accounting formulation of the PPS to be executed.														

Activities	Short term (8 YEARS)			Medium term (18 YEARS)					Long term (30 YEARS)					
	2019 2022	2023 2024	2025 2026	2027 2028	2029 2030	2031 2032	2033 2034	2035 2036	2037 2038	2039 2040	2041 2042	2043 2044	2045 2046	2047 2048
	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14
Ci31. Implementation of PPS with emphasis on climate change adaptation.														
Ci32. Strengthening for the commercialization of PPS products, and development of its own brand.														
Ci33. Strengthening of productive associations of women and men.														
Dj34. Diagnosis of the state of ecosystems, ecosystem services and vulnerability to the effects of climate change.														
Dj35. Design and implementation of the ecosystem protection and restoration strategy.														
Dj36. Strengthening the conservation and monitoring of the manatee *(Trichechus manatus*) and the slider turtle (*Trachemys callirostris*).														
Dj37. Design and implementation of a community monitoring program for the conservation and enhancement of ecosystem resilience.														
Dk38. Oversight and monitoring of the implementation of REDD actions														
Dl39. PQRDS System														
Dm40. Definition of strategies for monitoring and evaluation of environmental and social safeguards.														
Dn41. Risk management plan according to SbN														
Dn42. Integral strategy for adaptation to climate change.														

***Share reported in retroactive accounting period**

***Formulation or Planning**

***Implementation**

The description of each activity indicated in the above schedule is detailed in each tab below, with prior clarity about those responsible for implementation, which is different in the first period of validation and verification (2019-2022), with respect to the other verification periods; on which, there will already be the appointments of members of the communities to the positions established in the Governance System, with direct responsibility for implementation and measurement.

Table 2. responsible for implementation and measurement

Responsible for implementation and measurement, first verification period (2019-2022).	Responsible for implementation and measurement in the following verification periods
● Legal representatives of the Community Councils ● Biotrade S.A.S. Technical Team	● Monitoring, Reporting and Verification Coordinator (MRV) ● Project Directors per Community Council ● Biotrade S.A.S

Activity ID	Aa1				
REDD Activity	Formulation of the Ethnodevelopment Plan				
REDD Activity Description	The ethno-development plan is a strategy that focuses on the needs and aspirations of Afro communities; these plans seek to promote sustainable development by respecting their values, traditions and active participation in decision-making. It is the main instrument for exercising governance in the collective territories, which will be articulated with the instruments for planning, use, management and exploitation of renewable natural resources and ecosystem services.				
SDGs to be met	SDG 15 - Terrestrial Life and Ecosystems				
Relationship of the activity to direct or underlying cause	Direct cause: Expansion of the agricultural frontier and underlying cause: Political and institutional factors, due to low governance and the need to promote sustainable development within the territory. The competent institutions have not allocated resources for the formulation of ethno-development plans.				
Compliance with life plans or ethnodevelopment plans	Compliance with the provisions of ARTICLE 2.2.12.2.1. Ethno-development plan, of Decree 1384 of August 25, 2023 "*Whereby Chapter IV and the other environmental provisions contained in Law 70 of 1993 are regulated, in relation to renewable natural resources and the environment, in the collective territories awarded, in process or ancestrally and/or traditionally occupied by the black, Afro-Colombian, Raizal and Palenquero communities, and is added to Title 12 of Part 2 of Book 2 of Decree 1076 of 2015 - Sole Regulatory Decree of the Administrative Sector of the Environment and Sustainable Development Sector and other provisions are enacted*"				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	MRV coordinator and project managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer. **Ministry of Environment and Sustainable Development and competent entities: Institutions with responsibility for technical and financial support in the Ethnodevelopment Plan*.				
Implementation schedule	V2-V3 (2023-2026) * Action reported in the retroactivity period *see timeline*				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. of documents prepared in the preparation, diagnosis, and formulation phase of the Ethno-Development Plan.	**1Aa1**	Product	5 documents in the monitoring period V2 - V3	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S. development team.
No. of contracts for professionals and technicians for the elaboration of the Ethnodevelopment Plan.	**2Aa1**	Result	6 hires in the monitoring period V2 - V3	Number of new hires	

Activity ID	Aa2				
REDD Activity	Construction of the Environmental Management Plan of the Community Councils				
REDD Activity Description	Environmental management plan of the collective territories awarded, is the mechanism for the governance and management of the collective territory, adopted by the Community Council, as an instrument for planning the use, management and environmental administration of the territory and renewable natural resources.				
SDGs to be met	SDG 15 - Terrestrial Life and Ecosystems				
Relationship of the activity to direct or underlying cause	Direct causes: infrastructure, expansion of the agricultural frontier, timber extraction, mining, and illicit crops. The absence of an environmental management plan makes it possible for all the direct causes of deforestation and ecosystem degradation to manifest themselves.				
Compliance with life plans or ethnodevelopment plans	Compliance with ARTICLE 2.2.12.2.2.2. Environmental management plan for collective territories awarded, in process or occupied ancestrally and/or traditionally, of Decree 1384 of August 25, 2023 "*Whereby Chapter IV and other environmental provisions contained in Law 70 of 1993 are regulated, in relation to renewable natural resources and the environment, in the collective territories awarded, in process or ancestrally and/or traditionally occupied by the black, Afro-Colombian, Raizal and Palenquero communities, and is added to Title 12 of Part 2 of Book 2 of Decree 1076 of 2015 - Sole Regulatory Decree of the Administrative Sector of the Environment and Sustainable Development Sector, and other provisions are issued*"				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer. *Ministry of Environment and Sustainable Development, COODECHOCO and territorial entities: Institutions with responsibility for technical and financial support in the Environmental Management Plan.				
Implementation schedule	V3 (2025-2026) and V4 (2027-2028) *see timeline*				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. of document Environmental management plan	**3Aa2**	Product	1 document in the monitoring period V4	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S. development team.
No. of contracts for professionals and technicians for the preparation of the Environmental Management Plan.	**4Aa2**	Result	6 hires in the monitoring period V3 - V4	Number of new hires	

Activity ID	Aa3				
REDD Activity	Articulation in the execution of REDD actions with the ethno-development plan and environmental management plan of the Community Councils.				
REDD Activity Description	The Ethno-development Plan and the Environmental Management Plan correspond to the special instruments of self-government for the use and management of the natural resources of the collective territories, in this sense, once formulated, all programmed REDD actions should be articulated and harmonized with these instruments, so that their implementation is consistent with the guiding elements of Self-Government of each of the Community Councils.				
SDGs to be met	SDG 15 - Terrestrial Life and Ecosystems				
Relationship of the activity to direct or underlying cause	Direct causes: Infrastructure, expansion of the agricultural frontier, timber extraction, mining and illicit crops. Underlying causes: Political and institutional factors, due to low governance and lack of interest in sustainable development in the territory. The competent institutions have not allocated resources for the formulation of ethno-development plans and environmental management plans.				
Compliance with life plans or ethnodevelopment plans	Compliance with the stipulations of ARTICLE 2.2.12.2.2.1. Ethno-development plan and ARTICLE 2.2.12.2.2.2.				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	MRV coordinator and project managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.				
Implementation schedule	Articulation in formulation phases V2-V3 (2023-2026) and V4 (2027-2028) Articulation throughout implementation V5 to V14 (2029-2048) *see timeline*				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. Report document with actions to articulate REDD project articulation to own government instruments	**5Aa3**	Product	1 document in each monitoring period V5-V14	Document number	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.

Activity ID	Ab4
REDD Activity	Design and implementation of a participation, empowerment and governance strategy for women, youth, elderly, disabled and other minority groups.
REDD Activity Description	It involves the creation of a structured plan and the implementation of activities that enable the active collaboration of individuals, communities or stakeholders in decision making, planning and execution of projects or policies. This strategy seeks to foster the inclusion, voice and influence of those affected by or involved in a specific process. It may include methods such as public consultation, community meetings, surveys, citizen participation committees and other forms of stakeholder involvement to ensure more democratic and effective decision making and greater legitimacy for the actions undertaken.
SDGs to be met	SDG 5: Gender equality SDG 16 - Peace, justice and strong institutions
Relationship of the activity to direct or underlying cause	Underlying cause: Cultural factors in the loss of cultural and spiritual values in the perception of ecosystems, in which older adults and women play a leading role, to transmit knowledge to young people, demographic factors have an impact due to the migration of young people which leads to low governance within the territories and the incidence of direct causes such as the expansion of the agricultural frontier, mining and illicit crops due to the low control in the territory. By integrating the knowledge and participation of all stakeholders, it could be ensured that REDD Project activities are maintained.
Compliance with life plans or ethno-development plans	It is in the interest of the communities of the Community Councils to encourage the participation of older adults, who are responsible for the historical conservation of the forest, as well as the inclusion of women, youth, people with disabilities and other minority groups.
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.
Implementation schedule	Formulation V2-V3 (2023-2026) and Implementation V4 to V14 (2027-2048) *see timeline*

Indicators for reporting progress

Name	Indicator ID	Type	Goal	Unit of measure	Responsible for measurement
No. of Participation Strategy documents for women, youth, senior citizens, people with disabilities and other minority groups.	**6Ab4**	Product	5 documents in the monitoring period V3	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.
% Participation of women	**7Ab4**	Impact	50%	Percentage of women's participation	
% Youth participation	**8Ab4**	Impact	25%	Percentage of participation of young people (between 14 and 25 years of age)	
% Elderly participation	**9Ab4**	Impact	100%	Percentage of senior citizen participation	
Minority interest	**10Ab4**	Impact	100%	Percentage of minority groups	
Participation of people with disabilities	**11Ab4**	Impact	100%	Percentage of people with disabilities	

Activity ID	Ac5				
REDD Activity	Formulation and implementation of the strategy for the rescue and multiplication of ancestral knowledge.				
REDD Activity Description	It is a process that aims to preserve and disseminate traditional knowledge and practices related to the natural environment. This involves recovering and documenting local wisdom on sustainable natural resource management, biodiversity and climate change adaptation, and then sharing this knowledge with communities and future generations. This strategy not only contributes to environmental conservation, but also strengthens cultural identity and promotes collaboration between local groups and experts in environmental management, fostering a more holistic and equitable approach to environmental protection.				
SDGs to be met	SDG 11: Sustainable cities and communities				
Relationship of the activity to direct or underlying cause	Underlying cause: Cultural factors in the loss of cultural and spiritual values in the perception of ecosystems, in which older adults and women play a leading role, to transmit knowledge to young people, demographic factors have an impact due to the migration of young people which leads to low governance within the territories and the incidence of direct causes such as the expansion of the agricultural frontier, mining and illicit crops due to the low control in the territory. By integrating the knowledge and participation of all stakeholders, it could be ensured that REDD Project activities are maintained.				
Compliance with life plans or ethno-development plans	The community is interested in the recovery and multiplication of ancestral knowledge. The educational institution of Jiguamiando has been implementing a significant experience program "Sabio intercambio de saberes", a program since 2021.				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.				
Implementation schedule	Formulation V2-V3 (2023-2026). see timeline				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. of documents of Strategy for the rescue and multiplication of ancestral knowledge, with information on per capita expenditure for the protection of cultural heritage.	**12Ac5**	Product	1 document in the monitoring period V3	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.

Activity ID	Ac6				
REDD Activity	Strengthening of cultural events with the participation of different generations.				
REDD Activity Description	The promotion and support of activities that celebrate and preserve the cultural heritage of a community or region. These events may include festivals, fairs, exhibitions, traditional ceremonies, and other cultural manifestations that highlight music, dance, art, gastronomy and other aspects of local culture. By strengthening these events, it seeks to promote cultural pride, preserve traditions, and create economic opportunities for local artists and artisans, while fostering cultural exchange and understanding among different communities, thus contributing to cultural diversity and enrichment in the region.				
SDGs to be met	SDG 4: Quality education SDG 11: Sustainable cities and communities				
Relationship of the activity to direct or underlying cause	Underlying cause associated with "Cultural Factors" in the loss of cultural and spiritual values of ecosystems.				
Compliance with life plans or ethnodevelopment plans	The community is interested in maintaining cultural events, such as patron saint festivals, sporting events, and the promotion of new spaces that allow the rescue and multiplication of traditional knowledge.				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.				
Implementation schedule	Implementation V1 to V14 (2019-2048) ** Action reported in the retroactivity period.* see timeline				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. of reports on cultural events, rescue, and multiplication of ancestral knowledge with information on per capita expenditure.	**13Ac6**	Product	1 document in each monitoring period V1-V14	Document number	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.

Activity ID	Ad7				
REDD Activity	Facilities for recreation and sports, health, education, and culture.				
REDD Activity Description	This activity seeks to promote the well-being and development of a community or population through the combination of elements related to recreation, sports, health, education, and culture. With the equipment or endowments, we seek to improve the conditions for health, education, recreation, education, and culture services; supplies that will be in accordance with what is established in the Ethnodevelopment Plan, so that they can be carried out in a planned manner according to investment plans.				
SDGs to be met	SDG 11: Sustainable cities and communities				
Relationship of the activity to direct or underlying cause	Underlying cause associated with "Cultural Factors" in the loss of cultural and spiritual values of ecosystems.				
Compliance with life plans or ethno-development plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.				
Implementation schedule	V3 to V14 Implementation (2025-2048) *see timeline*				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. families benefited	**14Ad7**	Result	Coverage of all families living in the Community Council V3-V14.	Number of families living in each Community Council	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.
% Endowments for recreation and sports, health, education, and culture.	**15Ad7**	Result	100% of the allocations established in the purchase plans V3 - V14	Percentage of purchases in each monitoring period	

Activity ID	Be8				
REDD Activity	Strengthening of REDD technical capacities with emphasis on increasing socio-ecosystemic resilience for climate change adaptation.				
REDD Activity Description	It involves the development of skills and technical knowledge necessary to implement programs that reduce greenhouse gas emissions related to deforestation and forest degradation. This includes training in monitoring, sustainable forest management and technologies necessary for successful forest conservation and restoration initiatives.				
SDGs to be met	SDG 4: Quality education				
Relationship of the activity to direct or underlying cause	Direct causes: infrastructure, expansion of the agricultural frontier, timber extraction, mining and illicit crops. Related to the lack of training and implementation of REDD actions.				
Compliance with life plans or ethno-development plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	Biotrade S.A.S - with responsibility for knowledge transfer, social technology and capacity building. MRV Coordinator, Project Managers per Community Council: leaders in implementation.				
Implementation schedule	Implementation V2 to V14 (2024-2048) * *Action reported in the retroactivity period* see timeline				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. Training events in REDD techniques	**16Be8**	Impact	2 events in each monitoring period V2-V14	Number of events	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.

Activity ID	Be9				
REDD Activity	Capacity building for REDD project administration				
REDD Activity Description	This activity aims to improve the skills and knowledge needed to effectively manage projects related to Reducing Emissions from Deforestation and Forest Degradation (REDD). This involves capacity building in areas such as planning, monitoring, evaluation, and financial management of REDD projects, as well as stakeholder coordination and implementation of strategies for forest conservation and restoration. Strengthening these capacities is essential to ensure that REDD projects are carried out efficiently and effectively.				
SDGs to be met	SDG 4: Quality education				
Relationship of the activity to direct or underlying cause	Direct causes: infrastructure, expansion of the agricultural frontier, timber extraction, mining, and illicit crops. Related to the lack of training and implementation of REDD actions.				
Compliance with life plans or ethnodevelopment plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	Biotrade S.A.S - with responsibility for knowledge transfer, social technology, and capacity building. MRV Coordinator, Project Directors per Community Council: leaders in implementation.				
Implementation schedule	Implementation V2 (2023-2024) V5 (2029-2030) V8 (2035-2036) V11 (2041-2042) V14 (2047-2048) *see timeline*				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. of REDD project management training events	**17Be9**	Impact	1 training event in monitoring periods V2, V5, V8, V11 and V14	Number of events	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.

Activity ID	Be10				
REDD Activity	Capacity-building for project formulation and implementation				
REDD Activity Description	This activity aims to improve the skills and knowledge needed to effectively manage projects related to Reducing Emissions from Deforestation and Forest Degradation (REDD). This involves capacity building in areas such as planning, monitoring, evaluation and financial management of REDD projects, as well as stakeholder coordination and implementation of strategies for forest conservation and restoration. Strengthening these capacities is essential to ensure that REDD projects are carried out efficiently and effectively.				
SDGs to be met	SDG 4: Quality education				
Relationship of the activity to direct or underlying cause	Underlying cause "technology factors", in the understanding that there is low technology transfer for sustainable development. Regarding the development of PPS based on the environmental supply of the territory.				
Compliance with life plans or ethnodevelopment plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.				
Consultation mechanism for defining REDD+ activity	Free, prior, and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	Biotrade S.A.S - with responsibility for knowledge transfer, social technology and capacity building in project formulation, which is the way to implement the REDD actions proposed in the JIGRANTU project. MRV Coordinator, Project Directors by Community Council: leaders in the implementation.				
Implementation schedule	Implementation V2 (2023-2024); V4 (2027-2028); V6 (2031-2032); V8 (20335-2036); V10 (2039-2040); V12 (2043-2044); and V14 (2047-2048).				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. of training events on project formulation	**18Be10**	Impact	1 training event in monitoring periods V2, V4, V6, V8, V10, V12 and V14	Number of events	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.

Activity ID	Bf11
REDD Activity	Capacity building in sustainable productive actions led by women.
REDD Activity Description	The purpose of this activity is to improve the skills and knowledge necessary to strengthen the productive initiatives under development and the gestation of new economic alternatives for the women of the Community Councils. Its implementation is in line with activity *Bf12,* however, considering the importance of women's participation, this action contemplates specific planning and follow-up in the short, medium, and long term of the REDD project.
SDGs to be met	SDG 4: Quality Education SDG 5: Gender Equality
Relationship of activity to direct or underlying cause	Underlying cause "technology factors", in the understanding that there is low technology transfer for sustainable development. Regarding the development of PPS based on the environmental supply of the territory.
Compliance with life plans or ethnodevelopment plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.
Responsibility and role of the actors involved in implementation	Biotrade S.A.S - with responsibility for knowledge transfer, social technology, and capacity building. MRV Coordinator, Project Managers per Community Council: leaders in implementation.
Implementation schedule	Short-term V2 (2023-2024); Medium-term V4 (2027-2028) and Long-term V9 (2037-2038)

Indicators for reporting progress

Name	Indicator ID	Type	Goal	Unit of measure	Responsible for measurement
No. Training events, as well as planning and follow-up, for the strengthening of PPSs for women	**19Bf11**	Impact	1 training, planning and follow-up event, in the monitoring periods Short-term V2 Medium-term V4 Long-term V9	Number of events	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.

Activity ID	Bf12
REDD Activity	Capacity building in sustainable productive actions with emphasis on increasing socio-ecosystemic resilience.
REDD Activity Description	This activity aims to improve the skills and knowledge necessary to promote economic initiatives and business activities that allow the generation of long-term income, while minimizing negative impacts on the environment and society. These actions involve socially and environmentally responsible practices, such as organic agriculture, sustainable management of natural resources, promotion of clean energy and implementation of ethical business practices. The emphasis on increasing socio-ecosystemic resilience is based on the promotion of knowledge to cope with the effects of climate change, taking into account that resilience is based on the well-being of the ecosystem and human beings.
SDGs to be met	SDG 4: Quality education SDG 15: Terrestrial Life and Ecosystems
Relationship of the activity to direct or underlying cause	Underlying cause "technology factors", in the understanding that there is low technology transfer for sustainable development. Regarding the development of PPS based on the environmental supply of the territory.
Compliance with life plans or ethno-development plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.
Responsibility and role of the actors involved in implementation	Biotrade S.A.S - with responsibility for knowledge transfer, social technology and capacity building. MRV Coordinator, Project Managers per Community Council: leaders in implementation.
Implementation schedule	Formulation V2 (2023-2024) and Implementation V3 to V14 (2025-2048) * *Action reported in retroactivity period* see timeline

Indicators for reporting progress

Name	Indicator ID	Type	Goal	Unit of measure	Responsible for measurement
No. of document plan for capacity building in sustainable productive actions with emphasis on increasing socio-ecosystemic resilience.	**20Bf12**	Product	1 documents in the monitoring period V2	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.
No. Training events for strengthening PPS with emphasis on increasing socio-ecosystemic resilience.	**21Bf12**	Impact	1 training event, in each monitoring period	Number of events	

Activity ID	Bf13
REDD Activity	Capacity building in ecosystem restoration and conservation action
REDD Activity Description	The purpose of this activity is to improve the skills and knowledge necessary to establish in the communities the measures and practices aimed at revitalizing and preserving natural ecosystems, such as forests, swamps and other natural environments. Through continuous training processes, it is expected to have an impact, with theoretical and practical methodologies, that will generate a transformation in the relationship with forests and their resources, expanding the vision of sustainable use and generation of productive alternatives.
SDGs to be met	SDG 4: Quality education
Relationship of the activity to direct or underlying cause	Direct causes: Expansion of the agricultural frontier, timber extraction, mining and illicit crops. Underlying causes associated with political and institutional factors due to low governance within the territory and weak control and command institutions, and technology factors in the sense that there is little technology transfer for sustainable development and no local research on the territory's environmental supply.
Compliance with life plans or ethnodevelopment plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.
Responsibility and role of the actors involved in implementation	Biotrade S.A.S - with responsibility for knowledge transfer, social technology and capacity building. MRV Coordinator, Project Directors per Community Council: leaders in implementation.
Implementation schedule	V3 to V14 (2025-2048)

Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. Training events on ecosystem restoration and conservation	**22Bf13**	Impact	1 training event, in each monitoring period	Number of events	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.

Activity ID	Bf14				
REDD Activity	Capacity building in social infrastructure				
REDD Activity Description	The purpose of this activity is to improve the skills and knowledge necessary to promote self-construction processes to provide solutions to social infrastructure needs in biosustainable conditions, with functional, durable and stable designs that are in harmony with the landscape and culture of the black communities.				
SDGs to be met	SDG 4: Quality education				
Relationship of the activity to direct or underlying cause	Direct cause: Disorderly growth of social infrastructure due to predetermining factors such as the proximity of roads, proximity to population centers and biophysical characteristics of the territory such as fertile soils and precious minerals.				
Compliance with life plans or ethnodevelopment plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	Biotrade S.A.S - with responsibility for knowledge transfer, social technology and capacity building. MRV Coordinator, Project Directors per Community Council: leaders in implementation.				
Implementation schedule	V3 to V14 (2025-2048)				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. Training events on sustainable self-construction of social infrastructure	**23Bf14**	Impact	1 training event, in each monitoring period	Number of events	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.

Activity ID	Bf15
REDD Activity	Capacity building in governance and culture actions
REDD Activity Description	The purpose of this activity is to improve the skills and knowledge necessary to strengthen the exercise of self-government, including the promotion of knowledge in the regulation of collective territories, as well as policies and practices that promote transparency, citizen participation, accountability and the rule of law, contributing to fairer and more efficient decision making.
SDGs to be met	SDG 4: Quality education
Relationship of the activity to direct or underlying cause	Underlying cause associated with political and institutional factors due to low territorial governance, which leads to the manifestation of direct causes such as the expansion of the agricultural frontier, timber extraction, mining and illicit crops.
Compliance with life plans or ethno-development plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.
Responsibility and role of the actors involved in implementation	Biotrade S.A.S - with responsibility for knowledge transfer, social technology and capacity building. MRV Coordinator, Project Directors per Community Council: leaders in implementation.
Implementation schedule	V3 to V14 (2025-2048)

Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. Governance and culture training events	**24Bf15**	Impact	1 training event, in each monitoring period	Number of events	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.

Activity ID	Bf16				
REDD Activity	Capacity Building in Community Monitoring				
REDD Activity Description	This activity aims to improve the skills and knowledge necessary to promote active community participation in monitoring and tracking the health and condition of plant resources in their environment, such as forests, jungles or local green areas. Through this process, community members gather information on species diversity, soil quality, impact of deforestation or other threats, and conservation needs. This empowers the community to make informed decisions about the sustainable management of natural resources, contributes to the protection of biodiversity, and encourages greater shared responsibility for the preservation of local ecosystems.				
SDGs to be met	SDG 4: Quality education				
Relationship of the activity to direct or underlying cause	Direct causes: Expansion of the agricultural frontier, timber extraction, mining, and illicit crops. Underlying cause associated with political and institutional factors due to low territorial governance and weak environmental command and control institutions.				
Compliance with life plans or ethno-development plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	Biotrade S.A.S - with responsibility for knowledge transfer, social technology and capacity building. MRV Coordinator, Project Directors per Community Council: leaders in implementation.				
Implementation schedule	V3 to V14 (2025-2048)				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. of training events for Community Monitoring	**25Bf16**	Impact	1 training event, in each monitoring period	Number of events	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.

Activity ID	Bg17
REDD Activity	Formulation and implementation of the plan for undergraduate and postgraduate scholarships, courses or training programs.
REDD Activity Description	It corresponds to the development, design and implementation of a plan that guarantees professional or complementary training to basic high school education, as well as specialized technical training that can be accessed by adults with empirical skills and abilities, but who do not have a high school diploma. The scholarships will be allocated ensuring gender equity. The scholarship plan will have an operational implementation protocol that will be built for the first monitoring period. This document contemplates the construction of requirements to access the scholarships and characteristics that guarantee the conditions for development, such as support for the maintenance of the students.
SDGs to be met	SDG 4: Quality education
Relationship of the activity to direct or underlying cause	Underlying cause: technology factors, in the understanding that there is little technology transfer for sustainable development at both the social and productive levels. Demographic factors due to the migration process of people from the community due to the lack of opportunities within the territory.
Compliance with life plans or ethnodevelopment plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.
Implementation schedule	Formulation V2 (2023-2024) and Implementation V3 to V14 (2025-2048) see timeline

Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. of scholarship plan document	**26Bg17**	Product	1 document in the monitoring period V2	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.
No. of scholarships awarded gender equity	**27Bg17**	Result	10 grants in each monitoring period V3 - V14	Number of scholarships	

Activity ID	Bg18
REDD Activity	Formulation of a strategy for special quotas for women in the Scholarship Plan.
REDD Activity Description	It corresponds to the design and implementation of a strategy for the promotion and special allocation of quotas for the training process of women under equal conditions.
SDGs to be met	SDG 4: Quality education
Relationship of the activity to direct or underlying cause	Underlying cause: technology factors, in the understanding that there is little technology transfer for sustainable development at both the social and productive levels. Demographic factors due to the migration process of people from the community due to the lack of opportunities within the territory.
Compliance with life plans or ethno-development plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.
Implementation schedule	Formulation V2 (2023-2024) and Implementation V3 to V14 (2025-2048) see timeline

Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. of strategy documents for a women's scholarship scheme	**28Bg18**	Product	1 document in the monitoring period V2	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.

Activity ID	Ch19
REDD Activity	Home improvement
REDD Activity Description	Comprises a set of actions and projects aimed at renovating, repairing, or expanding the condition of a home for the purpose of increasing its quality, functionality, and comfort. These improvements may include structural repairs, infrastructure improvements such as plumbing or electrical, the incorporation of energy-efficient features, and the modernization of interior and exterior spaces. The goal is to provide a safer, healthier and more comfortable living environment for residents, while contributing to the preservation and value of the property.
SDGs to be met	SDG 1: End poverty SDG 11: Sustainable cities and communities
Relationship of the activity to direct or underlying cause	Direct causes: infrastructure, use of wood for housing construction. Underlying cause: technology factors due to low technology development and transfer.
Compliance with life plans or ethno-development plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.
Implementation schedule	V3 Planning (2025-2026) and V4 to V8 Implementation (2027-2036) *see timeline*

Indicators for reporting progress

Name	Indicator ID	Type	Goal	Unit of measure	Responsible for measurement
Document Housing improvement plan with statistical information on the proportion of the population benefited.	**29Ch19**	Product	1 documents in the monitoring period V3	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.
% of homes with improvements	**30Ch19**	Result	100% housing prioritized in the V8 plan	Percentage of homes requiring improvements	

Activity ID	Ch20
REDD Activity	Improvement of educational infrastructure
REDD Activity Description	It comprises the planning and execution of projects aimed at updating, expanding or renovating the physical facilities of educational institutions, such as schools and universities. It will include the construction of classrooms, laboratories, libraries, sports areas, as well as improvements in accessibility, safety, energy efficiency and technology. The objective is to provide a more adequate and functional learning environment that promotes quality education and creates conditions conducive to the academic and personal development of students and the performance of teachers.
SDGs to be met	SDG 4: Quality education
Relationship of the activity to direct or underlying cause	Direct causes: infrastructure, use of wood for construction of educational infrastructure. Underlying cause: technology factors due to low development and technology transfer. Demographic factors due to the migration process of people from the community due to the lack of opportunities within the territory.
Compliance with life plans or ethnodevelopment plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.
Implementation schedule	Medium term: V3 Planning (2025-2026) and V4 Implementation (2027-2028) Long term: V9 Planning (2037-2038) and V10 Implementation (2040-2041) *see timeline*

Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. of document educational infrastructure improvement plan	**31Ch20**	Product	1 document during the monitoring period V3 and V9	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.
% implementation of educational infrastructure improvement	**32Ch20**	Result	100% improvement of educational infrastructure as defined in the V4 and V10 plans	Percentage of educational infrastructure improvement	

Activity ID	Ch21				
REDD Activity	Basic sanitation infrastructure				
REDD Activity Description	Comprises the construction and maintenance of systems and facilities that ensure access to essential drinking water, wastewater treatment, and adequate solid waste management services in the community. This infrastructure includes the creation of safe water supply networks, wastewater treatment plants, solid waste disposal facilities, sewerage and sanitation systems, as well as measures to promote hygienic practices and environmental protection. The main purpose of this infrastructure is to preserve public health, improve the quality of life and prevent diseases related to lack of access to basic sanitation services.				
SDGs to be met	SDG 1: End poverty SDG 6: Water and basic sanitation SDG 11: Sustainable cities and communities SDG 12: Responsible production and consumption				
Relationship of the activity to direct or underlying cause	Underlying causes political or institutional factors, no resources are allocated for these purposes, solutions are created that are not biologically friendly, and technology factors due to the low transfer of technologies for sustainable development.				
Compliance with life plans or ethnodevelopment plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	MRV coordinator and project managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.				
Implementation schedule	V3 Planning (2024-2025) and V4 to V8 Implementation (2027-2036) *see timeline*				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
Document Basic sanitation infrastructure plan with statistical information on the proportion of the population benefited.	**33Ch21**	Product	1 document in the monitoring period V3	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.
of basic sanitation infrastructure	**34Ch21**	Result	100% basic sanitation infrastructure defined in the V8 plan	Percentage of basic sanitation infrastructure	

Activity ID	Ch22				
REDD Activity	Health infrastructure				
REDD Activity Description	It is a set of facilities, services, and resources necessary for the efficient and effective functioning of health care systems and health promotion. This infrastructure encompasses a wide range of components ranging from physical facilities to information technology and human resources.				
SDGs to be met	SDG 3: Health and well-being				
Relationship of the activity to direct or underlying cause	Underlying causes political or institutional factors, since resources are not allocated for these purposes, solutions are created that are not biologically friendly, and technology factors due to the low transfer of technologies for sustainable development.				
Compliance with life plans or ethnodevelopment plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.				
Implementation schedule	Medium term: V5 Planning (2029-2030) and V6 Implementation (2031-2032) Long term: V11 Planning (2041-2042) and V12 Implementation (2043-2044) *see timeline*				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. of document health infrastructure plan	**35Ch22**	Product	1 document in the monitoring period V5 and V11	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.
% of health infrastructure	**36Ch22**	Result	100% of infrastructure defined in the V6 - V12 plan	Percentage of health infrastructure	

Activity ID	Ch23				
REDD Activity	Communications infrastructure				
REDD Activity Description	The development of communications infrastructure comprises the networks and technologies that facilitate the transmission and reception of information and data, enabling connectivity and communication in a wide range of forms. This includes telecommunications networks, such as fixed and mobile telephone networks, internet infrastructure, television, and radio networks, as well as fiber optic cables and transmission towers. Communications infrastructure is fundamental to global interconnection, access to information, communication between people and organizations, and the operation of information and entertainment systems, playing an essential role for the community.				
SDGs to be met	SDG 9: Industry, innovation, and infrastructure				
Relationship of the activity to direct or underlying cause	Underlying causes political or institutional factors, since resources are not allocated for these purposes, solutions are created that are not biologically friendly, and technology factors due to the low transfer of technologies for sustainable development.				
Compliance with life plans or ethnodevelopment plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.				
Implementation schedule	Medium term: V3 Planning (2025-2026) and V4 Implementation (2027-2028) Long term: V9 Planning (2037-2038) and V10 Implementation (2040-2041) *see timeline*				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. of document Communications infrastructure plan	**37Ch23**	Product	1 document during the monitoring period V3 and V9	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.
% implementation of communications infrastructure	**38Ch23**	Result	100% communications infrastructure defined in the plan	Percentage of communications infrastructure	

Activity ID	Ch24				
REDD Activity	Infrastructure for sustainable productive alternatives with emphasis on adaptation to climate change				
REDD Activity Description	This activity includes the creation and development of facilities, resources and technologies designed to support economic activities and projects that are environmentally friendly and socially responsible. This includes the infrastructure needed to promote sustainable agriculture, renewable energy, green production, sustainable natural resource management and other initiatives that seek a balance between income generation and environmental preservation. This infrastructure can range from solar farms and organic farms to efficient irrigation systems and sustainable product processing centers, encouraging the adoption of economic practices that are beneficial to both communities and the environment.				
SDGs to be met	SDG 9: Industry, innovation and infrastructure				
Relationship of the activity to direct or underlying cause	Underlying causes political or institutional factors, since resources are not allocated for these purposes, solutions are created that are not biologically friendly, and technology factors due to the low transfer of technologies for sustainable development.				
Compliance with life plans or ethnodevelopment plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.				
Implementation schedule	V3 Planning (2025-2026) and V4 Implementation (2027-2028) V7 Planning (2033-2034) and V8 Implementation (2035-2036) V11 Planning (2041-2042) and V12 Implementation (2043-2044) see timeline				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. of documents infrastructure plan for sustainable productive alternatives with emphasis on climate change adaptation	**39Ch24**	Product	1 document in the monitoring period V3, V7 and V11	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator. Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.
% of infrastructure implementation for sustainable productive alternatives with emphasis on climate change adaptation	**40Ch24**	Result	100% of PPS infrastructure defined in the plan	Percentage of PPS infrastructure	

Activity ID	Ch25				
REDD Activity	Adequacy of waterways				
REDD Activity Description	Waterway improvement refers to the planning and implementation of improvements to rivers, canals, and other waterways for the purpose of making them more navigable, safe, and efficient for water transportation. This may involve the removal of natural or man-made obstacles, such as rocks, sandbars, or debris, to allow for smoother and more accessible flow. It may also include the construction of locks, dams, harbors and other infrastructure to regulate water levels and facilitate navigation. The adequacy of waterways is important for the transport of goods and people, as well as for the conservation of the aquatic environment, by minimizing the environmental impact of navigation and promoting efficiency in the movement of cargo.				
SDGs to be met	SDG 9: Industry, innovation and infrastructure				
Relationship of the activity to direct or underlying cause	Direct causes: Timber extraction (palisades), mining and illicit use crops (river contamination). Underlying causes: political or institutional factors, since resources are not allocated for these purposes, solutions are created that are not biologically friendly, and technology factors due to obsolete techniques for timber extraction.				
Compliance with life plans or ethno-development plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.				
Implementation schedule	V2 (2023-2024) to V14 (2047-2048)				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. reports of river unclogging and adequacy of waterways with statistics on cargo and passenger transport	**41Ch25**	Product	1 document in each monitoring period V2 to V14	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.

Activity ID	Ch26
REDD Activity	Construction and maintenance of bridges and roads
REDD Activity Description	Bridge and road construction and maintenance refers to the planning, design, construction and care of road infrastructure including bridges, highways and roads. This activity involves the creation of elevated walkways to cross natural obstacles such as rivers, valleys or steep terrain, as well as the construction of land transit routes that connect distant locations. In addition, the maintenance of these structures and roads includes repairs, improvements and road safety management to ensure their proper functioning and the safety of users. The construction and maintenance of bridges and roads are essential for access to remote areas, the transportation of goods and people, as well as for economic development and regional connectivity.
SDGs to be met	SDG 9: Industry, innovation, and infrastructure
Relationship of the activity to direct or underlying cause	Underlying cause associated with macro and microeconomic factors to increase local trade and value chains.
Compliance with life plans or ethno-development plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.
Implementation schedule	Planning V2 (2023-2024) and Implementation V3 to V8 (2025-2036) * Action reported in retroactivity period see timeline

Indicators for reporting progress

Name	Indicator ID	Type	Goal	Unit of measure	Responsible for measurement
No. of plan document for construction and maintenance of bridges and roads with methodology for measuring the volume of cargo and passenger transportation.	**42Ch26**	Product	1 document in the monitoring period V2	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.
No. of construction and maintenance reports for bridges and roads	**43Ch26**	Product	1 document in each monitoring period V1 to V14	Number of documents	

Activity ID	Ch27
REDD Activity	Construction of recreational scenarios (such as parks, etc.)
REDD Activity Description	The construction of recreational settings, such as parks and recreation areas, involves the planning and construction of spaces designed specifically for entertainment, relaxation, and outdoor activities. These settings often include green areas, playgrounds, sports facilities, trails, and landscaping elements that create an attractive and welcoming environment for the community. In addition to providing opportunities for recreation and fun, these venues encourage social interaction, promote an active lifestyle, and contribute to the overall well-being of the community.
SDGs to be met	SDG 11: Sustainable cities and communities
Relationship of the activity to direct or underlying cause	Underlying cause associated with cultural factors for the appropriation of these spaces by young people in the community that generates a sense of belonging to the territory.
Compliance with life plans or ethno-development plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.
Implementation schedule	Planning V4 (2027-2028) and Implementation V5-V6 (2029-2032) *see timeline*

Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. of plan document for the construction of recreational scenarios with statistical information on the proportion of the population benefited.	**44Ch27**	Product	1 document in the monitoring period V4	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.
% construction of recreational scenarios	**45Ch27**	Result	100% infrastructure defined in the plan	Percentage of sports venues	

Activity ID	Ch28
REDD Activity	Alternative energy infrastructure
REDD Activity Description	Supply of equipment as renewable or alternative energy sources that seek to be more sustainable and have a lower environmental impact compared to conventional energy sources. This activity is related to the implementation of infrastructure for sustainable productive projects, considering that in order to guarantee added value to the products, equipment that requires electricity consumption is required.
SDGs to be met	SDG 7: Affordable and clean energy
Relationship of the activity to direct or underlying cause	Underlying causes associated with macro and microeconomic factors to create value chains, political or institutional factors because resources are not allocated for these purposes, solutions are created that are not biologically friendly, and technology factors due to the low transfer of technologies for sustainable development.
Compliance with life plans or ethno-development plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.
Implementation schedule	V3 Planning (2025-2026) and V4 Implementation (2027-2028) V7 Planning (2033-2034) and V8 Implementation (2035-2036) V11 Planning (2041-2042) and V12 Implementation (2043-2044) see timeline

Indicators for reporting progress

Name	Indicator ID	Type	Goal	Unit of measure	Responsible for measurement
No. of alternative energy infrastructure plan document (associated to the PPSs)	**46Ch28**	Product	1 document in the monitoring period V3, V7 and V11	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.
% implementation of alternative energy infrastructure (associated with PPS)	**47Ch28**	Result	100% of PPS infrastructure defined in the plan	Percentage of PPS infrastructure	General Director REDD+ Project Director and Coordinator of Jiguamiando Director and Coordinator of the Grande Director and Coordinator of Turriquitado

Activity ID	Ci29				
REDD Activity	Diagnosis of the environmental and social supply for the implementation of PPSs				
REDD Activity Description	This corresponds to the evaluation of factors such as air quality, land use, availability of natural resources, biodiversity, social and economic conditions of the local population, as well as existing infrastructure. The purpose is to identify challenges and opportunities that enable the development of projects that are economically viable, environmentally friendly, socially inclusive and promote responsible business practices. This diagnosis is essential to ensure that sustainable productive projects are beneficial to the economy, the environment and local communities.				
SDGs to be met	SDG 9: Industry and infrastructure innovation				
Relationship of the activity to direct or underlying cause	Underlying causes associated with technological factors due to the low development and transfer of technologies, which results in a lack of local research on the environmental supply of the territory, and cultural factors due to the loss of cultural and spiritual values regarding ecosystems, which leads to the adoption of unsustainable production practices.				
Compliance with life plans or ethnodevelopment plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.				
Implementation schedule	Planning V2 (2023-2024) see timeline				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. of document Diagnosis of the environmental and social supply for the implementation of PPSs	**48Ci29**	Product	1 documents in the monitoring period V2	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.
No. of contracts for professionals and technicians for the elaboration of the PPS diagnostic.	**49Ci29**	Result	3 hires in the monitoring period V2	Number of new hires	

Activity ID	Ci30				
REDD Activity	Technical and accounting formulation of the PPS to be executed.				
REDD Activity Description	The technical and accounting formulation of Sustainable Productive Projects ensures detailed planning of activities and financial management, guaranteeing that the projects are economically viable and environmentally responsible. This activity is linked to the capacity building process for project formulation.				
SDGs to be met	SDG 9: Industry and infrastructure innovation				
Relationship of the activity to direct or underlying cause	Direct causes: Expansion of the agricultural frontier, timber extraction, mining and illicit use crops due to the lack of opportunities and sustainable alternatives leading to the manifestation of these causes. Underlying cause: Technology factors due to low development and technology transfer for sustainable agricultural and livestock development and low transformation development .				
Compliance with life plans or ethnodevelopment plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.				
Implementation schedule	V2 (2023-2024); V4 (2027-2028); V6 (2031-2032); V8 (20335-2036); V10 (2039-2040); V12 (2043-2044); and V14 (2047-2048).				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. of document Consolidated report of formulated projects	**50Ci30**	Product	1 document in monitoring periods V2, V4, V6, V8, V10, V12 and V14	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.

Activity ID	Ci31
REDD Activity	Implementation of PPS with emphasis on climate change adaptation.
REDD Activity Description	The Sustainable Productive Projects (PPS) designed in the implementation of the REDD project, have an emphasis on increasing socio-ecosystemic resilience, with the understanding that the capacity to respond to situations of change is due to the variety of productive alternatives, as well as the welfare and health of ecosystems and their communities. This action, which in itself is a central component of the REDD project, is linked to the implementation of various planning processes of the government's own instruments such as the Ethno-development Plan and the Environmental Management Plan, as well as the execution of operational instruments such as the PPS capacity building program and infrastructure plans. The project seeks to reduce poverty conditions by improving job opportunities and income generation for families, while minimizing negative impacts on the environment.
SDGs to be met	SDG 1: End poverty SDG 8: Decent work and economic growth SDG 15: Life of Terrestrial Ecosystems
Relationship of the activity to direct or underlying cause	Direct causes: Expansion of the agricultural frontier, timber extraction, mining and illicit use crops due to the lack of opportunities and sustainable alternatives leading to the manifestation of these causes. Underlying cause: Technology factors due to low development and technology transfer for sustainable agricultural development and low transformation development.
Compliance with life plans or ethnodevelopment plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.
Implementation schedule	Early implementation and harmonization with the PPSs in force in the communities V2 - V3 (2023-2026) Implementation of the PPS actions defined in the planning instruments V4 - V14 (2027-2048) see schedule

Indicators for reporting progress

Name	Indicator ID	Type	Goal	Unit of measure	Responsible for measurement
No. of document PPS implementation report	**51Ci31**	Product	1 document in each monitoring period	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.
Percentage increase in the number of families that improve their income	**52Ci31**	Result	50% families in the medium term, as reported in V8 100% families in the long term, as reported in V14	Percentage (families defined in the diagnostic baseline)	
Percentage decrease in unemployment rate	**53Ci31**	Result	50% in the medium term, as reported in V8 100% in the long term, as reported in V14	Percentage (unemployment rate defined in the diagnostic baseline)	
No. of hectares converted to sustainable productive projects	**54Ci31**	Result	1,009 Hectares transformed to the monitoring period. 50% V8 100% V14	Hectares	

Activity ID	Ci32				
REDD Activity	Strengthening for the commercialization of PPS products, and development of an own brand.				
REDD Activity Description	Constitutes strategies and actions aimed at improving the way products are promoted, distributed and sold in the marketplace, while building a distinctive brand identity. This includes the identification of target markets, optimization of distribution channels, marketing strategies, product promotion, as well as the design and promotion of a unique and recognizable brand. The goal is to increase product visibility, attract consumers, build brand loyalty and ultimately improve competitiveness and success in the marketplace.				
SDGs to be met	SDG 9: Industry and infrastructure innovation				
Relationship of the activity to direct or underlying cause	Direct causes: Expansion of the agricultural frontier, timber extraction, mining and illicit use crops due to the lack of opportunities and sustainable alternatives leading to the manifestation of these causes. Underlying causes: Technology factors due to the low development and transfer of technologies for sustainable agricultural development and low development in transformation and macro and microeconomic factors due to local trade and non-existent sustainable product value chains.				
Compliance with life plans or ethno-development plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.				
Implementation schedule	V3 Planning (2025-2026) and V4 Implementation (2027-2028) V7 Planning (2033-2034) and V8 Implementation (2035-2036) V11 Planning (2041-2042) and V12 Implementation (2043-2044) see timeline				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
Percentage increase in sales of products from sustainable productive projects	**55Ci32**	Result	5% increase in each monitoring period from V3 to V14	Percentage	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.

Activity ID	Ci33				
REDD Activity	Strengthening women's and men's productive associations				
REDD Activity Description	A set of actions and strategies designed to improve the capacity, sustainability and effectiveness of organizations or groups made up of women and men working together in productive activities. These associations may take various forms, such as cooperatives, producer groups, or any type of organization whose main objective is to develop economic activities.				
SDGs to be met	SDG 9: Industry and infrastructure innovation				
Relationship of the activity to direct or underlying cause	Direct causes: Expansion of the agricultural frontier, timber extraction, mining, and illicit use crops due to the lack of opportunities and sustainable alternatives leading to the manifestation of these. Underlying cause: Technology factors due to low development and technology transfer for sustainable agricultural development.				
Compliance with life plans or ethnodevelopment plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.				
Implementation schedule	V3 (2025-2026) to V14 (2047 - 2048) * Action reported in retroactivity period see timeline				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. of associations benefited	**56Ci33**	Result	5 associations benefited	Number of associations	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.
No. of document Report on improvement of administrative and management capacity	**57Ci33**	Product	1 document in each monitoring period	Number of documents	

Activity ID	Dj34				
REDD Activity	Diagnosis of the state of ecosystems, ecosystem services and vulnerability to the effects of climate change.				
REDD Activity Description	Diagnosing the state of ecosystems and ecosystem services involves a comprehensive assessment of the health and functioning of natural ecosystems, as well as the benefits they provide to society. This includes the study of factors such as air and water quality, biodiversity, soil productivity and climate regulation, in order to understand how ecosystems influence people's quality of life. This diagnosis is fundamental for making informed decisions in the sustainable management of natural resources and environmental protection, ensuring that the essential services provided by nature are maintained over time.				
SDGs to be met	SDG 15: Terrestrial Life and Ecosystems				
Relationship of the activity to direct or underlying cause	Underlying causes associated with technological factors due to the low development and transfer of technologies, which results in a lack of local research on the environmental supply of the territory, and cultural factors due to the loss of cultural and spiritual values regarding ecosystems, which leads to the adoption of unsustainable production practices.				
Compliance with life plans or ethnodevelopment plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.				
Implementation schedule	Planning V3 (2025-2026) * Action reported in the retroactivity period see schedule				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. of document Diagnosis of the state of ecosystems, ecosystem services and vulnerability to the effects of climate change.	**58Dj34**	Product	1 document in the monitoring period V3	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.
No. of contracts for professionals and technicians for the elaboration of the ecosystem diagnosis.	**59Dj34**	Result	3 hires in the monitoring period V3	Number of new hires	

Activity ID	Dj35
REDD Activity	Design and implementation of the ecosystem protection and restoration strategy.
REDD Activity Description	The design and implementation of the ecosystem protection and restoration strategy refers to the planning and action process aimed at preserving and revitalizing natural environments that have suffered degradation or damage. This involves the identification of vulnerable areas, the definition of conservation, restoration and sustainable management measures, as well as the implementation of concrete actions to mitigate environmental threats, such as deforestation, pollution or soil erosion. This activity links the strategic actions for the peaceful resolution of conflicts associated with the effects of private land in the Jiguamiando Community Council.
SDGs to be met	SDG 15: Life of Terrestrial Ecosystems
Relationship of the activity to direct or underlying cause	Direct causes: Expansion of the agricultural frontier, timber extraction, mining and illicit crops. Underlying causes associated with political and institutional factors due to low governance within the territory and weak control and command institutions, and technology factors in the sense that there is little technology transfer for sustainable development and no local research on the territory's environmental supply.
Compliance with life plans or ethnodevelopment plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.
Implementation schedule	Formulation V3 (2025-2026) Implementation V4 - V14 (2027-2048) see timeline

Indicators for reporting progress

Name	Indicator ID	Type	Goal	Unit of measure	Responsible for measurement
No. of document Ecosystem protection and restoration strategy	**60Dj35**	Product	1 document in the monitoring period V3	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.
No. of hectares under restoration for land reclamation due to the effect of private land titles.	**61Dj35**	Result	1,500 hectares of land reclamation in restoration process, reported at the monitoring period 50% V8 100% V14	Hectares	
No. Agreements with private properties for the cleanup and restoration of collective territory	**62Dj35**	Product	Thirty-one (31) agreements in the period V4	Number of agreements	

Activity ID	Dj36
REDD Activity	Strengthening the conservation and monitoring of the manatee (*Trichechus manatus*) and the loggerhead sea turtle (*Trachemys callirostris*)
REDD Activity Description	Conservation and manatee (*Trichechus manatus*) and loggerhead turtle (*Trachemys callirostris*) is the implementation of measures and actions aimed at improving the protection and monitoring of these species in their natural habitats. Both the manatee and the turtles are marine animals that face various threats, such as habitat loss, water pollution, incidental fishing, climate change and poaching.
SDGs to be met	SDG 15: Life of Terrestrial Ecosystems
Relationship of activity to direct or underlying cause	Direct causes: Expansion of the agricultural and livestock frontier, timber extraction, mining and illicit use crops. Underlying causes associated with political and institutional factors due to low governance within the territory and weak command and control institutions, and technological factors due to the lack of local research on the territory's environmental supply.
Compliance with life plans or ethno-development plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.
Implementation schedule	Formulation V2-V3 (2023-2026) and Implementation V4 to V14 (2027-2048) *Action reported in retroactivity period *see timeline*

Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. of documents of the Strategy for Strengthening the conservation and monitoring of the manatee (*Trichechus manatus*) and the loggerhead sea turtle (*Trachemys callirostris*).	**63Dj36**	Product	2 documents in the monitoring period V3	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.
No. Reports with measures and actions aimed at improving the protection and monitoring of the manatee (*Trichechus manatus*) and the slender-horned turtle (*Trachemys callirostris*)	**64Dj36**	Product	1 document in each monitoring period	Number of documents	

Activity ID	Dj37				
REDD Activity	Design and implementation of a community monitoring program for the conservation and enhancement of ecosystem resilience.				
REDD Activity Description	The design and implementation of a community conservation monitoring program involves the creation of a systematic plan in which members of a community actively participate in monitoring and tracking the health and management of their natural environment. This program includes the collection of data on biodiversity, water quality, ecosystem status, among others, and allows the community to report on potential problems and significant changes in their environment. The main objective is to empower the community to make informed decisions on the conservation and sustainable management of their environment, while promoting citizen participation and the protection of nature. This type of program contributes to the preservation of ecosystems and the promotion of more effective and sustainable conservation practices.				
SDGs to be met	SDG 15: Terrestrial Life and Ecosystems				
Relationship of the activity to direct or underlying cause	Direct causes: Expansion of the agricultural frontier, timber extraction, mining and illicit use crops. Underlying cause associated with political and institutional factors due to low territorial governance and weak institutions of environmental command and control, demographic factors affect due to the migration of young people which leads to low governance within the territories, by integrating the knowledge and participation of all those involved could ensure that the REDD Project activities are maintained.				
Compliance with life plans or ethno-development plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.				
Implementation schedule	Formulation V2-V3 (2023-2026) and Implementation V4 to V14 (2027-2048) *see timeline*				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. of documents Community Monitoring Program	**65Dj37**	Product	1 documents in the monitoring period V3	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.
No. Community monitoring reports	**66Dj37**	Product	1 document in each monitoring period	Number of documents	

Activity ID	Dk38
REDD Activity	Oversight and control of the implementation of REDD actions
REDD Activity Description	They refer to the active monitoring and oversight of REDD-related activities and projects. Oversight bodies, which are usually exercised by civil organizations, local communities or other stakeholders, aim to ensure that actions aimed at reducing greenhouse gas emissions from deforestation and forest degradation are carried out in a transparent and ethical manner and in accordance with established commitments and regulations. This involves reviewing reports, evaluating results, identifying and denouncing possible irregularities, and promoting accountability. Oversight and monitoring are essential to guarantee the effectiveness and integrity of REDD projects and to ensure that their climate change mitigation and forest conservation objectives are achieved.
SDGs to be met	SDG 13: Climate Action
Relationship of the activity to direct or underlying cause	Direct causes: Expansion of the agricultural frontier, timber extraction, mining, and illicit crops. Underlying cause associated with political and institutional factors due to low territorial governance and weak environmental command and control institutions.
Compliance with life plans or ethno-development plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.
Implementation schedule	Formulation V2 to V14 (2023-2048) *see chronogram*

Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. reports on oversight and control	**67Dk38**	Product	1 document in each of the monitoring periods	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.

Activity ID	DI39				
REDD Activity	PQRDS System				
REDD Activity Description	It is a management tool used by organizations and entities to receive, document, track and respond effectively to community needs and concerns. These acronyms cover a wide range of interactions, from requests for information and praise to expressions of dissatisfaction and demands for solutions to problems, enabling the project to improve the quality of its products and comply with quality standards and regulations.				
SDGs to be met	SDG 16: Peace, justice and strong institutions				
Relationship of the activity to direct or underlying cause	Underlying cause: Demographic factors impact due to youth migration leading to low governance within the territories and the incidence of direct causes such as the expansion of the agricultural frontier, mining and illicit use crops due to low control in the territory. By integrating the knowledge and participation of all stakeholders, it could be ensured that REDD Project activities are maintained.				
Compliance with life plans or ethno-development plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Managers per Community Council: implementation leaders. Biotrade S.A.S: technical advisor and developer.				
Implementation schedule	Formulation V2 to V14 (2023-2048) *see chronogram*				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. of PQRDS resolution reports	**68DI39**	Product	1 document in each of the monitoring periods	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.

Activity ID	Dm40				
REDD Activity	Definition of strategies for monitoring and evaluation of environmental and social safeguards.				
REDD Activity Description	Environmental and social safeguards are policies, procedures and practices designed to identify, prevent, mitigate and manage the potential adverse impacts that a project may have on the environment and local communities.				
SDGs to be met	SDG 15: Terrestrial Life and Ecosystems				
Relationship of the activity to direct or underlying cause	Underlying cause: Demographic factors impact due to youth migration leading to low governance within the territories and the incidence of direct causes such as the expansion of the agricultural frontier, mining and illicit use crops due to low control in the territory. By integrating the knowledge and participation of all stakeholders, it could be ensured that REDD Project activities are maintained.				
Compliance with life plans or ethnodevelopment plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.				
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.				
Responsibility and role of the actors involved in implementation	Biotrade S.A.S: responsible for formulation and technical developer MRV Coordinator and Project Managers per Community Council: responsible for implementation				
Implementation schedule	Formulation V2 (2023-2024) and Implementation V3 to V14 (2025-2048) see timeline				
Indicators for reporting progress					
Name	**Indicator ID**	**Type**	**Goal**	**Unit of measure**	**Responsible for measurement**
No. of strategy documents for monitoring and evaluation of environmental and social safeguards	**69Dm40**	Product	1 document in the monitoring period V2	Number of documents	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.
No. Monitoring and evaluation of environmental and social safeguards reports	**70Dm40**	Product	1 document in each monitoring period	Number of documents	

Activity ID	Dn41
REDD Activity	Risk management plan according to SbN
REDD Activity Description	This plan seeks to maximize the resilience of communities and ecosystems to adverse events such as floods, droughts, landslides and other natural disasters. They include the identification of key areas for ecosystem restoration, the promotion of sustainable agricultural practices, the conservation of wetlands and forests, and the implementation of green infrastructure. BNS-based Risk Management Plans contribute to more sustainable and effective management of natural hazards while preserving biodiversity and promoting adaptation to climate change.
SDGs to be met	SDG 1: End poverty SDG 11: Sustainable cities and communities SDG 13: Climate Action
Relationship of the activity to direct or underlying cause	Direct causes: Expansion of the agricultural frontier, timber extraction, mining and illicit crops. Underlying cause associated with macro and microeconomic factors due to the marketing structures of licit and illicit monocultures (banana, cassava, and coca).
Compliance with life plans or ethnodevelopment plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.
Responsibility and role of the actors involved in implementation	MRV Coordinator and Project Directors per Community Council: implementation leaders *Biotrade S.A.S.: technical advisor and developer Biotrade S.A.S: technical advisor and developer *Ministry of Environment and Sustainable Development and competent entities: Institutions with responsibility for technical and financial support in the Ethnodevelopment Plan.
Implementation schedule	V3 (2025-2026) *see timeline*

Indicators for reporting progress

Name	Indicator ID	Type	Goal	Unit of measure	Responsible for measurement
No of community councils implementing a Risk Management Plan according to Nature-based Solutions (NBS)	**71Dn41**	Impact	3 community councils with a Risk Management Plan according to SbN V3	Number of Community Councils	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.

Activity ID	Dn42
REDD Activity	Integral strategy for adaptation to climate change.
REDD Activity Description	This activity is focused on the construction of the Comprehensive Strategy for Adaptation to Climate Change, based on the conditions of local inhabitants, which involves agricultural production, as well as the objectives and potential lines of investment, the sustainable use of biodiversity, sustainable production, green businesses, and national policies, such as Payments for Environmental Services (PES). The strategy is based on strengthening the resilience of the socio-ecosystemic system (SES) to the effects of climate change, considering that resilience is based on the well-being of the ecosystem and human beings.
SDGs to be met	SDG 13: Climate Action
Relationship of the activity to direct or underlying cause	Direct causes: Expansion of the agricultural frontier, timber extraction, mining and illicit crops. Underlying causes associated with macro and microeconomic factors due to the marketing structures of licit and illicit monocultures (banana, cassava and coca) and technology factors due to the low development and transfer of technology for sustainable development.
Compliance with life plans or ethno-development plans	Compliance through articulation in the process of formulating the Ethnodevelopment Plan.
Consultation mechanism for defining REDD+ activity	Free, prior and informed consent through previous meetings and socialization. Approval in General Assembly, by Community Council.
Responsibility and role of the actors involved in implementation	Biotrade S.A.S: responsible for formulation and technical developer MRV Coordinator and Project Managers per Community Council: responsible for implementation
Implementation schedule	Formulation V2 (2023-2024) and Implementation V3 to V14 (2025-2048) see timeline

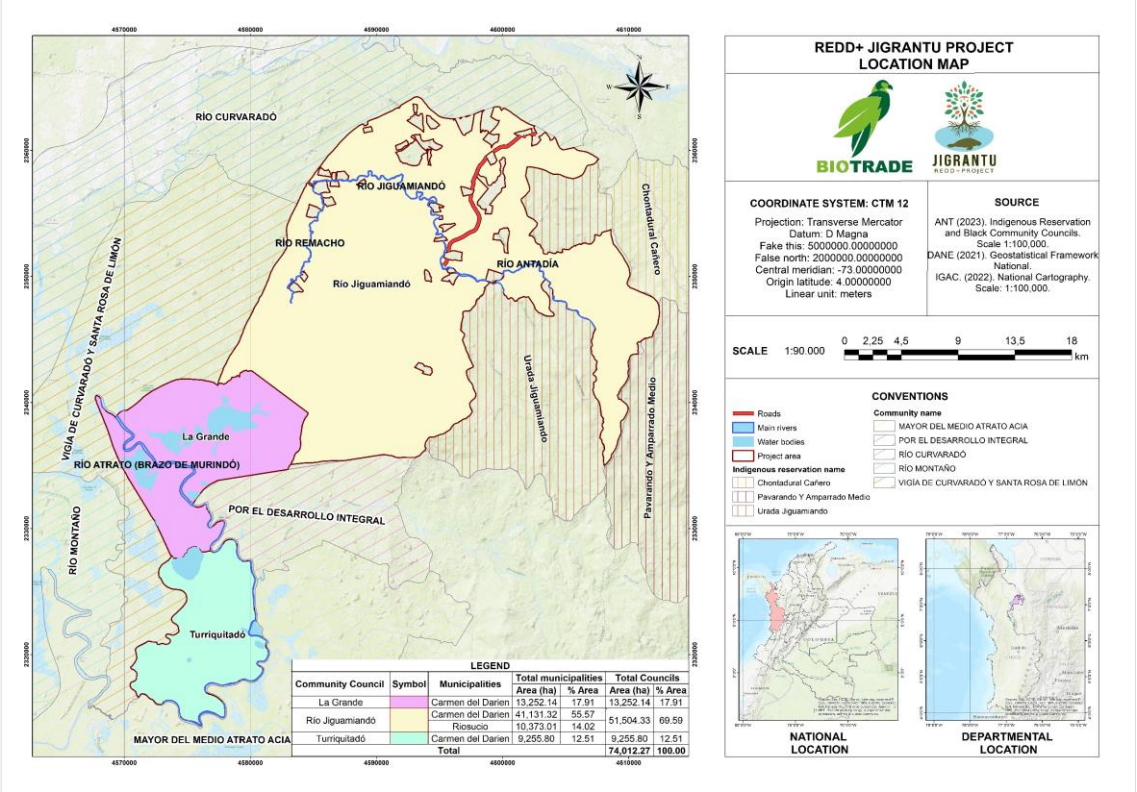
Indicators for reporting progress

Name	Indicator ID	Type	Goal	Unit of measure	Responsible for measurement
No. of Community Councils that have a comprehensive climate change adaptation strategy.	**72D41**	Impact	3 Community Councils that have a comprehensive strategy for adaptation to Climate Change V2	Number of Community Councils	Monitoring, Reporting and Verification (MRV) Coordinator; Project Director of Jiguamiando; Project Director of La Grande; Project Director of Turriquitado and Biotrade S.A.S development team.
No. Reports on the implementation of a comprehensive strategy for adaptation to climate change	**73D42**	Product	1 document in each monitoring period	Number of documents	

2.4 Project location

The project is in the Colombian Pacific region in the Northeast of the department of Choco in the Community Councils of La Grande, Rio Jiguamiando and Turriquitado, with an area of 74.012 hectares in the municipalities of Carmen del Darien (86%) and Riosucio (14%). It limits to the north with the Community Council of Rio de Curvarado, to the west with the Community Council of Vigia de Curvarado and Santa Rosa de Limon, to the southeast with the Community Councils of Mayor del Medio Atrato Acia and Por el Desarrollo Integral and to the east it limits with the indigenous reservations of Urada Jiguamiando, Pavarando and Amparrado Medio and Chontadural Cañero. Figure 2 details the location of the project with the occupation of the Community Councils.

Figure 2. Location map of the REDD+ JIGRANTU Project.



Prepared by Biotrade S.A.S (2023)

2.5 Additional information about the GHG Project

2.5.1 Biophysical characteristics

2.5.1.1 Atmosphere

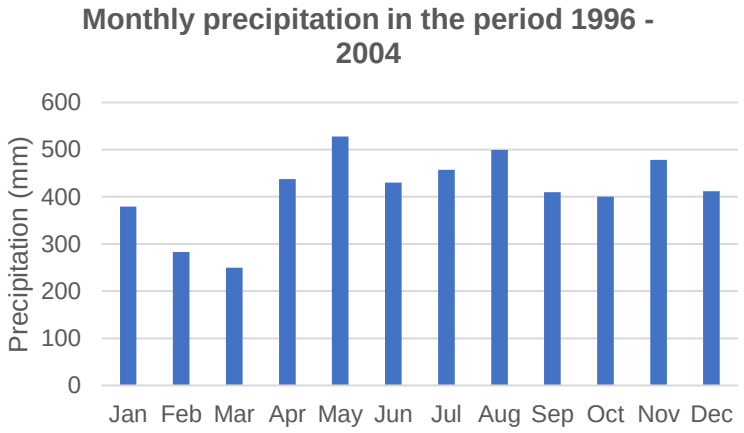
2.5.1.1.1 Precipitation

In the municipal territory of Carmen del Darien there is rainfall of 2000 to 4000 millimeters per year[6]. In the municipality of Riosucio, an average annual precipitation value of 3278 mm[7] is reported. According to the Environmental Compensation Fund (2009)[8], in the lower and middle Atrato region where these municipalities are located, there is a bimodal distribution with two rainy seasons, in the months of April to June and from September to November. The lowest precipitation values are shown in the months of January to March, with an average of 83 mm in the lower basin.

Figure 3 shows an average of the monthly precipitation of two stations located in the department of Choco that cover the project area, La Honda (Riosucio) and Bellavista (Bojaya), from here an average annual precipitation of 4965 mm is obtained. with a variation of 250 to 528 mm per month. The lowest values of precipitation in the period are found in the months of February and March with values of 283 mm and 250 mm respectively.

Figure 3. Average monthly precipitation at La Honda and Bellavista stations for the period 1996 - 2004.

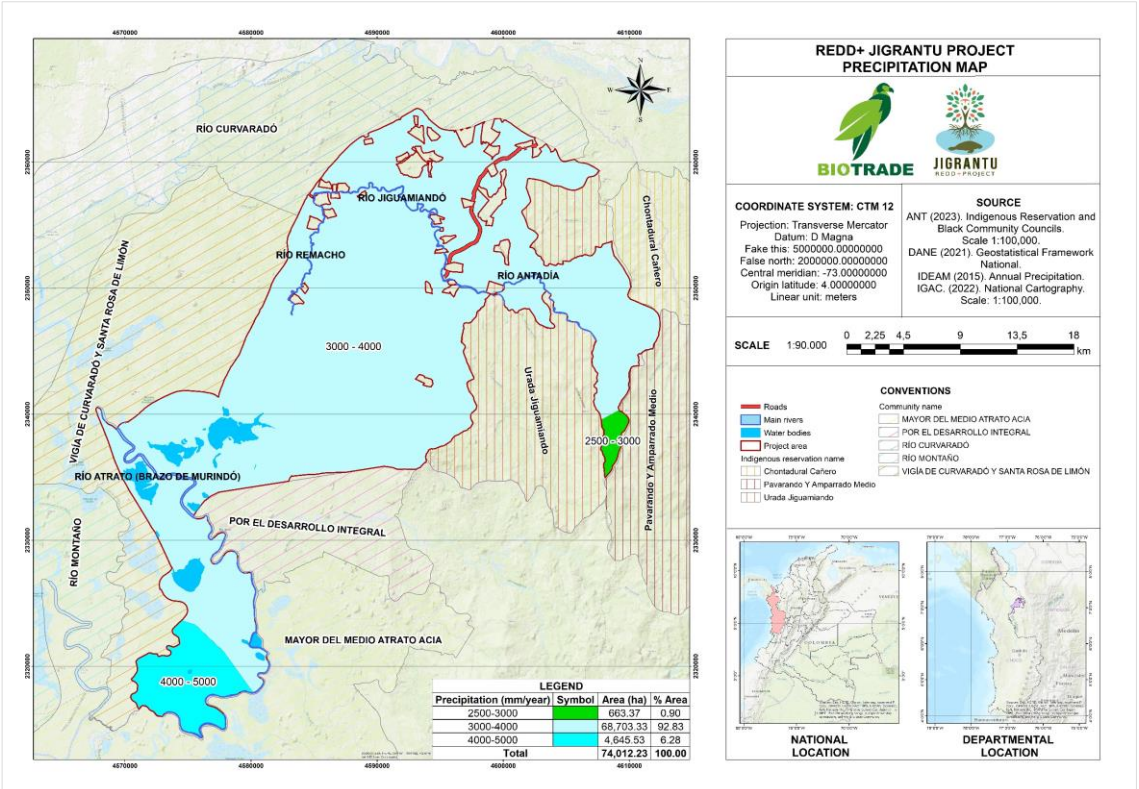
[6] Carmen del Darien Development Plan 2020-2023
[7] Riosucio Development Plan 2020-2023
[8] Integrated Management Plan for the Bajo and Medio Atrato Wetlands



Note. This figure is adapted from data presented by *FCA et al.* (2009) [8]

The project area is characterized by areas with rainfall between 2500 and 5000 mm/year; the majority, 93% of the area has rainfall between 3000 and 4000 mm/year. In the Figure 4 shows in detail the distribution of precipitation in the REDD+ JIGRANTU Project.

Figure 4. Precipitation map of the REDD+ JIGRANTU Project.



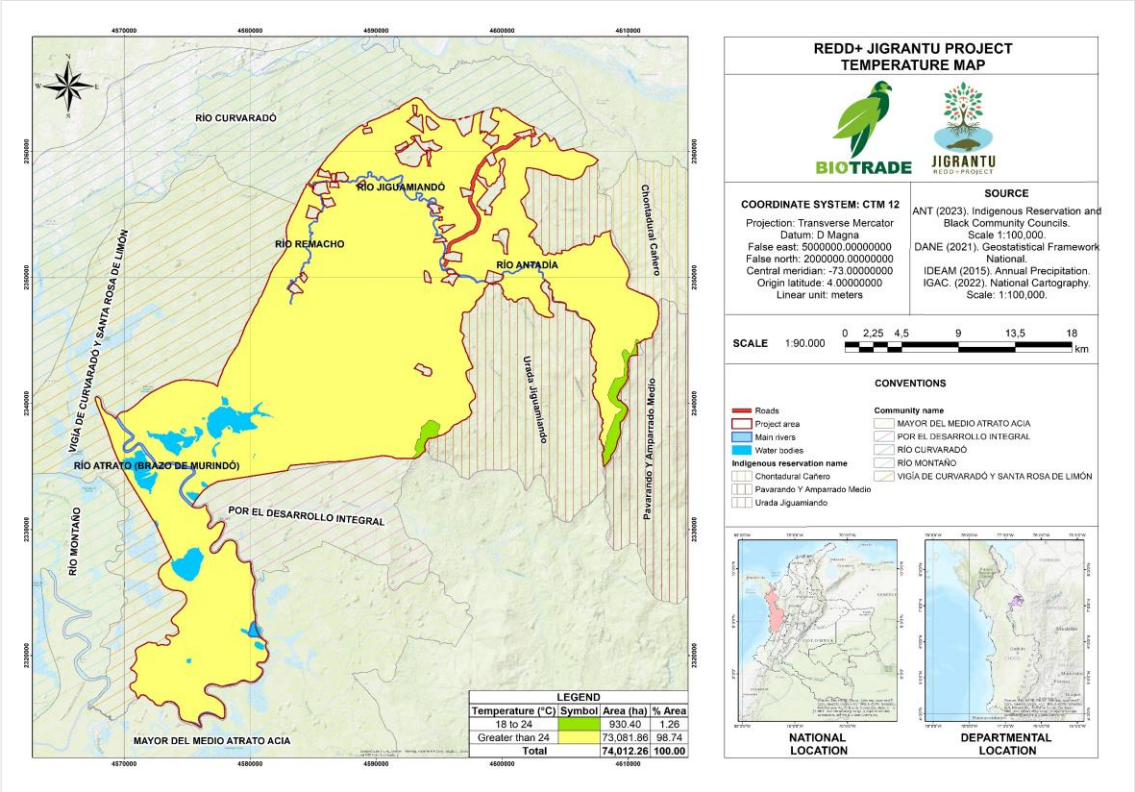
2.5.1.1.2 Temperature

The department of Choco, being in the equatorial region, presents little variation in ambient temperature during the year, with average annual temperatures[9] between 24 °C and 28 °C. In the Atrato region[8] region, the average annual temperature is 27.1 °C, with low oscillations between 26.4 °C and 27.5 °C. The lowest temperature values coincide with the lowest precipitation periods, which correspond to the first and last quarters of the year; the highest values also coincide with the months of highest precipitation.

In the lower Atrato the average temperature is lower than in the eastern area of the Gulf of Uraba, which is attributed to the influence of the westerly winds, which are colder than the northeasterly trade winds, which have a greater influence on the Caribbean coast[8]. In the municipalities of Carmen del Darien and Riosucio, the average annual temperature is higher than 24°C[1,2]. Regarding the temporal distribution of the average temperature, there is a maximum value in April and October with 26.9 °C and 26.1 °C respectively; the months with the lowest temperatures are February with 24.3 °C and December with 24.1 °C. Most of the project area has temperatures above 24 °C as shown in Figure 5.

Figure 5. Temperature map of the REDD+ JIGRANTU project.

[9] Integral Climate Change Plan for the Department of Choco



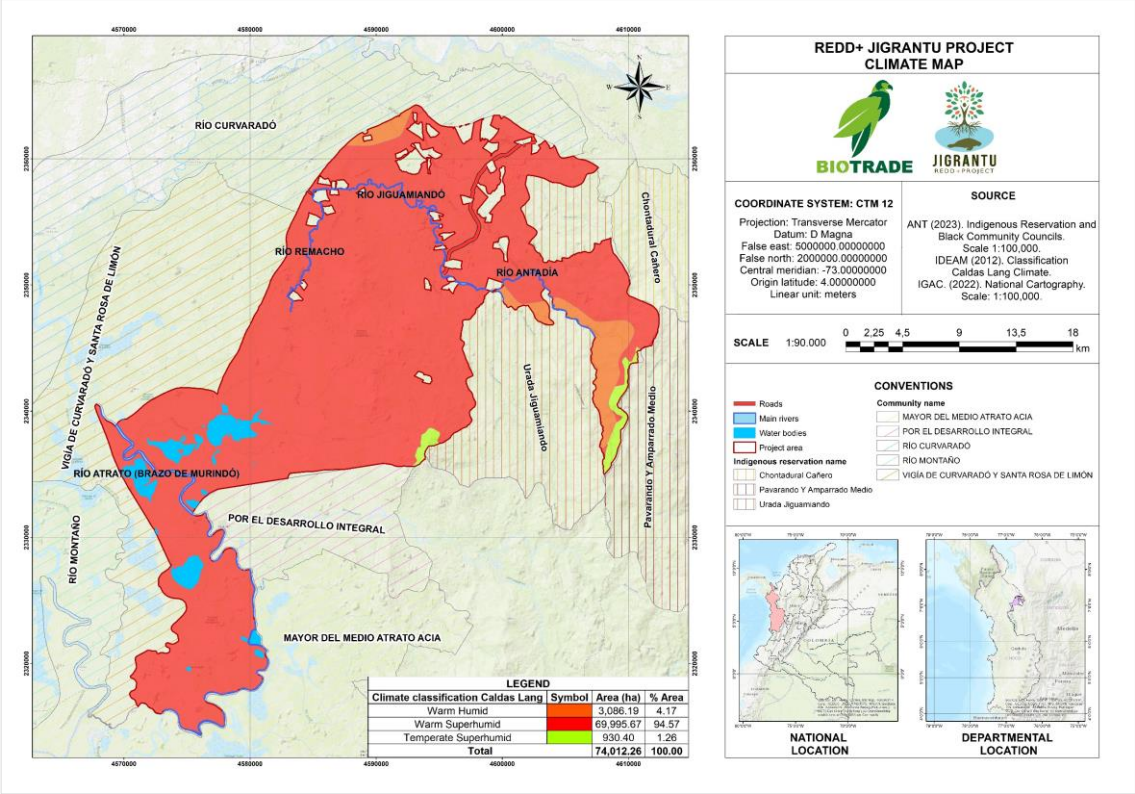
Prepared by Biotrade S.A.S (2023)

2.5.1.1.3 Climate classification

Based on the Caldas Lang climate classification[10] , the project area has a predominantly warm super-humid climate (94.6%). This classification is characterized by considering the thermal and humidity factors for its determination, using the altitudinal variation of temperature, which indicates the thermal floors, and the effectiveness of precipitation, which shows the humidity[11] , the Pacific region has a predominance of the warm super-humid climate, which is confirmed in Figure 6 which specifies the climates presented in the project area.

[10] Climate classification map of Caldas- Lang
[11] Climate zoning

Figure 6. Climate map of the REDD+ JIGRANTU Project



Note: The climate classification presented is an adaptation of the Caldas Lang climate classification for the project area. Prepared by Biotrade S.A.S (2023)

2.5.1.2 Hydrology

The Colombian Pacific has a great variety of rivers, the main ones being San Juan, Baudo, Dagua, Anchicaya, Naya, Micay, Saija, Timbiqui, Guapi and Patia and other water sources for aquifer recharge and inland wetlands. Given its geographic position, in addition to its topographic and climatological conditions and environmental richness, it has a large extension of hydrographic basins that empty their waters into the Gulf of Uraba, the Atlantic Ocean and the Pacific Ocean[12] .

In the department of Choco, the hydrographic basins were described up to the second order, obtaining 50 sub-basins, of which there are 3 main ones: Atrato, San Juan and Baudo. From this classification the project area is in the Atrato River basin, subregion of

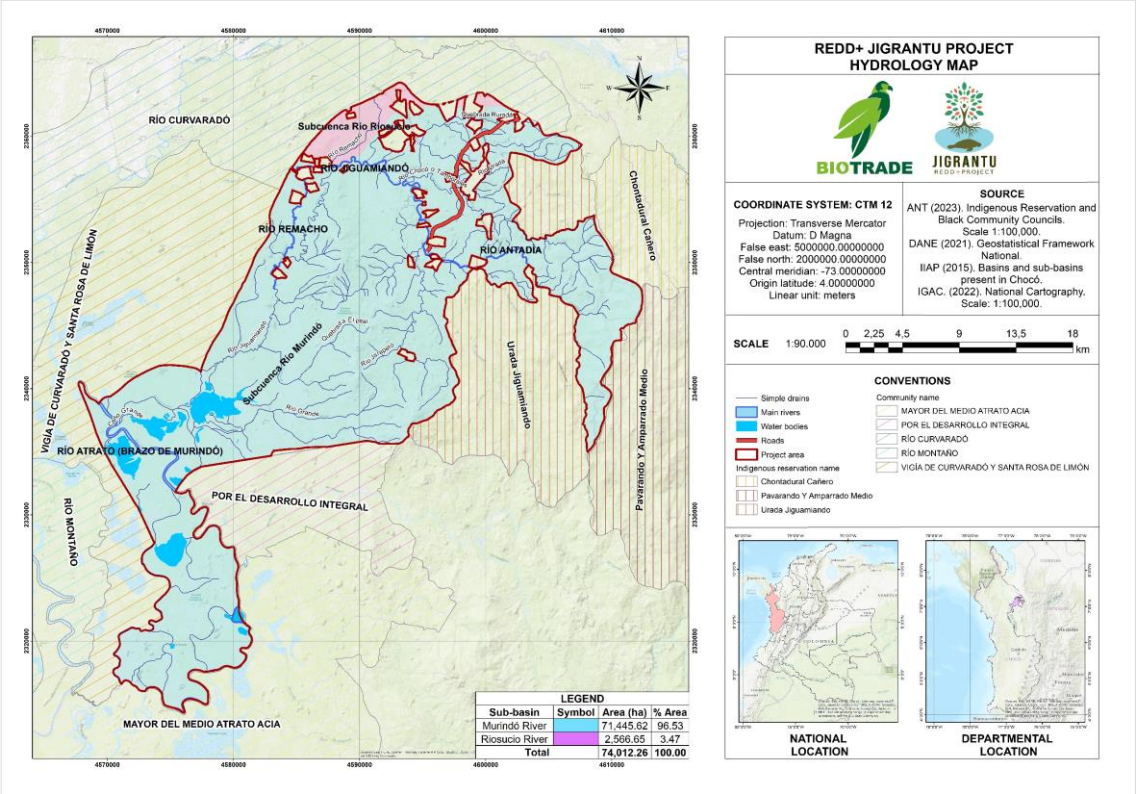
[12] Strategic plan for the Colombian Pacific macro-basin project

the lower Atrato and Darien with the sub-basins of the Murindo River and the Riosucio River[9].

The Atrato River is the main navigable waterway in the department of Choco and represents more than 51% of the surface area of the department[8]. The slowness of its current is explained by its low and scarce slope, which leads to the formation of swamps and marshes as well as continuous overflowing of the lands it bathes. The main subsystem of this river is the marshes, formed in flat terrain with poor drainage and floods of fluvial origin, of which it is estimated that about 65,000 hectares are productive for fishing during half of the year.

Most of the project area is represented in the Murindo River sub-basin with more than 96.5% of the area, the rest of the area is in the Riosucio River sub-basin with the Remacho River as its largest tributary. The Murindo River is more representative and contains more tributaries, including the Antadia River, Atrato River and Jiguamiando River, the latter with the tributaries of the Choco or Tamborales River and the Urada River. The bodies of water occupy about 2,229.92 hectares and correspond to the swamps, islands and lagoons present in the area. In the Figure 7 shows in detail the water network present in the project, as well as the location of the different water bodies.

Figure 7. Hydrological map of the REDD+ JIGRANTU project.



Prepared by Biotrade S.A.S (2023)

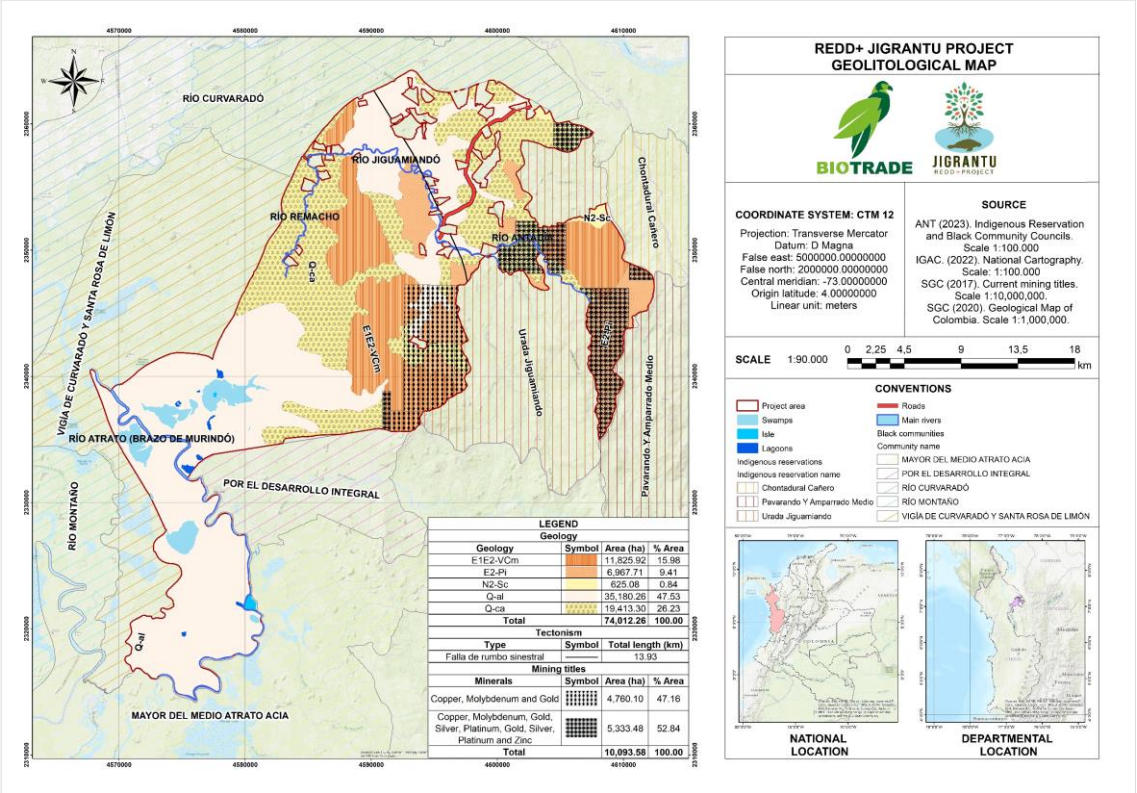
2.5.1.3 Geology

Regarding the geology of the project area, there are 5 geological formations with predominance of Q-al and Q-ca that cover more than 70% of the area, the formation with the smallest area corresponds to N2-Sc with a value of less than 1% (See Figure 8 y Table 3). Regarding tectonism, there is a sinistral fault corresponding to the Murindo fault that runs for more than 16 km. In the area there are 12 mining titles in force, with the exploitation of minerals such as Copper, Molybdenum, Gold, Silver, Platinum, and Zinc covering an area of 10.094 hectares, that is, more than 13% of the project area, of which more than 52% has the concession of all the minerals mentioned.

In the Figure 8 details the geology, tectonism, and mining title values within the project area. In Table 3 presents the description of the lithology associated with each of the geological formations present and the area of occupation of these, as well as the age, all within the Cenozoic era from the Paleocene to the Pliocene belonging to the Tertiary period. It should be clarified that, although the mining titles are in force, only 7 were in

execution for the year 2017 according to the Colombian Geological Service SGC[13] (5.355,16 ha), the rest were in suspended status.

Figure 8. Geolithological map of the REDD+ JIGRANTU project.



Prepared by Biotrade S.A.S (2023)

Table 3. Description of the lithology of the geological units present in the REDD+ JIGRANTU project area.

[13] Mining titles in force. Scale 1:10.000.000.

UC Symbol	Description lithology	Age	Area (ha)
E1E2-VCm	Basalts; breccias; agglomerates and tuffs intercalated with cherts; siltstones; calcareous mudstones and limestones.	Paleocene-Eocene	11,825.92
E2-Pi	Granodiorites varying to quartzodiorites and quartzomonzonites	Eocene	6,967.71
N2-Sc	Conglomerates, and litic conglomeritic sandstones intercalated with claystones, siltstones and peats.	Pliocene	625.08
Q-al	Alluvial and floodplain deposits	Quaternary	35,180.26
Q-ca	Alluvial fans and colluvial deposits	Quaternary	19,413.30

Note: The lithological description presented is adapted for the project area from the geological map of Colombia[14] .

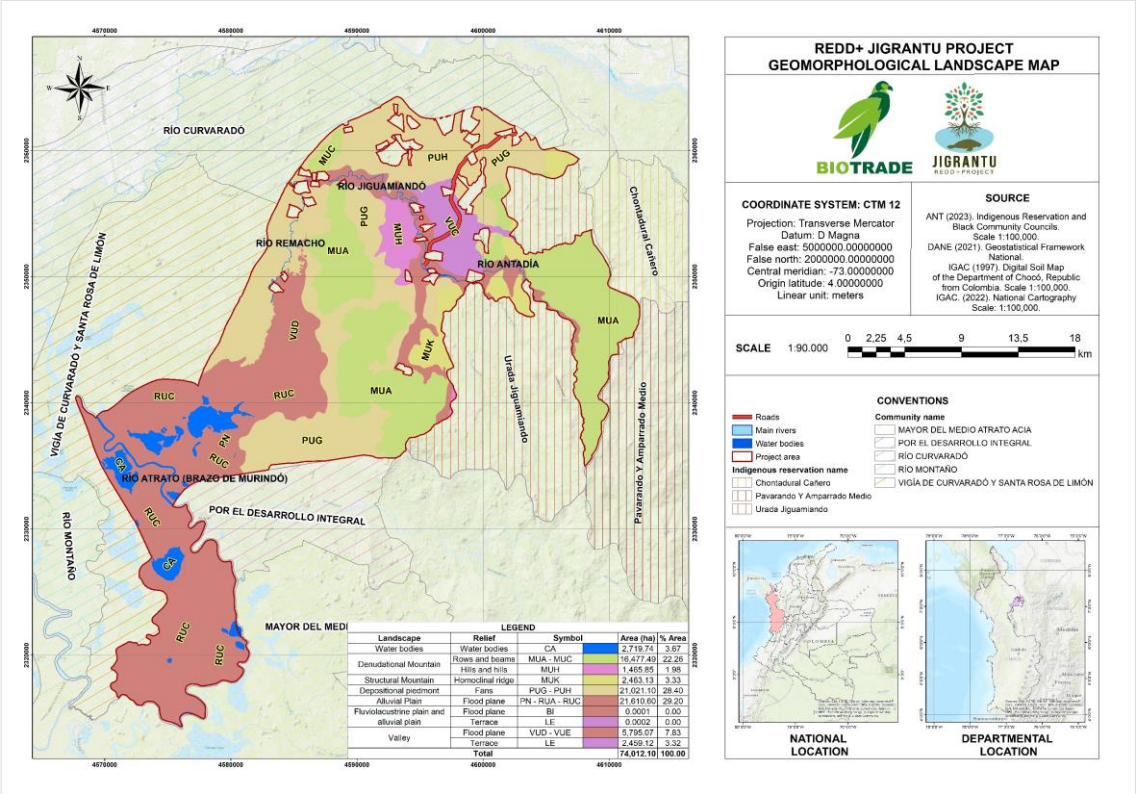
2.5.1.4 Geomorphology

2.5.1.4.1 Geomorphological landscape

In the department of Choco there are 52 geomorphological formations with a predominance of Homoclinal Spine and Conglomeratic Sandstone[9]. Regarding the geomorphology of the Jigrantu Project, this is represented by a landscape of depositional piedmont, alluvial plain and denudational mountain, with reliefs of fans, flood plain and rows and beams and hills and hills respectively. The least representative landscape is the alluvial plain and depositional foothills type landscape with a flood plain relief and fans respectively. In the Figure 9 shows in detail the behavior of the landscapes and reliefs within the project area, as well as the occupation of each one.

Figure 9. Geomorphological landscape map of the REDD+ JIGRANTU project.

[14] Geological Map of Colombia. Scale 1:100,000.

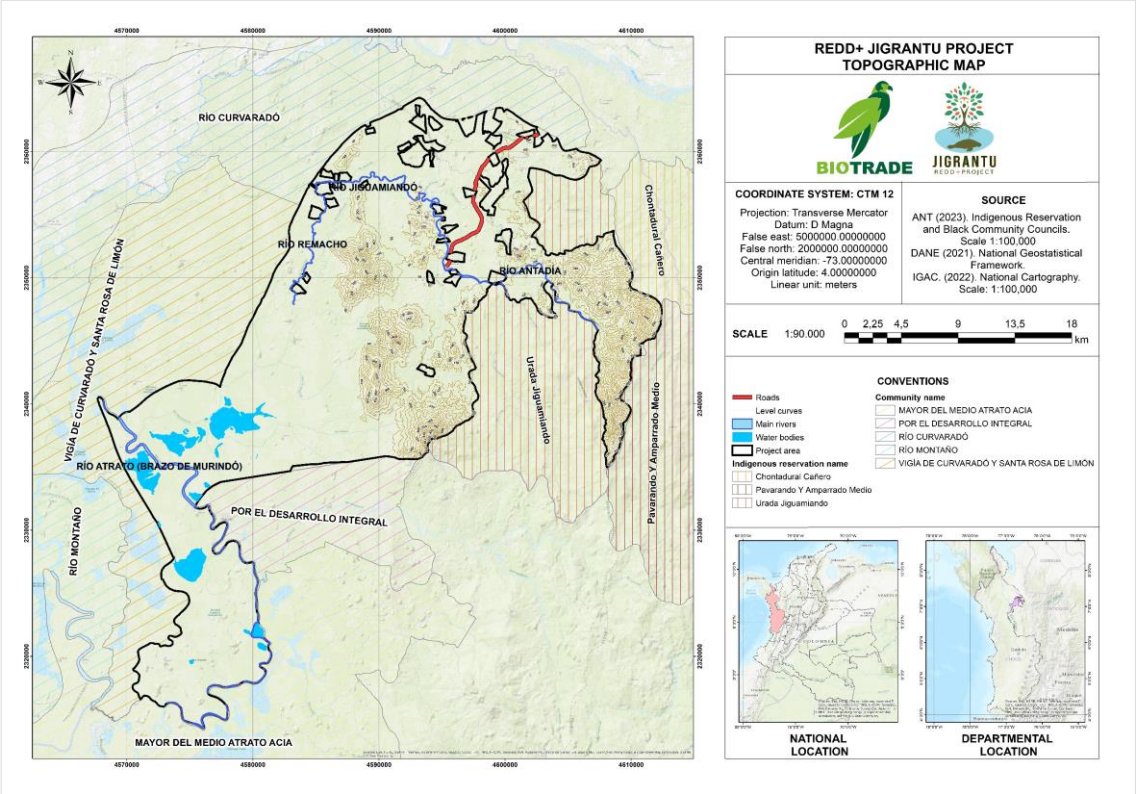


Prepared by Biotrade S.A.S (2023)

2.5.1.4.2 Height Above Sea Level

Topographically, there is a variation between 0 and 1,000 m.a.s.l. The highest elevations are found in the southeastern part of the zone, while the lowest elevations are distributed in the northern and eastern parts of the project area. However, most of the area is at sea level. In the Figure 10 shows a detail of the topography of the site.

Figure 10. Topographic map of the REDD+ JIGRANTU project.

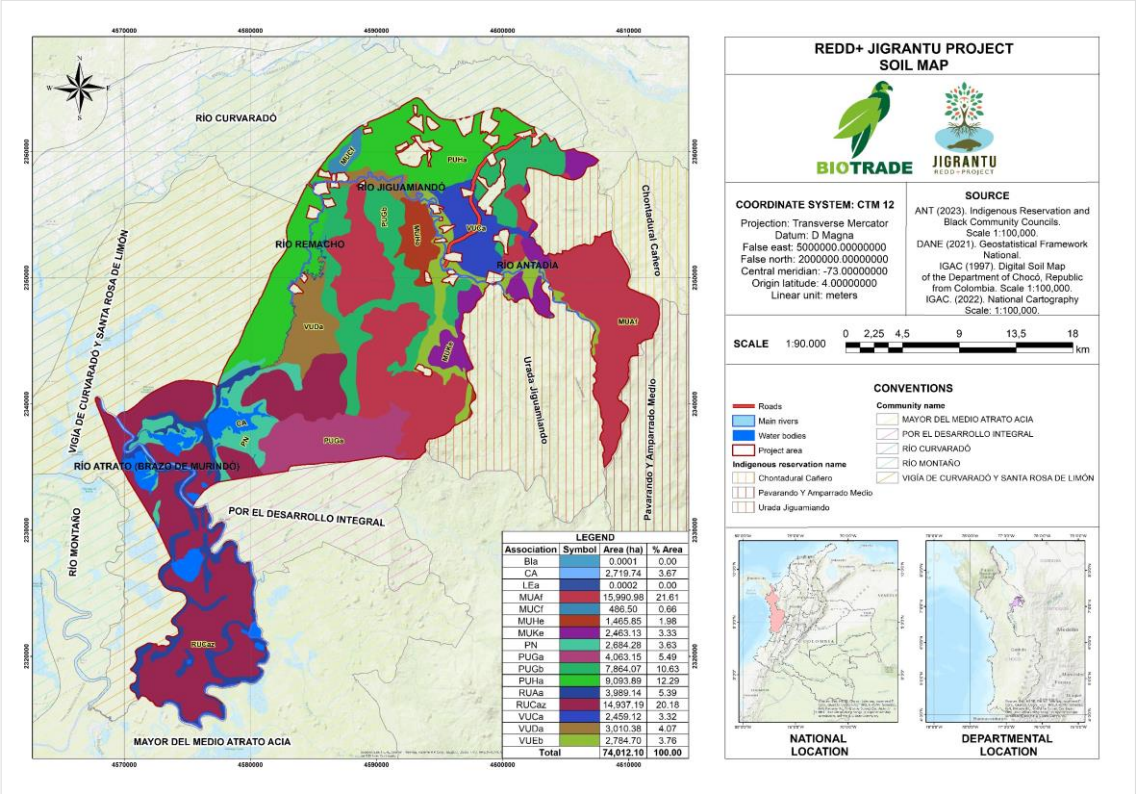


Prepared by Biotrade S.A.S (2023)

2.5.1.5 Soil science

In the project area, the MUAf, RUCaz and PUHa associations predominate, grouping more than 50% of the area. The least representative associations are MUCf and MUHe with a percentage of less than 1% (see Figure 11 y Table 4).

Figure 11. Soil map of the REDD+ JIGRANTU project.



Prepared by Biotrade S.A.S (2023)

Table 4. Soil associations present in the REDD+ JIGRANTU Project area.

UCS F	Partnership	Landscape	Area (ha)	% Area
Blah	Bihao: Hydric Haplohemists; Typic Endoaquents; Shoreline Areas	Fluvial-lacustrine plain and alluvial plain	0.0001	0.00
CA	Water bodies	Water bodies	2,719.74	3.67
LEa	Oxic Dystrudepts; Typic Dystrudepts; Aquic Dystrudepts	Fluvial-lacustrine plain and alluvial plain	0.0002	0.00
MUAf	Typic Dystrudepts; Typic Udorthents; Humic Dystrudepts	Denudational Mountain	15,990.98	21.61
MUCf	Humic Dystrudepts; Typic Eutrudepts	Denudational Mountain	486.50	0.66
MUHe	Typic Dystrudepts	Denudational Mountain	1,465.85	1.98
MUKe	Typic Dystrudepts	Structural mountain	2,463.13	3.33
PN	Swamps	Alluvial plain	2,684.28	3.63
PUGa	Oxic Dystrudepts; Typic Dystrudepts; Aquic Dystrudepts	Depositional piedmont	4,063.15	5.49
PUGb	Oxic Dystrudepts; Typic Dystrudepts; Aquic Dystrudepts	Depositional piedmont	7,864.07	10.63
PUHa	Typic Endoaquepts; Vertic Fluvaquents; Fluvaquentic Eutrudepts	Depositional piedmont	9,093.89	12.29
RUAa	Fluvaquentic Eutrudepts; Aeric Fluvaquents	Alluvial Plain	3,989.14	5.39
RUCaz	Humaqueptic Fluvaquents; Hydric Haplohemists	Alluvial Plain	14,937.19	20.18
VUCa	Fluventic Dystrudepts; Typic Fluvaquents	Valley	2,459.12	3.32

UCS F	Partnership	Landscape	Area (ha)	% Area
VUDa	Fluventic Dystrudepts; Typic Fluvaquents	Valley	3,010.38	4.07
VUEb	Typic Udifluvents; Typic Fluvaquents	Valley	2,784.70	3.76

Note: The information presented is adapted for the project area from the soil map of Choco[15] .

2.5.2 Biocenosis

2.5.2.1 Biomes and ecosystems

According to MADS and IIAP (2015) the ecosystems in the Pacific region are directly involved in the way of life, customs, and traditional management of the territory; they have also served as natural boundaries of the different peoples settled in the region. In the department of Choco there are 9 biomes, with 2 zonobiomes, 2 halobiomes, 1 helobiome and 4 orobiomes, where 55 ecosystems are found.

Within the project area there are 5 types of biomes, although two of these are less than 1% representative. Most of the area is composed of the Truando Helobiome and the Truando Humid Tropical Humid Zonobiome, covering more than 94 % of the area (see Table 5). The least representative is the San Juan Hydrobiome and the Truando Sub-Andean Orobiome. In the Figure 12 shows in detail the location and occupation of each biome in the REDD+ JIGRANTU Project.

Figure 12. Biome map of the REDD+ JIGRANTU Project.

[15] Soil map of Choco. Scale 1:100.000.

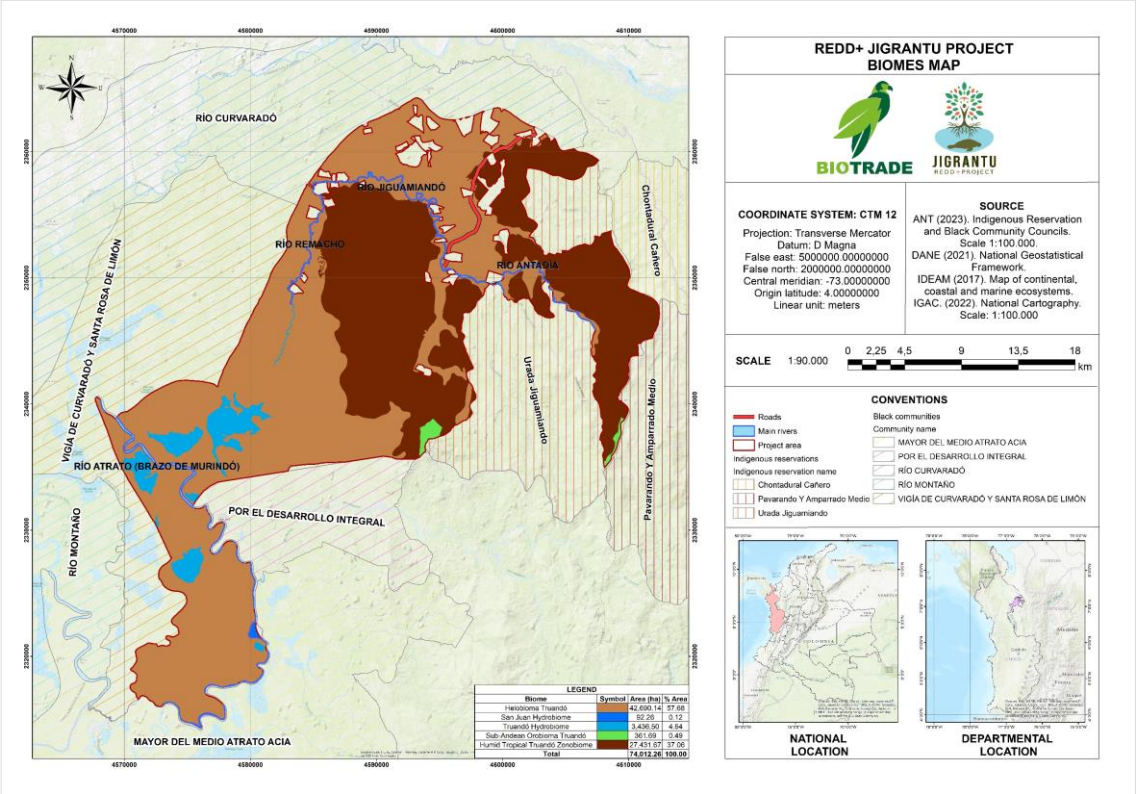


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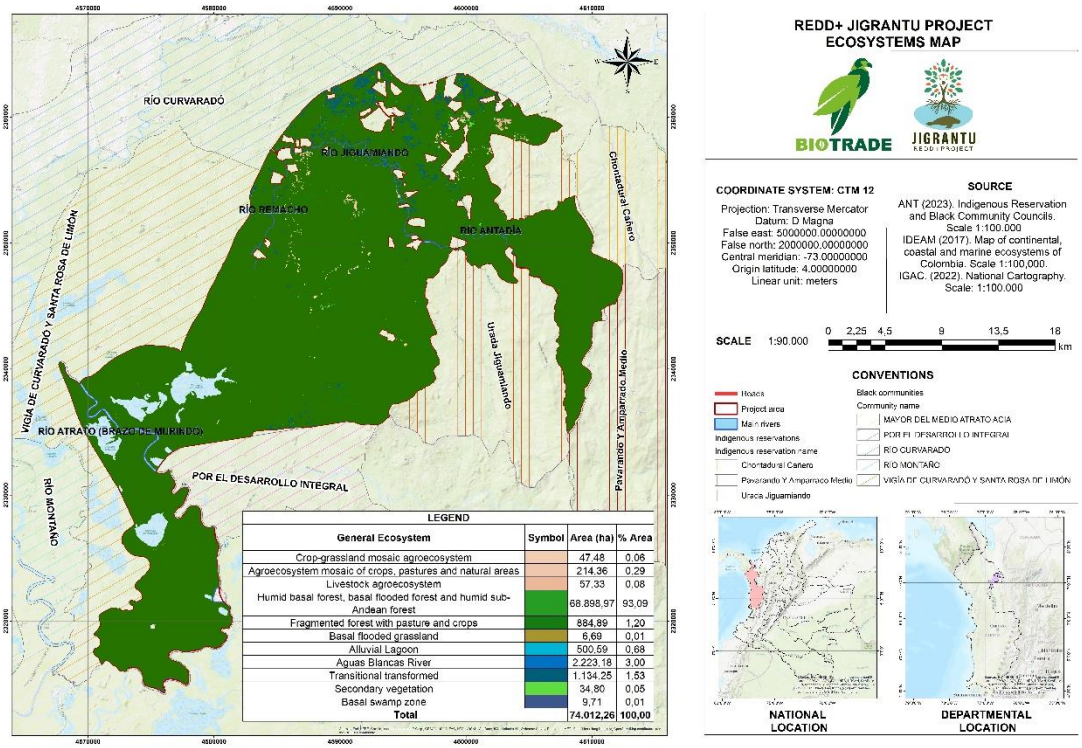
Table 5. Biomes present within the JIGRANTU REDD+ project area.

Gran Bioma	Bioma	Area (ha)	% Area
Orobioma of the Tropical Humid Zonobiome	Sub-Andean Orobioma Truando	361.69	0.49
Pedobiome of the Tropical Humid Zonobiome	Helobioma Truando	42,690.14	57.68
	San Juan Hydrobiome	92.26	0.12
	Truando Hydrobiome	3,436.50	4.64
Tropical Humid Zonobiome	Humid Tropical Truando Zonobiome	27,431.67	37.06

The ecoregion of the lower and middle Atrato is distinguished by its diversity of ecosystems and the presence of important plant associations such as arracachales, panganales, mangroves and cativales[8]. In terms of ecosystems, 9 were found in the project area. In the Figure 13 the most representative ecosystems are the Basal Humid Forest and the Basal Flooded Forest, covering more than 93% of the area. In contrast, the Fragmented Forest with secondary vegetation, livestock agroecosystem and agroecosystem of crop and pasture mosaic with a percentage of less than 1%.

Figure 13. Ecosystem map of the REDD+ JIGRANTU project.



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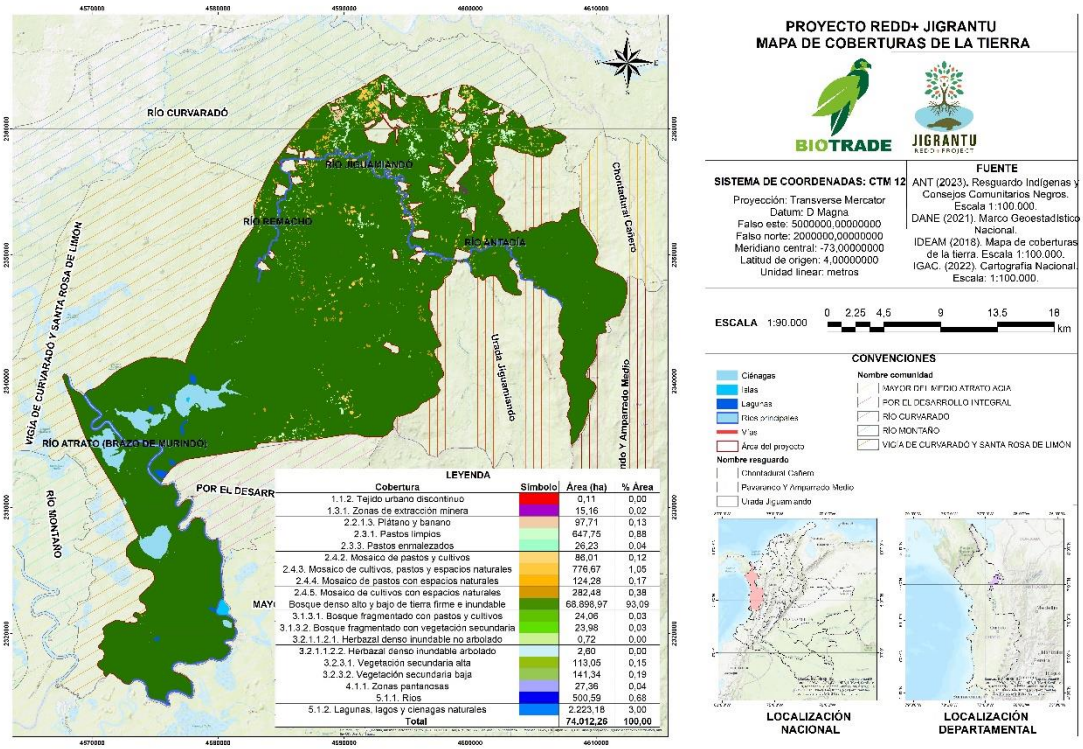
2.5.2.2 Land cover

Regarding the coverage of the project area, most of it consists of tall dense terra firma forest and tall dense floodable forest. To a lesser extent, there are discontinuous urban fabric coverages, clean pastures and a mosaic of crops, pastures and natural spaces - aquatic vegetation on bodies of water, low dense terra firma forest and gallery and riparian forest. In total, 1,925 types of coverage were found, although 163 of these do not even reach 1% of the area. Figure 14 shows the distribution of the coverages and the area they represent.

Figure 14. Land cover map of the REDD+ JIGRANTU project.



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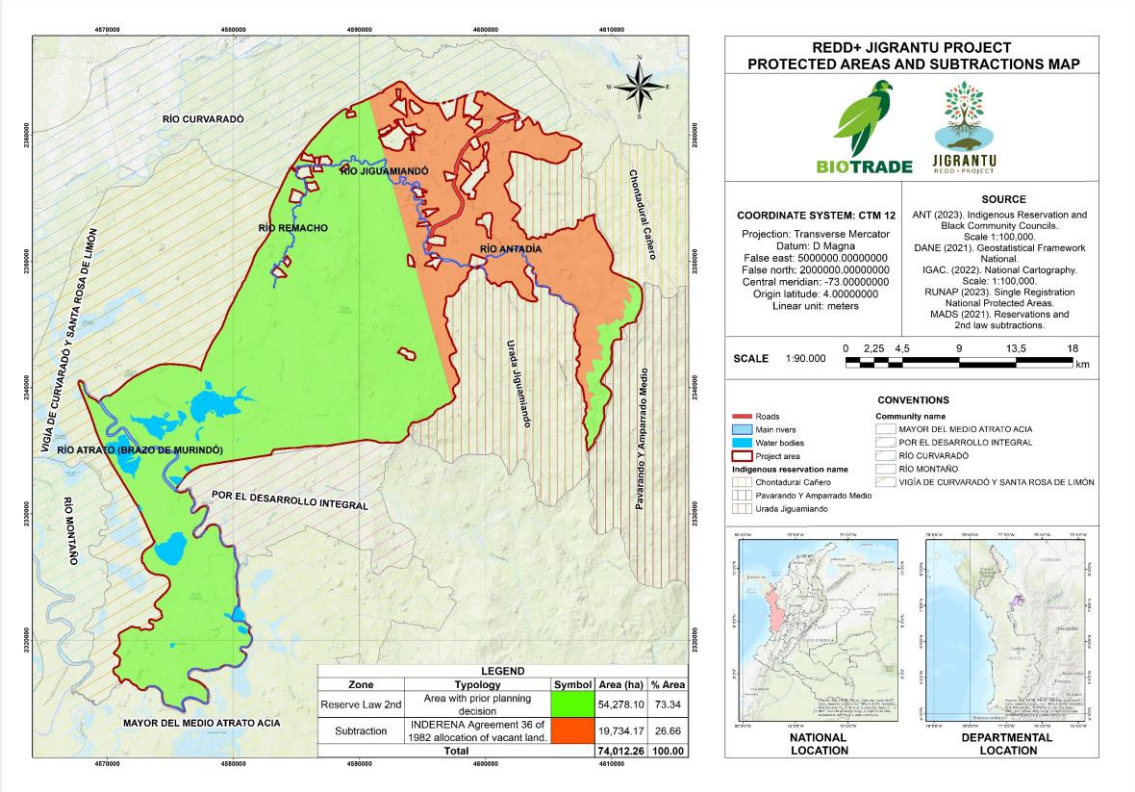
2.5.2.3 Protected areas and subtraction zones

Most of the project area is part of the Pacific National Forest Reserve with an area of more than 73%, previously the entire area was part of it, however, for the year 1982, INDERENA subtracted more than 26% of the area located towards the eastern part of the project, for the titling of vacant land, in the figure below. Figure 15 shows in detail the area belonging to the RFN and the subtraction zone.

Figure 15. Map of protected areas and subtractions of the REDD+ JIGRANTU project.



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Resolution 1926 of December 30, 2013, by which the zoning and management of the Pacific Forest Reserve, established in Law 2nd of 1959 and other determinants are adopted, considers in its chapter 3 that the Zoning and Management object of this resolution, does not apply to collectively titled territories within the Pacific Forest Reserve areas, according to what is stated in the considerations section. At the same time, the zoning of the Forest Reserve does not modify the functions and competencies assigned to the environmental authorities located in the collective territories.

The function of environmental administration of the collective territory is governed by Law 70, specifically by Decree 1384 of 2023 (August 25), which regulates Chapter IV and other environmental provisions contained in Law 70 of 1993, in relation to renewable natural resources and the environment, in the collective territories adjudicated, in process or ancestrally and/or traditionally occupied by the black, Afro-Colombian, Raizal and Palenquero communities, and is added to Title 12 of Part 2 of Book 2 of Decree 1076 of 2015 - Sole Regulatory Decree of the Administrative Sector of the Environment and Sustainable Development Sector and other provisions are issued:

> *Article 2.2.12.2.5. Articulation of the environmental management of the Community Councils with the environmental authorities: The environmental and natural resource management in the collective territories of the black, Afro-Colombian, Raizal and Palenquero communities, by the Community Councils, shall be articulated with the environmental authorities of the jurisdiction.*

Consequently, the community councils will in no case exercise environmental authority functions in the collective territories, since *Article 5 of Law 70 of 1993 only assigns them the function of overseeing the conservation and use of natural resources and Article 6, paragraph 4 of the same provision, orders them to apply to the authorities as required to carry out forest harvesting for commercial purposes.*

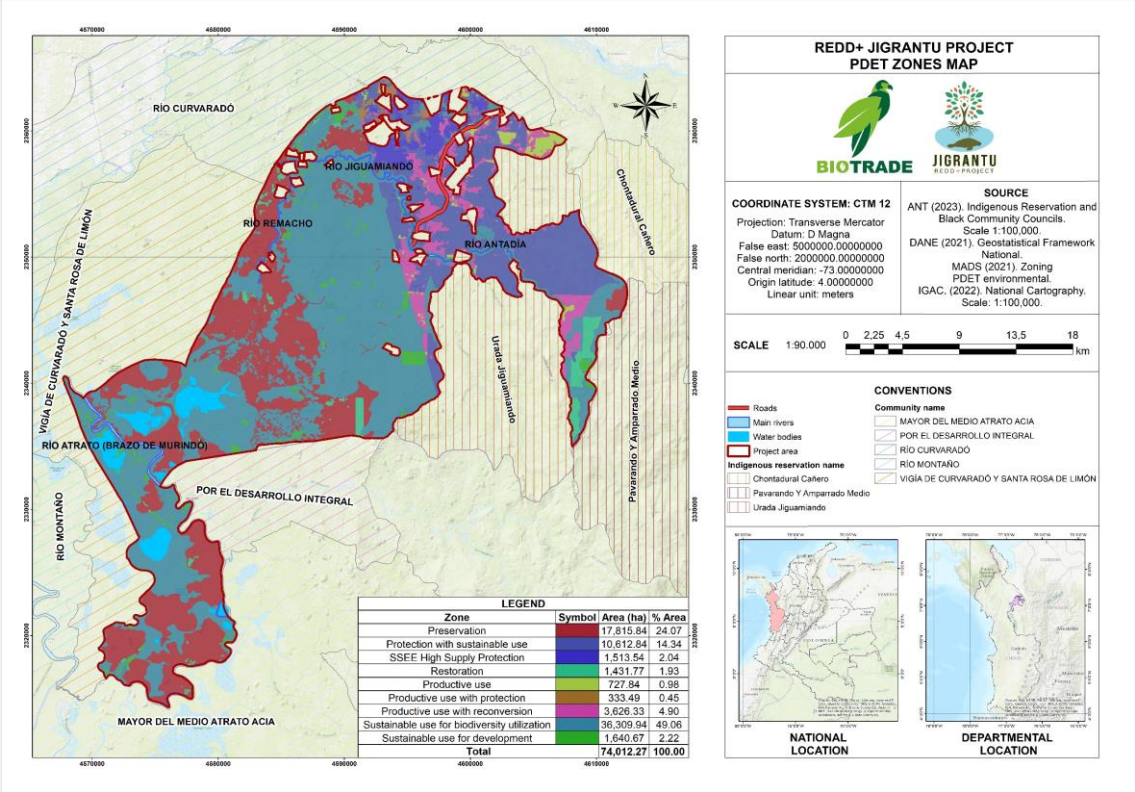
On the other hand, both in reserve zones of Law 2 and in the case of subtraction from the reserve, the right of collective title prevails, thus the holders of the territory have the right to seek financial mechanisms to ensure the preservation of forests and natural resources, For this reason the SDB seeks in the first instance the construction of the Ethno-Development Plan and subsequent zoning for the conservation and sustainable use of the territory, in this way the REDD+ JIGRANTU Project is in accordance with the provisions of Decree 1384 of August 2023 and Resolution 1926 of December 30, 2013.

Finally, none of the actions reported are the result of compensation for activities such as: infrastructure works or activities in the framework of the development of environmental licenses, concessions, single forest harvesting requests for change of land use and requests for definitive subtraction of national and regional forest reserves, since the subtraction within the Project area was carried out with the adjudication of vacant land (Agreement 36 of 1982 of INDERENA).

2.5.2.4 Development Programs with a Territorial Approach - PDET.

The entire project area is covered by the PDET Choco, most of which is destined for sustainable use for biodiversity (49%) and preservation (24%). In the Figure 16 details the proposed uses for the PDET zone that covers the entire project area.

Figure 16. Map of PDET zones of the REDD+ JIGRANTU project.



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3 Quantification of GHG emissions reduction

3.1 Quantification methodology

The methodology used for the project design corresponds to the methodological document of the AFOLU sector entitled "*Quantification of GHG Emission Reduction REDD+ Projects*" BCR0002 in its version 3.1[16], published in September 2022 by BioCarbon Registry.

Table 6. Tools used for project development

[16] Methodological document of the AFOLU sector

Subject	Tool
Methodological document of the AFOLU sector	Methodological Document AFOLU Sector. Quantification of GHG Emission Reductions. REDD+ Projects. BCR0002. Version 3.1 (BCR, 2022)[17]
BCR Standard	BCR STANDARD. From differentiated responsibility to common responsibility. Version 3.2 (BCR, 2023)[18] .
Avoidance of double counting	Avoiding Double Counting (ADC). BCR avoid double counting of emissions reductions/removals. Version 1.0 (BCR, 2023)[19]
Baseline and additionality	Baseline And Additionality. BCR projects generate verified carbon credits (VCC) that represent emissions reductions, avoidance, or removals that are additional. Version 1.2 (BCR, 2023)[20]
Monitoring, reporting and verification	Monitoring, Reporting and Verification (MRV). BCR carbon credits are quantified, monitored, reported, and verified. Version 1.0. (BCR, 2023)[21]
ODS	BCR Tool. Sustainable Development Goals (SDGs). Version 1.0 (BCR, 2023)[22]
Risk and permanence	BCR Tool. Permanence And Risk Management. BCR project holder take actions to ensure the project benefits are maintained over time. Version 1.0 (BCR, 2023)[23]
Safeguards	Tool to demonstrate compliance with REDD+ safeguards. Version 1.1. (Brigard & Urrutia, BCR, 2023).[24]
	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 (BCR, 2023)[25]

3.1.1 Conditions of applicability of the methodology

In the Table 7 shows the applicability conditions of the AFOLU BCR0002 sector methodology.

[17] BCR0002 Methodological Document REDD Projects
[18] BCR Standard
[19] Avoiding Double Counting
[20] Additionality
[21] Monitoring, Reporting and Verification (MRV)
[22] SDG Tool is
[23] Risk and permanence
[24] BCR REDD+ Safeguards Tool
[25] No Net Harm

Table 7. Conditions for the applicability of the methodology and its fulfillment

Condition of applicability	Compliance
a) The areas within the geographical boundaries of the project correspond to the forest category, at the beginning of the project activities, and ten years prior to the project start date.	Compliant. According to the cartographic evaluation carried out, it is concluded that the area where the project is being developed is characterized as a forest that has maintained its stability and presence for at least a decade prior to the start date of the activities.
b) The identified causes of deforestation include expansion of the agricultural frontier, mining, timber extraction and infrastructure expansion.	Complies. The expansion of the agricultural frontier, which involves both illegal and legal crops, mining, and timber extraction for own consumption and commercialization, were identified as the main causes of deforestation in the project area.
c) The causes of forest degradation may include selective logging, firewood extraction, forest fires, forest grazing, expansion of the agricultural frontier and illicit crops.	Compliant. In the project area, several reasons for forest degradation were identified, including selective logging, the extension of areas used for agriculture and cattle ranching, mining activities, as well as the presence of illicit crops.
d) No reduction in deforestation or degradation is expected to occur in the absence of the project.	Complies. Historically, there has been a steady trend of deforestation that could continue if the project is not implemented.
e) Carbon stocks in soil organic matter, litter and dead wood may decrease or remain stable in the project boundary areas.	Complies. Deforestation in the areas negatively affects carbon stocks in soil organic matter, causing a decrease in the amount of litter and dead wood.
f) The quantification of GHGs other than CO2 should be included in the quantification of emissions caused by forest fires during the monitoring period.	Compliant. During the monitoring period, if forest fires are detected, greenhouse gas (GHG) emissions from these fires will be calculated and integrated into the project's emissions estimates.

3.2 Project limits

3.2.1 Project area

Eligible project areas correspond to stable forest located within the community councils for at least a ten-year period prior to the project start date (See section 3.7.1). .

The community council of La Grande has a titled area of 13,455.53 ha according to Resolution 2806 of November 22, 2000; the community council of Rio Jiguamiando has an area of 54,973.84 ha as defined in Resolution 2801 of November 22, 2000; the community council of Turriquitado has an area of 9,406.86 ha according to Resolution

2799 of November 22, 2000. In total, the three community councils cover a titled area of 77,836.22 ha.

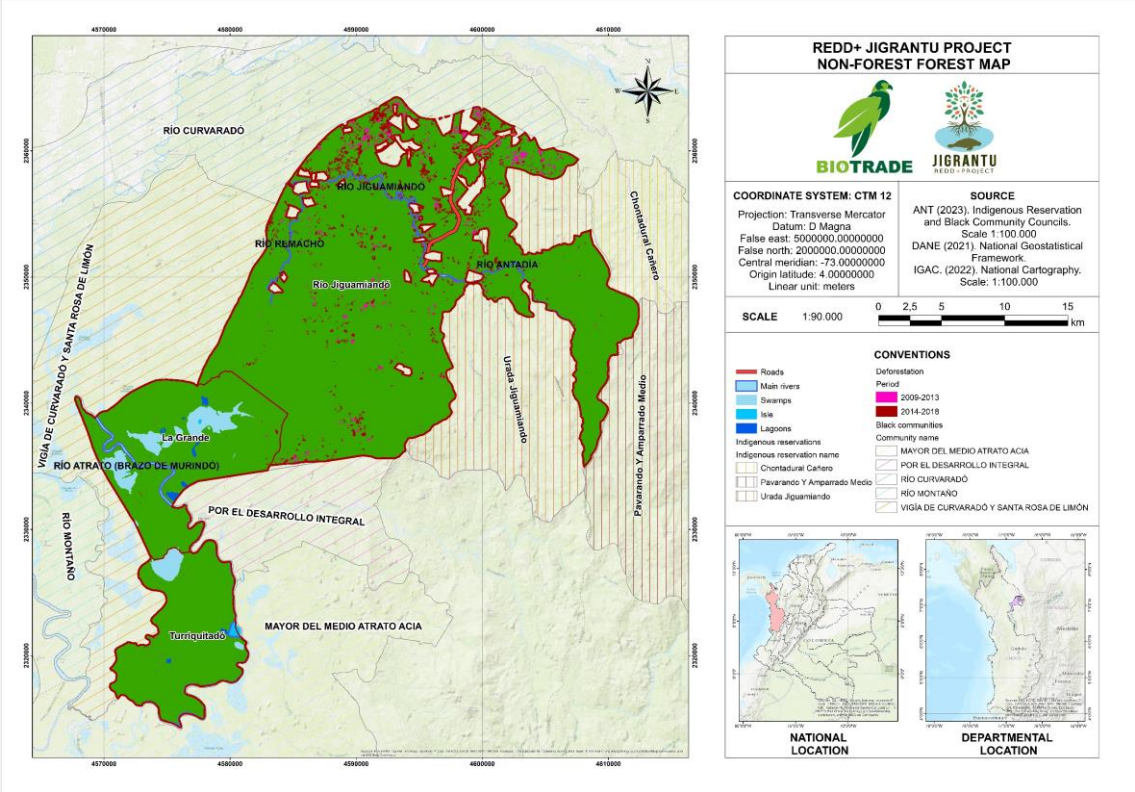
According to the information presented in Resolution 2159 of August 24, 2007 *"whereby the territories awarded to the Community Council of the Jiguamiando River in the Department of Choco are delimited from the lands of legitimate property awarded to private individuals"* and the legal characterization and regulation of the collective territories of Curvarado and Jiguamiando carried out by INCODER in 2012, the area titled to the 62 privately owned lands of private individuals is three thousand one hundred and two hectares (3,102 ha).

The area of the community council of the Jiguamiando River changes from fifty-four thousand nine hundred and seventy-three hectares (54,973 ha) as initially adjudicated in Resolution 029801 of November 22, 2000, to fifty-one thousand eight hundred and seventy hectares (51,870 ha) as established in Resolution 2159 of August 24, 2007. The polygon of the Community Council found in the ANT's open data portal has an area of 51,504 ha, that is, it is below the adjudicated area, so this is taken as the official information of the Council's area considering that the private lands of the collective territory have been delimited.

The areas of the community councils included in the project used for the analysis were downloaded from the Open Data Portal of the National Land Agency. However, the area calculated for each of the councils presents discrepancies in comparison with the titled area related in the administrative acts. From the calculation of the areas that make up the project, an extension of 74,012.27 ha is obtained, of which 68,898.97[2] ha correspond to forest eligible for the REDD+ project.

The project is bordered to the north by the community council of Rio de Curvarado, to the west by the community council of Vigia de Curvarado and Santa Rosa de Limon, to the southeast by the community councils of Mayor del Medio Atrato Acia and Por el Desarrollo Integral, and to the east by the indigenous reserves of Urada Jiguamiando, Pavarando and Amparrado Medio and Chontadural Cañero. In the Figure 17 details the location of the project with the occupation of the community councils and the bordering areas.

Figure 17. Location map with the boundaries of the REDD+ JIGRANTU project.



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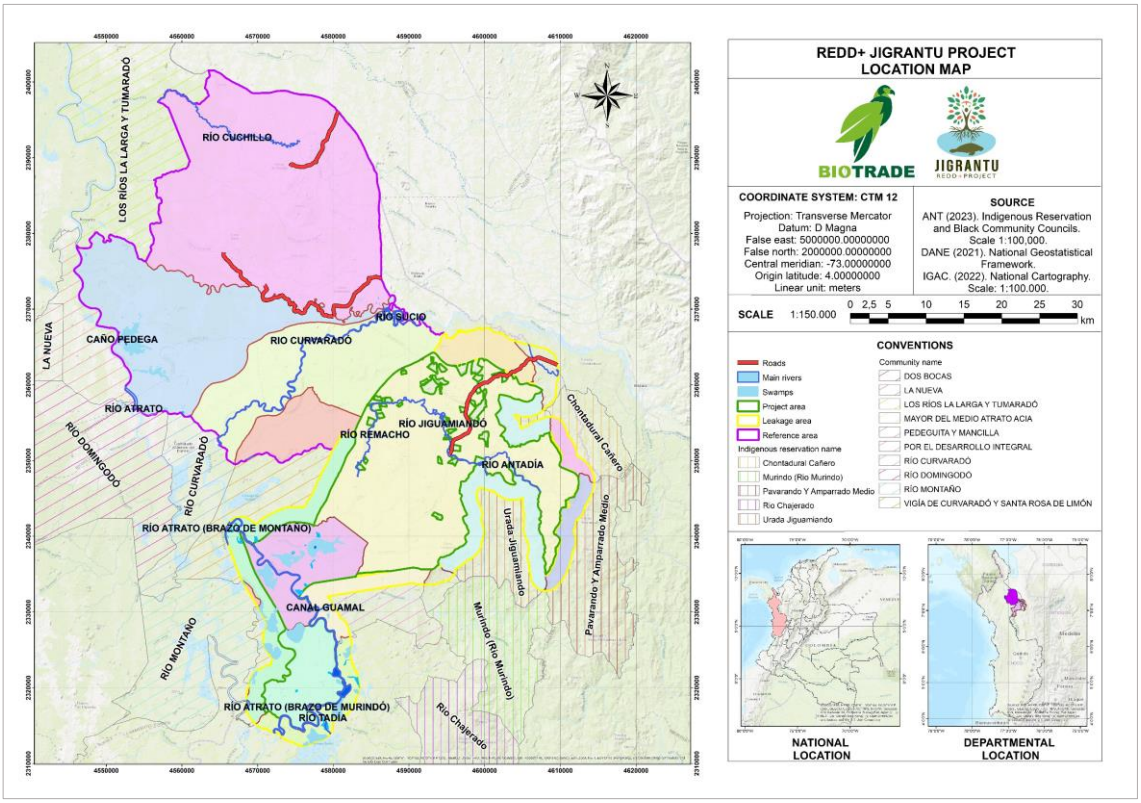
3.2.1.1 Reference region for baseline estimation

The delimitation of the reference region considered the incidence of navigable rivers in terms of access to the area, enclosing the main watersheds. Then, the similarity of biophysical characteristics, land cover and land tenure rights were evaluated. Considering this and the deforestation trend in the areas, it was concluded that the reference region reflects what is happening in terms of land use change in the project area. In the Figure 18 shows the location of the reference region and information about land tenure and access to the areas, in Table 8 presents the legend of the location map and shows in detail the land tenure patterns in each area.

Figure 18. Location map of the leakage area, reference area and REDD+ JIGRANTU Project.



Prepared by Biotrade S.A.S (2023)

Table 8. Legend of the map showing the location of the leakage area, the reference area and the REDD+ JIGRANTU project.

LEGEND LOCATION MAP			
Leakage area			
Community Council	**Symbol**	**Area (ha)**	**% Area**
Mayor del Medio Atrato Acia		4,923.54	10.87
For Integral Development		4,741.62	10.47
Montaño River		238.20	0.53
Curvarado River		5,205.92	11.50
Vigia de Curvarado and Santa Rosa de Limon		10,671.41	23.57
Subtotal black community councils		25,780,69	56.93
Indigenous reservation	**Symbol**	**Area (ha)**	**% Area**
Paving and Medium Walling		3,334.58	7.36
Chontadural Cañero		1,842.94	4.07
Murindo (Murindo River)		6.54	0.01
Urada Jiguamiando		10,941.93	24.16
Subtotal indigenous reserves		16,125.99	35.61
Untitled		3,376.22	7.46

LEGEND LOCATION MAP			
Total		**45,282.90**	**100.00**
Project area			
Community Council	**Symbol**	**Area (ha)**	**% Area**
La Grande		13,252.14	17.91
Rio Jiguamiando		51,504.33	69.59
Turriquitado		9,255.80	12.51
Total		**74,012.27**	**100.00**
Reference area			
Community Council	**Symbol**	**Area (ha)**	**% Area**
La Larga and Tumarado Rivers		73,421.25	49.24
Pedeguita and Mancilla		38,293.80	25.68
Curvarado River		28,843.16	19.34
Vigia De Curvarado and Santa Rosa De Limon		8,547.07	5.73
Total		**149,105.28**	**100.00**

A. **Agents and causes of deforestation/degradation:** Those responsible for forest loss in the reference region and in the project area are similar. This includes communities that practice subsistence agriculture with crops such as plantain, yucca, and corn, in addition to raising livestock for commercialization and self-consumption. Loggers, coca growers and miners are also among the drivers of deforestation. The direct causes behind deforestation and land degradation include the expansion of agricultural and cattle ranching areas, timber extraction, illicit crops, and mining activity.

B. **Access to the area:** Access to the project area is via a type 4 road located in the northeastern part and by navigable rivers corresponding to the Antadia River, Jiguamiando River, Remacho River and the Atrato River with the Montaño branch. In the reference area, the roads of the same type were considered since there were no lower levels and the navigable rivers were the Sucio river, Curvarado river, Arato river, Pedega river and Knife River. To evaluate the similarity of the area, road and water density were calculated with a percentage of comparability of 40% and 75%, respectively. The road and water density values are shown in the Table 9 highlighting the higher value of road density for the reference area and water density for the project area.

Table 9. Characteristics of the reference area and the REDD+ JIGRANTU Project area in terms of road and water density.

Criteria	Project area	Reference area	% comparability
Area (km^2)	740.12	1491.05	-
Road length (m)	16095.16	42569.02	40
Road density (m/km^2)	21.72	28.55	
Water length (m)	618631.09	969133.81	75
Water density (m/km^2)	834.99	649.9	

C. **Land tenure:** Both the project area and the reference area are collective territories of black communities in their entirety. Within the areas there are special protection zones corresponding to the Pacific Forest reserve established in Law 2ª of 1959, with zoning and management process as of Resolution 1926 of 2013, these zones cover more than 55% of the project area and reference area, previously everything was part of that reserve.
However, subtraction processes have been carried out for the titling of vacant lots, spontaneous colonization, and conservation. In the reference area, the Colombian Institute of Agrarian Reform (INCORA) has carried out the following administrative acts: Resolution 2964 of 1964, Resolution 169 of 1968 and Resolution 25 of 1962 and by INDERENA from Agreement 38 of 1973 and Agreement 36 of 1982, it is worth noting that in the subtraction area around 1971 the National Protective Forest Reserve RFPN of Rio Leon was created, declared from Agreement No 23 of 1971, however, it was only around 2017 that the MADS specifies the boundary of this reserve with Resolution 2708 of December 21, 2017.

D. **Land uses:** The mainland uses in the project area and the reference area correspond to dense forest, clean pastures, secondary or transitional vegetation, and a mosaic of crops, pastures, and natural spaces. In the Table 10 the reference is presented in detail the coverages within the project and in the reference area.

Table 10. Land covers within the reference area and JIGRANTU REDD+ project area.

Coverage	Project		Reference	
	Area (ha)	% Area	Area (ha)	% Area
Discontinuous urban fabric	10.80	0.01	45.83	0.03
Mining extraction areas	119.00	0.16	-	-
Permanent herbaceous crops	203.30	0.27	660.78	0.44
Clean pastures	2046.22	2.76	34191.19	22.93
Weedy pastures	397.07	0.54	5316.05	3.57
Crop mosaic	-	-	2281.97	1.53
Mosaic of pastures and crops	215.65	0.29	14212.24	9.53
Mosaic of crops, pastures and natural areas	4268.39	5.77	14311.48	9.60
Mosaic of pastures with natural spaces	910.17	1.23	6574.81	4.41
Mosaic of crops with natural spaces	682.27	0.92	2281.00	1.53
Dense forest	47654.23	64.39	28648.14	19.21
Open forest	-	-	2248.06	1.51
Fragmented forest	1383.27	1.87	2998.56	2.01
Gallery and riparian forest	102.56	0.14	1437.59	0.96
Grassland	3916.34	5.29	8289.37	5.56

Coverage	Project		Reference	
	Area (ha)	% Area	Area (ha)	% Area
Shrub	-	-	351.68	0.24
Secondary or transitional vegetation	4714.85	6.37	19528.55	13.10
Bare and degraded land	-	-	146.76	0.10
Burned areas	-	-	38.44	0.03
Swampy areas	4521.02	6.10	3745.68	2.51
Aquatic vegetation on water bodies	66.76	0.09	138.50	0.09
Rivers	577.19	0.78	843.83	0.57
Natural ponds, lakes and marshes	2223.18	3.00	814.74	0.55
Total	**74012.26**	**100**	**149105.28**	**100**

Note. The information presented is an adaptation for the project area and reference from the land cover map[26] .

E. Biomes and ecosystems present: The biomes present in the two areas are: Truando Helobiome, San Juan Hydrobiome, Truando Hydrobiome, Truando Sub-Andean Orobiome, Alto Murri Tropical Humid Zonobiome, Truando Tropical Humid Zonobiome, Darien-Tacarcuna Helobiome, Darien-Tacarcuna Hydrobiome, Darien-Tacarcuna Tropical Humid Zonobiome. In the reference area, the Darien-Tacarcuna Helobioma predominates, while in the project area there is a higher percentage of the Truando Helobioma. However, there is incidence of several of the biomes in both areas. In terms of the ecosystems present, the most important are the humid basal forest, basal flooded forest, basal flooded grassland, and the transformed transitional ecosystem.

F. Political context and required standards: The project and reference area is located within the administrative boundaries of the department of Choco, in the municipalities of Carmen del Darien and Riosucio. The highest authority within the territories are the black community councils, who administer and fulfill the role of environmental, traditional and justice administration authority, in addition to safeguarding the Afro-Colombian culture[27].

G. Biophysical parameters: In terms of biophysical characteristics, according to the Caldas-Lang classification[10], both the reference area and the project area are characterized by a warm humid and warm super-humid climate classification, both the reference area and the project area are characterized by a warm humid and warm super-humid climate, with average annual rainfall of 2000 to 4000 mm,

[26] Land cover map
[27] Legal analysis of the functions of Community Councils in collective territories of black communities.

temperatures above 24 °C, with elevations ranging from 0 to 1000 m.a,s,l. where the lower elevations predominate. Most of the reference area is bathed by the Riosucio River sub-basin.
In terms of geology, the Q-al and Q-ca associations are found in a higher percentage; within the reference area there is also the Murindo fault with more than 45 km in extension. Regarding mining titles, current titles were found occupying about 825.35 hectares of Copper, Molybdenum, Gold, Silver, Platinum and Zinc minerals and gravel and sand, although the latter in a proportion of less than 7% of the titles granted. In front of the landscape, both the reference area and the project area have a greater predominance of alluvial plains and depositional foothills with flood plain relief and fans, respectively. Likewise, the Typic Endoaquepts association; Vertic Fluvaquents; Fluvaquentic Eutrudepts and Humaqueptic Fluvaquents; Hydric Haplohemists are among the highest presence in the areas.

The reference area has a total area of 149,105 hectares of which 141,082 ha, about 95% were forest in 2009 and 132,858[28] ha remain, 89% at the time of project initiation (see Figure 20). For the definition of the reference region, areas with restricted access, associated with protected areas of Colombia's National Natural Parks, were excluded.

3.2.1.2 Leakage area

The leakage area was defined considering the mobility of the agents of deforestation and the incidence of rivers and roads mainly (see Figure 18).

The factors that influence potential changes in forest cover in the leakage area can be significant in relation to scale and can increase susceptibility to planned GHG variations in mitigation projects. Therefore, the identification of such factors constitutes the sources of information to determine the dynamics of mobility of the main agents of deforestation.

For the identification of the leakage area, the multicriteria analysis technique (MCA) based on the determination of Euclidean distances was used, the spatial data processing was carried out by means of a GIS software. The proposed methodology consists of the spatial superposition of the base criteria that define the interaction between different biotic, physical and social components that influence as causes of deforestation.

[28] The forest area for the different areas is presented in: 5. CARBON CALCULATIONS\Deforestation analysis\V3\Deforestation areas.xlsx which are found in: 7. MAPPING\V. 3\GDB REDD+ JIGRANTU PROJECT

3.2.1.2.1 Criteria Definition

The criteria defined for the agent mobility analysis are grouped as follows:

- Biotic component: Boundaries with forest areas.
- Abiotic component: Double drainages.
- Socioeconomic component: Roads and boundaries of the project area.

3.2.1.2.2 Standardization and assignment of relative weight to the criteria

Since the criteria may have different units and scales, it is necessary to standardize them to make them comparable. For each of the variables, 5 classes were defined, depending on the distance, a relative weight was assigned; where a value of 0 corresponds to a greater distance, that is, a "Very low" susceptibility, and a value of 4 corresponds to a "Very high" level of proximity, which indicates greater susceptibility (See Table 11).

Table 11. Normalization and assignment of relative weight to the criteria defined for the analysis of agent mobility in the leakage area of the REDD+ Jigrantu Project.

Relative assigned weight	Susceptibility	Variables			
		Limit of forest areas (m)	Double drains (m)	Roads (km)	Limit Project area (km)
0	Muy baja	2500 - 3000	4000 - 5000	4000 - 5000	4000 - 5000
1	Baja	1500 - 2000	3000 - 4000	3000 - 4000	3000 - 4000
2	Media	1000 – 1500	2000 - 3000	2000 - 3000	2000 - 3000
3	Alta	500 - 1000	1000 - 2000	1000 - 2000	1000 - 2000
4	Muy alta	0 - 500	0 - 1000	0 - 1000	0 - 1000

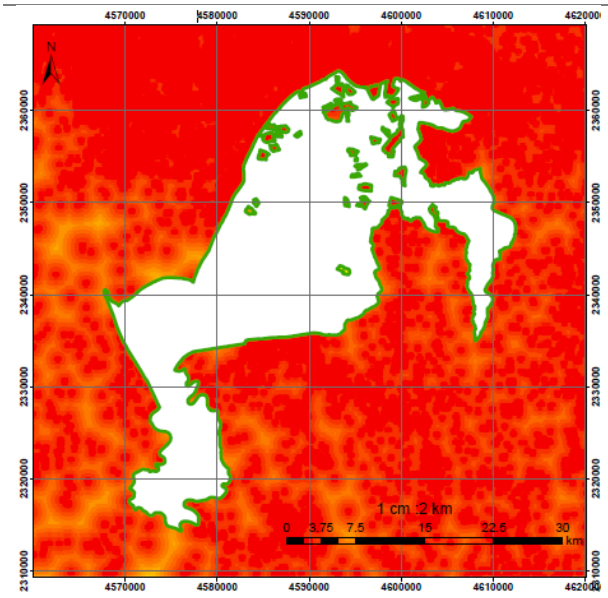
Prepared by Biotrade S.A.S (2024)

3.2.1.2.3 Calculation of Euclidean distances and probability rasters

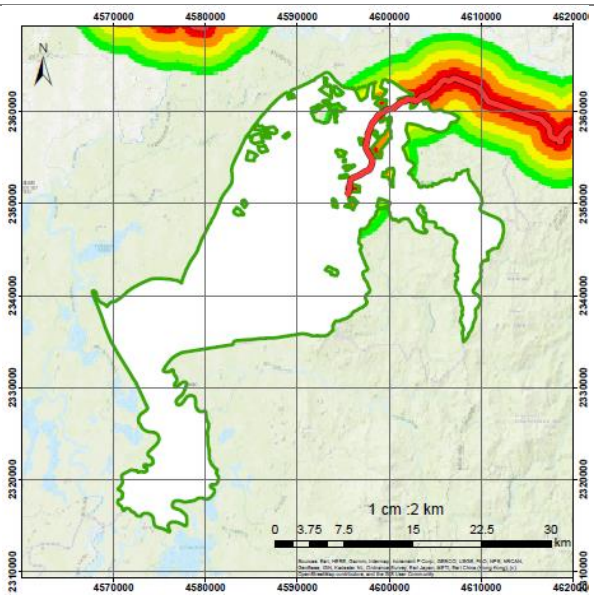
For each criterion, probability rasters were performed to identify the mobility of agents according to the spatial distribution of the normalized values.

Table 12. Criteria defined for the analysis of agent mobility in the leakage area of the REDD+ Jigrantu Project.

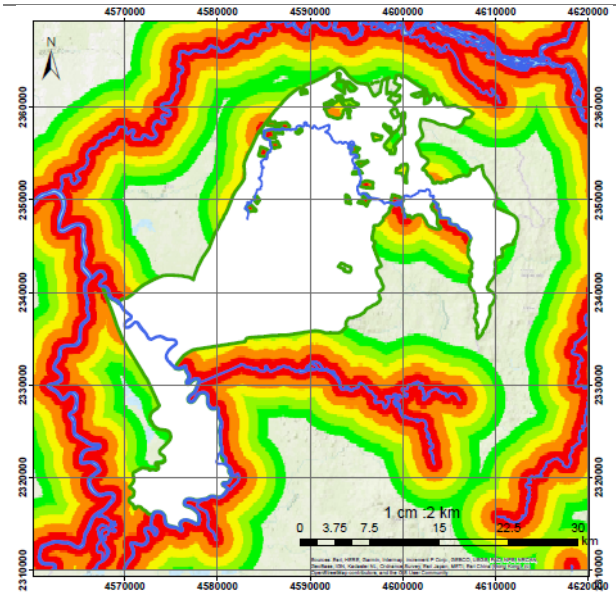
Probability raster - agent mobility by boundaries with forest areas.



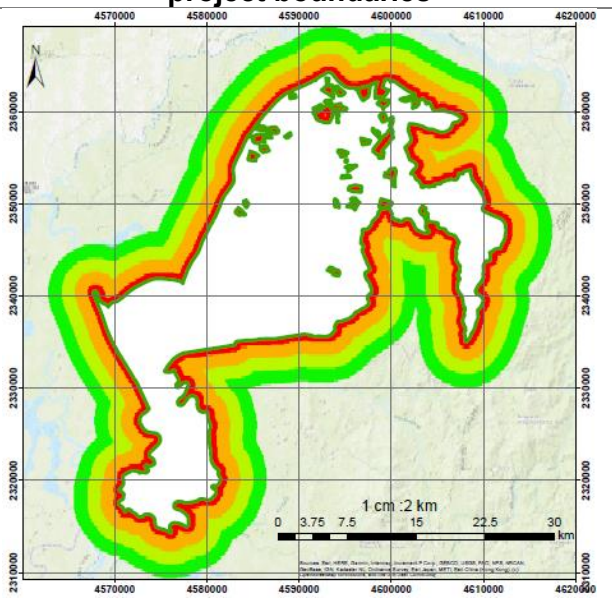
Probability raster - mobility of agents by roads.



Probability raster - agent mobility by double drains.



Probability raster - agent mobility by project boundaries



Prepared by Biotrade S.A.S (2024)

3.2.1.2.4 Combination of Criteria

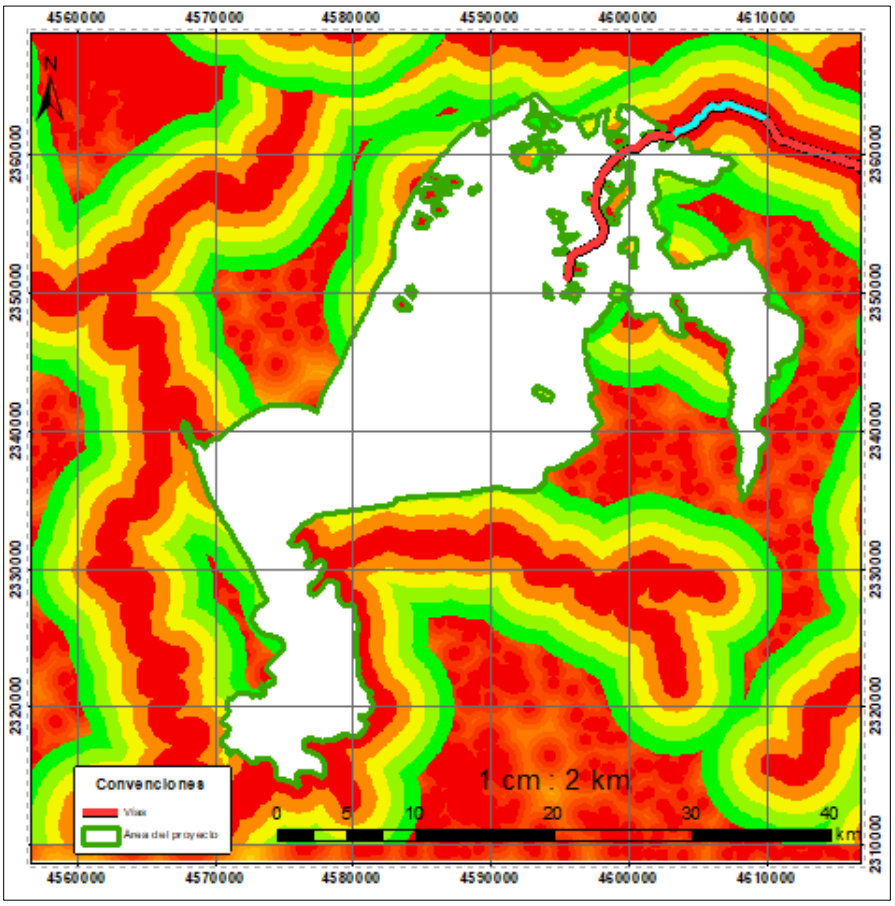
The combination of the output raster to obtain the probability map of the mobility agents, in this case was used by means of a weighted superposition of the variables defined for each criterion (See **Table 13**).

Table 13. Weighting percentage for each criterion defined as a mobility agent for the leakage area of the Jigrantu REDD Project.

Criteria	(%) Weighting
Boundaries with forest areas	25
Double drains	25
Roads	25
Project boundaries.	25
Total	100

Prepared by Biotrade S.A.S (2023)

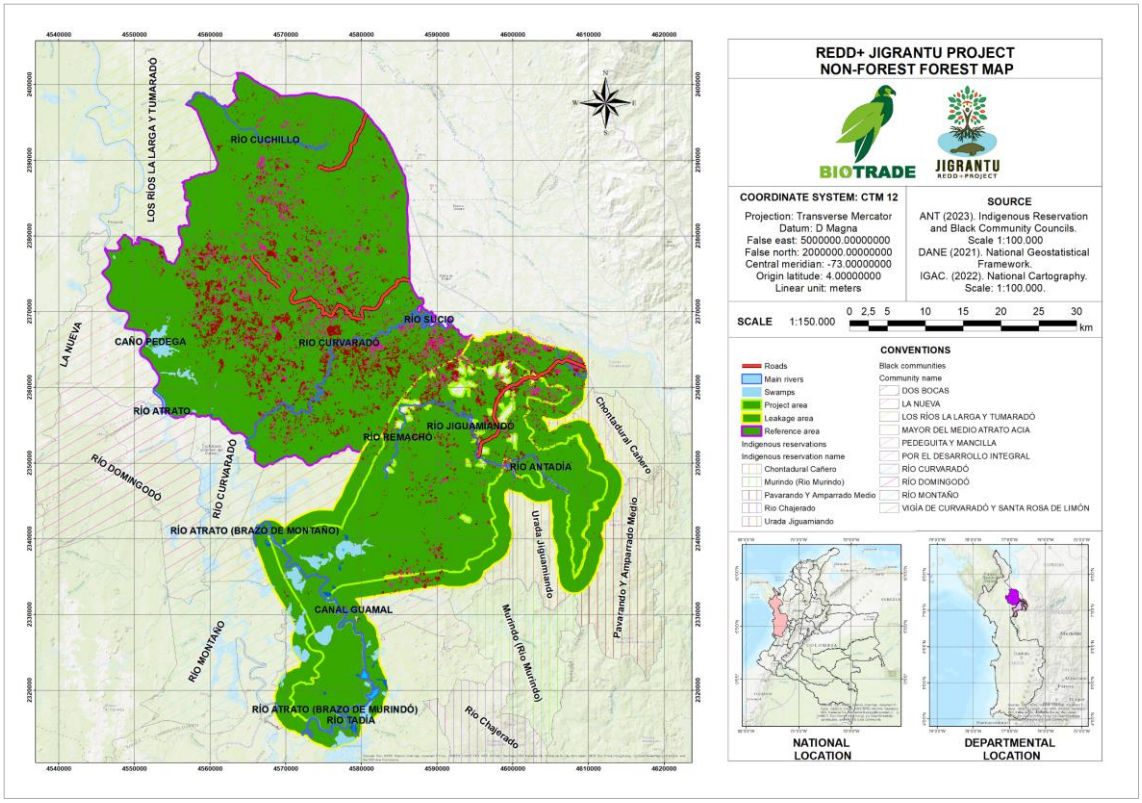
Figure 19. Map of the probability of mobility agents in the leakage area of the REDD+ Jigrantu Project.



Prepared by Biotrade S.A.S (2023)

It has a total area of 45,283 ha of which 41,576 ha were forest in 2009 and 40,330 ha are maintained for 2019, on average there is a loss of coverage of 128 ha/year. The change in forest cover in the leakage area, project area and reference region are presented in the Figure 20, in the Table 14 shows a detail of the legend of the non-forest forest areas in Figure 20 in the period from 2009 to 2018.

Figure 20. Map of non-forest forest from 2009 to 2018 in the leakage, reference, and REDD+ JIGRANTU project area.



Prepared by Biotrade S.A.S (2023)

Note. The information represents forest loss in the period from 2007 to 2018, corresponds to an adaptation for the leakage area, project area and reference area of the global forest change map 2000- 2022 (Hansen *et al.,* 2013).

Table 14. Legend of forest/non-forest map for the period 2007 to 2018 in the leakage, reference, and REDD+ JIGRANTU project area.

LEGEND				
Leak area				
Period	**Condition**	**Symbol**	**Area (ha)**	**% Area**
2009 - 2013	Forest		40.960,40	90,45
	Not forest		615,53	1,36
2014 – 2018	Forest		40.330,02	89,06

LEGEND				
	Not forest		630,39	1,39
Total Leakage Area			**45,282.90**	**-**
Project area				
Period	**Condition**	**Symbol**	**Area (ha)**	**% Area**
2009 - 2013	Forest		70.281,15	94,96
	Not forest		572,05	0,77
2014 – 2018	Forest		68.898,97	93,09
	Not forest		1.382,17	1,87
Total Project Area			**74,012.26**	**-**
Reference area				
Period	**Condition**	**Symbol**	**Area (ha)**	**% Area**
2009 - 2013	Forest		138.333,91	92,78
	Not forest		2.747,96	1,84
2014 – 2018	Forest		132.857,70	89,10
	Not forest		5.476,22	3,67
Total Reference Area			**149,105.28**	**-**

In addition to this, to determine the leakage area of the project, the criteria in the following table were considered Table 15.

Table 15. Criteria for defining the leakage area and its compliance in the REDD+ JIGRANTU project.

Criteria	Compliance
All areas in forest that are within the range of mobility of the identified agents should be included.	Compliant. Including forest areas that are within the range of mobility of deforestation agents. The incidence in terms of access to the area is considered considering water and road density with values of 182.39 and 16.41 (m/km^2) with a comparability with respect to the project area of 75 and 55% respectively.
Exclude areas of restricted access to deforestation and degradation agents.	Compliant. Protected areas of Colombia's National Natural Parks were validated and excluded for the leakage region.

Leakage monitoring and control will be carried out by monitoring the forest cover in this area. In addition, the participation of community members in productive activities will be sought to reduce the need to engage in deforestation practices, both inside and outside the territory.

3.2.2 Carbon sinks and GHG sources

The carbon pools included in the project are shown in Table 16.

Table 16. Selection of carbon reservoirs

Carbon tank	Is it included?	Justification
Aerial biomass	Yes	It is the most representative carbon deposit originated by the execution of the project's actions.

Arboreal vegetation		
Aerial biomass Non-tree vegetation	No	This reservoir is not considered since the implementation of productive activities focused on short-term and annual agricultural crops is expected.
Subway biomass	Yes	A significant accumulation of carbon resulting from the implementation of project activities.
Dead wood and leaf litter	No	This deposit is conservatively discarded since no increase is anticipated after the occurrence of deforestation.
Soil organic carbon	Yes	This reservoir is included considering that the carbon content is expected to change in the project scenario.

The emission sources and GHGs associated with project activities are shown in Table 17.

Table 17. Emission sources and GHG

Fountain or reservoir	GEI	Including (Yes/No)	Justification
Woody biomass combustion	CO_2	No	CO_2 emissions due to woody biomass combustion are not quantified as carbon stock changes.
	CH_4	No	If forest fires occur during the monitoring period, methane emissions will be calculated and added to the emissions for the corresponding period.
	N_2O	No	If forest fires occur during the monitoring period of the activities, nitrogen dioxide emissions will be estimated and included in the emissions for the corresponding period.

3.2.3 Time frames and analysis periods

3.2.3.1 Project start date

The start date of the *JIGRANTU REDD+ Project is based on compliance with the BCR V standard.*3.2 where it states, "*the start date is when the project activities reduce emissions from deforestation and forest degradation. For example, this may involve the initiation of forest management strategies and, where appropriate, forest resource conservation plans, including agreements or contracts. In other words, concrete actions to reduce deforestation/degradation*."

For this reason, the start date is January 2, 2019 given by resolution No.0010 issued by CODECHOCO for Persistent Forest Exploitation (AFP) in the Community Council of Jiguamiando, this management plan was the first to be carried out in the project area,

however, there are currently 5 resolutions (**Table 18**)[29] totaling an area of 2,161.5 ha as shown in the **Figure 21**. The actions of the AFP are carried out within the Community Council of Jiguamiando and are integrated into the community's sustainable forest management strategy within Pillar C, Sustainable Development; Program *i.* Sustainable productive projects; and activity 31, implementation of sustainable productive projects with an emphasis on adaptation to climate change.

The results on the dynamics of deforestation reduction attributed to Forest Management in the AFP areas executed in the Community Council of Jiguamiando (**Table 19**), were analyzed based on deforestation trends by means of a comparison between the area of the resolutions and the area of influence of the same based on a surrounding buffer of 1 Km, and the private properties overlapping or overlapping with the area of the resolution **Figure 22**.

Table 18. Data of resolutions implemented in the project area

LEGEND								
Date	**Resolution No.**	**Symbol**	**Project Area (ha)**	**% Project area**	**Private Property (ha)**	**% Private Property**	**Total Area (ha)**	**% Total Area**
2-ene-19	0010 of 2019		233,28	10,79	166,56	65,55	399,84	16,55
26-dic-19	1712 of 2019		485,45	22,46	72,55	28,55	558,00	23,10
26-dic-19	1713 of 2019		449,98	20,82	7,43	2,92	457,41	18,94
17-nov-20	1310 of 2020		498,42	23,06	0,42	0,16	498,84	20,65
17-nov-20	1311 of 2020		494,32	22,87	7,14	2,81	501,46	20,76
Total			**2161,45**	**100,00**	**254,10**	**100,00**	**2415,55**	**100,00**
Area description		**Symbol**			**Area (ha)**			
Buffer (1 km)					5860,88			
Private Property					254,10			

Figure 21. Map of forest harvesting area, in the Jiguamiando community council of the JIGRANTU REDD+ Project

[29] Available in: 12. MONITORING EVIDENCE/34. Diagnosis of the state of ecosystems/Diagnosis of conservation actions/ Annexes of the Conservation Actions Report 23-29 June/Forest management of the Jiguamiando River

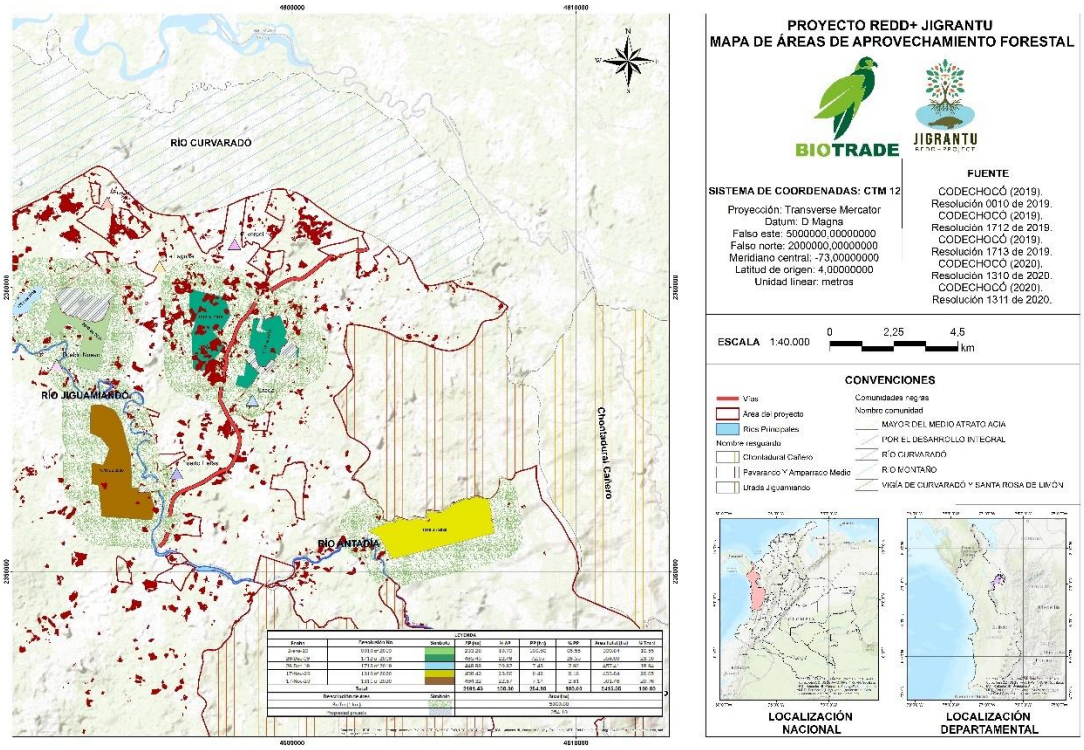
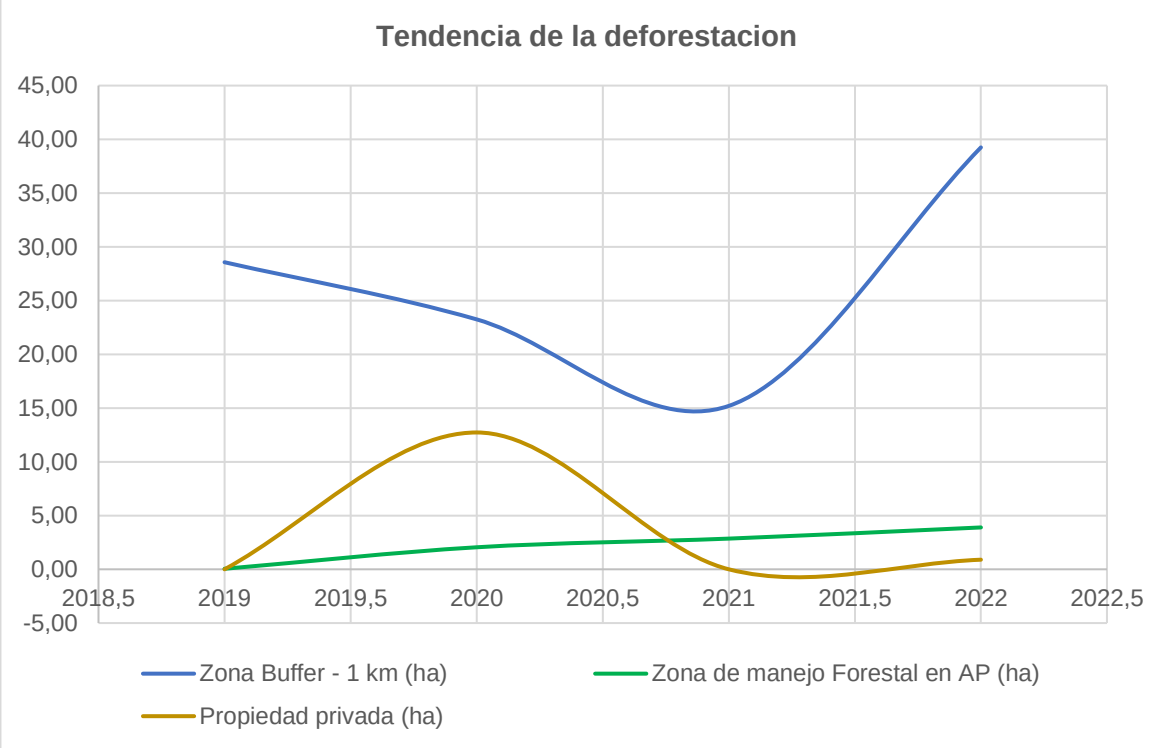


Table 19. Deforestation data in areas with Persistent Forest Harvesting resolution, in the project area (buffer zone) and private land.

LEGEND									
Date	**Resolution No.**	**Clasification**	**Symbol**	**Area (ha)**	**% Area**	**Total Area (ha)**	**% Total Area**	**Total deforestation area (ha)**	**% Total deforestation area**
2-ene-19	0010 of 2019	REDD Project		233,28	10,79	399,84	16,55	0,70	0,17
		PA Deforestation		0,70	0,30				
		Private property		166,56	65,55				
		PP Deforestation		0,00	0,00				
26-dic-19	1712 of 2019	REDD Project		485,45	22,46	558,00	23,10	87,43	15,67
		PA Deforestation		85,19	17,55				
		Private property		72,55	28,55				
		PP Deforestation		2,24	2,63				
26-dic-19	1713 of 2019	REDD Project		449,98	20,82	457,41	18,94	4,36	0,95
		PA Deforestation		1,97	0,44				
		Private property		7,43	2,92				
		PP Deforestation		2,39	32,14				
17-nov-20	1310 of 2020	REDD Project		498,42	23,06	498,84	20,65	0,50	0,10
		PA Deforestation		0,50	0,10				
		Private property		0,42	0,16				
		PP Deforestation		0,00	0,00				
17-nov-20	1311 of 2020	REDD Project		494,32	22,87	501,46	20,76	5,98	1,19
		PA Deforestation		5,98	1,21				
		Private property		7,14	2,81				
		PP Deforestation		0,00	0,00				
Total						**2415,55**	**100,00**	**98,98**	**100,0**

Figure 22. Deforestation Trend in Forest Management Areas in Persistent Use (PA), Buffer Zones and Privately Owned Properties with PA



The graph shows the deforestation trend from 2019 to 2022 in three different areas: Buffer Zone - 1 km (ha), Forest Management Zone in Harvesting Areas (AP) (ha), Private Property (ha). It can be inferred that in the Buffer - 1 km zone (Blue Line) in 2019 deforestation begins in approximately 28 hectares. From 2019 to 2021, there is a steady decrease in deforestation, reaching a minimum around 2021 with approximately 15 hectares, but for 2021 to 2022, a significant increase in deforestation is observed, reaching a value close to 40 hectares by 2022. On Private Property (Yellow Line) in 2019, deforestation starts at 0 hectares, in the period from 2019 to 2020, deforestation increases rapidly, reaching a peak in 2020 with approximately 12 hectares. For the period from 2020 to 2021, a decrease in deforestation is observed, dropping to about 1 hectare and remains the same in the period from 2021 to 2022. In the Forest Management Zone in AP (Green Line) in 2019, deforestation is 0 hectares, in the period from 2019 to 2022, there is a gradual increase in deforestation, rising from approximately 0 to about 2 hectares in 2022, the general trend is of a slow and steady increase in deforestation. Although deforestation has increased, the increase is slow and controlled, which reflects effective management with forest management implemented.

It is expected that, with the benefit of the sale of the carbon credits obtained from the first verification of the project, a comprehensive strategy for sustainable forest management will be designed and implemented, where forest harvesting achieves greater effectiveness in controlling deforestation in conjunction with other actions such as enrichment of the natural forest with timber species, agroforestry arrangements, plantations, among others.

On the other hand, in the Councils of Turriquitado and La Grande, the actions of the *forest management strategy* focus on the implementation of the Environmental Action Plan for the protection and recovery of the Atrato River basin, within the framework of Judgment T-622 of November 2016 of the Constitutional Court, which responded to the action for the protection of the black communities that inhabit the Atrato River basin in in which the Community Councils of La Grande and Turriquitado actively participated through the Association of Community Councils of Bajo Atrato (ASCOBA).

The tutela action was based on the violation of the fundamental rights to life, resulting in effects on health, water, food security and the environment as a result of illegal mining activities. The ruling recognizes "*the Atrato River, its basin and tributaries as an entity subject to rights*." It then determines 13 orders to protect, conserve, maintain and restore the tributary and the definition of responsibilities to twenty-five entities to guarantee the protection, maintenance, conservation and restoration of the Atrato River and its communities. Compliance with the Judgment not only seeks the protection of the natural environment, but also advocates for the empowerment of local communities, thus ensuring a comprehensive and sustainable approach to the management of natural resources.

A strong element of this process of community and institutional articulation is the fulfillment of the fifth order of the Judgment, which states:

"FIFTH.- ORDER the Ministry of the Environment, the Ministry of Finance, the Ministry of Defense, Codechocó and Corpourabá, the Governors of Chocó and Antioquia, and the defendant municipalities, with the support of the Humboldt Institute, the Universities of Antioquia and Cartagena, the Institute of Environmental Research of the Pacific, WWF Colombia, and the other national and international organizations determined by the Office of the Attorney General of the Nation, and in conjunction with the communities Within one year of the notification of the judgment, a plan is designed and implemented to decontaminate the basin of the Atrato River and its tributaries, the riparian territories, recover their ecosystems and avoid further damage to the environment in the region. This plan will include measures such as: (i) the restoration of the Atrato Riverbed, (ii) the elimination of the area banks formed by mining activities and (iii) the reforestation of areas affected by legal and illegal mining. In addition, this plan will include a series of clear indicators to measure its effectiveness and must be designed and implemented in concert with the inhabitants of the area, as well as guaranteeing the participation of the ethnic communities that settle there within the framework of ILO Convention 169."

Compliance actions for the formulation and implementation of the Environmental Action Plan of the fifth order of the T-622 judgment are described below and are set out in the **Figure 23**.

1. July 26, 2018, first commission of Guardians of the Atrato River in which the structural guidelines for the collective construction of the comprehensive plan for the comprehensive recovery of the river were established, as well as the operational regulations of the commission. (MINAMBIENTE, 2019)

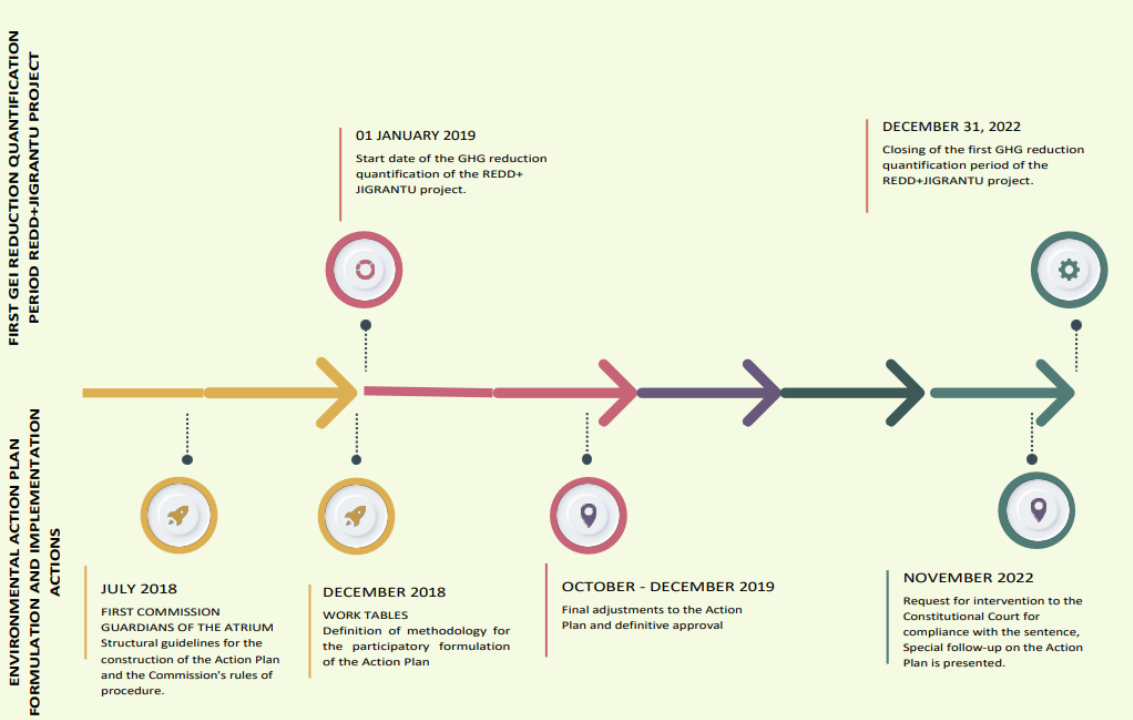
2. December 13, 2018, working groups, one with the technical team of the Collegiate Body of Guardians for the analysis of the matrix and articulating the construction of the action plan (MINAMBIENTE, 2018). In this working table, it was possible to reach an agreement between the Ministry of Environment and the Guardians on the importance of building a joint methodology for the participatory formulation of the action plan. The development of this methodology led to an unprecedented exercise in environmental governance that served as a reference for other orders and is even an example for other processes in the country. (COCOMAPOCA, 2022)

3. October 2019: The Ministry of Environment and Sustainable Development delivers the first version of the Plan to the Collegiate Body. The guardians of the Atrato reviewed this proposal and issued significant comments. That they conjectured the holding of two other Technical Committees to agree on the adjustments, as well as the integration of a review team to the drafting of the plan. (COCOMAPOCA, 2022)

4. On 21 December 2019, having reached agreement on the document formulated, the action plan was approved at the 13th session of the Guardian Commission. (COCOMAPOCA, 2022)

5. November 03, 2022 Request for intervention by the Constitutional Court in the follow-up to judgment T-622. A special exercise is being carried out to comply with the provisions of the Plan of Action. The organization that is part of the Collegiate Body of the Guardians makes a decisive demand. (COCOMAPOCA, 2022)

Figure 23. Comparative start date and actions Environmental action plan



Prepared by Biotrade S.A.S (2024)

The action to comply with Judgment T-622 is binding on the collective territories of La Grande and Turriquitadó as they are part of the Atrato River basin;[30]tags. The Community Councils of La Grande, Turriquitadó and the Jiguamiandó River have transversal processes of sustainable management of natural resources, associated with their cultural dynamics, as well as the movement of joint territorial defense actions that have taken years of resistance and organization to achieve the attention of the State in guaranteeing the protection of social and environmental rights.

These legal acts are understood as socio-environmental processes that have an effective impact on the conservation of forests, by promoting the construction of support networks between communities and institutions to guarantee command-control measures in the restitution of environmental and social rights to the territory, which improves territorial governance in a framework of joint action that promotes the participation and effective action of communities.

[30] 4. START DATE

The community councils of La Grande, Río Jiguamiandó and Turriquitadó explored economic options to manage their territory independently. Its main objective has been to protect its territory, preserve biological diversity, develop sustainable production projects, improve access roads and strengthen social infrastructure, as well as public services. However, despite their efforts, the actions undertaken have not had enough impact to achieve the goals set by the community.

For this reason, these councils partnered with Biotrade S.A.S. to manage a REDD Reduced Emissions from Deforestation and Forest Degradation project. This partnership was formalized through the signing of alliance contracts with each of the legal representatives of the community councils, which took place on October 23, 2022[31] . Through the General Assemblies, participatory rural diagnosis PRA, surveys, interviews, and field visits, which took place from October 19 to 31, 2022[32] , the inputs for the participatory structuring of the project called "REDD+ JIGRANTU Project" were achieved, in these workspaces the Governance System and the Benefit Sharing System SDB were built, and principles and rules for the proper implementation of the project were established.

3.2.3.2 Period of quantification of GHG emissions reduction

January 2, 2019, to January 1, 2049 (30 years).

3.2.3.3 Follow-up periods

The first monitoring period corresponds to January 2, 2019, to December 31, 2022. Subsequently, monitoring reports are expected to be carried out every 2 years.

3.3 Identification and description of the baseline scenario

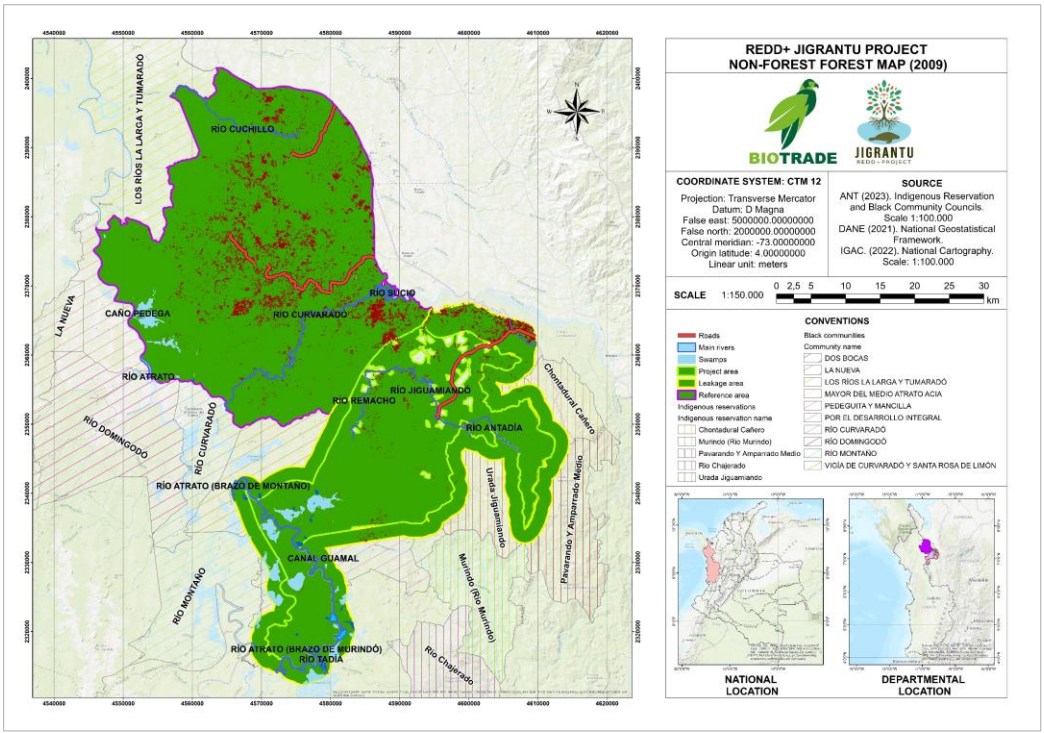
The following is a detailed identification, description and analysis of the causes and factors responsible for deforestation, with the purpose of developing specific measures and actions aimed at reducing deforestation and forest degradation in the project area.

[31] 6. LEGAL COMPLIANCE\REDD+ project alliance agreement
[32] 16. EVIDENCE OF FORMULATION

3.3.1 Spatial and temporal dimensions

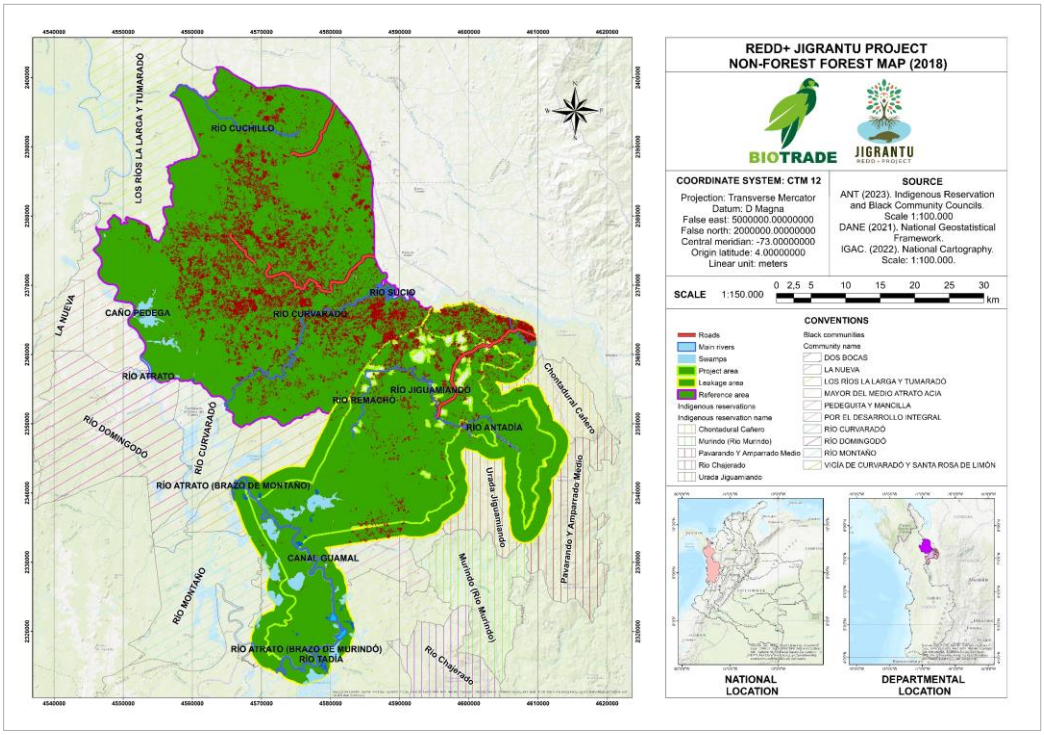
An analysis of how and when deforestation occurred in the reference region, as well as in the specific project area and leaks, was carried out during the period between 2009 (Figure 24.) and 2018 (Figure 25.).

Figure 24. Map of non-forest forest at the beginning of the reference period (2009)



Prepared by Biotrade S.A.S (2023)

Figure 25. Map of non-forest forest at the end of the reference period (2018).



Prepared by Biotrade S.A.S (2023)

3.3.2 Context

3.3.2.1 National context

Deforestation is a serious environmental problem in Colombia. According to MADS and IDEAM (2018)[33] , the country has lost more than 6 million hectares of forests from 1990 to 2016, despite a decrease from 2005. The areas with the highest percentage of loss occurred in municipalities with high incidence of armed conflict. It is important to note that, in Colombia, natural forest is any land mainly occupied by trees, which may include shrubs, palms, guaduas, herbs and lianas, characterized by having a predominant tree cover with at least 30% density in the canopy, a minimum height of 5 meters at the time of identification and a minimum area of 1 hectare. Excluded from this definition are forest areas of commercial plantations, palm plantations and trees planted for agricultural purposes[34] .

[33] Integrated Deforestation Control and Forest Management Strategy
[34] Definition of natural forest in Colombia.

Based on the reconstruction of the general timeline in Colombia[33], the relationship between forest cover change and the socioeconomic processes most influential in the dynamics of deforestation at the national level was identified. the relationship between forest cover change and the socioeconomic processes most influential in the dynamics of deforestation at the national level has been identified. During the period from 1990 to 2015, the main cause of deforestation throughout the country was the conversion of forests into pastures, known as praderizacion.

In the 1990s, a progressive increase in illicit crops was observed in the Amazon and the Pacific, which was subsequently brought under control thanks to improved monitoring and control by the end of the 2000s. During this time, industrial palm cultivation also increased, resulting in the transformation of forests into these plantations[33].

From 2010 to 2015, mineral extraction activities and coca cultivation for illicit use became significant factors driving the deforestation process. The highest concentration of alluvial gold mining was registered in the departments of Antioquia and Choco, representing more than 75% of the areas destined at the national level. In the latter region, mineral extraction was responsible for the greatest direct losses of natural cover[33].

The main direct causes of deforestation in the country identified in 2017[35] include the expansion of agricultural and livestock areas, illegal mineral extraction, infrastructure development, timber extraction and forest fires. These causes were triggered by indirect or underlying factors involving complex variables in social, political, economic, technological and cultural domains.

The underlying causes that stand out are related to technological and economic factors, such as markets, illegal economies, and government incentives, as well as political and institutional aspects, such as sectoral and territorial policies. Cultural factors also play a role, such as the perception of the forest, the rootedness to the territories, ancestral practices and education, as well as demographic factors, such as population growth and migration. Biophysical factors such as slope, climate, soil types, deposits, water supply and accessibility to forest areas also play an important role[35].

Deforestation is a complex and multidimensional challenge that impacts the entire territory. It is crucial to understand the dynamics at the national level to better understand what is happening at the regional level. This context allows us to identify the underlying causes of deforestation, analyze patterns of change at different times and places, and

[35] Characterization of the main causes and agents of deforestation at the national level: 2005-2015 period.

delimit priority areas for forest conservation and restoration. It also contributes to the design of effective policies and strategies to address this problem and promote sustainable forest management.

3.3.2.2 Regional context

In Colombia, forest loss is mainly concentrated in the Pacific, Amazon and Caribbean regions[35]. In the Pacific region, deforestation is attributed to various human activities, such as the expansion of the agricultural frontier, illegal mineral extraction, logging and other factors related to infrastructure development.

The loss of forests results in an increase in the extent of other forms of land cover with various associated uses. In the Pacific region, the presence of shrublands accounted for 48% in 2015, considerably surpassing other coverages such as pastures, which occupied 14%. This shows a different behavior than that observed at the national level, where pastures were the main cover that replaced forest with 50%, followed by shrublands with 28%, crops with 7% and grasslands with 5%. Although there are differences in behavior, these coverages are generally associated with agricultural uses, such as extensive cattle ranching and small and medium-scale agriculture[35].

In 2015, approximately 79% of the region was covered by forests[35] ,these harbor the highest concentration of endemic species and biological diversity in Colombia, and one of the highest globally[36] . The history of colonization here was driven by the gold rush, resulting in a migration characterized by logging and the temporary creation of settlements. This, together with the climatic conditions, topography and forest density, made the region inhospitable to settlers, hindering the early creation of cities and strategic ports[37] .

The economy has depended on the extraction of precious metals, fishing and timber resources, and the abundance of natural resources has historically sustained the communities and the cultural development of the inhabitants of the Colombian Pacific. However, the constant economic, political and social marginalization has hindered the development of secondary economies based on services not linked to the exploitation of natural resources[38] .

[36] African palm in the Colombian Pacific: illegality, consequences and violation of territorial rights
[37] Black Communities in the Colombian Pacific. Innovations and ethnic dynamics.
[38] Economies of the Colombian Pacific

Alarming social indicators are observed in the region. More than 50% of the municipalities with high levels of Unsatisfied Basic Needs (UBN) are in this area, especially in the departments of Choco and Nariño. In addition, more than 50% of the municipalities with a high incidence of the Multidimensional Poverty Index are found there, this index indicates that almost the entire population faces shortages in access to education, health services, social security, and basic services in housing. This creates a level of underdevelopment compared to the national average, which leads communities to depend on productive practices that only guarantee their daily survival. In this region, there are partially or totally 163 collective territories of black communities and 163 indigenous reserves[35].

This region follows the national trend of deforestation, mainly due to the expansion of the agricultural frontier. However, it presents particularities in terms of resource development and exploitation. Despite its natural wealth, illegal exploitation largely benefits external actors, while local communities depend on subsistence practices, which hinders their development and well-being.

Forest loss in this region not only has environmental, but also social and cultural impacts, as it affects indigenous and Afro-descendant communities that depend on forests for their livelihoods and have a historical and cultural connection to these ecosystems. To address this problem, it is crucial to implement strategies and policies that promote forest conservation and restoration, while considering the needs and rights of local communities. Continuous monitoring and effective enforcement are essential to combat deforestation in this important region of Colombia.

3.3.2.3 Local context

According to the results of the monitoring until 2020 and part of 2021, MADS and IDEAM reported on the deforestation situation in different natural regions of the country. These results show a decrease in the Pacific, with the department of Choco registering the greatest reduction, approximately 2,900 hectares, with the municipality of Riosucio leading the decline[39] . However, it is important to note that historically this department has suffered significantly from deforestation and has been strongly affected by the armed

[39] Deforestation monitoring results year 2020 and first quarter of 2021

conflict[40] . Among the main causes of deforestation in this region are alluvial gold mining, expansion of urban areas, illicit crops, agriculture and cattle ranching.[41]

The territory of the councils of Rio Jiguamiando, La Grande and Turriquitado has been affected by the displacement of most of its inhabitants due to the armed conflict, which led to the transformation of the community social structure, loss of the social fabric, destruction of the historical heritage, thus creating a weakening of autonomy and the guarantee of their ethnic and territorial rights[42] .

The arrival of individuals with interests that did not prioritize the preservation of ecosystems caused lasting changes that continue to affect their territories[43] . Logging companies such as Uraba and Darien and Atrato exploited more than ten thousand hectares of forest without prior consultation in the area, to finance their activities and those of armed groups[42] in order to finance their activities and those of armed groups, in addition to displacing local communities from their lands[44].

Other exploitation methods included extensive cattle ranching and oil palm cultivation with companies such as Urapalma, Palmura S.A and Acopalma[45] , among others, which totaled more than 22,000 hectares for palm plantation[46] and more than 4,000 hectares for extensive cattle ranching. However, there are reports that in 2008 a plague severely affected the palm crops, which has led to the non-existence of this type of crops and associated companies at present[43].

Subsequently, the arrival of people from outside the region occurred with the complicity of illegal groups, which also impacted the environment due to the establishment of illegal crops.This has also impacted the environment due to the establishment of illegal crops. This has caused the contamination of water sources and has promoted other illegal activities in the area, such as gold and platinum mining. These activities have led to the accumulation of sediment in the Atrato River and its tributaries due to contamination by mercury and other chemicals derived from the processing of these illegal crops[43].

[40] The environment as a victim of the armed conflict in the department of Choco.
[41] Deforestation in the Department of Choco using LANDSAT and SENTINEL satellite images during the period 2015-2019.
[42] The environment as a victim of the armed conflict in the department of Choco
[43] Curbarado and Jiguamiando: the challenge remains, land restitution.
[44] Logging companies helped paramilitaries to dispossess land in Uraba and Darien
[45] The Palm Cunning of Jiguamiando
[46] Analysis of the multidimensional impact of African palm monoculture in the communities of Curvarado and Jiguamiando under Atrato Chocoano 1996 2005

Considering the previous information, it is possible to understand that, although the project area is owned by the members of the community councils, other external actors from different regions of the country have also exerted and continue to exert pressure on the territory. The relationship between the communities and the armed groups has been mainly marked by fear and the inability of the communities to protect their culture and territory, causing many of the community members to remain far from their territories[42,43 y 46].

In terms of the socioeconomic aspects of these territories, the productive systems were previously traditional, making these activities one of the bases of food security. With the installation of storage centers and camps, food crops were destroyed, swamps, streams and rivers were diverted, transforming the environmental conditions to establish agricultural exploitation activities, specifically for palm cultivation and extensive cattle raising[43].

Figure 26. Modification of the waterway for the establishment of activities

Source: Biotrade S.A.S (2022)

The number of people currently linked to the territory is less than the total number of people in the community; there are still families who wish to return to their communities. The main economic activities in the region include agriculture, fishing, cattle ranching, mining, hunting, forest harvesting, gathering forest products, and some handicrafts. The production systems are characterized by a lack of technology, which results in low yields

due to the high incidence of pests and diseases caused by flooding. In addition, the obstruction of the Atrato River makes it difficult to access marketing channels.

Figure 27. Some of the activities present in the project area are as follows.

Note: The activities correspond to agriculture with banana, cassava, rice and corn crops, livestock, mining and forestry[47]. *Source.* Biotrade S.A.S (2022)

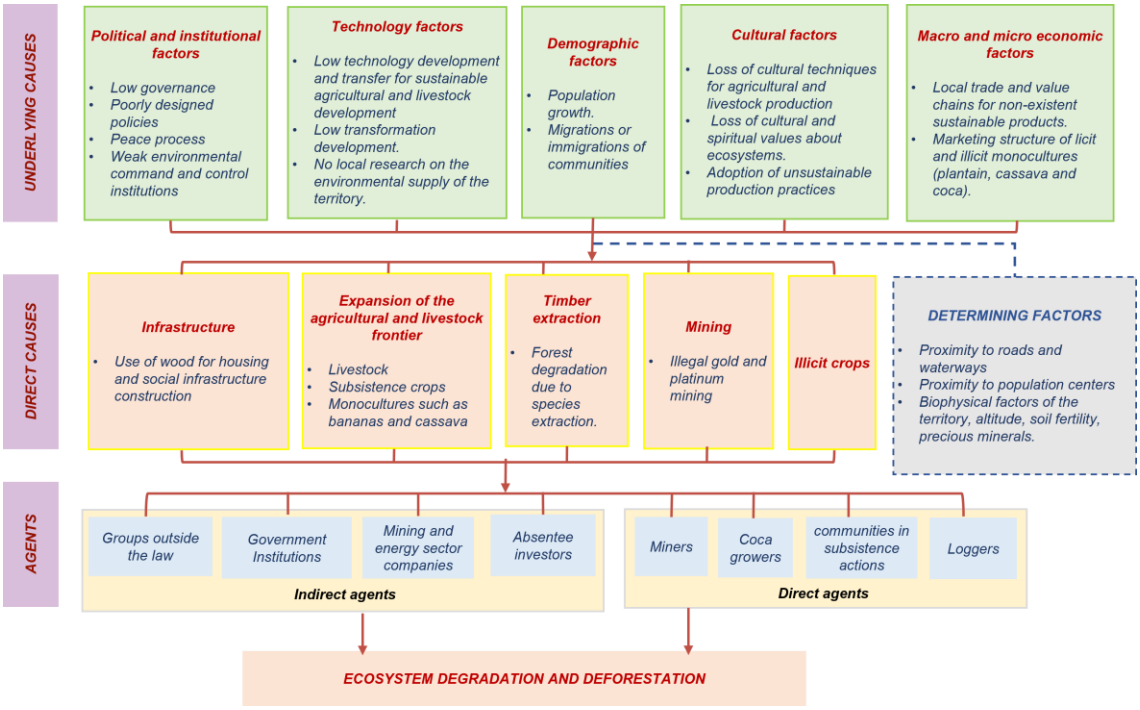
Agricultural crops include bananas, corn, rice, cassava and, to a lesser extent, chontaduro, papaya, sugarcane, lulo, caimito, sapote, borojo, guama, lemon, guava, apple, mango, mandarin, orange, avocado, coconut, cocoa and soursop. Prolonged flooding and poor soil quality affect planting times and the productivity of essential crops such as rice, corn, cacao, bananas, and chontaduro. Family income does not exceed the minimum monthly wage. Currently, many of the fertile areas of the territory are used for illicit crops, as they have been taken over by outsiders in complicity with illegal groups.

[47]Activities identified in field trips, the KMZ are presented with photos and different control points: 16. FORMULATION EVIDENCE\KML with tours and photos JIGRANTU

3.3.3 Analysis of agents, drivers and underlying causes of deforestation and its likely future development

Considering the previous context, the analysis of the factors of deforestation and degradation in the REDD+ JIGRANTU project area is carried out, which is shown in Figure 28., identifying direct and indirect agents, direct and underlying causes, and pre-determining factors for the deterioration of ecosystems in these territories.

Figure 28. Analysis of deforestation factors in the JIGRANTU REDD+ Project area.

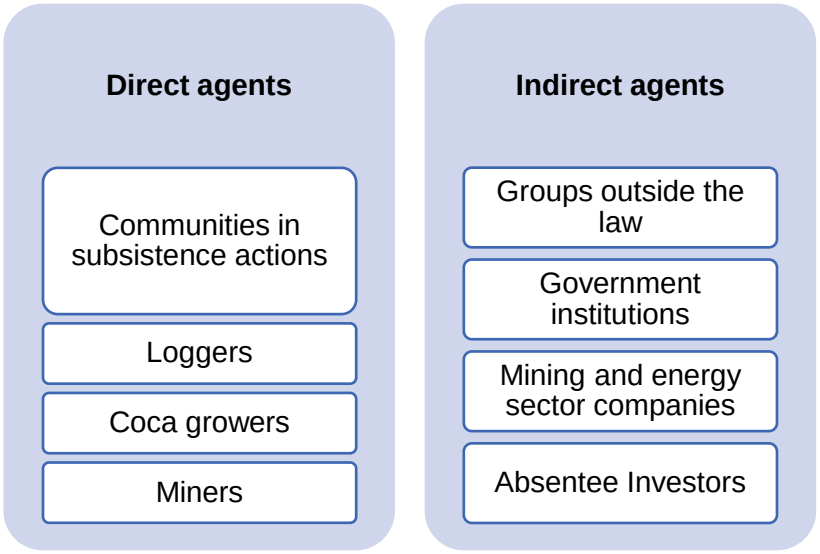


Source. Biotrade S.A.S (2023)

3.3.3.1 Identification of deforestation agents

The economic activity of the community councils is based on the use of natural resources for subsistence, and each of the agents identified in the project area are described below (see Figure 29.), which in the practice of their economic activity impact the composition, diversity and structure of the forest.

Figure 29. Identified stakeholders in the JIGRANTU REDD+ Project area.



Source: Biotrade S.A.S (2023)

3.3.3.1.1 Direct agents

3.3.3.1.1.1 Agent 1. Communities in subsistence actions

According to the structure of the Gross Domestic Product (GDP) of the department of Choco in 2019, the second largest contributor to the economic progress of rural families was the agriculture, livestock, hunting, forestry, and fishing sector. However, these activities are carried out under precarious conditions, which prevents the production of high-quality products that can compete in markets, largely because there are no guarantees of technical support, technology, infrastructure, access to roads and fair trade. Even so, people have been involved in agriculture and livestock farming for decades, which helps them meet their needs for self-consumption[48] .

Among the most notable production methods in the department are the following: in agriculture, crops such as rice, corn, cassava, bananas, cocoa, sugar cane, pineapple, bananas and borojo. Animal production focuses on poultry farming, fish farming, artisanal fishing, pig farming, and dual-purpose livestock. There is also a forestry focus through the cultivation of trees in agroforestry systems, such as oak, cedar and coffee walnut[48].

[48] Departmental Extension Plan Department of Choco 2020-2023

Through socioeconomic surveys conducted with members of the communities in the project area[49] , it was identified that they grow food both for their own subsistence and to sell, especially in Belen de Bajira. The main crops include plantain, yucca, corn, and rice, with cultivation areas varying from 0.5 to 5 hectares. In terms of animal husbandry, they focus on the production of pigs, chickens, and cows, and to a lesser extent, they practice fish farming with Cachama, mojarra and tilapia.

3.3.3.1.1.2 Agent 2. Loggers

Logging in Colombia's Pacific region is an important activity, especially in the areas of Tumaco, Buenaventura and the Lower and Middle Atrato Coast. However, it is not the main source of income in the region. Fishing, practiced in an artisanal manner and in some parts of the Atrato River, is the most important economic activity in Carmen del Darien and in the Colombian Pacific region[6].

Timber is harvested for a variety of purposes such as firewood, construction, fencing, roof maintenance and decking, repair and construction of small bridges, and to a lesser extent, for sale[49]. The project area harvests economically important species, some of which have permits from CODECHOCO for the implementation of Forest Management Plans[50] . In the Table 20. details the volume granted by species in the different permits (see Table 21.) for the community council of Rio Jiguamiando.

Table 20. Volume granted by species from 2019 to 2023.

Common name	Scientific name	Volume (m^3)
Caracoli	*Anacardium excelsum*	9,144
Amargo	*Andira inermis*	2,520
Sande	*Brosimum utile*	5,955
Guino	*Carapa guianensis*	5,517
Abarco	*Cariniana pyriformis*	10,080
Cedro	*Cedrela odorata*	10,174
Choiba	*Dipteryx oleifera*	9,945
Higueron	*Ficus insipida*	7,506
Higueron	*Ficus maxima*	1,200
Higueron	*Ficus schippii*	2,643
Balsamo	*Myroxylon balsamum*	1,814

[49] Location of the surveys for the socioeconomic characterization: 16. EVIDENCE OF FORMULATION\ JIGRANTU surveys
[50]Information on forest harvesting in the Jiguamiando River: 12. EVIDENCE MONITORING\ Actions conservation\Rio Jiguamiando Forest management.

Common name	Scientific name	Volume (m^3)
Cativo	*Prioria copaifera*	2,109
Roble	*Tabebuia rosea*	13,939
Total, general		**82,546**

Source: Biotrade S.A.S (2023) based on resolutions (Table 21.)[32].

Table 21. Volume granted by resolution from 2019 to 2023.

Standard	Volume (m^3)
Resolution No 0010 of 2019	11,000
Resolution No 1310 of 2020	14,611
Resolution No 1311 of 2020	14,400
Resolution No 1712 of 2019	11,461
Resolution No 1713 of 2019	11,074
Resolution No 2296 of 2022	10,000
Resolution No 2297 of 2022	10,000
Total, general	**82,546**

3.3.3.1.1.3 Agent 3. Coca growers

Coca cultivation in Colombia's Pacific region has been a topic of interest in recent years. According to a report by France[51] , the Colombian Pacific region is the place where 44% of the 204,000 hectares of drug crops in Colombia are planted, according to the United Nations balance for 2021. In the project area, this activity is presented as a means of livelihood for the communities and external agents that come to take advantage of places with high fertility, leaving few planting opportunities for community members and destroying hectares of forest for the establishment of these crops.

3.3.3.1.1.4 Agent 4. Miners

Illegal mining is a serious problem in Colombia's Pacific region. According to a WWF report[52], illegal gold mining is driven by criminal and corrupt networks and is one of the main causes of deforestation and environmental contamination in Colombia. Illegal mining has degraded at least 3,185 hectares in 13 municipalities in the Choco region[53] . As for the minerals exploited in the region, mining activity has been developed since pre-Columbian times, with the extraction of gold in rivers and streams. Currently, mining in the Pacific region has diversified and includes the extraction of platinum, copper, and

[51] The unsuspected crisis in Colombia's cocaine business
[52] Illegal gold mining that destroys Pacific rainforest is driven by criminal and corrupt networks
[53] More than 3,000 hectares degraded by illegal mining in Choco

other minerals. Within the project area in the subtraction zone of the Pacific Forest Reserve there are mining titles in force for the exploitation of different minerals occupying an area of more than ten thousand hectares, which shows the influence of mining in this area (see Figure 8).

3.3.3.1.2 Indirect agents

3.3.3.1.2.1 Agent 1. Groups outside the law

Deforestation caused by illegal groups has severe environmental, social, and economic consequences. These include biodiversity loss, climate change, human rights violations, increased poverty, and armed conflict. The actions of these groups in areas of high biodiversity represent a major conservation challenge, as they significantly modify land use, mainly to establish illicit crops. In addition, illegal extraction of natural resources and land tenure conflicts, which result in the expulsion of local communities, contribute to harmful activities such as illegal logging and the transformation of forest areas. The lack of control and governance in these regions further complicates the situation[54].

One of the areas most affected by the armed conflict in Colombia is the department of Choco, which has been affected not only in terms of people but also in terms of the environment, with the contamination of soil, air, and water. The project area has been strongly impacted by the armed conflict, and today there are still people who are outside the territory due to the fear that these groups have inflicted over the years.

The Special Characterization Plans of each of the councils detail the impacts that the armed conflict has had in these areas, mentioning invasions in the territory due to the lack of territorial control, fear due to constant threats to the community, thus generating displacement of the young population, loss of social fabric, destruction of historical heritage and weakening of autonomy and guarantee of ethnic and territorial rights. Thus, the impact that these groups have had over the years within the project area is evident; they have historically promoted land use change processes to finance their activities[55] .

3.3.3.1.2.2 Agent 2. Government Institutions

Government institutions play an important role in the establishment and implementation of policies and regulations related to forest management; these are public entities at the national, regional, and local levels whose functions, regulations and actions influence

[54] Impacts of the armed conflict on conservation and new territories and their relationship with the post-conflict period.
[55] Special Characterization Plans of the Community Councils in the project area.

deforestation trends. They can create conditions that encourage deforestation or, on the contrary, implement measures to prevent it. Among these actors are the Presidency of the Republic, the Ministry of Environment and Sustainable Development, National Natural Parks of Colombia, the Ministry of Agriculture, the Agrarian Bank, the National Land Agency, the Ministry of Mines and Energy, the Attorney General's Office, IDEAM, among others[56] .

The way in which forests are managed in Colombia, through its policies and regulations, is complex and has led to conflicting interpretations. This has resulted in conflicting messages regarding the conservation and sustainable use of forests[56]. In addition, in several areas of the country permits are granted for activities related to natural resource use, timber harvesting, agriculture and mining, and the way in which these permits are granted and monitored can often have a direct impact on deforestation levels, and corruption in the concession process can further exacerbate this phenomenon. The capacity of the state to inspect and enforce laws related to deforestation control, the lack of resources, trained personnel, and political will to address illegal logging and other destructive activities allows it to continue unchecked[57] .

Problems related to land tenure and pressure to expand the agricultural frontier, as well as lack of knowledge of land zoning, generate land use change in areas unsuitable for other activities. Likewise, the creation of government incentives and subsidies have an influence on change decisions; the existence of policies that favor agricultural expansion without adequately considering environmental sustainability can contribute to increased deforestation[58] .

3.3.3.1.2.3 Agent 3. Mining and energy sector companies

Traditionally, the department of Choco has been characterized for having mining as its main economic activity, although most of its history has been carried out in an artisanal way by peasants, Afro-descendant communities, and indigenous people of the territory. Recently it has been exploited by national and international companies through concessions granted by the Colombian State[59] .

The relationship between companies in the mining and energy sector, bid mining and deforestation of Choco's forests is related to the expansion of infrastructure, as road and

[56] Political and economic analysis of deforestation in conflict-affected regions of Colombia
[57] The role of the State in forest management in Colombia, history perspective and case study
[58] Deforestation in Colombia, a dead end?
[59] Mining in Choco polluting rivers and streams

camp construction is often required, which can lead to direct deforestation by opening roads and areas for mining activity. This activity can imply a significant change in land use, especially in large-scale operations, which negatively affects the forests, either through the direct cutting of trees or the alteration of the surrounding ecosystem[60] .

Mining activity generates pollutants that have negative impacts on water and soil quality, forest health and the ability of forests to regenerate, and the loss of forest habitats can lead to the decline of local flora and fauna populations. The relationship between legal mining and deforestation can vary depending on how mining operations are carried out, the environmental management practices adopted by companies, and the effectiveness of government regulations in monitoring and controlling these activities[61] .

According to secondary information in the municipalities of Carmen del Darien and Riosucio, the companies with the most mining titles in these areas are AngloGold Ashanti Colombia S.A. and Muriel Mining Corporation, companies originally from South Africa and the United States, the latter has more than 3 mining titles covering more than 4700 ha for the exploitation of copper, gold and molybdenum minerals. The weakness of state entities, the absence of the state, corruption, the presence of armed actors, violence and impunity create a highly vulnerable scenario, which is easily exploited by different actors, legal or not[62] .

3.3.3.1.2.4 Agent 4. Absentee Investors

Pressure on natural resources comes from economic interests that seek short-term profits without considering the long-term consequences for the environment. The presence of absentee investors, those who invest in projects or activities without being physically present in the region, could contribute to deforestation in various ways[63] .

Investments in extractive sectors, such as mining or natural resource extraction can contribute to environmental impacts and deforestation, especially if sustainable practices are not implemented. Large-scale agriculture can also be supported by these types of investors leading to the loss of forests[64]. The physical absence of these investors can

[60] Legal mining also contributes to deforestation
[61] Mining and environment in Colombia
[62] Impacts of mining in the Colombian Pacific.
[63] Active policies to attract foreign direct investment in Latin America and the Caribbean
[64] Consumer Goods and Deforestation

result in a lack of oversight and control over the activities carried out on their behalf, which benefits the development of environmentally destructive practices[65] .

The arrival of absentee investors in the territories may involve the displacement of local communities, which in turn facilitates the expansion of economic activities that contribute to deforestation in association with other actors such as illegal armed groups and government institutions, as in the case of Urapalma S. A., where links between oil palm growers and paramilitary leader Vicente Castaño were demonstrated. A where the links between oil palm growers and paramilitary leader Vicente Castaño were demonstrated, the lands that supported the credits granted by the Agrarian Bank were illegally taken from communities in the municipality of Riosucio in the Jiguamiando and Curvarado[66].

3.3.3.2 Identification of direct causes

The following is a description of the direct causes of deforestation derived from the socioeconomic factor that drives the processes of forest degradation and loss in the territory.

3.3.3.2.1 Cause 1. Infrastructure

Infrastructure in the Colombian Pacific region, especially in the Atrato river basin, has been an important factor in deforestation processes (Figure 30.). According to a WWF report[67] , road construction and the expansion of the agricultural frontier are the main causes of deforestation in the region. Wood is a common construction material in this region and is often the material of choice for housing and social infrastructure.

Figure 30. Infrastructure present within the project area where the use of wood as the main construction element is evident.

[65] Responsible governance of tenure: a technical guide for investors
[66] Urapalma, whose partners committed crimes, was found fiscally responsible by the Comptroller's Office
[67] Colombian Biogeographic and Geo-strategic Pacific

Source: Biotrade S.A.S (2022)

3.3.3.2.2 Cause 2. Expansion of the agricultural and livestock frontier

The expansion of the agricultural frontier in the Colombian Pacific region, particularly in the Atrato River area, has been identified as one of the key drivers of deforestation in the region[68]. The conversion of natural forests into land for agriculture and cattle ranching has resulted in the loss of natural habitats and the degradation of ecosystems in the area.

This deforestation process has significant consequences for local biodiversity, ecosystem services and the quality of life of communities that depend on natural resources in the region, increasing vulnerability to natural disasters and decreasing critical environmental services, such as climate regulation and water supply. According to CODECHOCO[69] about 13 thousand hectares were deforested for this cause between the years 2014 to 2021 in the department of Choco. Corresponding to crops such as banana, coconut, cocoa, chontaduro, rice, corn, pineapple, and Chinese potato.

The main drivers of deforestation identified within the project area[70] include agriculture and cattle ranching and the influence they have had over the years, with a higher incidence from 2000 to 2010. From the socioeconomic characterization carried out[49] the socioeconomic characterization showed that the previous agricultural use corresponded mainly to forests and stubble respectively, and the cause of these changes is to obtain higher income and self-consumption. Regarding future use, community members plan to maintain crop areas by rotating them and increasing the area of pasture for livestock, but they identify that assistance and training, an improved market, and economic support are required for this use (Figure 31.).

[68] Atrato Ecoregion
[69] Causes of deforestation in Choco
[70] Minutes with deforestation drivers and agents analysis workshop: 10. CONCERTING STAKEHOLDERS\Construction of the REDD+ JIGRANTU Project\Minutes, assemblies and meetings\Meeting minutes 003, 004 and 005.

Figure 31. Evidence of banana crops and livestock within the project area.

Source: Biotrade S.A.S (2022)

In terms of logistics, the communities use an average of 30 minutes to get to the production unit; most of them have people hired as day laborers to grow the crops. In this area, technical assistance has been provided by SENA and the World Food Program for crop improvement, agroecological management and ointment production for up to 1 year, all considered it appropriate even though they commented that they did not receive income from the sale of their products in the case of ointment production, the community is interested in growing high value agricultural products and strengthening markets as well as training in other areas.

In the Table 22. presents a summary of the characterization of agricultural production obtained from the surveys. The main place of sale of the products is Belen de Bajira and Nueva Esperanza. Most of the respondents commented that the price of the products is very variable, sometimes they sell banana bags for up to $5,000, that is, $1,000 less than the equivalent of the price of transporting each bag.

Table 22. Characterization of agricultural production in the JIGRANTU REDD+ project area.

Cultivation	Area (ha)	Harvest (kg)	Price	Turnover (month)
Banana	3	1000	18,000/bag	2 a 12
Yucca	5	5000	$25,000/bag	8 a 12
Corn	2	1000	$200,000/load	3 a 4
Rice	1	1000	$110,000/bulk	3 a 12

Source: Biotrade S.A.S (2023) based on the socioeconomic characterization surveys conducted[49].

3.3.3.2.3 Cause 3. Timber extraction.

Due to the biological richness of the department of Choco, over time it has been given a mining and logging vocation. This has led to many outsiders, including mestizos, settlers and emigrants (approximately 6%), using the region as a source of resources. These actors, both national and international, have contributed to the loss of vegetation cover, generating poverty in a large part of Choco's territory. The lack of technology in this area

has meant that construction and basic resources are based on forest products. The inhabitants depend on the forest to build their homes, make utensils and obtain fibers and other materials; the use of the forest in this region is essential for the human groups present[71] .

Timber extraction is one of the causes of deforestation in the Colombian Pacific region and the Atrato River region in particular[35]. According to IDEAM, timber extraction for local use and commercialization is one of the illegal activities in the region that contribute to deforestation. In the project area, the Rio Jiguamiando community council has permits to harvest timber to date, mainly due to the existence of a road that allows timber extraction in the area; the other councils use timber mainly for construction activities due to the lack of roads in these territories and the blockage of the Atrato River, which makes commercialization difficult.

Figure 32. Timber harvesting in the project area.

Source: Biotrade S.A.S (2022)

3.3.3.2.4 Cause 4. Mineral extraction

In the Colombian Pacific region, the departments of Choco, Valle, Cauca and Nariño are the main producers of gold, platinum and silver, mainly from the San Juan and Atrato rivers[72]. Mining in this region has a significant impact on the environment. In the department of Choco, traditional tools such as bateas, almocafres, barretones, mates and canalones are used along with technological innovations introduced a few years ago, such as gasoline engines, motor pumps and dredges. In recent times, the most common mining practice is semi-industrial, carried out by foreign entrepreneurs, mainly

[71] Effects of socioeconomic activities (mining and logging) on forests in the department of Choco.
[72] Which minerals are exploited in the Pacific region

from the Antioquia region. These entrepreneurs sell and register their activities mainly in Antioquia and Risaralda, thus avoiding local royalties[71].

Among the findings of the monitoring carried out in the national territory of alluvial gold exploitation during 2021[73], it is highlighted that 88% of the Evidence of Alluvial Gold Exploitation (EVOA) are concentrated in 3 departments, Choco, Antioquia and Bolivar and that only a low proportion of these are within the legal framework (35%). By 2021, Choco ranked first with the highest detection of EVOA with 38,980 ha, i.e., 40% of the national total, and also focused the largest amount in the category of illicit exploitation in areas excluded from mining. The largest producers of Gold in the period 2017 to 2021 were Antioquia (57%) and Choco (14%).

The extraction of minerals on the earth's surface results in extensive excavation and deforestation of large tracts of land, resulting in loss of soil through erosion, loss of habitats for many forms of life, loss of biodiversity or alteration of some biogeochemical cycles such as water[71]. In addition, mineral extractions release dust and other toxic gases into the environment, which originate in the explosions that break rocks. These gases can cause serious respiratory problems for humans and animals living in nearby areas[74] . Uncontrolled mining also induces serious social impacts such as unemployment and informal employment that increase the problem of poverty and environmental deterioration. In the project area, it is evident that this activity has affected the environment and is one of the main causes of sedimentation and contamination of the rivers.

Figure 33. Mineral extraction in the project area.

Source: Biotrade S.A.S (2022)

[73] Colombia Alluvial gold mining Evidence from remote sensing 2021.
[74] Platinum and gold mining in Choco: poverty, natural wealth and informality.

3.3.3.2.5 Cause 5. Illicit crops

According to a report published by the Humboldt Institute in 2017[75] , the growth of illicit crops, particularly coca in Colombia, has been an important driver of ecosystem transformation and the impact on ecosystem services in recent decades. When analyzing the impact of coca crops on ecosystems, it is evident that the region with the greatest impact on its biomes was the Pacific region, with 57,778 hectares affected.

According to the regional analysis of the problem related to illicit drugs in the department of Choco[76], approximately 60% of the territory is intermittently affected. The highest concentration of coca crops, about 97%, is in forest and agroforestry lands, linked to the department's water network. Over the years, the density of coca cultivation has increased, with its presence becoming evident since 2012 in the municipalities of Carmen del Darien and Riosucio, especially on the eastern side. Communities have identified illicit crops as one of the drivers of deforestation, and their impact has increased significantly in recent years, following departmental behavior[70].

In the monitoring of the areas affected by illicit crops in Colombia (2021), the Pacific region ranked first in terms of the extent of coca cultivation, contributing 44% of the national total, reaching 89,266 hectares. There has been a rapid increase in the creation of new areas, especially in the north of Choco, facilitating the formation of productive enclaves[77]. Although coca crops are not the main cause of coca cultivation, they are linked to activities that represent a significant threat in the area.

The presence of itinerant populations that settle in the area generates impacts on the expansion of the agricultural frontier. In addition, the practice of selective logging for domestic and construction purposes is one of the greatest threats in this region of the country[76]. In the project area there are illicit crops used as a means of subsistence by the communities and in areas exploited by external agents.

3.3.3.3 Identification of underlying causes

It is essential to remember that the direct causes of deforestation are driven by indirect or underlying factors, which encompass a variety of social, political, economic, technological, and cultural variables. These variables influence the decisions made by

[75] Coca cultivation for illicit use
[76] Atlas of the regional characterization of the problem associated with illicit drugs in the department of Choco
[77] Monitoring of territories affected by illicit crop cultivation 2021

those involved in deforestation activities and help explain why deforestation occurs[78]. The main underlying causes identified in the REDD+ JIGRANTU Project are listed below.

3.3.3.3.1 Political and institutional factors

According to UNDP (2023)[79], in Colombia there is a regulatory framework that encourages the development of productive sectors without considering factors related to the conservation, management and sustainable use of biodiversity. In other words, many laws in the country have not considered unintended negative impacts or the potential to generate environmental damage. This can affect the biological richness of the country and the resilience of ecosystems. A lack of coordination between actors in the agricultural and environmental sectors is recognized in the governance of incentives generated by various laws.

Diverse cultures converge in Choco, including indigenous, Afro-descendant and mestizo. Most of the continental area, 96%, is made up of collective territories comprising 683 black communities organized in 64 major community councils, with a total of 2,915,339 hectares of titled land. In addition, there are 125 indigenous reserves belonging to the Embera, Wounan and Tule ethnic groups, distributed in 26 of Choco's 30 municipalities. The remaining 4% of the territory is inhabited by the mestizo peasant population[80]. However, some sectoral policies are not aligned with the area's environmental vocation and capacities.

Productive practices such as monocultures and timber exploitation, promoted by companies in the region, have caused damage to the culture and ecosystem. In addition, illegal activities such as mining and coca production have not been effectively addressed by the relevant institutions. In the context of illegal mineral exploitation, the State has been responsible for the omission of its monitoring and control functions[81] , i.e., the supervision of these activities on the ground has been insufficient, and alternative opportunities have not been implemented to allow communities a dignified development within their territories.

Even though the Colombian Constitutional Court declared the Atrato River as a subject of rights through judgment T-622 of 2016, the problems linked to illegal mining and extractive activities continue to persist in the department of Choco and in the

[78] Deforestation in Colombia-proposals for mitigating its effects
[79] Analysis of agricultural sector incentives with impacts on biodiversity in Colombia
[80] Technical inputs for the formulation of the Land Management Plan for the department of Choco.
[81] Analysis of the Responsibility of the Colombian State for Illegal Mining

communities living along this river. This situation is aggravated by the presence of subversive groups that see mining extraction as a source of funding for their criminal activities. This problem has other consequences, such as significant damage to ecosystems, a direct result of non-compliance with norms and principles, as well as corruption at various levels and mismanagement by political leaders. All of this highlights the State's inability to exercise effective control in the territories[82].

3.3.3.3.2 Cause 2. Technology factors

One of the key challenges in rural and agricultural development, especially in the sociocultural dimension, is the limited coverage and access to technologies, including Information and Communication Technologies (ICTs). The low availability of electricity services also hinders access to technological tools. Strategic efforts to improve the competitiveness of the agricultural sector in Choco include the integration of agricultural innovation processes, technology transfer and infrastructure that add value to production. It also seeks to implement technological packages adapted to the agroclimatic conditions of various subregions[83].

Despite being identified as a problem in the department, the development and use of technologies that promote agricultural production is still incipient. In the project area, no support has been provided by entities for more than one year, according to what has been identified to date[49]. Adequate technologies have not been developed to implement activities that change land use and for the sustainable extraction of natural resources in accordance with the environmental characteristics of the territory. Both timber harvesting and the adoption of monocultures and subsistence crops are carried out using unsustainable practices.

To promote appropriate productive practices, it would be necessary to establish a collaborative research and action plan to develop technologies that are adapted to the ecosystem and local communities. However, no research is being carried out to create technologies that promote the sustainable use of natural resources. While there is some incipient research on biodiversity and human impacts on Choco ecosystems, it is not focusing on sustainable production systems. In the absence of the project, it is likely that communities will lack access to technology, education, or research for the development

[82] State responsibility for environmental damage caused by illegal mining in the Atrato River in Colombia.
[83] Integral Plan for Agricultural and Rural Development with a Territorial Approach Department of Choco

of sustainable productive projects, leading to the continuation of the current scenario of resource exploitation, crop pests and diseases, and illicit crops in the region.

3.3.3.3.3 Cause 3. Demographic factors

Colombia's Pacific region has been significantly affected by the presence of illegal groups and settlers who come to the area for the purpose of exploiting the region's forest and mineral resources. These illegal actors, which can include armed groups and illegal timber traffickers, often operate outside of regulations, resulting in uncontrolled deforestation and degradation of natural ecosystems[42].

The lack of effective state presence and the weakness of local institutions to enforce the law and protect natural resources have facilitated the incursion of these illegal actors in the region[82]. The pressure exerted by these groups in combination with the arrival of settlers in search of economic opportunities has led to a higher rate of deforestation, displacement of local communities, and conflicts over territorial control and natural resources.

To address this issue, a comprehensive approach is required that not only strengthens the capacities of local institutions and promotes effective law enforcement, but also ensures the participation and empowerment of local communities in the sustainable management of natural resources[78]. In addition, it is essential to implement alternative development strategies that provide sustainable economic opportunities for local communities, thereby reducing pressure on natural resources and promoting the long-term conservation of forests and biodiversity in this region[83].

3.3.3.3.4 Cause 4. Cultural factors

The Pacific culture, which is closely related to water patterns in the region, faces threats due to environmental changes caused by climate change and illegal activities, such as timber extraction and mining, which cause a progressive decrease in the area's environmental diversity and supply[71]. Extensive research conducted by the IIAP in the Choco Biogeografico region has revealed that the loss of cultural heritage harms both conservation and the livelihoods of local inhabitants[35]. Effective management of Pacific forests is crucial to foster development in the region. The loss of ecosystems represents one of the most worrisome effects in the department, reducing the environmental services available in the region to communities that rely heavily on this resource. At the same time, an increase in pests and diseases in crops of local economic importance has been noted.

3.3.3.3.5 Cause 5. Macroeconomic and microeconomic factors

The pressure on Choco's forests is due to a combination of factors at both the macroeconomic and microeconomic levels. One of these factors is the lack of a local trade system and value chains for sustainable products, which promotes unsustainable exploitation of natural resources. This includes logging for timber and the opening of new areas for agriculture and livestock farming[49]. The absence of fair local trade prevents the region's inhabitants from obtaining adequate prices for their products and forces them to depend on intermediaries who often do not act fairly.

Another pressure on Choco's forests is related to the market structure of both legal and illegal crops, such as plantain and cassava and coca crops. The expansion of these crops generally occurs at the expense of deforestation and environmental degradation. In addition, the presence of these crops encourages the migration of people in search of economic opportunities, which increases the pressure on the forests and their biological diversity[78]. The lack of public policies that encourage sustainable agriculture and crop diversification, together with the lack of incentives for forest and biodiversity conservation, further aggravate the situation.

3.3.4 Baseline scenario

The baseline scenario was identified based on changes in carbon stocks within the project boundaries, identifying the most likely land use at the beginning of the project, with the above context and the analysis of agents, drivers and underlying causes of deforestation and its likely future development within the project area is intended to demonstrate that all assumptions, justifications, and documentation considered are adequate to identify this scenario. The baseline scenario was identified according to the guidelines established in section 9 of the AFOLU Sector Methodological Document, REDD+ Projects, version 3.1 (BCR, 2022)[84] and following the *Baseline and Additionality* guide version 1.2 (BCR, 2023) [85]. For this purpose, the criterion of literal C was selected as defined in the methodological document and the guide.

3.3.4.1 Step 0. Project start date

The project start date corresponds to January 1, 2018, it was defined based on the start of activities that allow generating a reduction of emissions from deforestation in the project area, as described in section 3.2.3.

[84] Methodological document REDD Projects
[85] Baseline and Additionality

3.3.4.2 Step 1. Identification of alternative land-use scenarios

3.3.4.2.1 Sub-step 1a. identification of likely land use alternatives in the project area

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

- **Scenario 1: Continuation of previous land use (prior to project implementation)**

Based on the observations and workshops conducted with the members of the community councils[49], a list of the practices already identified and described in section 3.3.3.2 is presented below. The following is a list of the practices already identified and described in section 3.3.3.2, the continuation of existing practices involves the following activities:

a) Infrastructure
b) Expansion of the agricultural and livestock frontier
c) Timber extraction.
d) Illegal mining
e) Illicit crops

- **Scenario 2: REDD+ projects without certification of emission reductions**

In this context, community members take voluntary control of activities that cause forest loss in their territories. To achieve this, they avoid the expansion of the agricultural frontier by limiting the development of extensive cattle ranching, logging and the creation of new areas for agriculture. Instead, they gradually implement productive activities that do not affect forest cover. Project activities include monitoring vegetation and biodiversity every 2 years, which requires skilled labor with professionals for field coordination and support, and unskilled labor with people trained to monitor the fauna and flora present in the project area.

This implies reducing the expansion of the agricultural frontier by improving livestock practices, intensifying production, and adopting silvopastoral and agroforestry systems. There are also expenses for the monitoring team, their mobility, stationary supplies, and infrastructure for meetings and follow-ups with the entire team. However, given that the project has not been registered under the REDD+ mechanism, the community members do not obtain economic income related to the reduction of greenhouse gas emissions due to avoided deforestation in the forests present in their territories; there are only costs for executing the different actions.

- **Scenario 3: Optimization of agricultural practices and development of environmentally friendly value chains**

This scenario involves adopting sustainable strategies that seek to improve both agricultural productivity and land conservation in a way that provides an opportunity to migrate from activities that cause deforestation to profitable and sustainable activities[78]. To achieve this, actions focused on sustainable agriculture must be carried out. This includes the introduction of environmentally friendly agricultural practices, such as crop rotation and agroecology. It also seeks to promote the use of techniques that conserve the soil, preventing erosion and improving its fertility. The implementation of agroforestry systems that combine trees and crops, benefiting both production and biodiversity. In addition, it should encourage the planting of native tree species and fruit trees that contribute to the restoration of the landscape.

To develop value chains aligned with principles of fair trade and environmental sustainability, it is essential to establish partnerships with companies committed to environmentally friendly practices. The importance of providing training and technical assistance to farmers is emphasized. This process involves educating farmers on sustainable agricultural practices and environmental management methods. Ongoing technical assistance is considered crucial to ensure the effective implementation of these practices[83].

In addition, there is a need to promote the valorization of local products, highlighting their sustainable origin and encouraging local consumption. This can be achieved by establishing marketing channels that emphasize environmentally friendly production. These measures seek not only to promote environmental sustainability, but also to strengthen the connection between local production and the community[86].

The sustainable production model in the Biogeographic Choco region is key to its long-term development. It has been developed in collaboration with ethnic and farming communities, institutions and consultants. This approach seeks to identify productive options that minimize environmental impacts, ensuring that production respects the conditions of the territory and does not contribute to the deterioration of natural capital. It emphasizes the importance of incorporating biocultural rights and considering the territorial context, while seeking to integrate knowledge, technology and innovation to improve processes and products without losing cultural roots. In addition, fair marketing of products is promoted. The diversification of productive activities is seen as

[86] A sustainable production model with a biocultural rights approach for the Biogeographic Choco proposed by IIAP

fundamental for the sustainability of the territory, as it reduces human pressure on natural resources and soil[86].

This scenario contemplates a boost to productive development led by the national government and departmental actors. The main intention should be to establish limits to the unsustainable use of forests, recognizing the importance of preserving these natural resources. The objective is to reduce the economic dependence of the population in relation to these activities, proposing alternatives that generate income in a more equitable and sustainable manner. This vision encompasses not only environmental protection by limiting the unsustainable use of forests, but also the positive transformation of the local economy, seeking to reduce the economic vulnerability associated with traditional agricultural activities and promote more equitable and sustainable development.

3.3.4.2.2 Sub-step 1b. Consistency of land use alternatives with applicable laws and regulations.

The scenarios considered are based on the records and historical evolution of the country and the region. According to municipal, departmental, and regional development plans, these territories are destined for forest conservation, the implementation of agroforestry systems and subsistence practices. However, the reality of the area also contemplates the persistence of activities not approved by national regulations, such as deforestation for the expansion of the agricultural frontier, illegal logging, illicit crops, and illegal mining.

Because the state has limited capacity to enforce regulations that protect natural resources in these remote areas, noncompliance does not result in legal or criminal consequences that would discourage violators from correcting their practices.[51]. The limited presence, and in some cases absence, of government representatives in these areas makes it difficult to ensure compliance with the laws. Considering that community councils have autonomy to manage and develop their territories, the proposed scenarios are aligned with the capacities and objectives of the area, and are in accordance with national regulations, which makes their implementation possible. For this reason, the result of sub-step 1b lists the possible land use alternatives:

Scenario	Description
1	It involves the continuation of current land use in the same manner as in the past, including activities such as agriculture, cattle ranching, timber extraction, illicit crops, and illegal mining. Although these actions do not comply with current laws, people living in the project area and in the reference, region carry them out. Therefore, it is assumed that this

	situation may continue over time and even increase, making it a likely land use option.
2	These actions comply with current national regulations, as they imply reducing practices that have deteriorated the forest, by introducing productive options that are environmentally friendly. This scenario is presented as an option that communities can pursue using their own resources, as it aims to improve living conditions and the capacity to manage the territory in a sustainable manner.
3	It involves improving existing production systems to create value chains. These activities are in line with the plans of the authorities at the departmental and regional levels. For this reason, it is perceived as a likely land use option.

3.4 Additionality

After identifying the list of possible land use alternatives, it is necessary to carry out at least an investment analysis or a barrier analysis according to the *Baseline and Additionality* methodology version 1.2 (BCR, 2023)[87]. The analysis chosen to demonstrate the additionality of the REDD+ JIGRANTU Project is presented below.

3.4.1 Barrier analysis

3.4.1.1 Sub-step 2a. Identification of barriers to project implementation

Investment barriers:

The implementation of REDD+ activities require a considerable amount of funds. In the country, there are no loans or investment resources available for this type of socio-environmental initiatives, as they are not attractive from a financial point of view[88]. Resources for REDD+ projects come from donations or voluntary commitments. However, a considerable part of the approved funds is not immediately disbursed. This is because some funds are designated for results-based payments, which means that countries do not receive funding until they demonstrate emission reductions. As a result, the preparatory phases do not receive the necessary funding[89]. The only viable option for obtaining the necessary resources for project activities is through the REDD+

[87] Baseline and Additionality
[88] Critical review of REDD+: Limitations and potentials of its application in Colombia.
[89] REDD+ in Latin America. Current status of strategies to reduce emissions from deforestation and forest degradation.

mechanism. This mechanism offers the opportunity to trade carbon certificates and obtain funds to carry out the necessary investments.

Even though production alternatives represent a positive economic potential in the region, community members do not have access to credit mechanisms or external investors to financially support the development of such initiatives. The establishment of productive systems requires significant investments by the community, and the lack of financing options has been a historical constraint in the region[70].

On the other hand, the promotion of governance, monitoring and improvements in infrastructure and basic sanitation do not generate any type of economic benefit, so their implementation depends entirely on financial support. The REDD+ project formulation, validation and verification process involves significant costs that could not be covered considering the lack of income from the commercialization of Reduced Emissions from Deforestation and Degradation Certificates[90].

Social barriers:

These barriers are due to the lack of opportunities for the communities in the region, in addition to the armed conflict that has strongly affected this area. It is necessary to establish sustainable alternatives that integrate the communities to new productive models, which represents an opportunity for income generation due to the generalized absence of job offers in the region[55]. This relationship favors the development of unsustainable practices that result in forest degradation and deforestation and limits the capacity to exercise adequate territorial control. The commercialization derived from the project is expected to make resources available for the development of these alternatives and to strengthen governance, which will reduce the population's economic dependence on illegal activities and the entry of external agents that engage in these actions.

Institutional barriers:

Successful REDD+ processes require the strengthening and coordination of regulatory and institutional frameworks to address the direct and underlying causes of deforestation. One of the challenges in developing these policies is that it requires a combination of environmental, forestry, agricultural, land and development policies. In

[90] Project cash flow: 2. TECHNICAL APPENDICES 1. RISK ANALYSIS OF THE JIGRANTU project cash flow.xlsx

many cases, these sectors operate with contradictory objectives and in others they are complementary but have overlapping competencies[89].

REDD+ strategies in most cases are aligned with the country's political objectives. The construction of these strategies requires the participation of all stakeholders involved in a way that respects the right to participation of all people who are or want to be part of REDD+ strategies. Although the country has regulations associated with the control of deforestation, they have not been effective due to the lack of control by the environmental authorities and the lack of cohesion of the different institutional actors[91].

Barriers due to local environmental conditions:

From the characterization of the risks associated with the REDD+ JIGRANTU project[92] it was possible to identify that the area has a high vulnerability to climate change so the environmental risk is high, so most of the area is susceptible to flooding and a high threat of mass movements, This means that there are potentially flood-prone areas with potential damage due to the presence of communities in these areas and triggering factors such as high precipitation, proximity to rivers and bodies of water, earthquakes (which have already occurred in the area) and anthropogenic activity (deforestation) that contribute to the increase in the threat of mass movements[93] .

For this reason, the community councils of La Grande and Turriquitado depend mainly on fishing for their subsistence. The incidence of flooding in these territories hinders the production of food crops because it favors the presence of pests and diseases, which limits the development of these crops[94]. These conditions limit the development of this type of project because there is a risk that the carbon stock will be decimated by some natural phenomenon that must be monitored.

Market and transportation-related barriers:

Based on the characterization of the project area through the construction of cartographic information from secondary sources, which is detailed in section 2.5 of this document, and the diagnosis made in the assemblies of each of the community councils, which shows a low access to the market due to the lack of marketing channels, the

[91] Climate change and the implementation of REDD+ projects in Colombia
[92] Risk characterization: 2. TECHNICAL ANNEXES\ 1. RISK ANALYSIS\JIGRANTU Risk Analysis.xlsx
[93] Environmental risk analysis supports: 2. TECHNICAL ANNEXES\1. RISK ANALYSIS\CARTOGRAPHY-ENVIRONMENTAL RISKS
[94] Results of the interviews in the framework of the development of the diagnostic document of the Project's conservation actions: 12. EVIDENCE OF MONITORING/Diagnosis of conservation actions

actions carried out in the territories are framed in subsistence activities where the commercialization of products is carried out within them[70]. The actions carried out in the territories are framed in subsistence activities where the commercialization of products is carried out within these territories.

Road access to the Rio Jiguamiando community council creates a differential environment with respect to the La Grande and Turriquitado councils because in this case products are marketed in other municipalities (Belen de Bajira). However, the conditioning factor in this case is the absence of fair markets due to fluctuations in product prices and in some cases the high cost of transportation (Section 3.3.3.2.2).

Barriers related to land tenure:

Land tenure is a critical factor for the success of REDD+ projects, as it determines who holds the rights and responsibilities to manage, use and benefit from forest resources. Uncertainty in land tenure can undermine REDD+ objectives by causing conflict, discouraging investment, and encouraging deforestation and degradation in territories. Addressing these issues can improve project outcomes by clarifying and strengthening the rights of local communities, as well as improving governance and resilience. These actions should be tailored to the particularities and contexts of each REDD+ project, involve the participation and consultation of all relevant stakeholders, and be aligned with national legal frameworks and policies[95].

Land ownership emerges as a crucial component in the design of REDD+ strategies, forming an integral part of the dynamics associated with deforestation and degradation. The lack of transparency in land tenure is established as a central obstacle for the effective implementation of the REDD+ mechanism; this problem is a constant in most Latin American countries. Even though many countries have regulations in this regard, their application and compliance have not been carried out in a comprehensive manner, which is attributed to the deficiencies present in the regulatory bodies. This issue also involves historical conflicts over land rights, use and regulation. At many times the REDD+ mechanism is the one that must take care of the difficulties with legislations, in which land ownership is defined and respected[89].

Access to credit is a key financial tool for promoting rural development. It allows landowners to obtain resources for productive activities, improve infrastructure, purchase inputs, machinery or deal with emergency situations. In Colombia, private landowners

[95] Land tenure and REDD+. Risks to property rights and opportunities for economic growth.

often find it easier to access credit because they have registered titles that can be used as collateral[96]. In addition, there is a greater supply of financial institutions, such as banks, cooperatives, and funds, that offer rural credit, which facilitates the development of activities that promote deforestation and ecosystem degradation. On the other hand, collective territories face more difficulties in this regard. They lack registered titles as collateral and must respect their internal norms, life plans, uses, customs and collective rights, which limits their capacity for indebtedness, management, and payment *"the part of the land of the black community destined for its collective use is inalienable, imprescriptible and unseizable"* (Article 7 Law 70 of 1993).

Within the project area, specifically in the community council of the Jiguamiando River, private properties were legitimately awarded to individuals by means of resolution 2159 of August 24, 2007, which is the object of the recognition and safeguard of article eight of the resolution of award to the council 02801 of November 22, 2000, which states that *"this award does not include rural properties in which private property is accredited in accordance with laws 200 of 1936 and 160 of 1994*", although the lands have been delimited, they present conflicts of occupation and use in the collective territory, leading to illegal occupations by invaders and repopulators that cause the areas to exceed the maximum adjudicable areas.

According to the legal characterization and regularization of the collective territories of Curvarado and Jiguamiando carried out by INCODER in 2012[97] the demarcation process in the case of the community council of the Jiguamiando River concluded with the issuance of resolution 2159 of 2007 establishing within this sixty-two (62) legitimate titles that accredited private property, with an extension of three thousand one hundred and two hectares with nine thousand one hundred and thirty-two square meters (3,102 ha-9,132 m^2), INCODER ordered the material restitution to the community councils of areas the document was issued on the date of issuance of the document, however, the fact that the occupants had not yet complied with this decision is highlighted.

This poses a problem for the development of the project due to improper occupation of the areas, which promotes practices with objectives contrary to the project's activities; although the delimitation of the areas was established at the time, the owners of private properties have increased their areas, generating tension in the community. Failure to comply with the law and appropriate regulations has not ensured land tenure; although

[96] Private property and indigenous territory: the individualism-collectivism dichotomy
[97] Legal Characterization and Sanitation of the Collective Territories of Curvarado and Jiguamiando.

property rights have been clearly defined, they have not been complied with and have exceeded the areas that were originally allocated.

The territory of the REDD+ JIGRANTU Project has been violated by several actors, including the private title holders, since the collective title areas are perceived almost as wastelands that can be used without any penalty, so that companies and individuals holding private titles have extended their land use change practices beyond the limit that appears in the private property title, due to this the community leaders have resorted to the relevant instances to clean up their territory. However, these efforts have not yielded the expected success, which requires constant monitoring and inspection on a property-by-property basis with command-and-control actions executed by state institutions.

The REDD+ JIGRANTU Project in its strategic line of governance, seeks within the action *"Aa2. Construction of the Environmental Management Plan of the community councils" to* determine the areas that need to be cleaned up and initiate a restoration process to prevent these areas from being used again by the owners of private properties, for which it is required to implement within the action *"Dj37. Design and implementation of a community monitoring program for the conservation and enhancement of ecosystem resilience"*, a strategy to increase governance, strengthening support networks at the institutional level to ensure the permanence of carbon stocks. Without the REDD project, the leaders and the community will not be able to counteract the expansion of deforestation actions from private territories into the collective titled areas of the community councils.

3.4.1.2 Sub-step 2b. Analysis of barriers to the implementation of at least one of the identified alternatives except for the project activity.

Below, in Table 23., the barriers identified in substep 2a are analyzed in relation to the land use scenarios presented in substep 1a.

Table 23. Analysis of barriers with respect to identified land use scenarios.

Land use alternatives	Scenario analysis and implementation
1	None of these barriers have prevented the development of activities that have been developed over the years in the territory, as evidenced by the analysis of agents, drivers and causes of deforestation within the project area (Section 3.3.3). These activities continue to be carried out in this area due to the lack of opportunities, even though there are difficulties this does not prevent the actions from being carried out, however, it can lead to an increase in deforested areas due to the increase of crops needed to increase the income received.

2	**Investment:** The lack of investment capital prevents the transition of current productive activities to sustainable productive systems that consider the care of the natural environment. **Social:** Given that communities are economically dependent on practices that cause deforestation, if the population does not have a financial mechanism to counteract this dependence, it is unlikely that economic alternatives will be developed that provide employment opportunities and reduce those that generate deforestation.
3	**Investment:** Local and regional authorities have limited resources, and although measures to improve agricultural practices have been identified, they have not yet been disseminated in the territories. For this reason, it is unlikely that resources will be allocated in the project area to counteract the activities that cause deforestation. In addition, the lack of resources and capacity makes it unlikely that communities will be able to make this transition. **Social:** This intervention is expected to be carried out with funds from municipalities, departments, and environmental authorities to strengthen productive systems; however, there is still no evidence that it benefits people in the community. For this reason, its impact is minimal compared to the problem faced by the different population groups, and this barrier could be difficult to overcome. **Institutional barriers:** Since this type of alternative considers the participation of several local and regional actors, the coordination and contribution of these can be difficult due to the lack of resources and the competencies of each of the actors. **Barriers related to the market and transportation:** The lack of a fair market conditions the development of this type of alternatives, as well as the cost of transportation and production of these. **Barriers related to land tenure:** The lack of clarity in land rights and the title of collective territory limits access to credits that contribute to rural development and the establishment of this type of alternative.

Based on the above results, the most likely option for establishing the project baseline is the continuation of use at the time of project initiation, corresponding to Scenario 1. Scenarios 2 and 3 are discarded because they are also affected by the identified barriers and are therefore not considered a viable alternative.

3.4.2 Impact of project registration

Revenues generated from the sale of (VCC) represent a source of investment funds that enable the implementation of project activities. These activities are necessary to address practices and factors that threaten forests. REDD+ initiatives offer employment and

income generation opportunities, reducing dependence on activities that result in deforestation of the territory[98] .

The resources from the REDD+ project registration become available working capital to realize the interests and opportunities identified by the community members, who seek the sustainability of their culture and territory. In addition, these resources will make it possible to overcome the barriers identified in the additionality analysis. Given that the members of the Community Councils do not have access to credit or financial support from the State or banking entities, the funds from the sale of the CCVs represent a unique opportunity to finance REDD+ activities[90]. These resources will also contribute to the strengthening of territorial management and governance capacity, which will result in a cultural strengthening of the communities and an improvement in their quality of life.

By participating in the REDD+ mechanism, the benefits associated with the reduction of greenhouse gas emissions translate into direct economic income for the community, which guarantees the continuity of actions that reduce deforestation. Considering the above, it is evident that the project is not aligned with the baseline scenario, which confirms its additional nature.

3.5 Uncertainty management

The uncertainty of the project's estimates of reductions is related to activity data and emission factors. The data for the calculation of deforestation in the REDD+ JIGRANTU project were taken from the Global Land Analysis and Discovery Laboratory (GLAD) of the University of Maryland in partnership with Global Forest Watch (GFW) that provide annual updated data on forest loss at a global scale, using Landsat type images with a resolution of 30 x 30 meters.

Due to the inconsistency of the data due to the lack of information, mainly due to the incidence of climatic aspects such as the high cloud cover present in the area, in addition to the deficient functioning of the line corrector in the Landsat 7 satellite, a detailed analysis of the project area was not possible by means of Digital Image Processing (DIP). For this reason, the GLAD and GFW data were used[99] .

For the uncertainty estimation, the methodology proposed by GOFC-GOLD (2016)[100] described in section 2.7 is considered, which details the methodology used to obtain the

[98] Reducing Emissions from Deforestation and Forest Degradation (REDD+) in Latin American countries
[99] High-Resolution Global Maps of 21st-Century Forest Cover Change. Science 342: 850-53
[100] A sourcebook of methods and procedures for monitoring and reporting anthropogenic greenhouse gas emissions and removals associated with deforestation, gains and losses of carbon stocks in forests remaining forests, and forestation.

global maps. For quantification it is necessary to identify potential sources of uncertainty such as in area estimates or activity data, i.e. the area of a land category change. When evaluating the accuracy of the maps, adjustments can be made to the area estimates. The uncertainties of individual parameters can be combined using error propagation, in this case the level 1 method was used which is based on addition, subtraction and multiplication, in this it is considered that there are no correlations between the categories and none of the parameter estimates have an uncertainty greater than 60%.

Following the *BCR STANDARD. From differentiated responsibility to common responsibility.* Version 3.2 (BCR, 2023)[101] where the uncertainty management is determined by the accuracy of the maps used to estimate the activity data values and the discounts in the emission factors. Therefore, the global precision values of the loss error matrix reported by Hansen *et al.* (2013)[99] were used, with a value for the tropics and a value for the tropics of the world. with a value for the tropics of 99.5 % and a standard error of 4.7 %, the latter value is taken as the degree of uncertainty in the measurement of activity data. However, in this case it is important to highlight the non-existence of uncertainty values for aboveground biomass and soil organic carbon, the uncertainty value for the activity data is deduced from the precision and standard error reported.

The emission factors for carbon content per deposit were taken from the proposed reference level of forest emissions from deforestation in Colombia developed by MADS and IDEAM in 2019[102] , which correspond to 8.8% in relation to aboveground biomass and 8.1% in underground biomass and organic carbon in the soil. The 2019 NREF is considered for the calculation of the years 2019 to 2022 since it presents the increase values due to national circumstances. The uncertainty of the emission factor was calculated using the formula recommended by the IPCC (2006)[103]. The level 1 method considers the propagation of errors and is based on two equations, the first that combines the uncertainty of several emission sources and the second that evaluates the potential uncertainty in the product of the parameters (GOFC-GOLD, 2016).

A) Reference equation for combining uncertainties from various emission sources:

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

Where:

[101] BCR_Standard_en.pdf
[102] Proposed Reference Level of Forest Emissions from Deforestation in Colombia for REDD+ Payment for Results Under the UNFCCC
[103] Consistent representation land

t: Total uncertainty; T: Total associated GHG emissions; A: Category A emissions; a: uncertainty of category A emissions, B: category B emissions; b: uncertainty of category B emissions, ... N= category N emissions; n= uncertainty of category N emissions.

i) Emission factor uncertainty NREF, 2019:

Pacific aerial biomass = 241 tCO_2/ha
Pacific underground biomass = 55 tCO_2/ha
Pacific soil organic carbon = 17 t CO_2/ha

$$t = \frac{\sqrt{(241\ t\ CO2/ha * 8.8\%)^2 + (55\ \text{t}\ CO2/\text{ha} * 8.1\%)^2 + (17\ \text{t}\ CO2/\text{ha} * 8.1\%)^2}}{313\ \text{t CO2/ha}} = 0{,}0694$$

Total emission factor uncertainty = 6.94%.

ii) Uncertainty of activity data:

Activity data: 4.7%[99].

B) Percentage uncertainty in the product of the parameters:

$$U_{total} = \sqrt{U1^2 + U2^2 + \cdots + Un^2}$$

Where:
U_{total} : Percentage uncertainty in the product of the parameters; Un: Percentage uncertainty associated with each of the parameters.

iii) Uncertainty of project reductions:

$$U_{total} = \sqrt{6.94^2 + 4.7^2} = 0{,}0838$$

Uncertainty of project reductions = 8,38%.

Combining the uncertainties of the activity data and emission factors, it is determined that the estimates of reductions have an uncertainty of 8,38%.

The emission factors used to calculate GHG emission reductions of 2019 to 2022 are consistent and are based on MADS and IDEAM's Proposed Reference Level of Forest Emissions from Deforestation in Colombia for Payment for REDD+ Results under the UNFCCC (NREF) of MADS and IDEAM (2019). These factors have an uncertainty of

less than 10%, so it was not necessary to apply the percentages defined for this discount factor during the monitoring period.

For the calculation of ex-ante emissions for the years after 2022, the NREF (2024)[104] is considered, considering that it is the most updated version that has been submitted by Colombia to the UNFCCC. The uncertainty for the emission factors for carbon content per pool corresponds to 15.85% for aboveground biomass, 14.22% for belowground biomass and 26.71% for soil organic carbon. The total uncertainty of the emission factor was calculated using the formula recommended by IPCC (2006) presented in paragraph A) of this section.

i) Emission factor uncertainty NREF, 2024:

Pacific aerial biomass = 390,94 tCO_2/ha
Pacific underground biomass = 79,24 tCO_2/ha
Pacific soil organic carbon = 16,17 tCO_2/ha

$$t = \frac{\sqrt{(391\ tCO2/ha * 15.85\%)^2 + (79\ \text{t}CO2/\text{ha} * 14.22\%)^2 + (16\ \text{t}\ CO2/\text{ha} * 26.71\%)^2}}{486\ \text{tCO2/ha}} = 0{,}1298$$

Total emission factor uncertainty = 12.98%

ii) Uncertainty of activity data:

Activity data: 4.7%

iii) Uncertainty of project reductions:

$$U_{total} = \sqrt{12.98^2 + 4.7^2} = 0{,}1380$$

Uncertainty of project reductions = 13.80%

Combining the uncertainties of the activity data and the NREF emission factors, (2024), it is determined that the estimates of reductions have an uncertainty of 13.80%.

[104] Propuesta del nivel de referencia de las emisiones forestales de Colombia para el periodo 2023 – 2027 como mecanismo para optar al pago por resultados de REDD+ bajo la CMNUCC.

3.6 Leakage and non-permanence

This chapter is developed based on the *BCR Tool. Permanence And Risk Management. BCR project holder take actions to ensure the project benefits are maintained over time*. Version 1.0 (BCR, 2023)[105]. The project strives to maintain the benefits in the territory by improving the quality of life of its inhabitants, climate, and biodiversity over time (for 30 years). This will be achieved by strengthening governance and defending the territory, which in turn will strengthen the local economy. The project activities aim to establish a self-governance system for the management of the territory, regulating the activities that occur in it in a sustainable manner to preserve the existing ecosystems. In addition, the project seeks to generate productive activities that will sustain the local economy beyond the duration of the project.

The programs implemented with the project will establish a solid governance structure with economic policies and sustainable developments that maintain territorial governance and protection over time, preserving the territory and its ecosystem. In addition, the creation and strengthening of support networks will contribute to the conservation of the territory and the promotion of sustainable production strategies in line with cultural identity and local environmental resources. These approaches will ensure that project results do not depend solely on income from carbon credits in the medium and long term and guarantee the preservation of carbon in the standing forest beyond the 30-year life of the project.

According to the *BCR STANDARD. From differentiated responsibility to common responsibility*. Version 3.2 (BCR, 2023)[106], project managers must ensure that project activities are maintained during the period for which GHG reductions are being calculated. As a precautionary measure against potential reversal risks associated with the project, 20% of the VCCs are set aside, as detailed in section 7.2 on Reversal Risk Management. The identified non-permanence risks are presented below, along with the level of risk, mitigation measures, monitoring indicators and the process for reporting if any of these situations arise.

[105] Risk-and-permanence.pdf
[106] BCR_Standard_en.pdf

Risk	Risk level	Mitigation measures	Monitoring indicators	Reporting procedure	Frequency of monitoring
Fires	Under	- Visual observation of fires during walks conducted by community members. - Analysis and interpretation of satellite images. - Establish a system of communication and request for assistance with emergency response organizations. - CCV reserves as an integral part of the reversal risk management strategy.	1. Number of fires detected 2. Number of hectares affected by fires 3. tCO_2 emitted by fire incidence 4. tCH_4 emitted by fire incidence	1. Inform the legal representative of the community council of the identification of a fire, indicating its location and providing a rough estimate of its size. Record the details of the fire, including who sighted the fire, the date it occurred, the exact location, the extent of the fire and the duration of the incident. 3. Notify Biotrade S.A.S. and the local authorities in charge of emergency response of the event. 4. Calculate the affected area using satellite images and, if possible, verify the information in the field. 5. Measure the carbon dioxide (CO_2) and methane (CH_4) emissions generated by the fire to quantify its environmental impact.	Annual
Floods	Medium	- Visual identification of flooding during the movement of community members. - Analysis and interpretation of satellite images. - Establish a system of communication and request for assistance with emergency response organizations. - CCV reserves as an integral part of reversal risk management strategy	5. Number of hectares affected by floods	1. Inform the legal representative of the community council of the identification of a flood, indicating its location and providing a rough estimate of its extent. 2. Record the details of the flood, including who detected it, the date it occurred, the exact location, the extent of the event and its duration. 3. Notify Biotrade S.A.S. and the local authorities in charge of emergency response of the event. 4. Calculate the affected area using satellite images and, if possible, verify the information in the field. 5. Measure CO emissions$_2$ associated with flooding to quantify the impact.	Annual

Risk	Risk level	Mitigation measures	Monitoring indicators	Reporting procedure	Frequency of monitoring
Land tenure disputes	Under	Creation of a space for dialogue and definition of mechanisms to resolve conflicts related to land tenure.	6. Number of hectares subject to land tenure disputes.	1. Representatives of the community councils shall identify interested parties seeking to claim rights to lands recognized as council territories. 2. Inform the Ministry of the Interior, local mayors' offices, and the respective governor's office, as well as Biotrade S.A.S., of the intention of a third party to claim land titling rights.	Annual
Conflicts between project stakeholders	Medium	Creation of a space for dialogue and definition of mechanisms to resolve conflicts between project stakeholders.	7. Number of reported conflict events between stakeholders	1. The legal representatives of the councils will inform Biotrade S.A.S. and the established dialogue instance about the conflict situation, the participants involved and the possible consequences for the forested areas. 2. Address the conflict situation through the defined procedures for resolving disputes between project stakeholders. 3. Determine the areas of forest that have been deforested in the context of the conflict.	Annual
Non-ownership of project activities	Under	-Execution of actions agreed with the community, following previously established stages. - Monitoring of progress and expected results in each phase. - Identification and implementation of improvement measures to address problems in the execution of activities.	8. Number of REDD+ activities that cannot be implemented due to low ownership by the project stakeholders. 9. Number of hectares of forest deforested.	1. Evaluate the results of the activities and implementation phases, identifying potential adoption issues by project participants. Measure the number of hectares of forest deforested and estimate the CO_2 emissions related to the lack of adoption of project activities.	Annual

Risk	Risk level	Mitigation measures	Monitoring indicators	Reporting procedure	Frequency of monitoring
		- Provide ongoing support to the participants involved in the project.			
Governance deficit	Medium	Update or create internal regulations for the councils with the integration of priority activities.	10. Number of hectares deforested	1. Evaluate the results of the activities related to the territorial governance component and the implementation phases, identifying possible adoption problems by project participants. Measure the number of hectares of forest deforested and estimate the CO_2 emissions associated with the governance deficit.	Annual
Community involvement	Under	- Ensure full participation of all community members involved in project activities. - Share in an open and understandable manner the progress of project activities according to the established schedule. - Ensure the participation of community members in project-related decision making.	11. Number of community members participating in project activities. 12. Number of hectares of forest deforested	1. Evaluate the participation of community members in socialization events, training, and decision-making processes. Measure the number of hectares of forest deforested and estimate the CO2 emissions related to the low community participation in the REDD+ project.	Annual

3.7 Mitigation results

3.7.1 Eligible areas within the GHG project boundary (if applicable)

Eligible project areas correspond to the stable forest found within the community councils for at least a ten-year period prior to the project start date. For the purposes of NREF construction, forest is defined as: *"Land occupied mainly by trees that may contain shrubs, palms, guaduas, herbs and lianas, in which tree cover predominates with a minimum canopy density of 30%, a minimum canopy height (in situ) of 5 meters at the time of identification, and a minimum area of 1.0 ha. Tree cover of commercial forest plantations, palm plantations, and trees planted for agricultural production are excluded"*.

Historical deforestation within the reference period between 2009-2018 was defined under the GOFC- GOLD 2009 standard as those areas with a direct conversion from forest cover to another type of cover in the time period determined for the REDD+ JIGRANTU Project, all years of the historical and monitoring period (2009-2022) were evaluated as detailed below:

Compilation of appropriate data

The dataset used for the JIGRANTU REDD+ Project corresponds to information developed by Hansen, the Global Land Analysis & Discovery (GLAD) laboratory, the University of Maryland (UMD), Google, the United States Geological Survey (USGS) and NASA. Discovery (GLAD) laboratory, the University of Maryland (UMD), Google, the United States Geological Survey (USGS) and NASA, where global land cover loss was measured at a resolution of 30 x 30 meters, using multispectral satellite images from MODIS and Landsat operational sensors analyzed in the time intervals 2009 to 2022, from which the non-forest forest map was produced (Hansen *et al.* (2010)[107] and Hansen *et al.* (2013)[99])

The following is an explanation of image acquisition, pre-processing, classification, post-classification and evaluation of the accuracy of the information. Used for the projection of land use changes and land cover changes:

Image acquisition

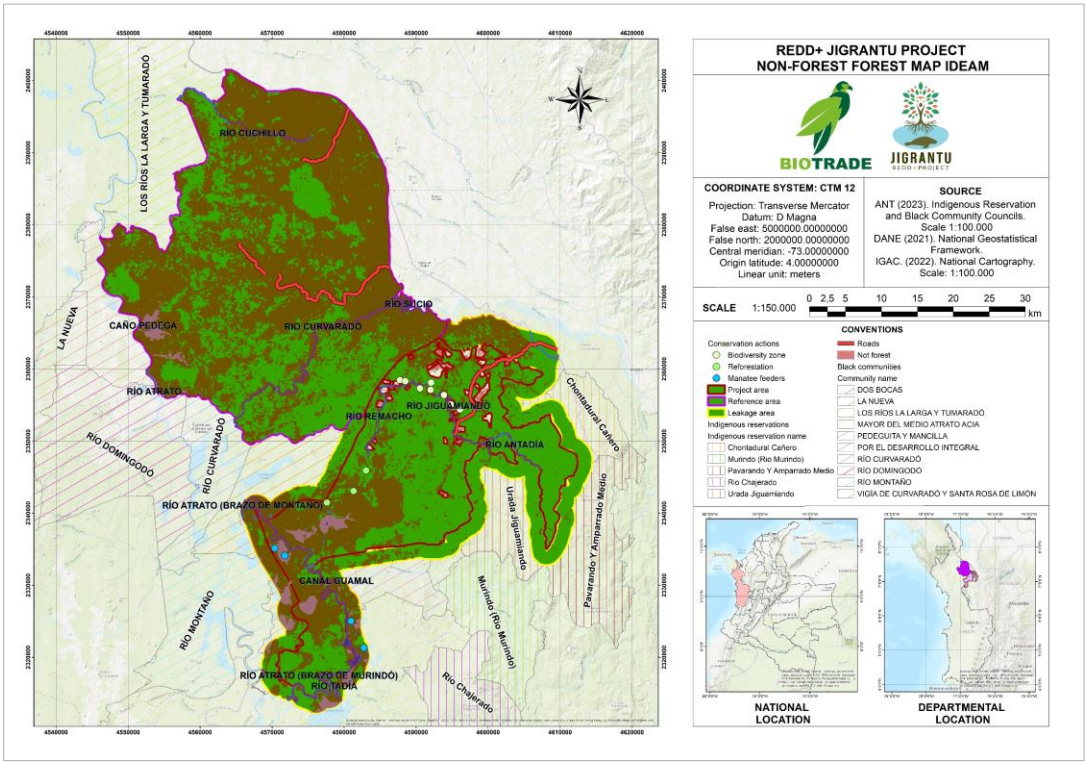
The quantification of deforestation in the Project areas was performed using the Hansen dataset of tree cover loss Hansen *et al.* (2010)[107] and Hansen *et al. (*2013)[99] collected in

[107] Quantification of global gross forest cover loss

the repositories of the Google Earth Engine platform of the Global Land Analysis and Discovery (GLAD) laboratory of the University of Maryland[108] , thereby quantifying deforestation for the baseline period (2009 - 2018) and the monitoring period (2019 - 2022) throughout the implementation of the REDD+ JIGRANTU Project actions.

Before this, a verification of the information corresponding to the maps generated by the Forest and Carbon Monitoring System (SMByC) of the IDEAM for the years 2005, 2010, 2012 to 2018 was carried out, however, there were inconsistencies with what was observed in different visits (points of conservation actions), as there were areas as non-forest that did not correspond to this classification and large areas that were "without information" (See **Figure 34.**).

Figure 35. Inconsistencies in the IDEAM non-forest forest map in the leakage area, reference area and REDD+ JIGRANTU project.



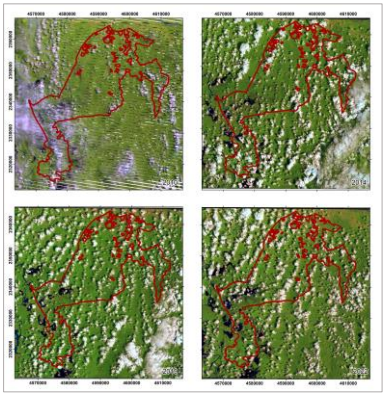
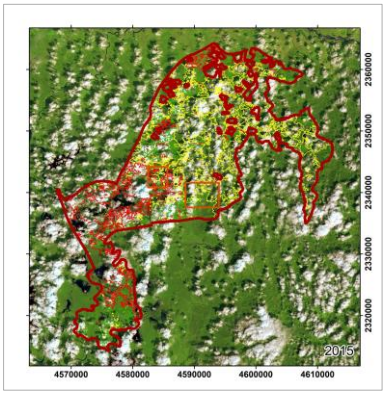
Prepared by Biotrade S.A.S (2023)

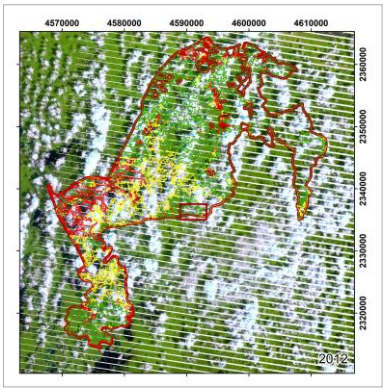
[108] Global Forest Change

To complement the SMByC information, Landsat 7 and 8 satellite images were downloaded from the U.S. Geological Survey website from 2007 to 2018 corresponding to route 010 of row 055 that covers the entire project area; the spatial resolution of these images is 30m. Although all the images that met the criteria of cloudiness from 0 to 40% were verified, sometimes in the year by year search it was only possible to download one image due to interference in the rest of the images, but it was not possible to determine the status of the "no information" areas because they corresponded to the areas with high cloudiness of the downloaded images. For this reason, it was decided to use the information on global forest change.

Digital processing of PDI images was not possible due to the inconsistency of the data due to the lack of information, mainly due to the incidence of climatic aspects such as the high cloud cover present in the area. Because the information from the SMByC Forest and Carbon Monitoring System of IDEAM was not considered due to the high presence of areas without information and zones where the deficient functioning of the line corrector in the Landsat 7 satellite is evident (see **Table 24.**).

Table 24. Inconsistencies in the information generated by the SMByC (IDEAM)

Item	Observation	Evidence
Atmospheric characteristics	The REDD+ JIGRANTU Project area is an area with high cloud cover; when downloading Landsat and Sentinel images, the level of cloud cover was always higher than 30% in all baseline and monitoring years.	
Areas without information	The map shows forest areas with green outline, non-forest areas with red and areas without information in yellow. This year the areas without information are more than 30,000 hectares, i.e. more than 44% of the project area, the reliability of the data is low, and there are areas with the problem of banding of Landsat 7 satellite images.	

Item	Observation	Evidence
Inconsistency of information	Although the areas without information are smaller than in the previous image year, in this layer the problem of banding of Landsat 7 satellite images is more noticeable in some areas of forest as well as in areas without information, this was evident when downloading the image to which the layer corresponds, this casts doubt on the reliability of the data for different years.	
Deforestation analysis	In all areas of the REDD+ JIGRANTU Project, deforestation analysis was carried out and the inconsistency in the data can be seen. The annual change in the area covered by forest was higher in all cases, considering the period from 2010 to 2018 for the AR was 2134 ha/year in the AF of 457 ha/year and in the PA of 707 ha/year unlike what was found with the data of Hansen *et al.,* (2013) where in the AR it was 795 ha/year in the AF of 128 ha/year and in the PA of 183 ha/year.	SMByC (IDEAM) Área / Año / Área de bosque (ha) / Área de no bosque (ha) / Sin informacion (ha) / CSB año Área de referencia — Línea base 0 — 0,00 — 0,00 2010 — 64.367,29 — 82.993,34 — 1.700,37 — 3.708,75 2012 — 56.949,78 — 78.112,77 — 13.998,06 — -1.406,04 2013 — 58.355,82 — 86.625,73 — 4.078,99 — -2.255,72 2014 — 60.611,55 — 87.357,88 — 1.091,35 — 11.305,19 2015 — 49.306,36 — 87.174,21 — 12.579,71 — -6.614,67 2016 — 55.921,02 — 90.923,10 — 2.216,51 — 3.226,28 2017 — 52.694,74 — 96.364,13 — — 5.399,37 2018 — 47.295,37 — 101.560,99 — 263,05 — 4.183,13 Área de referencia — Monitoreo 2019 — 43.112,24 — 105.946,88 — — 1.570,57 2020 — 41.541,67 — 107.517,44 — — 993,23 2021 — 40.548,44 — 108.510,52 — — 40.548,44 2022 — 0,00 — 0,00 — — - Área de fugas — Línea base 0 — 0,00 — 0,00 — — - 2010 — 28.803,01 — 15.118,42 — 9,34 — 3.555,13 2012 — 21.692,76 — 10.555,85 — 11.674,64 — -3.981,82 2013 — 25.674,58 — 16.108,62 — 2.144,37 — 282,18 2014 — 25.392,40 — 16.215,41 — 2.320,17 — 10.571,42 2015 — 14.820,98 — 15.040,26 — 14.064,71 — -11.267,54 2016 — 26.088,52 — 16.497,21 — 1.342,25 — -881,40 2017 — 26.969,93 — 16.958,25 — — 1.819,28 2018 — 25.150,65 — 17.416,71 — 1.360,62 — -980,65 Área de fugas — Monitoreo 2019 — 26.131,31 — 17.788,66 — 8,09 — 135,52 2020 — 25.995,79 — 17.931,45 — — 146,13 2021 — 25.849,66 — 18.077,62 — — 25.849,66 2022 — 0,00 — 0,00 — — - Área del proyecto — Línea base 0 — 0,00 — 0,00 — — - 2010 — 50.819,13 — 23.110,51 — 82,63 — 5.384,21 2012 — 40.056,71 — 13.310,49 — 20.651,06 — -3.803,31 2013 — 43.854,02 — 25.157,21 — 5.001,04 — -1.313,93 2014 — 45.167,95 — 25.404,09 — 3.440,22 — 25.009,69 2015 — 20.158,26 — 21.114,56 — 32.739,44 — -26.145,51 2016 — 46.303,77 — 25.604,86 — 2.103,63 — -937,03 2017 — 47.240,80 — 26.770,93 — 0,54 — 2.074,95 2018 — 45.165,84 — 28.020,80 — 825,62 — 141,87 Área del proyecto — Monitoreo 2019 — 45.023,97 — 28.980,30 — — 437,83 2020 — 44.586,13 — 29.426,13 — — 435,06 2021 — 44.151,07 — 29.861,19 — — - 2022 — 0,00 — 0,00 — — -

The information generated by Hansen *et al.* (2010)[107] and Hansen *et al.* (2013)[99] use Landsat images and present information with a spatial resolution of 30 x 30 meters and in general terms, the Google Earth Engine (GEE) platform offers processed satellite images with atmospheric corrections, calibrations and radiometric normalizations, allowing the desired accuracy along with the incorporation of experts for visual verification of forest changes in the desired periods.

The objective of the dataset Hansen *et al.,* (2010)[107] is to provide a global estimate of forest cover extent and gross forest cover loss (GFCL) due to natural and human disturbances. The methodology employs a stratified sample of 541 blocks of 18.5 km × 18.5 km (0.22% sampling density) and uses data from MODIS and Landsat ETM+ satellite sensors. MODIS allows stratification of forest biomes into regions of homogeneous forest cover loss, while Landsat ETM+ quantifies the area of forest in 2000 and the area of GFCL.

Forest cover is defined as 25% or more canopy closure for trees over 5 m tall. This methodology allows comparisons between biomes, continents and countries, based on the premise that Landsat data provide a clear and quantifiable signal of forest cover and

its loss. The method focuses on spectral signatures that indicate complete canopy removal, without identifying the exact cause of each disturbance. The estimates obtained were accurate at continental and national scales for countries with more than 1,000,000 km² of forest cover[107].

According to Hansen *et al.,* (2013)[99] one of the main objectives of large-scale land cover mapping is to provide globally consistent characterizations that are also useful and relevant at the local level. The maps and statistics presented in the study can serve as an initial reference for countries lacking such data, stimulate capacity building for the establishment of national-scale forest extent and change maps, and provide a basis for comparison for the evolution of national monitoring methods.

According to The Nature Conservancy[109] this is a valuable tool for forest carbon accounting, which requires reference biomass maps to quantify carbon stocks. Despite some sources of error, it provides spatially explicit and transparent data, improving the measurement of forest loss and gain, facilitating comparisons with REDD+ reference levels. Its open access and global coverage allow for comprehensive accounting. In addition, its flexibility to be applied at different scales and time periods, and its alignment with IPCC principles, reinforce the credibility and accuracy of emissions and reductions estimates, contributing to the success of forest conservation and management initiatives.

The following Table 25. below is a comparison of the accuracy of the IDEAM and HANSEN data.

Table 25. Comparison of IDEAM vs. Hansen Data Accuracy

ITEM	IDEAM	HANSEN
Resolution	The protocol uses images with a spatial resolution of 15 to 80 m.	Spectral resolution of 1 arcsecond per pixel 30x30 m
Sensor	Landsat 5,7 and 8 Terra Aster, IRS AWiFs or LISS III, CBERS, DMC, SPOT HRV and Alos AVNIR 2 sensors;	MODIS and Landsat 3,4,5,6 and 7
Timeliness	Consecutive years from 2012 to present	2000-2023

Preprocessing

Through the "Global Land Analysis and Discovery" platform, a combination of several petabytes of satellite imagery and geospatial datasets with planetary-scale analysis capabilities to detect changes, map trends and quantify differences in the land surface,

[109] Applicability of the Hansen Global Forest Data to REDD+ Policy Decisions

which is very much aligned with the objective of calculating and monitoring forest cover within the project boundaries.

The automated Landsat image preprocessing process included steps such as image resampling, conversion to TOA reflectance, cloud screening, and image normalization. Training data for Landsat metrics were obtained using high-resolution image interpretation and mapping methods. Trends in annual forest loss were derived using ordinary least squares regressions (Hansen *et al.,* 2013).

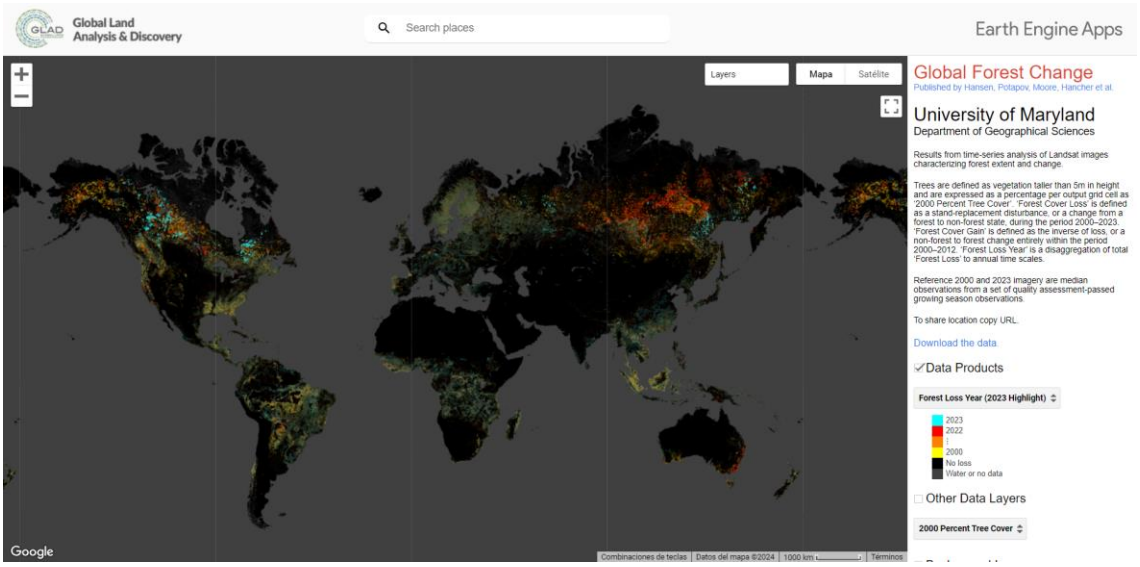
Figure 36. shows the *web app*[110] developed by the University of Maryland using the GEE platform, which contains information on forest cover loss since 2000 worldwide. Additionally, this *web app* has more visualization information such as forest cover since 2000 depending on the percentage of canopy cover (glad.earthengine, 2022) .

The Google Earth Engine (GEE) platform offers satellite images processed with atmospheric corrections, calibrations and radiometric normalizations, allowing the desired accuracy along with the incorporation of experts for visual verification of forest changes in the desired periods. Additionally, the use of this input is given because this information is very traceable in temporality and this feature is very important for monitoring over several years as is the case of the quantification of the baseline of this type of project.

The use of this platform is through Java Script which is a programming language widely used in Geographic Information Systems in different online or desktop user interfaces for the visualization, analysis and processing of mainly spatial data. The focus of the platform is to combine a catalog of several petabytes of satellite imagery and geospatial datasets with planetary scale analysis capabilities to detect changes, map trends and quantify differences in the Earth's surface, which is very much aligned with the objective of calculating and monitoring forest cover within the project boundaries.

[110] Definition of Web app: "version of the website optimized and adaptable to any mobile device".

Figure 36. Web app for visualization of global forest cover loss data[108].



Interpretation and classification

The forest cover identification system was used, through this result we can have not only the temporality of the baseline, which for this project is punctually the years 2009 to 2018, but we also have the quantification of forest cover in the monitoring period (2019 - 2022) with a high degree of accuracy and traceability since it is the algorithm developed by the authors Hansen *et al.* (2010) and Hansen *et al.* (2013).

Post-processing

This information is downloaded in RASTER format and transformed into Vector format for subsequent management in GIS software to leave a repository within the annexes of the project. After this, the double drainages and water bodies present in the study area corresponding to the national cartography 2022 scale 1:100,000[111] are eliminated.

Verification of map accuracy

Validation of the map product was conducted independently, using a stratified random sample based on 120 m block probabilities per biome. Validation results indicated that the estimated forest loss amounted to 2.2M km², compared to 2.3M km² in the map

[111] Basic national cartography

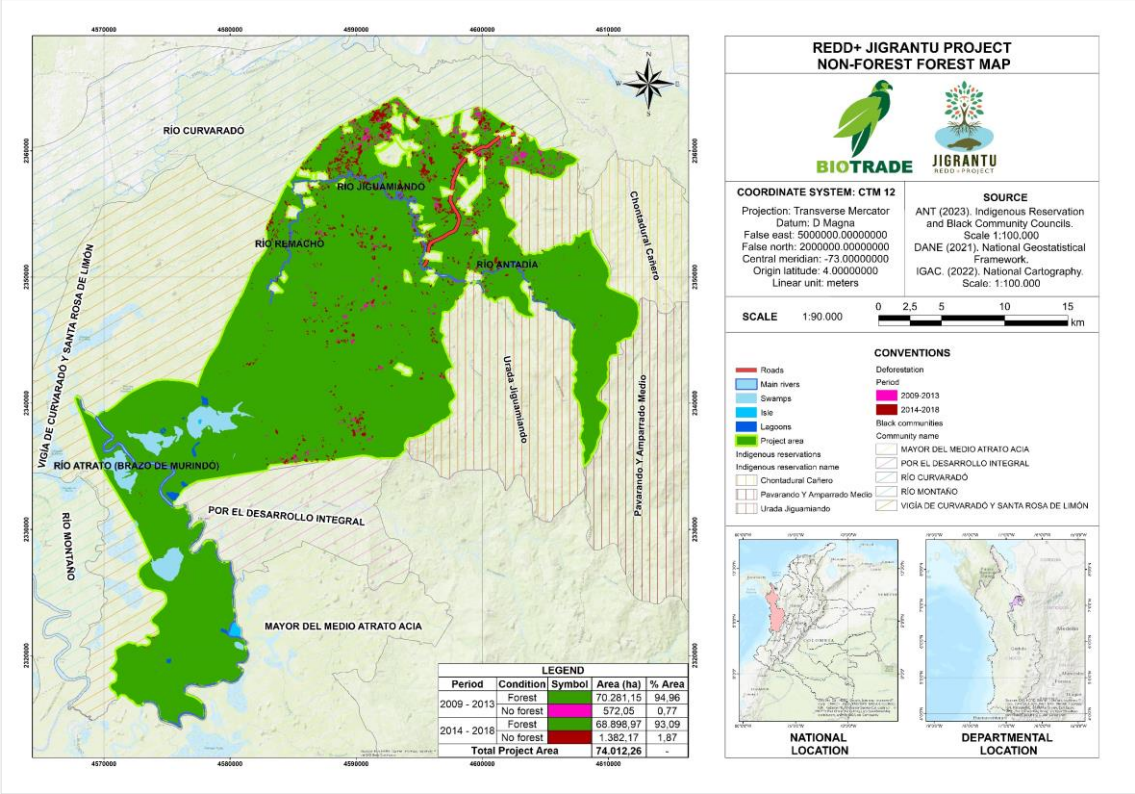
(Hansen *et al.,* 2013). The global level accuracy values of the loss error matrix they report were used with a value for the tropics of 99.5% and a standard error of 4.7%. The authors have a 75% confidence that the loss occurred in the year indicated, and a 97% confidence that it occurred during the previous or subsequent year. It is therefore suggested that users of the data can buffer against such uncertainty by examining the mean of several years.

On the Global Forest Watch platform (2015)[112] it is reported: *"the examination of false positives (also known as errors of commission) and false negatives (also known as errors of omission) of changes. A false positive is a 30-meter pixel labeled as a "loss" or "gain" on the map, but did not change in the real world. A false negative is the opposite; a pixel labeled in the data as "no change" but actually lost or gained tree cover."* The authors assessed the overall prevalence of false positives in these data at 13%, and the prevalence of false negatives at 12%, although accuracy varies by biome and thus may be higher or lower in any given location. In the tropics with respect to the loss data, there were 13% false positives and 17% false negatives; for Latin America, specific values were 4% and 17%, respectively.

From the calculation of the areas that make up the project, an extension of 74,012.27 ha is obtained, of which 68,898.97 ha correspond to forest eligible for the REDD+ project. In the Figure 37. details the non-forest forest areas of the project area in the period from 2009 to 2018.

[112] How accurate is it accurate enough? How to examine GLAD's global tree cover change data

Figure 37. Map of non-forest forest from 2009 to 2018 in the JIGRANTU REDD+ project area.



Prepared by Biotrade S.A.S (2023)

3.7.2 Stratification

The distribution of carbon pools is homogeneous corresponding to tropical humid forest (bh-T) considering the characteristics of the project area identified in section 2.5 and the Table 26.

Table 26. Forest stratification based on Holdridge life zones adapted for Colombia.

Criteria	Flooded forest	Tropical rain forest	Project area
Altitude (m.a.s.l.)	< 800	< 800	< 800
Temperature (ºC)	>24	>24	>24
Precipitation (mm/year)	>1500	2000 - 4000	3000-4000

3.7.3 Reduction of GHG emissions in the baseline scenario

3.7.3.1 Uncertainty management

According to the BCR Standard, managing uncertainty depends on the accuracy of the maps used to estimate the activity data values, and the application of discounts in the emission factors. In the case of activity data, the accuracy must exceed 90%, for the

evaluation of this accuracy field observations are made or analysis of high-resolution images is performed. Section 3.5 of this document provides detailed information on the handling of uncertainty associated with the activity data and emission factors used for the analysis.

3.7.3.2 Activity data Deforestation

3.7.3.2.1 Deforestation

3.7.3.2.1.1 Estimation of deforestation rate based on historical averages.

To calculate the rate of forest loss, an analysis was carried out comparing the extent of forest and non-forest areas at two specific time points, in this case, the years 2007 and 2018. Only those areas that were covered by forest on the first date and had been cleared on the second date were considered, thus ensuring that this change occurred during the study period (gross deforestation), this allowed us to calculate the amount of land deforested between these two years.

3.7.3.2.1.2 Annual historical deforestation in the region of reference

The following formula is used to calculate the historical annual deforestation in the reference region[28]:

$$CSB_{año} = \left(\frac{1}{t_2 - t_1}\right) * (A_1 - A_2)$$

$$CSB_{año} = \left(\frac{1}{2018 - 2009}\right) * (141{,}081.87\ ha - 133{,}929.87\ ha)$$

$$CSB_{año} = 794.67\ ha$$

Where:

$CSB_{año}$= Annual change in the area covered by forest in the reference region (ha)
t_2= End year of the reporting period
t_1=Starting year of the reference period
A_1= Wooded area of the area under control at the initial time (ha)
A_2= Forest area of the area under control at the final moment (ha)

The CSB represents the average historical deforestation in the reference area, this value will be used as a proxy for the expected forest loss in the baseline scenario.

3.7.3.2.1.3 Projected annual deforestation in the scenario with REDD+ project.

The following formula is used to calculate the historical annual deforestation in the REDD+ project scenario:

$$CSB_{proy,año} = CSB_{lb,año} * (1 - \%DD)$$

$$CSB_{proy,año} = 794.67 * (1 - 80\%)$$

$$CSB_{proy,año} = 158.67\ ha$$

Where:

$CSB_{proy,año}$= Annual change in area covered by forest in the scenario with project (ha)
$CSB_{lb,año}$= Annual change in the area covered by forest in the without-project scenario (ha)
$\%\ DD$ = Projected decrease in deforestation due to the implementation of REDD+ activities

3.7.3.2.1.4 Annual historical deforestation in the leakage area

To calculate deforestation in the leakage area, the following equation is used:

$$CSB_{f,año} = \left(\frac{1}{t_2 - t_1}\right) * \left(A_{1,f} - A_{2,f}\right)$$

$$CSB_{f,año} = \left(\frac{1}{2018 - 2009}\right) * (41{,}575.93\ ha - 40{,}423.58\ ha)$$

$$CSB_{f,año} = 128.04\ ha$$

Where:

$CSB_{f,año}$= Annual change in the area covered by forest in the leakage area in the without-project scenario (ha)
t_2= End year of the reporting period
t_1=Starting year of the reference period
$A_{1,f}$= Forest area of the leakage area at the beginning of the reference period (ha)
$A_{2,f}$= Forest area of the leakage area at the end of the reference period (ha)

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

The following equation is used to project the estimated annual deforestation in the leakage area in the REDD+ project scenario:

$$CSB_{REDD+proy,f\ año} = CSB_{f,lb} * (1 + \%Ef)$$

$$CSB_{REDD+proy,f\ año} = 128.04\ ha * (1 + 10\%)$$

$$CSB_{REDD+proy,f\ año} = 140.84\ ha$$

Where:

$CSB_{REDD+proy,faño}$= Annual change in the area covered by forest in the leakage area, in the scenario with project (ha)
$CSB_{f,lb}$= Annual change in the area covered by forest in the leakage area in the without-project scenario (ha)
$\%\ Ef$ = Percentage increase in emissions in the leakage area due to the implementation of REDD+ activities.

3.7.3.3 Emission factors

3.7.3.3.1 Deforestation

3.7.3.3.1.1 Carbon emission factor in total biomass

According to the *BCR STANDARD. From differentiated responsibility to common responsibility.* Version 3.2 (BCR, 2023)[113], total biomass (BT) is calculated by adding aboveground biomass (BA) and belowground biomass (BS). The carbon content of total biomass (CBF) is determined by multiplying BT by the carbon fraction of dry matter FC. The carbon dioxide equivalent contained in total biomass (CBF_{eq}) is obtained by multiplying CBF by a constant representing the molecular ratio between carbon (C) and carbon dioxide (CO_2). The calculation of CBF_{eq} is performed using the following equation:

$$CBF_{eq} = BT * FC * \frac{44}{12}$$

[113] BCR_Standard_en.pdf

$$CBF_{eq} = 296\ \frac{tCO_2e}{ha}$$

Where:

CBF_{eq}= Carbon dioxide equivalent contained in total biomass (tCO_2 e/ha)
BT = Total biomass (t/ha)
FC = carbon fraction of dry matter (0.47)

For the calculation in the monitoring period, the values of the NREF, 2019 were used, after the year 2022 the values of the NREF, 2024 were used:

$$CBF_{eq} = 470\ \frac{tCO_2e}{ha}$$

3.7.3.3.1.2 Soil carbon emission factor

According to the guidelines established in the *BCR STANDARD. From differentiated responsibility to common responsibility.* Version 3.2 (BCR, 2023)[114], when calculating emissions due to soil deforestation, a gross emission is considered in which the soil carbon content (COS) is released in equal proportions over a 20-year period once the deforestation event occurs. For this, the annual rate of soil carbon emission over 20 years ($_{COS20years}$) is determined by dividing the COS by 20, as shown in the following equation:

$$COS_{eq} = \frac{COS}{20} * \frac{44}{12}$$

$$COS_{eq} = 17\ \frac{tCO_2e}{ha}$$

Where:

COS_{eq}= Carbon dioxide equivalent contained in soils (tCO_2 e/ha)
COS= Soil carbon content (tC/ha)

Starting in 2023, the COS values of the NREF, 2024, are considered:

[114] BCR_Standard_en.pdf

$$COS_{eq} = 16\ \frac{tCO_2e}{ha}$$

3.7.3.3.1.3 Total carbon emission factor

The total carbon emission factor incorporates the emission of carbon dioxide equivalent per hectare deforested, considering both biomass and soil carbon behavior, according to the following equation:

$$CT_{eq} = CBT_{eq} + COS_{eq}$$

$$CT_{eq} = 313\ \frac{tCO_2e}{ha}$$

Where:

CT_{eq} = Total Carbon Dioxide Equivalent (tCO_2 e/ha)
CBT_{eq}= Carbon dioxide equivalent contained in total biomass (tCO_2 e/ha)
COS_{eq}= Carbon dioxide equivalent contained in soils (tCO_2 e/ha)

Starting in 2023, the COS values of the NREF, 2024, are considered:

$$CT_{eq} = 486\ \frac{tCO_2e}{ha}$$

3.7.3.4 GHG emissions in the period of analysis

3.7.3.4.1 Deforestation

The annual emission due to deforestation in the baseline scenario is determined using the following equation:

$$EA_{lb} = DA_{lb} * CT_{eq}$$

$$EA_{lb} = 794.67\ ha * 313\ \frac{tCO_2e}{ha}$$

$$EA_{lb} = 248{,}953.51\ tCO_2/ha$$

Where:

EA_{lb} = Annual emission in the baseline scenario (tCO_2 /ha)
DA_{lb} = Annual historical deforestation in the baseline scenario (ha)
CT_{eq} = Total Carbon Dioxide Equivalent (tCO_2 e/ha)

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

$$EA_{REDD+proy,año} = DA_{REDD+proy} * CT_{eq}$$

$$EA_{REDD+proy,año} = 158.93\ ha * 313\ \frac{tCO_2e}{ha}$$

$$EA_{REDD+proy,año} = 49{,}790.70\ tCO_2/ha$$

Where:

$EA_{REDD+proy,año}$ = Annual emission in the scenario with project (tCO_2 /ha)
$DA_{REDD+proy}$ = Projected annual deforestation in the scenario with project (ha)
CT_{eq} = Total Carbon Dioxide Equivalent (tCO_2 e/ha)

The annual emission from deforestation in the leakage area is estimated from the following equation:

$$EA_{f,año} = DA_f * CT_{eq}$$

$$EA_{f,año} = 140.84\ ha * 313\ \frac{tCO_2e}{ha}$$

$$EA_{f,año} = 44{,}123.07\ tCO_2/ha$$

Where:

$EA_{f,año}$ = Annual emission in the leakage area (tCO_2 /ha)
DA_f = Projected annual deforestation in the leakage area (ha)
CT_{eq} = Total Carbon Dioxide Equivalent (tCO_2 e/ha)

3.7.4 GHG emission reductions in the project scenario

The estimation of emission reductions due to avoided deforestation is done using the following equation:

$$RE_{DEF,REDD+proy} = (t_2 - t_1) * (EA_{DEF,lb,año} - EA_{DEF,REDD+proy,año} - EA_{DEF,f,año})^{115}$$

$$RE_{DEF,REDD+proy} = 10{,}159{,}307.91\ tCO_2e$$

Where:

$RE_{DEF,REDD+proy}$ = Emission reductions from avoided deforestation in the project scenario (tCO_2 e)
t_2 = End year of the reporting period
t_1 = Start year of the reference period
$EA_{DEF,lb,año}$ = Annual emission from deforestation in the baseline scenario (tCO_2e)
$EA_{DEF,REDD+proy,año}$ = Annual emission from deforestation in the project area (tCO_2e)
$EA_{DEF,f,año}$ = Annual emission from deforestation in the leakage area (tCO_2e)

A considerable reduction in greenhouse gas (GHG) emissions is expected during the 30-year quantification period, which runs from 2019 to 2049. According to the estimates detailed in Table 27. indicating an average annual net GHG reduction of approximately 338,643.60 tCO_2e, the measures and practices implemented under the project will generate a total GHG emission reduction of about 10,159,307.91 tCO_2e over the accounting period. These efforts not only aim to protect the environment, but also to culturally conserve the territory of the councils, through the consolidation of self-government, strengthening of traditional knowledge, actions for sustainable development, and monitoring and control of the territory, to improve the quality of life of the communities that inhabit it over the duration of the project.

Table 27. GHG emission reductions from project implementation

Year	Calendar year	Reduction of GHG emissions in the baseline scenario (tCO_2e)	GHG emission reductions in the project scenario (tCO_2e)	GHG emissions attributable to leakage (tCO_2e)	Estimated net GHG reduction (tCO_2e)
Year 1	2019	670.596,96	155.466,55	53.469,89	461.660,51
Year 2	2020	416.967,68	121.494,69	21.355,26	274.117,72
Year 3	2021	374.746,95	124.578,92	37.907,10	212.260,93
Year 4	2022	654.480,92	127.869,93	54.954,18	471.656,81
Year 5	2023	703.788,36	167.701,75	64.884,89	471.201,72
Year 6	2024	721.787,22	166.694,51	64.687,48	490.405,23
Year 7	2025	737.887,54	165.693,31	64.490,66	507.703,57

[115] The application of the formula was carried out for each year of project implementation considering that the forest area changes as the project progresses, the detailed calculations are found in the folder: 5. Carbon calculations\Carbon calculator.

Year 8	2026	752.121,44	164.698,13	64.294,45	523.128,87
Year 9	2027	764.520,65	163.708,92	64.098,83	536.712,90
Year 10	2028	542.418,85	162.725,65	63.903,81	315.789,39
Year 11	2029	539.160,98	161.748,29	63.709,38	313.703,31
Year 12	2030	535.922,68	160.776,81	63.515,54	311.630,34
Year 13	2031	532.703,84	159.811,15	63.322,29	309.570,39
Year 14	2032	529.504,32	158.851,30	63.129,63	307.523,39
Year 15	2033	526.324,02	157.897,21	62.937,56	305.489,26
Year 16	2034	523.162,83	156.948,85	62.746,07	303.467,91
Year 17	2035	520.020,62	156.006,18	62.555,16	301.459,27
Year 18	2036	516.897,28	155.069,18	62.364,84	299.463,26
Year 19	2037	513.792,70	154.137,81	62.175,09	297.479,80
Year 20	2038	510.706,77	153.212,03	61.985,92	295.508,82
Year 21	2039	507.639,37	152.291,81	61.797,33	293.550,23
Year 22	2040	504.590,40	151.377,12	61.609,31	291.603,97
Year 23	2041	501.559,74	150.467,92	61.421,86	289.669,96
Year 24	2042	498.547,28	149.564,18	61.234,98	287.748,12
Year 25	2043	495.552,92	148.665,87	61.048,67	285.838,37
Year 26	2044	492.576,54	147.772,96	60.862,93	283.940,65
Year 27	2045	489.618,03	146.885,41	60.677,75	282.054,87
Year 28	2046	486.677,30	146.003,19	60.493,14	280.180,97
Year 29	2047	483.754,23	145.126,27	60.309,09	278.318,87
Year 30	2048	480.848,71	144.254,61	60.125,59	276.468,50
Average annual GHG emission reduction (tCO2e/year)		550.962,57	152.583,35	59.735,62	338.643,60
Total, reductions in accounting period		16.528.877,12	4.577.500,53	1.792.068,68	10.159.307,91

4 Compliance with applicable legislation

To advance project legal compliance, Biotrade S.A.S. has a documented procedure to manage information, establishing guidelines to update and control project information on legal issues[116],establishing guidelines to update and control project information in the legal area. Ensuring the identification, review, versioning, approval, distribution, access, use, preservation, conservation and publication of documentation. The process includes periodic evaluation of national legislation applicable to REDD projects. During project development, national sources are consulted to identify updates to regulations and make changes if necessary.

[116] Document location: 15. INFORMATION QUALITY MANAGEMENT\PD-T-GIC-01-01 Information Management Procedure in REDD Projects.pdf

The project proponents commit to comply with all relevant laws, statutes, properties, rights and other regulatory frameworks. The rigorous stakeholder consultation process and the effective implementation of the project are assurances that full compliance with applicable regulations will be achieved. Table 28. lists the laws, decrees, rules, and regulations that are relevant to the project. In addition, a matrix is included that describes how the project complies in each of these cases. For additional information on legal compliance, please refer to the Legal Compliance folder[117].

Table 28. Legal Compliance Matrix of the JIGRANTU REDD+ Project

[117] Folder 6. LEGAL COMPLIANCE/REDD+JIGRANTU legal compliance matrix

Standard Level	Legislation or another requirement	Purpose and description	Direct Execution	Compliance Officer	Related document	Folder where the evidence is kept
NATIONAL	RESOLUTION 1447	Regulates the system for monitoring, reporting and verification of mitigation actions at the national level referred to in Article 175 of Law 1753 of 2015.	Compliance with the provisions of Article 40 and 41 regarding methodological reconstruction, to analyze and interpret satellite images of the project area and the definition of limits and emission factors. Compliance with the provisions of Article 43 regarding additionality conditions.	GIS and Coordination Professional	Definition of reference area, calculations of emission reductions.	Carbon Calculations
	RESOLUTION 418	Partially regulates article 175 of Law 1753 of 2015 (modified by article 230 of Law 2294 of 2023) establishing that the Ministry of Environment and Sustainable Development will define the administration of the National Registry of Emissions Reduction and Removal of Greenhouse Gases (RENARE)	Registration of the project on the RENARE platform in compliance with the provisions of the Ministry of Environment and Sustainable Development	GIS and Coordination Professional	Project document	PDD and RM
	Methodological reference document	Reference Level of Forest Emissions from Deforestation in Colombia. Presents the reference level of forest emissions (NREF) to be included in the technical evaluation process required to qualify for the results-based payment mechanism for reducing emissions from deforestation and forest degradation, forest conservation, sustainable forest management and enhancement of carbon contents in developing countries (REDD +) before the UNFCCC.	Compliance. Methodological application of the provisions of the NRE, especially regarding the selection of emission factors and cartographic analysis.	GIS Professional, and Coordination	Project document	Carbon calculations and Cartography Folder 7.
		Estimation of forest degradation in Colombia through fragmentation analysis: elaborated in 2018, it presents in detail the results of one of the methodologies prioritized by the Forest and Carbon Monitoring System (SMByC), to estimate forest degradation in Colombia.	Compliance. Reference degradation and fragmentation thresholds.	GIS Professional, and Coordination	Project document, cartographic products	Folder 7. Cartography
		Methodological and conceptual guide to adequately characterize the causes and agents of deforestation, so that the information is comparable and interoperable, at different spatial and temporal scales. It determines the scope of a study to characterize the causes and agents of deforestation, which depends on a set of criteria to be taken into account when planning its development. The evaluation of these criteria defines the most appropriate approach in terms of resources, capacity and objectives of the study and the project.	Compliance. Application of the methodological reference to define the causes and agents of deforestation that were identified based on the documentary review and the participation of the communities in the workshops. The causes and agents were recorded in the project document.	Biotrade S.A.S-Coordination	Project document and evidence of formulation	Folder 1 PPD and RM, Folder 10. Stakeholder Consultation and Folder 16. Evidence of Formulation

Standard Level	Legislation or another requirement	Purpose and description	Direct Execution	Compliance Officer	Related document	Folder where the evidence is kept
		Guidelines established by the IPCC in 2006 and 2019 for national greenhouse gas inventories - Volume 4. Agriculture, forestry and other land uses: define guidelines for estimating and reporting GHG emissions and removals, incorporating good practices and uncertainty management in national GHG inventories.	The quantification of emissions uses methodological elements defined by the IPCC. This guide will also be used during project monitoring.	GIS Professional, and Coordination	Project document, Monitoring plan	PDD and RM
	CONPES 4021	National policy for the control of deforestation and sustainable forest management: Policy guidelines to counteract deforestation and promote sustainable forest management: approved in 2020 (CONPES 4021), with the objective of reducing deforestation and forest degradation through measures that promote forest management in Colombia, with a focus on integrated rural development.	Compliance. The project is aimed at consolidating a strategy for the conservation and management of forests by exercising control and governance over the territory, as well as the generation of sustainable productive alternatives for the families that make up the CC, strengthening the monitoring and follow-up system for an efficient administration of the territory.	The Community Councils of the Jiguamiando, La Grande and Turriquitado Rivers, Steering Committees and Biotrade S.A.S.	Project Document	PDD and RM
	DECREE 926	Establishes the procedure for the Non Causation of the National Carbon Tax. Its purpose is to stimulate the formulation and implementation of mitigation initiatives that generate GHG emission reductions or removals in exchange for the non-payment of the tax.	The decree indicates the characteristics of the emission reductions that allow the establishment of carbon neutral projects, as well as establishes the relevant methodologies and carbon standards to be used for this, which must be recognized by the national government to be used in the REDD registry. In addition, it is the regulatory framework for carbon credits to be traded by the REDD+ project that can be sold to other agents so that they can credit the non-causation of the carbon tax.	Biotrade S.A.S	Project document, application of the methodology	PDD and RM; Folder 3. Methodology and Tools; Folder 4.
	LAW 2169	Whereby the low carbon development of the country is promoted through the establishment of minimum goals and measures in terms of carbon neutrality and climate resilience and other provisions are enacted.	The REDD+ project contributes to the national objective of reducing emissions from deforestation and forest degradation.	Community Councils of the Jiguamiando, La Grande and Turriquitado Rivers and Biotrade S.A.S.	Project Document	PDD and RM
	DECREE 2811	National Natural Resources Code	REDD+ activities are aligned with the rational use of natural resources and no environmental licensing application is required. The activities	The Community Councils of the Jiguamiando, La Grande and	Project document	PDD and RM

Standard Level	Legislation or another requirement	Purpose and description	Direct Execution	Compliance Officer	Related document	Folder where the evidence is kept
			contribute to the conservation of natural resources.	Turriquitado Rivers, Steering Committees and Biotrade S.A.S.		
	LAW 164	The "United Nations Framework Convention on Climate Change", adopted in New York on May 9, 1992.	REDD+ activities contribute to the conservation of natural resources and the maintenance of the country's forest cover.	Community Councils of the Jiguamiando, La Grande and Turriquitado Rivers and Biotrade S.A.S.	Project Document	PDD and RM
	LAW 52	Whereby the Organic Law of the Development Plan is established.	REDD+ activities are aligned with local and departmental planning instruments. They contribute to the conservation of natural resources and the maintenance of forest cover. The strategic line of the project "Strengthening governance" includes the development of the ethno-development plan for each community council.	Community Councils of the Jiguamiando, La Grande and Turriquitado Rivers and Biotrade S.A.S.	Project Document; SDB	PDD and RM; Folder 2. Technical annexes_folder 4.
	LAW 21	Approving Convention 169 concerning Indigenous and Tribal Peoples in Independent Countries, adopted by the 76th session of the General Conference of the International Labour Organization.	The REDD+ project is developed on lands titled to the Community Councils and used by the communities.	The Community Councils of the Jiguamiando, La Grande and Turriquitado Rivers.	Project Document	Folder 6. Legal Compliance_Documents Legal Representation
	LAW 99	Whereby 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 is organized and other provisions are enacted.	The REDD+ project develops activities that are agreed with the communities and do not affect natural resources or the provision of environmental services, while contributing to the protection of the forests of the Colombian Choco. The initiatives also protect the cultural and social elements associated with traditional forest management within the Community Councils.	Community Councils of the Jiguamiando, La Grande and Turriquitado Rivers and Biotrade S.A.S.	Project Document, SDGs, SDGs and Safeguards	PDD and RM; Folder 1. PDD and RM; Folder 2.
	LAW 1700	To regulate the sustainable use and protection of forests and forest lands for the benefit of present and future generations, harmonizing the social, economic and ecological interests of the country.	The main objective of the REDD+ project is to promote the sustainable use of forests in the territory of the Community Councils, thus	Community Councils of the Jiguamiando, La Grande and	Project Document	PDD and RM

Standard Level	Legislation or another requirement	Purpose and description	Direct Execution	Compliance Officer	Related document	Folder where the evidence is kept
			contributing to the implementation of community forest management schemes as a model for forest conservation.	Turriquitado Rivers and Biotrade S.A.S.		
	DECREE 3570	Whereby the objectives and structure of the Ministry of Environment and Sustainable Development are modified and the Administrative Sector of Environment and Sustainable Development is integrated.	The project is aligned with the policies and guidelines issued by the Ministry of the Environment and Sustainable Development, respecting and recognizing its role as the leading entity in environmental and resource management.	Community Councils of the Jiguamiando, La Grande and Turriquitado Rivers and Biotrade S.A.S.	Project Document	PDD and RM
	LAW 1955	NATIONAL DEVELOPMENT PLAN 2018-2022. Defines the national REDD strategy and the mechanisms for its development.	The project is framed within national strategies for the conservation of forests and the avoidance of GHG emissions associated with the loss of forest cover, through local strategies led by empowered communities willing to protect their territory.	Community Councils of the Jiguamiando, La Grande and Turriquitado Rivers and Biotrade S.A.S.	Project Document and SDGs Operational Manual, SDGs and Safeguards	PDD and RM; Folder 1. PDD and RM; Folder 2.
	DECREE 1076	Sole Regulatory Decree of the Environment and Sustainable Development Sector.	The project is being developed in compliance with all regulations related to the use and management of natural resources, and does not require any type of environmental permit or license application to carry out the proposed activities.	Community Councils of the Jiguamiando, La Grande and Turriquitado Rivers and Biotrade S.A.S.	Project Document	PDD and RM
	LAW 1454, 1455, 1456	Organic Law of Territorial Planning (1454 of 2011), LOOT, establishes that "The purpose of territorial planning is to promote the increase in the capacity for decentralization, planning, management and administration of their own interests for the entities and instances of territorial integration, to promote the transfer of competencies and decision-making power from central or decentralized government bodies at the national level to the relevant territorial level, with the corresponding allocation of resources".	The project in strict compliance with the special mechanisms of prior consultation, with the participation of the representatives of the Community Councils and the communities affected or benefited in this process.	Community Councils of the Jiguamiando, La Grande and Turriquitado Rivers and Biotrade S.A.S.	Project Document	Stakeholders' Consultation
	LAW 70	The purpose of this law is to recognize the black communities that have been occupying uncultivated lands in the rural areas along the rivers of the Pacific Basin, in accordance with their traditional production practices, the right to collective property.	The purpose of the project, through the "Sustainable Development" strategic line and the "Strengthening Governance and Culture" strategic line, is to establish mechanisms for the protection of the cultural identity	Community Councils of the Jiguamiando, La Grande and Turriquitado	Project Document, SDB Operational Manual, SDGs and Safeguards	PDD and RM; Folder 2. Technical Annexes

Standard Level	Legislation or another requirement	Purpose and description	Direct Execution	Compliance Officer	Related document	Folder where the evidence is kept
			and rights of the black communities of the proponent Community Councils as an ethnic group, and the promotion of their economic and social development, in order to ensure that these communities obtain real conditions of equal opportunities compared to the rest of Colombian society.	Rivers and Biotrade S.A.S.		
	DECREE 1745	Whereby Chapter III of Law 70 of 1993 is regulated, the procedure for the recognition of the right to collective ownership of the "Lands of the Black Communities" is adopted and other provisions are enacted. In accordance with Law 70 of 1993 and in compliance with the social and ecological function of property, the Black Communities are recognized the right to collective ownership of the uncultivated lands they have been occupying in the rural areas bordering the rivers of the Pacific Basin, and in other areas of the country, in accordance with the provisions of the second paragraph of Article 1.	The project is proposed by the black communities of the Rio Jiguamiando, La Grande and Turriquitado Community Councils, recognized by the Ministry of the Interior as owners of the collective territory.	Community Councils of the Jiguamiando, La Grande and Turriquitado Rivers	Project Document	Folder 6. Legal Compliance_Documents Legal Representation
	DECREE 4633	Whereby measures of assistance, attention, comprehensive reparation and restitution of territorial rights to the victims belonging to the indigenous, Rom (gypsy), black, Afro-Colombian, Raizal and Palenquero peoples and communities are dictated. It generates the legal and institutional framework of the public policy of integral attention, protection, integral reparation and restitution of territorial rights for the indigenous peoples and communities as collective subjects and their members individually considered, in accordance with the Political Constitution.	The project is proposed by the black communities of the Rio Jiguamiando, La Grande and Turriquitado Community Councils, which are recognized by the Ministry of the Interior as owners of the collective territory. In the strategic line of the project "Strengthening Governance and Culture".	Community Councils of the Jiguamiando, La Grande and Turriquitado Rivers	Project Document	PDD and RM
	DECREE 2893	Whereby the objectives, organizational structure and functions of the Ministry of the Interior are modified and the Administrative Sector of the Interior is integrated. It provides that the Ministry of the Interior will have the objective within the framework of its competencies and the law to formulate, adopt, direct, coordinate and execute public policy, plans, programs and projects in the areas of human rights, international humanitarian law, integration of the Nation with the territorial entities, security and citizen coexistence, for ethnic issues, within its directorates are the Directorate of Indigenous	The project ensures compliance with the provisions of the Ministry of the Interior. The territorial legal entities are the representatives of the territorial councils proposing the project.	Community Councils of the Jiguamiando, La Grande and Turriquitado Rivers	Project Document	PDD and RM

Standard Level	Legislation or another requirement	Purpose and description	Direct Execution	Compliance Officer	Related document	Folder where the evidence is kept
	MINISTRY OF ENVIRONMENT PROGRAM	Affairs, Rom and Minorities, and the Directorate of Prior Consultation. National Program for the Conservation and Management of Manatees (Trichechus sp) in Colombia. Omacha Foundation and the Ministry of Environment, Housing and Territorial Development whose purpose is through the Directorate of Ecosystems, in the context of its responsibility for the recovery and conservation of endangered species in the country, has the function of promoting environmental management concerning the line of focal species (threatened, endemic, migratory and invasive exotic) within its work program of Conservation and Sustainable Use of Biodiversity.	REDD+ project activities are aligned with manatee conservation, with a ban on hunting and monitoring in their natural habitat in the marshes of the La Grande and Turriquitado Community Councils.	"The Community Councils of the Jiguamiando, La Grande and Turriquitado Rivers, Steering Committees and Biotrade S.A.S".	Project Document and Monitoring Report	PDD and RM
	NATIONAL POLICY FOR INLAND WETLANDS OF COLOMBIA	The Policy for Inland Wetlands in Colombia is formulated in the context of the National Environmental Policy, Collective Environmental Project, whose central axis is water. The objectives and actions proposed are aimed at promoting the rational use, conservation, and recovery of the country's wetlands at the national, regional, and local levels. It also highlights the global importance of the Pacific Basin, which has been distinguished as one of the most important wetlands in the world. area of considerable cultural and biological richness and promotes for the Colombian Pacific.	REDD+ project activities are aligned with the preservation and care of wetlands, ensuring the conservation of ecosystems, the permanence of artisanal fishing as a source of food and economic activity for the communities in the project area.	Community Councils of the Jiguamiando, La Grande and Turriquitado Rivers	Project Document and Monitoring Report	PDD and RM
INTERNATIONAL	LAW 165	Approves the "Convention on Biological Diversity", done in Rio de Janeiro on June 5, 1992. Conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of benefits arising from the utilization of resources.	REDD+ activities contribute to the conservation of natural resources, the maintenance of forest cover, the care of water sources and their monitoring. For the protection of biodiversity present in the territory.	The Community Councils of the Jiguamiando, La Grande and Turriquitado Rivers, Steering Committees and Biotrade S.A.S.	Project Document	PDD and RM
	LAW 17	Approving the "Convention on International Trade in Endangered Species of Wild Fauna and Flora", signed in Washington, D.C. on March 3, 1973.	REDD+ activities contribute to the conservation of existing ecosystems in the territory. Restoration and monitoring activities of the manatee species (*Trichechus manatus*) in VU conservation status present in the marshes of the Community Councils of La Grande and Turriquitado.	The Community Councils of the Jiguamiando, La Grande and Turriquitado Rivers, Steering Committees and Biotrade S.A.S.	Project Document	PDD and RM

Standard Level	Legislation or another requirement	Purpose and description	Direct Execution	Compliance Officer	Related document	Folder where the evidence is kept
	LAW 22	Approving "The International Convention on the Elimination of All Forms of Racial Discrimination", adopted by the United Nations General Assembly in Resolution 2106 of December 21, 1965.	REDD+ project activities are aligned with the elimination of all forms of discrimination.	Community Councils of the Jiguamiando, La Grande and Turriquitado Rivers and Biotrade S.A.S.	Project Document	PDD and RM; Folder 2. Technical Annexes _ Folder 2.SDB and Folder 3.
	LAW 31	LAW 31 OF 1967. Approving the International Labor Convention concerning the Protection and Integration of Indigenous and Tribal Populations in Independent Countries, adopted by the Fortieth Session of the General Conference of the International Labor Organization (Geneva, 1957).	Approves the International Labor Convention concerning the Protection and Integration of Tribal Populations in Independent Countries, adopted by the Fortieth Session of the General Conference of the International Labor Organization (Geneva, 1957). Part II, Article 11 "...recognizes the right of collective or individual ownership by members of tribal peoples of lands traditionally occupied by them".	The Community Councils of the Jiguamiando, La Grande and Turriquitado Rivers, Steering Committees and Biotrade S.A.S.	Project Document	Folder 6. Legal Compliance Documents Legal Representation
	LAW 145	Approving the "Agreement Establishing the Fund for the Development of Indigenous Peoples of Latin America and the Caribbean", signed in Madrid on July 24, 1992.	Approves the "Convention on Biological Diversity", done in Rio de Janeiro on June 5, 1992. Conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of benefits arising from the utilization of resources.	The Community Councils of the Jiguamiando, La Grande and Turriquitado Rivers, Steering Committees and Biotrade S.A.S.	Project Document	Folder 1 PPD and RM

5 Carbon ownership and rights

5.1 Project holder

The ownership of the territory and of the REDD+ JIGRANTU Project corresponds to the three (3) Community Councils: Community Council of the Jiguamiandó River, Community Council of La Grande and Community Council of Turriquitadó, signed with their current legal representatives; however, a percentage of the emission reductions corresponds to the company Biotrade S.A.S., as technical and financial partner and developer of its subsequent verifications.

Since the project is owned by the Community Councils as the authority of the collective territory, the consultation and formulation process was carried out through free, prior and informed consent in meetings and socializations with the communities linked to the Community Councils of the Jiguamiandó River, La Grande and Turriquitadó, complying with the legislation regarding the Community Councils, which are collective territories, the approval of the general assembly for the structuring of the project was obtained and the project was formulated in a participatory manner at the same time.

The selection and approval process of the company Biotrade S.A.S. as the technical developer of the project is described in detail in section 5.4 *"Agreements related to carbon rights"*. Thus, it is demonstrated that the ownership falls on the legal figure of the black communities as territorial authorities, therefore, Prior Consultation is not appropriate considering that there is currently no Ministry of Interior protocol for the implementation of this type of project.

GHG project owner contact information.

Individual or organization	**Community Council of the Rio Jiguamiando**
Contact Person	Melkin Romaña Cuesta
Job Title	Legal Representative
Address	Community Council of the Rio Jiguamiando Carmen del Darien, Choco
Phone Number	3103868552
Email	melkinro@gmail.com
Individual or organization	**Community Council of La Grande**
Contact Person	Fawer Paz Cordoba
Job Title	Legal Representative
Address	La Grande Community Council Carmen del Darien, Choco
Phone Number	3206380744
Email	fapazcor@hotmail.com
Individual or organization	**Community Council of Turriquitado**
Contact Person	Alcides Panesso Palacio

Job Title	Legal Representative
Address	Turriquitado Community Council Carmen del Darien, Choco
Phone Number	3113480798
Email	replegalturriquitado@gmail.com
Responsibilities and obligations of Community Councils	1. The Community Councils declare that no other contract, agreement, pact, or alliance with the same purpose is in force at the time of signing the PARTNERSHIP AGREEMENT. Pact or alliance with the same object that prevents and hinders the development of the same. 2. The PROJECT'S STEERING COMMITTEE will exercise the REDD+JIGRANTU PROJECT's management functions, through the Steering Committee, and to adopt the internal regulations for its operation, authorizing the legal representative of each Community Council to execute the REDD+ project's actions. 3. Resolve autonomously any difficulties or conflicts of an internal and social nature that may arise and that affect or hinder the execution of the normal development of the project. 4. Support processes of convening, logistics and security, arranging the necessary measures for Biotrade S.A.S. technical team. 5. Strictly comply with their responsibilities and contributions regarding the control and surveillance of the Community Council area that guarantee the commitment not to deforest or degrade the part defined as PROJECT AREA, described in the PdD, taking into account the historical cultural use of the territory such as agricultural production practices for family consumption. 6. Allow and facilitate access and transit through the territories of the Community Council to the professionals and technicians designated by Biotrade S.A.S., during the term of the Alliance. 7. Facilitate, cooperate and transmit information and help manage documentary information in possession of other private or public organizations that has been developed with the Community Council, in order to ensure quality in the process of preparing the Project Document (DoP) and the Monitoring Report (MR), especially the retroactivity period, set by the carbon standard defined for the formulation of the REDD project. 8. Coordinating, defining and establishing locations and arrangements of meetings with the members of the Community Council necessary for the design, development and implementation of the project. 9. Inform, disseminate, and publish the scope and achievements of the project to the members of the Community Council and other national and international organizations.

	10. Plan investments annually by establishing a POA and have transparency in the design and development of activities and achieve effective participation of families living inside and outside the territory of the Community Council. 11. Contribute to the Monitoring, Reporting and Verification Coordinator, as well as to the technical committee of the REDD+ JIGRANTU Project, in the preparation of the Monitoring Reports and quantification of GHG emission reductions during the life of the project. 12. Jointly constitute the Governance System (GS) and the Operational Manual (OM) detailing the responsibilities and actions required for the correct financial execution and implementation of REDD activities defined in the Benefit Sharing System (BDS). 13. The COMMUNITY COUNCIL shall be the TRUSTEEESHIPEE BENEFICIARY, for the administration of the project's financial resources and to contribute to the correct implementation of the REDD+ JIGRANTU Project. **Note:** The beneficiary settlor is defined as the group, ethnic group and/or person to whom the resources that the constituent settlor contributes and/or transfers to the trust as an ally (without fiduciary rights) will be transferred, such assets and/or resources are 100% of the respective beneficiary settlors.

Individual or organization	**Biotrade S.A.S**
Contact Person	Ruby Acosta Bastidas
Job Title	Director
Address	Calle 42b sur 72 T 47, Bogota.
Phone Number	301 6279136
Email	gerencia@biotradeco2.com
Responsibilities and obligations of Biotrade S.A.S	1. Lead the participatory design of the REDD+JIGRANTU PROJECT in its different phases, with a suitable technical team. 2. Contribute technical and scientific knowledge with its technological elements for the design, validation, verification, certification, and execution of the REDD+JIGRANTU PROJECT. 3. Contribute and manage the financial resources necessary for the design and development of the REDD+JIGRANTU PROJECT (described in the PdD) and for the submission, validation and registration with VERRA, Cercarbon or BioCarbon Registry or any similar carbon standard. In this sense, it will manage the additional financial resources required to achieve its Validation, Verification and Certification.

4. Availability of the necessary resources to carry out updates, information transfer, implementation of social technology and capacity building.
5. Responsible for the quality of technical, financial, social, environmental and market studies.
6. Maintain a technical file containing the documentation and make it available during the life of the Alliance.
7. Build the project according to the technical and social guidelines of the Community Council.
8. Coordinate the activities for the construction of the Monitoring Reports every two years and take charge of the audits for the Project Verifications.
9. Jointly constitute the Governance System (GS) and the Operational Manual (OM) detailing the responsibilities and actions required for the correct financial execution and implementation of REDD activities defined in the Benefit Sharing System (BDS).
10. It shall provide the administrative, financial and technical support required by the steering committees, technical committees and the oversight and control committee.
11. It will support decision-making processes in the implementation of SDB REDD+ actions.
12. Implement the REDD+ actions of the project according to the technical and social guidelines of the Community Councils.
13. Biotrade S.A.S will be the CONSTITUTING TRUSTEE, for the administration of the project's financial resources and contribute to its proper implementation by each of the Community Councils that make up the REDD+ JIGRANTU Project.
    Note: The constituent Trustor is defined as the person and/or company that will transfer the goods and/or resources to the FIDEICOMISO and has the responsibility to comply with the object of the Fiduciary contract.

5.2 Governance structure for the project

Biotrade S.A.S as one of the project proponents, is responsible for the technical component, through the development of tools and field and desktop methodologies to formulate the PdD and MR and all annexes that make up the documentation of the REDD+ JIGRANTU Project, ensuring compliance with the requirements of the *BCR STANDARD. From differentiated responsibility to common responsibility.* Version 3.2

(BCR, 2023)[118], the Colombian regulations on Afro law and the internal regulations of the communities.

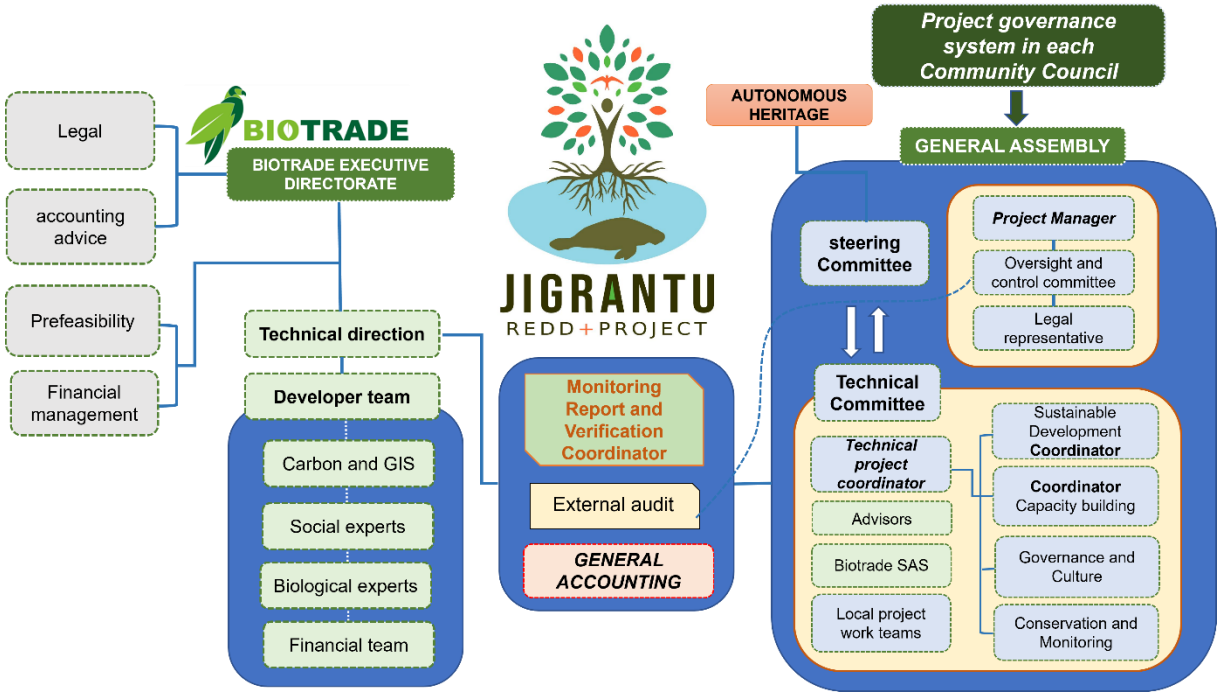
Biotrade S.A.S, is rigorous with each of the processes for the construction of the project, therefore it has an information quality management system (SGCI), which is integrated by protocols for the design and implementation of the tools of Participatory Rural Appraisal PRA, surveys, interviews and analysis of primary and secondary information, carbon accounting, GIS processing, biodiversity analysis, stakeholder relations. In addition, the Company assures the financial funds to leverage all the activities that will lead the project to validation, verification, certification and finally the transaction of the carbon credits, expenses such as payment of project registration with BCR, payment of audits, field activities for the participatory construction of the project and relationship with stakeholders, payroll of professionals and field support, capacity building of communities for the proper implementation of the project, among others.

Biotrade S.A.S, has a highly trained and experienced team to build a project in a participatory manner with the beneficiaries, also from the governance model of the project, this team of professionals will provide capacity building support to people related to the implementation of REDD+ activities, so that all project holders have responsibilities in the design, implementation and monitoring of project objectives and actions performed. Biotrade S.A.S. will also accompany the oversight and control processes, monitor the emission reductions and the construction of the MRV Monitoring and Verification Reports every two years.

The following is an explanation of the functions of the professional team involved in the JIGRANTU REDD+ Project from Biotrade S.A.S. and the governance structure of the project, from the pre-feasibility study to the implementation of REDD+ activities.

[118] BCR_Standard_en.pdf

Figure 38. Governance scheme for the design, implementation, and verification of project REDD actions



I. ***Legal Department:*** It is composed of a team of lawyers specialized in indigenous and Afro-descendant affairs, they analyze the legal representation of each territory and adjust the contract agreements to develop the project, taking into account the particular conditions of each of the projects, Since most REDD+ project proposals are made with collective territories taking into account several Indigenous Reserves or several Community Councils of Afro-descendant communities, an analysis of territorial conflicts, overlaps with public spaces and possible risks of expropriation, mining titles, National Natural Parks or Special Management Districts, among others, is performed.

II. ***Prefeasibility Area:*** This team is responsible for the prefeasibility analysis of new projects and is the first to have contact with the communities and their legal representatives and leaders. Therefore, one of its missions is to explain in a clear and transparent manner how a REDD+ project works, how REDD+ carbon credits are obtained and the requirements for fair, transparent and equitable implementation in terms of joint work. The pre-feasibility area performs the initial diagnosis, which is composed of an analysis of land tenure, analysis of possible local social conflicts, dynamics of the land, and the dynamics of the project deforestation history, current status of the forest and future deforestation trends, as well as pressures and threats near the project

area.

III. ***Development team:*** Technical team specialized in the participatory formulation of REDD+ projects, being the main responsible for the community articulation for the project design, design of REDD+ activities to be implemented, determination of specific objectives, providing technical support to communities for project implementation and capacity building and monitoring the activities carried out in the field for the RMVs, this team is responsible for audits with the OVV and responds to non-conformities of each process of Validation and Verification. In addition, during project execution, the Biotrade S.A.S. development team ensures compliance with the MO and the different internal regulations of the communities.

IV. ***Carbon and GIS (Geographic Information System):*** Team in charge of determining and reviewing the project baseline, deforestation dynamics, project leakage and monitoring through satellite images of deforestation occurrence in the project area, in addition to performing driver, additionality and permanence analyses for each project, producing calculations of emission reductions in accordance with the standards and methodologies used.

V. ***Social Experts:*** Team responsible for socioeconomic analysis, liaison and coordination with communities and other stakeholders, development and implementation of social activities, design, formulation and monitoring of indicators, risk analysis and execution of field activities.

VI. ***Financial team.*** This section of the company is in charge of the financial analysis for the development of each activity in the formulation of the projects, as well as the formulation of productive actions and financial analysis required by the methodologies and carbon standards. They support capacity building actions and support the design of the Operational Manual and the regulations of the Steering and Technical Committees for the implementation of the projects, as well as the coordination with the fiduciary entity that manages the resources of the autonomous patrimony of each of the REDD+ projects with communities.

Just as in the design of the project, the proponents were articulated so that REDD actions would be consistent with the social and environmental needs of the territory, the same coordination also exists in the implementation, with the ***Steering Committee*** and the ***Monitoring, Reporting and Verification Coordinator*** as the highest bodies of relationship. The organizational scheme is based on the General Assembly for decision making, which is described in detail in the Governance model.

The Steering Committee has the function of approving the actions to be developed from a POA and approving the disbursements by the autonomous patrimony trust fund for the functions of the Steering Committee are described in detail in the Project's

Operating Manual. The Steering Committee is made up of the legal representatives of the 3 Community Councils and their boards of directors, the project's general manager, and the oversight and control committee.

Technical Committee: Composed of the project coordinator and a coordinator for each of the four strategic lines (1. Sustainable Development, 2. Capacity Building, 3.) It oversees carrying out the prioritization exercise of the activities to be developed through needs assessments in each of the communities. After prioritization and once these are approved by the steering committee, the formulation exercise is carried out using the Logical Framework methodology, with clearly identified objectives and results and each of the activities with a budget and schedule, which allows the actions to be consolidated in an AOP. Both the landowners and Biotrade S.A.S. work together effectively to strengthen the capacities of the teams in the field and the correct execution of the actions. Both are responsible for monitoring the project area, as well as monitoring indicators of safeguards, SDGs, REDD+ activities, accounting, and project performance reports to the assembly.

In the execution of the AOP, there is coordination with the institutions involved in the development of REDD+ actions, creating and strengthening over time an institutional support network, both in capacity building, ecosystem research, community monitoring, implementation of sustainable production projects, culture and governance, as well as avoiding possible invasions by external factors that could cause forest deterioration and prevent pressures and threats from reaching the project area, thus minimizing changes in the biome or any other activity that could lead to deforestation and biodiversity loss. Mutual contact between proponents will be maintained on an ongoing basis throughout the life of the project. The communities and other stakeholders are fundamental for the development of the activities, and it is expected to have a participatory process to build the actions according to the communities, characteristics and needs.

For capacity building of project beneficiaries, each strategic line will contain a capacity building program with tools and activities that will be developed annually and will be an integral part of each of the AOP's, this will help the project to evolve and adapt over time and ensure the permanence of carbon stocks, trust, transparency, participation, and equity. Structure for the specific execution of the 3 Community Councils for the development of the project:

The REDD+ JIGRANTU Project has an organizational structure based on the fundamental principle of trust for the relationship between the proponents, which is based on mutual knowledge and respect. For the design and execution of the project, the parties commit themselves and keep their word, an aspect that goes beyond what is written, which, in fact, is a reaffirmation of their word. This exercise is carried out in

the daily life of the people in the territory of the project area, where ideas are shared with respect and sincerity. For the administration of resources and the implementation of REDD+ actions, the following governance structure was established.

The overall governance structure for the execution of the project was established as follows:

a. Monitoring, reporting and verification coordinator: main function is the consolidation of information for the preparation of the Monitoring Report, and is responsible for providing the requirements to develop a proper oversight and control by the General Assembly that requires it of each Community Council that is part of the project. Support the review of the technical sheets of the projects, evaluating the technical and financial component for subsequent review by each assembly. The MRV Coordinator will support the audits in each verification period.
b. The project's general accountant will support the general manager in monitoring the resources executed in each of the councils and will support the generation of a resource management system taking into account the guidelines of the Operational Manual.

Biotrade S.A.S: Performs the administrative, financial, and technical support required by the Steering and Technical Committees in the decision-making processes and in the implementation of REDD+ actions, as well as advising and supporting the exercise of oversight and control. Responsible for submitting to the assembly the Terms of Reference for the qualification and selection of candidates to integrate the governance structure and REDD+ actions.

Each Community Council shall have independence in the administration and execution of the resources, for which purpose it shall have the following bodies:

a) General Assembly: the highest decision-making body of the project, which approves or rejects the projects prioritized by each of the communities. The assembly will also support the oversight and control of the implementation of REDD+ actions, and will appoint the investment line coordinator and general coordinator of the project.
b) Project Director of each Council: appointed by the Assembly, he/she will be in charge of consolidating the information required by the General Director, directing the project activities according to the guidelines of the Steering Committee and supervise the Technical Committee in the implementation of REDD+ actions.
c) Steering Committee: composed of 3 people, including the legal representative, who is responsible for the approval of projects formulated for the

implementation of REDD+ actions, the budget execution of the autonomous patrimony and the presentation of follow-up and control reports to the Assembly and the Community Council; the project director and an accountant who serves as secretary.

d) Trust: Body in charge of managing the financial resources of the "Autonomous Patrimony", generated by verified and certified GHG reductions.
e) Technical Coordinator: Appointed by the Steering Committee, this is the person responsible for the management of the Technical Committee in the formulation and implementation of REDD+ actions.
f) Technical Committee: is composed of the technical coordinator and 1 coordinator of each strategic or investment line per Community Council. The technical committee is responsible for gathering information from the community for the formulation of projects framed within the guidelines of the Steering Committee according to the Benefit Sharing System defined by the Assembly and set out in the REDD+ JIGRANTU Project Operating Manual.

5.3 Other project participants

There are no other participants with project responsibilities for the GEI project.

5.4 Agreements related to carbon rights.

La Grande and Turriquitado, problems such as the lack of productive, educational and health opportunities. As well as the lack of cultural and territorial appropriation, which have been caused by historical violence and the total helplessness of the state. The leaders have seen that the REDD+ projects have been a regional example of community self-management for the development of communities, resolution of environmental and social problems, some Community Councils neighboring the project area have socialized the performance of REDD+ actions and it has been concluded that it is the only mechanism that can contribute to the exercise of democracy and sustainable development in the territory.

Due to the local and regional experience of other Community Councils with the implementation of REDD+ projects, the boards of directors of the Jiguamiando, La Grande and Turriquitado Community Councils, undertook the search for a technical partner to help them formulate a REDD+ project, invited and listened to different proposals from various companies. Biotrade S.A.S. is one of the companies with which they contact, virtual meetings are held, and after these meetings they decide to formally invite the company to a meeting with the leaders and Boards of the councils in the city of Apartado on July 13 and 14, 2022.

In the first face-to-face meeting, Biotrade S.A.S. explained to the leaders and their respective Boards, in the city of Apartado in a simple way, the steps and conditions to start the formulation of a REDD+ project and the scope it would have in the territory. This meeting provided the space to resolve doubts about the REDD mechanism, the environmental and economic benefits and the way in which economic benefits are distributed. The leaders and advisors asked all kinds of technical questions, not only about the design and audit process, but also about how the sale of the bonds and the execution of the activities are carried out. The work proposal for the development of the REDD project was presented in the Community Councils.

The Boards of each Community Council evaluated the pros and cons of working with each of the companies contacted and finally decided to start with Biotrade S.A.S. for the structuring of a REDD+ project. Summoning the company to present again in the territory of each Community Council the work proposal through a General Assembly. Because it is the highest authority according to Article 4 of Decree 1445 of 1995[119] that can decide on the execution of the project in each Community Council (The General Assembly is made up of the persons recognized in accordance with the system of their own law and registered in the internal census of each Council).

The General Assembly is convened with the purpose of *"Socializing the methodology of the REDD project and the conclusion of the alliance agreement between Biotrade S.A.S. and the Community Council".*

In the general assemblies held in each of the Community Councils, Biotrade S.A.S. presented in simple language the steps and scope of the structuring of a joint REDD project in the *Jiguamiando, La Grande and Turriquitado Community Councils.* The importance of participation, equity and transparency was highlighted, which would allow an active coordination of *the three* councils, so that the project would be efficient and effective, both in the formulation and implementation of community control and oversight actions. In the assemblies all participants had the opportunity to resolve concerns, make contributions, observations in the construction of the Benefit Sharing System, administration, and governance system.

In the space of the General Assembly, each Community Council evaluated and decided by means of a "vote" on the signing of the alliance agreement with Biotrade S.A.S. for the process of formulating and implementing a REDD project in conjunction with the community councils with a duration of 30 years. Giving the endorsement to your legal

[119] Available in: Decree 1445 of 1995

representative for the signing of the alliance contract[120]. And to the company to initiate the local and field participatory diagnosis. In this first assembly in each community council, the Benefit Sharing System was elaborated and adjusted with the help of the participants, and the organizational chart of the project was approved and previously agreed with the Boards of Directors of the Community Councils. The dates of Assemblies and their minutes are detailed in section 10 of this document.

5.5 Land tenure

The REDD+ JIGRANTU project links three Community Councils of Afro-descendant communities, Jiguamiando, La Grande and Turriquitado, with recognition and titling of collective territories according to Law 70 of 1993[121] as described in Table 29.

Table 29. Titles of collective territories of the Community Councils of the project

Collective Territory	Degree Resolution	Date	Communities recognized in the resolution	Titled Area
Community Council of Rio Jiguamiando	02801	22/11/2000	Eleven (11) communities: Puerto Lleras, Pueblo Nuevo, Urada, Apartadorcito, La Laguna, Nueva Esperanza, Santafe de Jiguamiando, Caño Seco, El Vergel, Bracitos and Bella Flor Remacho.	54,973 ha 8,368 m^2
Community Council La Grande	02806	22/11/2000	La Grande	13,455 ha 5,255 m^2
Turriquitado Community Council	02799	22/11/2000	Turriquitado	9,406 ha 1,760 m^2

Source: Biotrade S.A.S with information on the respective resolutions.

In December 2022, the number of communities that are part of the Community Council of Jiguamiando is expanded to include two (2) more communities: Centro Jigua and Las Menas. (see conclusions and general observations of the Report General Assembly of December 14- 16, 2022).

5.6 Organization and administration in the Community Councils

The form of organization and administration of the Community Councils involved in the REDD JIGRANTU project is governed according to the regulations for the territories of black communities in Decree 1745 of 1995[122]. Thus, to ensure recognition and respect

[120] Alliance contracts available at: 6. LEGAL COMPLIANCE\ALLIANCE AGREEMENTS REDD PROJECT
[121] Available: Law 70 of 1993
[122] Disponible: Ley 1745 de 1955

for the governance structure in all phases of formulation and implementation of the project. The definition and composition of the legal administrative structure applied to the Community Councils was reviewed:

> *Chapter II. Article 3. Definition. A black community may constitute itself as a Community Council, which as a juridical person exercises the highest authority of internal administration within the Lands of the Black Communities...*
>
> *...Black Community is the group of families of Afro-Colombian descent that have their own culture, share a history and have their own traditions and customs within the rural-populated relationship, which reveal and preserve awareness and identity that distinguish them from other ethnic groups.*
>
> *The Community Council is composed of the General Assembly and the Community Council Board.*

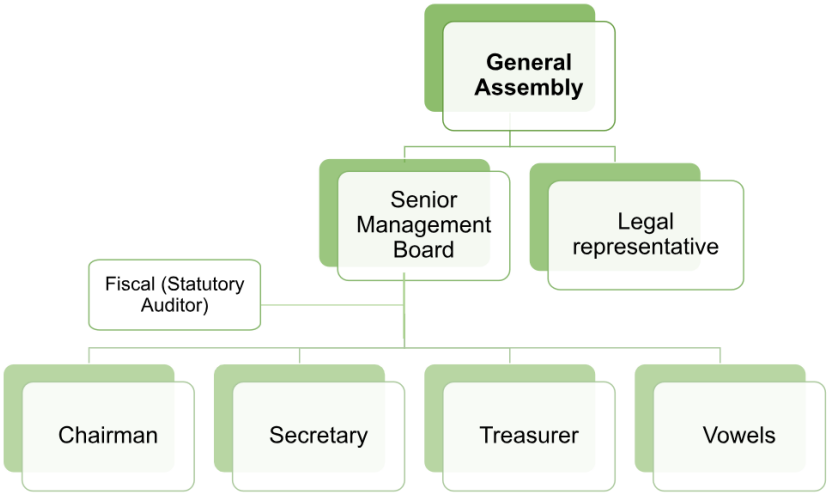
To better understand the organizational structure and legal management of the Community Councils, it is essential to become familiar with the concepts of General Assembly, Community Council Board and Legal Representative, which are defined in detail in the aforementioned decree.

> *Article 4...*the **General Assembly** is the highest authority of the Community Council and shall be made up of the persons recognized by it, in accordance with its own system of law and registered in the internal census.
>
> *Article 7. The **Board of the Community Council** is the authority of direction, coordination, execution and internal administration of the community that has formed a Community Council to exercise the functions attributed to it by Law 70 of 1993, its regulatory decrees and others assigned to it by the community's own system of law. Its members are members of the Community Council, elected and recognized by it.*
>
> *Article 13. Functions of the **Legal Representative.** 1. To represent the community, as a juridical person.*

On the other hand, each of the three Community Councils involved in the project is regulated by its corresponding bylaws (available in Internal Regulations). These documents detail the composition of the positions and functions of the members of the Board of Directors, information that is deployed from the same decree, therefore, they are the same for the three Community Councils. Below are the organization charts and the functions that operate for each position, schemes designed by Biotrade S.A.S in consultation with the legal representatives, with information described in the internal

regulations and proof of registration of the Community Councils before the Mayor's Office of Carmen del Darien.

Figure 39. Organizational chart of the Community Councils of Turriquitado and La Grande.



Source: : Biotrade S.A.S (2023). With information from internal regulations

There are no differences between the designation of members of the Boards of Directors of the Community Councils of Turriquitado and La Grande; their organizational chart contains the same composition and hierarchical relationship.

Functions of the Legal Representative

1. *Represent the community as a legal entity.*
2. *Present before the competent environmental authority and before the Ministry of Mines and Energy, the requests for use, exploration and exploitation of natural resources, for the benefit of the community, prior approval of the Board of the Community Council and the general assembly; with the exception of the uses by operation of law, with respect to renewable natural resources.*
3. *Any other duties assigned by law and the internal regulations.*
4. *With prior approval of the Community Council Board, enter into agreements or contracts and administer the benefits derived therefrom.*
5. *Be aware of the cases that arise in the community and are within its competence.*
6. *Seek the development of the community and propose alternative solutions to conflicts, managing projects with the prior approval of the Board and General Assembly.*
7. *Delegate tasks to the Local Organizing Boards.*
8. *Work jointly with other community entities.*

9. *Coordinate actions with working groups, such as committees within the Community Council such as the parents' association, local public services administration board, women's groups, youth groups, health, children's home support committee, among others.*
10. *Authorize disbursements upon approval of the Community Council Board.*
11. *The legal representative will solve the problems that arise in the communities as long as the communities provide guarantees for him to comply with them, those that affect the community council in general and those that cannot be solved by the community council, with the support of the board of directors.*
12. *Report to the disciplinary committee when the situation warrants it.*

Functions of the president.

1. *To summon the Community Council to ordinary and extraordinary meetings and sign documents jointly with the secretary.*
2. *Delegate functions according to the circumstances due to absence, illness or a lot of pending work.*
3. *Serve as mediator or amiable compositeur in the internal conflicts of the community together with the other members of the Board of Directors, if they cannot be resolved, request the General Assembly as the highest authority.*
4. *Comply and enforce the regulations approved by the General Assembly.*

Functions of the secretary

1. *To keep the minutes of the meetings up to date.*
2. *Receive and send communications to the members of the Community and others.*
3. *To keep a file of everything that is done.*
4. *Keep the Community Council Board informed of pending activities.*
5. *Attend all meetings.*
6. *Socialize all communications sent and received with the board of directors and when necessary, with the community in general.*

Functions of the Treasurer

1. *Be clear about the inflows and outflows of financial resources.*
2. *Be available to render accounts at any time, at the request of the board of directors or any member of the community who deems it convenient.*
3. *Submit monthly financial reports to the board of directors and every 4 months to the general assembly meetings.*
4. *Receive and manage the funds of the Community Council.*
5. *To keep a book of incoming and outgoing accounts.*

6. *Open a bank account, with two signatures for the management of resources.*
7. *The resources in the petty cash account should not exceed 2,000,000 pesos, if the aforementioned amount is exceeded, the remaining amount should be consigned to the bank account.*
8. *Keep a record of the community council's goods and chattels.*

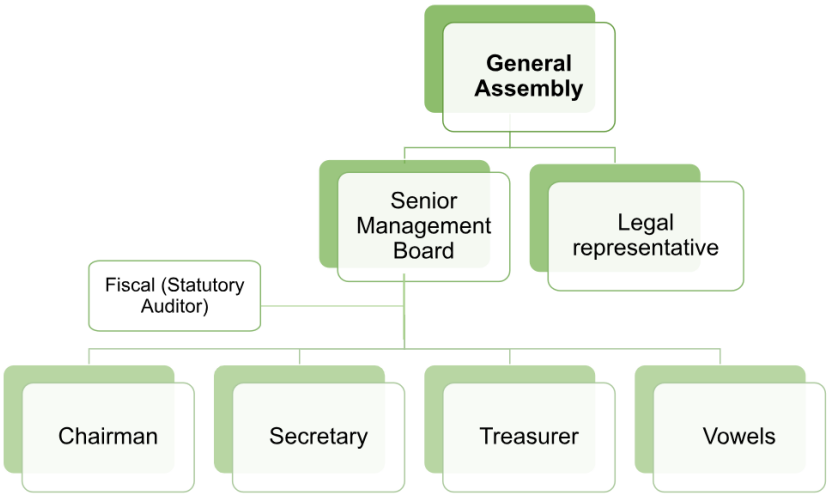
Functions of the Prosecutor

1. *Convene meetings of the Board of Directors of the Community Council.*
2. *Be aware of everything that happens in the community and submit a written report.*
3. *To ask for a report of all activities carried out by the Community Council Board when he/she is not present or is not aware of them.*
4. *To ask the treasurer for a report on the state of the accounts.*
5. *Inform the member to call the Community Council Board to a General Assembly when the situation requires it.*
6. *Convene a General Assembly when the members of the Community Council Board are not fulfilling their function.*
7. *Not to be biased with any of the directors or members of the community.*
8. *Keep a record of goods and belongings of the community council.*
9. *Accompany the community council to create mechanisms and strategies for the functioning of the administration.*
10. *Sign and endorse everything within the organization.*

Functions of the Vowel.

1. *To summon the Community Council Board to regular and special meetings.*
2. *Be aware of meeting dates.*
3. *Present proposals for community projects to the other members of the Board.*
4. *In case any member of the board is not present, he/she must assume his/her responsibility in case he/she does not have an alternate.*

Figure 40. Organizational chart of the Community Councils of the Rio Jiguamiando.



Note: For internal organization in the governance, administration and communication of the Jiguamiando River Community Council there are local organizing boards in each of the thirteen (13) communities, however, the legal structure and major authority corresponds to the main board of directors.

Source: Biotrade S.A.S (2023). With information from the registration certificate.

On the other hand, the Community Council of the Jiguamiando River presents a subtle difference with respect to the other two Councils involved in the project; the composition of the members of the Board of Directors includes the position of vice-president (Figure 40.).

Functions of the vice-president.

1. Its main function is to support the president in the management of the functions of the board of directors and to be his substitute in case of absence.

In Jiguamiando, to facilitate internal organization and communication issues for the management of the thirteen (13) communities recognized within the Council, each community has a Local Organizing Board, however, it is the Senior Management Council that has the legal powers for the administration and leadership of the territory[123].

[123] Available in 9. TECHNICAL DOCUMENTATION/INTERNAL REGULATIONS/Explanatory letter Jiguamiando Local Organizing Boards

6 Climate change adaptation

In the REDD+ JIGRANTU Project, a review of scientific information was conducted, and results of climate change adaptation projects were analyzed to develop an efficient and effective climate change adaptation strategy in the project area, based on the conditions of the local inhabitants, and the strategy designed is based on adaptation to the effects of climate change by increasing the resilience of the socio-ecosystemic system SSE.

To provide guidelines for climate change adaptation in the JIGRANTU REDD+ Project, an exhaustive review of scientific information was carried out and the results of previous projects related to climate change adaptation were analyzed. The review sought to develop an efficient and effective adaptation strategy for the project area, based on the conditions of local people. The strategy is based on strengthening the resilience of the socio-ecosystemic system (SES) to the effects of climate change.

The national policy instruments reviewed were:

1) Climate Change Adaptation Plan.
2) National Restoration Plan
3) The National Policy for the Integrated Management of Biodiversity and its Ecosystem Services (PNGIBSE) 2012.
4) Strategic ecosystems.
5) Biodiversity Policy 1998.
6) Sustainable Consumption and Production Policy 2010
7) National Green Business Plan 2014

In general, the National Policy instruments aim to increase socio-ecosystem resilience, taking into account the sustainable use of biodiversity, sustainable production, green businesses and even the Payments for Environmental Services (PES) policy, taking into account that resilience is based on the wellbeing of the ecosystem and human beings.

Resilience can be understood as the capacity of the social-ecological system to resist or absorb abrupt or constant impacts. A resilient system maintains the fundamental elements of its structure and function through re-organization, learning and adaptation to new circumstances. This concept allows us to recognize the interactions that exist between individuals within a society, between actors, between societies. It also recognizes the importance of the different types of organisms and the interactions between them for the well-being of societies and the impacts of societies' activities on them. Sustainability, based on the resilience of social-ecological systems, can ensure both the well-being of future generations and the well-being of the environment and functioning that sustain life on the planet, even in the face of undesired changes. Resilience is a fundamental characteristic of most ESSs, which can resist without being totally altered. Analyzing the resilience of an ESS involves examining how a system

behaves as a whole. The resilience approach in SES implies that it is not possible to analyze a single causal relationship, since it is important to look for and understand multiple causes that are at least partially linked to each other.

These opportunities are determined by the conditions and dynamics of systems at different spatio-temporal scales. A resilient SES is seen as a system that persists and maintains its capacity to sustain human well-being in the face of disturbance, both by buffering external shocks, but also by adapting and reorganizing in response to change Thus, resilience refers to the tension between persistence and change, that is, on the one hand, understanding and managing the capacity to absorb shocks and maintain functionality, but, on the other hand, also to maintain the capacity for renewal, reorganization and development at different scales.

Examples of these regime changes can be observed in the change of vegetation cover from forest to pasture, soil compaction due to poor production practices, loss of plant and animal biodiversity in production systems, loss of ancestral knowledge, dependence on external inputs. These environmental changes are generated by a wide range of variables, which, when receiving the external impacts of other variables, move the Socioecological System to a new state, which may (or may not) generate undesirable consequences. Some of these variables play a preponderant role in generating a regime change. The idea that Socioecological Systems are self-organized in a hierarchical manner; and the fact that these hierarchical relationships between variables give rise to systems nested within larger systems, is called Central ***Panarchy*** for this idea is the notion that connections, through various levels of panarchy, are determinant for the dynamics of self-organization in Complex Adaptive Systems.

The diversity of components in SSE plays a preponderant role for its capacity to adapt to changing environments. Diversity increases the possibility of adaptation (considering both diversity in ecological terms and diversity of ideas, strategies, etc., with respect to the social system). Finally, probably the most important driver of SSE and, therefore, the most important attribute for resilience is the presence, identification and understanding of feedback patterns and slow variables that characterize the diverse and interconnected components of a system.

The policies developed by the MADS seek to increase resilience in socio-ecosystems by strengthening the institutional and local structure, creating ***support networks*** to increase knowledge and adequate management diversity and other ESS, as well as the proper management of agroecosystems. For this it is essential to see natural and productive ecosystems as a single system and manage them integrally, the REDD+ JIGRATU Project seeks this social and environmental integrality through:

- Generation of innovative sustainable alternatives, oriented to the use and exploitation of biodiversity and green growth in the project area, such as: support for rural development, use and exploitation of timber and non-timber fauna and flora, ecotourism, among others.
- Preservation of cultural heritage, resources for education and knowledge generation. Maintenance of biodiversity and its ecosystem services, in terms of soil conservation, water resources, climate regulation, carbon sequestration, watershed protection, among others.
- Construction of public and private sector alliances, seeking local solutions to manage and organize the activities of the beneficiary communities, harmonizing interests and at the same time ensuring their well-being and improving their quality of life.
- Strengthening the sense of ownership by the beneficiary communities in the improvement of the environmental component of their region, focusing on the conservation and sustainability of ecosystems and their ecosystem services.
- The use, management, and administration of natural resources in a sustainable and coordinated manner among different stakeholders.

The review of the instruments sought synergy for the fulfillment of these goals of the REDD+ JIGRANTU Project. Below are the results found in the objectives of each policy, as well as the diagnosis of the rural agricultural production component, and the goals or lines of action.

The JIGRANTU REDD+ Project is designed to contribute to poverty reduction by ensuring long-term social and environmental results. A condition for achieving this result is to consider a fair benefit-sharing scheme for participating communities, which has required a fluid and dynamic construction process, and it is expected that monitoring and evaluation will provide feedback on lessons learned within the community. The Strategic Environmental and Social Assessment (SESA) process carried out by the MADS in 2013 showed that the areas with the highest deforestation are areas where there is an absence of state governance and there is no clarity in the legal tenure of the land, which is why the processes of violence are strongly linked to the exodus of communities and subsequent deforestation, a dynamic that leads to biological erosion, loss of culture, increased poverty and social disintegration (Acosta 2013).

The safeguards must guarantee the co-benefits of REDD+, taking into account the effective participation of local communities and their governance based on improved management of ecosystem services derived from forests, which in turn will lead to the improvement of their livelihoods, this supports the reduction of costs in the implementation and generate greater adaptive capacity of communities to climate variability and change, promoting increased transparency and accountability, thus

achieving a reduction of negative environmental and social effects in the implementation of REDD+. A REDD+ project should ensure dialogue among stakeholders, institutional collaboration; improve tenure rights and regimes; sustainable local development, management for emission reductions at the landscape level; development of local regulations that guide the sustainable and socio-culturally appropriate use of land, agriculture and forest resources, should encourage the effective application of forest law.

The National Policy for the Integral Management of Biodiversity and its Ecosystem Services (PNGIBSE) 2012

The diagnosis highlights the importance of Colombia at the global level, in its genetic biodiversity, which has contributed to economic development based on domesticated plants and animals for production, as well as the potential of biodiversity without exploring promising species. The culture and knowledge of native peoples is also part of this biodiversity and the integrality of generic resources with knowledge can support the increase of resilience to improve the state of ecosystems, recovery of degraded soils and improve the quality of life of rural communities, making them less vulnerable to climate variability and change. Table 30. shows the results of the review of the instrument.

National Biodiversity Policy

In the first quarter of this year, the Ministry of the Environment, and the National Planning Department, with the support of the Humboldt Institute, prepared and published the National Biodiversity Policy. This document, the result of a consultation of more than one hundred people and entities from the public and private sectors, makes the provisions of the Convention on Biological Diversity (Law 165 of 1994) a reality. One of the main objectives of the National Biodiversity Policy is to communicate the way in which Colombia intends to orient national biodiversity strategies in the long term, as well as to define who will oversee the different areas of action. The document has one main characteristic: it is timeless. The document is a national policy, from which each government can choose an area to develop without leaving aside the main objective of promoting the conservation, knowledge and sustainable use of biodiversity, and the fair and equitable distribution of the benefits derived from its use.

The National Biodiversity Policy was approved by the National Environmental Council in 1995 and is based on the following principles: biodiversity is the nation's heritage and has a strategic value for Colombia's present and future development. Biological diversity has tangible components at the level of molecules, genes, and populations, species and communities, ecosystems and landscapes. Among the intangible components are the associated knowledge, innovations, and cultural practices. Biodiversity is dynamic in time and space, and its components and evolutionary processes must be preserved. The

benefits derived from the use of biodiversity components must be used fairly and equitably in concert with the community. These principles consider that biodiversity is vital to our existence because of the environmental services derived from it and its multiple uses, such as food, fossil fuels, by-products, and natural fibers.

The conservation strategy includes in-situ conservation measures through the protected areas system, the reduction of processes and activities that cause biodiversity loss or deterioration, and the recovery of degraded ecosystems and threatened species. The knowledge strategy encompasses the characterization of biodiversity components at the ecosystem, population, species and genetic levels, and the recovery of traditional knowledge and practices. The utilization strategy seeks to promote the use of sustainable management systems, support and promote the establishment of germplasm banks and biotechnology programs, design and implement multi-criteria biodiversity valuation systems, and mechanisms for the equitable distribution of benefits derived from its use. It also includes measures for the sustainable development of the economic potential of biodiversity.

Table 30. shows the lines of action that are in synergy with the objectives of the REDD+JIGRANTU Project and that can support the formulation of the investment portfolio, considering the use of biodiversity to increase the resilience of socio-ecosystems and the maintenance of the ESS.

Sustainable Consumption and Production Policy 2010

Colombia has not developed a Political Constitution that supports the economic growth of the country in harmony with sustainable development, giving fundamental importance to the environmental issue, having as fundamental principles the obligation of the State and the people to protect the cultural and natural wealth of the nation, as well as to plan the management and use of natural resources, with the purpose of guaranteeing sustainable development, preventing and controlling factors of environmental deterioration.

The focus of this policy seeks to influence changes in the behavior of different actors, such as businessmen, trade union leaders, environmental authorities, government officials at different levels, universities, NGOs, among others, so that they as a whole move towards more sustainable production and consumption. The policy considers production and consumption trends as an integrated system, where trends are interrelated and affect each other. In other words, any change in production impacts consumption and vice versa.

Although the policy focuses on industries and global markets, there are lines of work that can be linked to sustainable small and medium-scale agricultural production actions,

taking into account the strengthening of small and medium-sized enterprises, the strengthening of marketing networks for green products, special certification seals, etc. Table 30. shows a summary of the policy, taking into account the synergies with the objectives of the REDD+ JIGRANTU Project.

National Green Business Plan 2014

Some of the positive impacts sought by the National Green Business Plan are in the area of Conservation: Change of non-renewable materials for renewable ones, Maintenance of native biodiversity, Changes in non-renewable energy sources for renewable ones. Regarding the Decrease of pressure on the resource, it seeks: Decrease of contamination, maintenance of ecosystem services, education and environmental culture. Regarding the repopulation and maintenance of the natural base, it seeks: the improvement of the conditions of natural resources, reduction of greenhouse gas emissions and respect for knowledge and friendly traditional cultural practices. The sector where the NV strategies that have synergies with the REDD+ JIGRANTU Project are framed is the sustainable goods and services from natural resources and the carbon market with emphasis on avoided deforestation. Table 30. summarizes the NB plan and the axes that can be articulated with the objectives of the REDD+ JIGRANTU Project.

Table 30. Policies evaluated for adaptation to climate change.

Instrument	Diagnosis	Objectives	Investment Lines
National Policy for the Integrated Management of Biodiversity and its Ecosystem ecosystem services (PNGIBSE) 2012	**AGROBIODIVERSITY** Gonzalez (2002) identifies the presence in Colombia of about 38 genera and 7 species of wild relatives of cultivated and forage plants. Regarding farmer varieties, no more than 200 varieties of yucca (*Manihot sculenta* Krantz) exist in Amazonia (e.g. the Piapoco tribe has no less than 82 varieties) and of arracacha (*Arracacia xanthorrhiza* Bancroft), the indigenous Sibundoyes or Kamtza have some 22 varieties, while western science knows of no more than four varieties (Gonzalez 2002). In the case of Creole animal breeds, of which there is no consolidated list of all types of livestock, there are at least 9 Creole cattle breeds in the country, all derived from European cattle (Corpoica 2007; Pardo 2010); 26 Creole chicken breeds (Angarita 2010); 5 swine breeds (Gobernacion del Valle del Cauca 2010); 5 goat breeds and 11 sheep breeds (Anco 2010). In Colombia, the permanent availability of food (crops and livestock), one of the necessary conditions to guarantee the country's food and nutritional security, depends not only on the diversity of species and varieties resulting from a long process of domestication, selection and improvement. It also depends directly on soil fertility, the supply of water resources and the natural occurrence of ecological processes resulting from the interaction between wild species and between these and cultivated species, such as pollination, seed dispersal, natural pest and parasite control, among others. In general terms, the contribution of agriculture to the national GDP has been in the order of 10 to 14% since 1994 (Jarvis 2010), generating 21% of the country's employment (Dane, 2009) and occupying about 44.8% of the total national land area (Dane, 2009). Of the total agricultural production in 2007, 55.2% corresponds to agricultural production and the remaining 44.8% to livestock production (Jarvis 2010). Regarding livestock production, the 2009 national census reported a total of 22,540,251 head of cattle. For meat production in 2011, 4,103,337 head of cattle were slaughtered, which means a 4% growth, while in milk production in 2008 was 6,476 million liters (Fedegan 2012). In the period 2001 - 2006, the supply of organic products in the country increased by	**PURPOSE** To guarantee the conservation of biodiversity and its ecosystem services and the fair and equitable distribution of the benefits derived from it, in order to contribute to the improvement of the quality of life of the Colombian population. **GENERAL OBJECTIVE** To promote Integrated Management for the Conservation of Biodiversity and its Ecosystem Services, in order to maintain and improve the resilience of socio-ecological systems, at national, regional and local scales, considering scenarios of change and through joint, coordinated and concerted action by the State, the productive sector and civil society. **THEMATIC AXES AND STRATEGIC LINES OF ACTION** **AXIS I. BIODIVERSITY, CONSERVATION AND CARE OF NATURE** **AXIS II. BIODIVERSITY, GOVERNANCE25 AND CREATION OF PUBLIC VALUE AXIS III. BIODIVERSITY, ECONOMIC DEVELOPMENT, COMPETITIVENESS AND QUALITY OF LIFE AXIS IV. BIODIVERSITY, KNOWLEDGE MANAGEMENT, TECHNOLOGY AND INFORMATION.** **AXIS V. BIODIVERSITY, RISK MANAGEMENT AND PROVISION OF ECOSYSTEM SERVICES AXIS VI. BIODIVERSITY, CO-RESPONSIBILITY AND GLOBAL COMMITMENTS**	**AINCHI GOALS IN SYNERGY WITH PNGIBSE** **Strategic Objective C.** Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity. **Target 7:** By 2020, areas under agriculture, aquaculture and forestry are sustainably managed, ensuring the conservation of biodiversity. **Target 8:** By 2020, pollution, including from excess nutrients, is brought to levels that are not detrimental to ecosystem functioning and biodiversity. **Strategic Objective C.** To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity. **Target 13:** By 2020, the genetic diversity of cultivated plant species and farmed and domesticated animals and wild relatives, including other species of socioeconomic and cultural value, is maintained, and strategies are developed and implemented to minimize genetic erosion and safeguard their genetic diversity. **Strategic objective D.** Enhance benefits for all from biodiversity and its ecosystem services **Target 14:** By 2020, ecosystems that provide essential services, including water-related services, and that contribute to health, livelihoods and well-being are restored and safeguarded, taking into account the needs of women, indigenous and local communities , and the poor and vulnerable. **Target 15:** By 2020, increase ecosystem resilience and the contribution of biodiversity to carbon stocks through conservation and restoration, including restoration of at least 15 percent of degraded lands, thereby contributing to climate change mitigation and adaptation and combating desertification. **Target 16:** By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising out of their Utilization is in force and operational, in accordance with national legislation. **6. Implementation of measures to address environmental change. -** Ecosystem restoration, recovery, and rehabilitation - 280,000 hares restored or rehabilitated for protection

Instrument	Diagnosis	Objectives	Investment Lines
	25,713 ha, with crops mainly banana, coffee, cocoa, cereals, oil palm, tubers, fruits, panela, vegetables, heliconias, among others (MADR 2007).		purposes, including biological connectivity corridors , as well as avoided deforestation. **7. Strengthening institutional adaptive capacity** - 280,000 ha restored or rehabilitated for protection purposes, including biological connectivity corridors , as well as avoided deforestation. - Avoided deforestation of 200,000 hectares out of 61 million hectares of natural forest - Promote the formulation of programs for the development of technologies for the restoration, recovery, rehabilitation of ecosystems and sustainable use of biodiversity, in coordination with the National Science and Technology System.
National Biodiversity Policy	In agriculture, all of the plants grown commercially and consumed on a daily basis are the product of biodlversity management. This management occurs through genetic improvement to increase their productivity, tolerance to extreme climatic conditions and resistance to different kinds of pests and pathogens. Of the 270,000 vascular plant species known worldwide, approximately 3,000 are edible, and only about 200 have been domesticated for cultivation. At present about 90% of plant foods are derived from just 20 species, mostly relatives of wild grasses, such as rice, wheat and [to barley. Several of the main crops have their center of origin in Latin America, among them, the frUol (Phaseotus vulgaris), potato (Solanum tuberosum), tomato (Lycopersicon esculentum), cassava (Manihot escuientus) and cocoa (Theobroma cacao). There is also a great variety of wild plants that have been traditionally used by communities, with an important potential use. Many of the agricultural crops that are used depend on insects and vertebrates for pollination. Clear cases of this interaction between plants and animals are cocoa, pollinated by diptera (flies), and cotton, pollinated by bees. An example of economic importance for Colombia is bananas, which are pollinated by bats. These crops are susceptible to numerous pests caused by insects, fungi and viruses, which can be combated, in many cases, using natural biological control agents. Some practical uses are wasps	The National Biodiversity Policy is the core of a national strategy to articulate the sustainability of biological diversity with the economic and social development process, improving the country's competitiveness; quality of life; poverty eradication; subsistence; integration of peoples and sustainable development. General Objective: To promote the conservation, knowledge and sustainable use of biodiversity, as well as the fair and equitable distribution of the benefits derived from the use of the knowledge, innovations and practices associated with it by the national scientific community, industry and local communities. **SPECIFIC OBJECTIVE 1: IN THE FIELD OF SCIENTIFIC AND TECHNICAL KNOWLEDGE OF BIODIVERSITY:** Strengthen the management capacities of the public, private and municipal sectors with scientific and technical competence in the field of biodiversity, at the central, sectoral and local levels. **SPECIFIC OBJECTIVE 2: IN THE FIELD OF PRIORITY BIODIVERSITY CONSERVATION: To** develop the use of tools and procedures that promote the integral, balanced and conservationist use of biological and genetic resources at the national level, aimed at improving the economy of communities affected by poverty. **SPECIFIC OBJECTIVE 3: IN THE FIELD OF SELECTIVE, SUSTAINABLE AND RATIONAL USE OF BIODIVERSITY**: To promote the sustainable use of	**OBJECTIVE 1/ ACTION POINT 1.** Establish pilot projects to stimulate business financing for indigenous communities that support bioprospecting programs accompanied by local or indigenous traditional knowledge as schemes, within protected areas. **ACTION LINE 2.** Characterize agricultural diversity and traditional knowledge, associated as an integral part of these activities, to use it as a reliable tool for decision making regarding rural-agricultural development within and outside indigenous communities. Identify and promote adaptive management practices, technologies and related policies and seek incentive measures to promote positive impacts and mitigate negative impacts of agriculture on biodiversity. **OBJECTIVE 3: ACTION POINT 1 2**. Create incentives to promote biodiversity conservation by civil society. Develop and validate sustainable management systems for biodiversity components, considering the systems used by traditional communities and those developed by scientific research. **ACTION POINT 6** 1. Conduct studies on the economic valuation of biodiversity, taking into account priority watersheds, ecosystem types and protected areas. The equitable participation in the benefits resulting from conservation actions or added contributions to the value of biodiversity should be quantified through programs established in conjunction with the communities; stimulating local investment in the selective use of biodiversity and other natural resources

Instrument	Diagnosis	Objectives	Investment Lines
	used to control the sugarcane borer and fungi to control the coffee berry borer.	natural resources aimed at the conservation of ecosystems, populations of species and their genetic varieties. Prevent adverse environmental impacts in the management of biological diversity and develop an effective use of existing natural resources. **SPECIFIC OBJECTIVE 4: IN THE AREA OF CITIZEN PARTICIPATION, ATTACKING POVERTY AND IMPROVING QUALITY OF LIFE: To** increase sustainable management of biodiversity conservation and management, through the promotion of training, formal education, better inter-institutional coordination and the attainment of financial resources for community projects, aimed at eradicating poverty and raising the standard of living. **SPECIFIC OBJECTIVE 5: IN THE FIELD OF THE COUNTRY'S COMPETITIVENESS: To** develop new alternatives that contribute to promote research on biodiversity, production systems, bioprospecting, biosafety and access to genetic resources that contribute to the creation of highly efficient and effective companies in the field of conservation and sustainable use of biological resources.	in the area. Identify possible derivative uses and artisanal and industrial processes of biodiversity based on the comparative analysis of biodiversity management strategies in different cultures, with a perspective of their history and according to their degree of technological experimentation. 1. Promote the establishment of joint ventures for the selective sustainable use of biodiversity as micro-enterprises for the production of products of nature with friendly technologies and with the support of national or international capitalist partners and the State, represented by ANAM. Create profitable formulas and modalities for the populations most affected by poverty in selected areas for the development of Mixed Biodiversity Enterprises (ECO-BIO) with friends of biodiversity. To carry out activities oriented to increase the services and benefits for the communities and populations within these areas, with an organized community participation for this purpose; within the terms of sustainability of the affected resource. 2. Design proposals for communities, both rural and urban, to cultivate and commercialize organic products or other activities promoted by the Community Enterprises for Biodiversity. 3. Establish agreements for basic crops among the most affected population in order to develop crops with great acceptance and easy cultivation which can bring enormous benefits of rural and urban order.
Sustainable Consumption and Production Policy 2010	In general terms, production and consumption activities have increased in Colombia in the last 10 years due to a constant increase in the gross domestic product (GDP). This increase in the country's productivity leads to greater pressure on natural resources. In this regard, the Sustainable Production and Consumption Policy seeks to contribute to the trend of increasing the gross domestic product (GDP) in a sustainable manner; that is, to promote growth by making more efficient use of the natural resources on which we depend. The trends in the growth of the country's productive sector are relevant for the Sustainable Production and Consumption Policy, given that they differ in terms of growth intensity, technological progress, use of natural resources and environmental impact by the companies that make up the	**General objective of the policy: To** guide the change of production and consumption patterns in Colombian society towards environmental sustainability, contributing to the competitiveness of companies and the well-being of the population. To generate a critical mass of companies that position good practices, as well as sustainable goods and services, in the national and international market. 2. To create a culture of sustainable production and consumption among public institutions, companies and consumers. 3. Strengthen the institutional framework that promotes	**- Agroindustrial sector** (sugar, flowers, bananas, biofuels): (i) High export potential; (ii) Growing sector, especially in relation to biofuels; (iii) Resource-intensive sector with high optimization potential; (iv) Strategic sector within national competitiveness policies; (v) Potential for efficient use of energy and water and adequate waste management; (vi) Potential to set an example for the rational use of resources. - **Tourism sector**: (i) Strategic sector within national competitiveness policies. (ii) With potential for efficient use of energy and water and adequate waste management. (iii) With potential to set an example for the rational use of resources.

Instrument	Diagnosis	Objectives	Investment Lines
	sector. Furthermore, the prospects for the policy to positively impact production and consumption practices are different for the various sectors of the Colombian economy. For example, for manufacturing sectors, the optimization of their natural resource extraction and transformation processes would lead to important environmental and economic benefits, while for sectors such as mining, the planning and location of the activity is of greater importance in terms of sustainability. In addition, state policies related to the development of large infrastructure projects, social housing and public transportation systems, have a significant influence on the sustainability of progress.	sustainable production and consumption within the national territory.	**- Organic food sector:** (i) With potential for export growth; (ii) With potential to be considered as an example of sustainable production and consumption practices; (iii) With potential to be considered as an example of sustainable production and consumption practices. **- Biodiversity products and services sector (**i) With export growth potential (ii) With potential to be considered as an example of sustainable production, consumption and use practices. **- SMEs supplying large companies (**i) With the potential to disseminate practices among groups of companies (ii) With the potential to generate and conserve employment (iii) With the potential to implement sustainable production and consumption practices.
National Green Business Plan 2014	**Consumers** - In general terms, the national consumer is unaware of what green businesses are, their differentiating characteristics, and their benefits for the environment, health and society. - There have been few campaigns to raise awareness and position the issue among consumers. - The local market for these products is quite incipient compared to developed countries. - There is a lack of impetus for cultural change among Colombian consumers. - Instruments can be designed and created to differentiate products, such as the Colombian Environmental Seal (SAC), but if they are not promoted and consumers are not made aware of the instrument, all the effort and investments made will be lost. **Production** - In general, there is insufficient production volume to meet market demand. Production is minimal and there are no consolidated producer networks to meet the demand. - In general, production has competitive weaknesses in terms of quality and quantity.	**General Objective** The objective of the Policy is to direct the production and consumption patterns of Colombian society towards environmental sustainability, contributing to the competitiveness of companies and the well-being of the population. It seeks to generate supply and demand for more sustainable goods and services in the markets, reduce pollution, conserve natural resources, and promote the sustainable use of biodiversity, all as a source of business competitiveness. This Policy articulates market supply (production) and demand (consumption) and seeks to boost economic growth through greater efficiency in the use of natural resources and the sustainable use of biodiversity. This shift - the inclusion of demand in the policy - is fundamental to understanding the market for sustainable goods and services, as market power is used to generate social and environmental	**E1:** Seals: Colombian environmental, organic food and sustainable tourism. **E2**: Access to genetic resources. Use of biodiversity. Traditional knowledge **E3:** Articulation with market needs Identification of existing research and technology Transfer of **traditional** knowledge **E5:** Existing marketing strategies. E5: Existing marketing strategies Regional / National marketing strategies International marketing strategies **E8:** Value chains Alliances Tools Producers' network Prioritization products

Instrument	Diagnosis	Objectives	Investment Lines
	- In some areas of the country there are public disturbances, which limits the development of production activities. **Marketing** - Very few market studies have been developed for green business products. At the same time, there is a lack of promotion lines and programs. - There is a lack of exclusive marketing platforms for green business products. - Existence of illegal competition in the commercialization of native species (fauna, flora) - In most cases, the research lines of the research institutes are disconnected from the needs identified in the market studies. - Existence of paternalism and dependence on the State.	benefits. generate social and environmental benefits. **Specific Objectives** - Boost national demand for green products - Position Colombia as a supplier of green products - Consolidate the supply of green producers - Establish instruments to support the green products sector. **STRATEGY 1:** Promote the new green market sector within the Colombian production system as an alternative for the country's development. **STRATEGY 2:** Raise awareness among Colombian consumers and producers about these new markets and their advantages. **STRATEGY 3:** Coordinate, articulate and strengthen existing initiatives on green markets in the country. **STRATEGY 4:** Promote financial tools to support green producers. **STRATEGY 5:** Conduct research and create an information system in the area of markets. **STRATEGY 6.** Coordination and institutional / sectoral articulation. **STRATEGY 7.** Market information, monitoring and evaluation system. **STRATEGY 8**. Development and strengthening of the offer	

EVALUATION AND PRIORITIZATION OF THE PROPERTIES TO BE INTERVENED

Although the project area is under collective titling, within the communities the families have defined areas for their use; each family is assigned an area to implement productive activities with the obligation to take care of the environment of the designated area. The board of directors of the Community Council and the local boards keep control and inventory of the areas assigned to each of the families, for the process of adaptation to climate change two specific actions will be carried out, the adaptation of productive systems and the restoration of strategic ecosystems for the provision of environmental services, For the adaptation of the SSP, a diagnosis will be made at the farm level or by farm, which is the plot assigned to the families, and for the restoration of strategic ecosystems, an analysis will be made at the landscape level taking into account the restoration that contributes to increase connectivity and water regulation.

In order to have an approximation of the impact of the investments in the properties, an evaluation of resilience is required, and criteria will be designed to evaluate the properties for the two adaptation measures contemplated in the project: ecosystem restoration at the landscape level to contribute to the increase of Ecosystem Services and productive systems that increase family resilience by integrating greater diversity in the productive system with a focus on environmental demand of the territory and cultural knowledge. Table 31. shows the description of the criteria and their corresponding interpretation and evaluation. These criteria were rated using values from 1 to 3, with 1 being the lowest rating and 3 the highest.

Table 31. Evaluation criteria for the prioritization of interventions in the productive component.

CRITERIA	DESCRIPTION OF THE CRITERION	INTERPRETATION AND VALUATION	VALUATION (APPRAISAL)
Labor available	The criterion evaluates the labor available on the farm. According to what was found in the diagnostic of conversations and work tables, on average an adult woman between 19 and 60 years of age works 16 to 14 h/d, corresponding to productive work up to 10 h/d, the rest in housework, men work 6 to 8 h/d, in the productive system, school-age minors can work up to 4 h/d, that is, the average work potential of an adult is 10 h/d and that of a minor from 12 to 17 years of age is 4 h/d.	The labor available to the family is a limiting factor for the development of productive activities; the change of production system based on Agroecology demands an increase in work for the family; not carrying out the programmed tasks in each productive system can lead to its failure. The potential family work is evaluated, without considering daily wages or minga (free labor through borrowed labor in groups).	A maximum score is considered for families that can count on more labor for the implementation of new productive systems, that is, the highest value will be obtained by families that have more than 30 h/d and the lowest value by those that have less than 10 h/d. It is possible to evaluate this indicator based on surveys and interviews.
Available Area	Area of the property available for adaptation.	The vulnerability analyses of the productive typologies indicate that both large and small producers are socioeconomically vulnerable in different factors; however, the larger the reconverted area, the greater the contribution to water regulation and the maintenance of ecosystem services such as connectivity at the landscape level.	The maximum value is considered to be the farm with the largest productive area, i.e. more than 10 ha, 2 will be between 5 and 10 ha and 1 will be less than 5 ha. It is possible to evaluate this indicator based on the interview and survey.
Negative impact on water bodies due to land use and land use change	Evaluate to what degree conventional production systems are deteriorating water quality, whether pastures and monocultures extend to the edge of water bodies, sloping furrows in agricultural systems facilitate runoff of soil and pesticides, excreta from piggeries are discharged into watercourses or onto the ground.	In order to contribute to the improvement of water quality, due to the adaptation actions of the productive systems, priority should be given to those properties that are affecting the water bodies to a greater degree due to the cultural activities of the productive systems. Vulnerability increases the more water bodies are affected.	The higher the impact, the higher the rating, the higher the rating, the higher the rating will be for properties with no protection of water bodies, high slope with furrows on the slope in monocultures, properties in which excreta are being dumped into water bodies, properties that have good protection of water bodies and productive area in pastures will have a rating of 2, properties with good forest area, low slope and protected water bodies will have a rating of 1.
Soils	Soil is one of the agroecosystem components that contributes most to water regulation and agricultural production. The loss of soil characteristics such as porosity, infiltration, structure and organic matter increases the vulnerability of the agroecosystem and its capacity for water regulation and productivity.	The most vulnerable soils will be those with high compaction, low infiltration, and low organic matter. These will be the highest rated soils.	The most vulnerable soils will be those with a higher rating, i.e., those with high compaction, low infiltration, and low organic matter. The lowest rated soils will be those with good infiltration and organic matter.
Biodiversity of the current production system	Evaluates diversity in production systems. Greater vulnerability to lower plant and animal diversity present in the agroecosystem Henao and Alttieri 2016, diversity is represented by the number of species present both in commercial agricultural	The greater the diversity, the lesser the vulnerability and the lower the qualification since the aim is to increase resilience in the most vulnerable systems.	More than 20 species present in the farming system score 1, 10 to 20 species score 2, less than 10 species score 3.

	production systems, and in the production of food for family		
Food autonomy status	Evaluates the availability of food for the family produced on the same farm. One of the factors that most affect the vulnerability of the families is the availability of healthy food and in good quantity, it has been evidenced in the diagnosis that most of the families do not have food produced on the farm, so their dependence on the purchase of these is high.	The lower the food autonomy, the greater the vulnerability, and priority will be given to families that are more dependent on the purchase of supplies for the family food basket.	Does not have a family vegetable garden =1 Has a vegetable garden, but production is precarious=2 Has a diversified vegetable garden and also produces minor species=1
Cash flow vs. needs analysis	The lower the family's income, the greater the vulnerability, according to the diagnosis, the families studied have a negative cash flow because the dependence on milk production is high considering the opportunity cost of land use and labor invested, the investment is not recovered.	Vulnerability increases the lower the cash flow, families with negative cash flow will be prioritized.	Income of >$100,000 per person=3. $100,000 to $50,000 per person =2 ≤49 ,000 =3.
Family counterpart	The community's counterpart is evidenced in the financial resources that each family may have available for productive reconversion.	The counterpart indicates a good reception of the family to the actions of adaptation of the productive systems, this indicates commitment and sustainability in the medium and long term.	A $1 match from the family for $5 of the project=1. A $2 match from the family for $5 of the project=2. A $3 family match for $5 of the project=3.
Number of people dependent on the property	Vulnerability increases the greater the number of people who depend economically on the productive activities of the property.	An increase in income from the adaptation of production systems will help to improve the quality of life of a larger population and reduce vulnerability.	The greater the number of people dependent on the productive activities of the property, the higher the qualification.
Number of vulnerable people (children, elderly and handicapped)	The most vulnerable population will be considered.	Due to the fact that in some communities there are people with some degree of disability or elderly people and children.	Priority will be given to families with the highest number of individuals in these conditions.

Proposal for the elaboration of a strategy for the adaptation of production systems by farm.

Based on the results of the characterization visits, analysis of production systems and evaluation of the properties to be intervened, inputs will be obtained and tools for adaptation to climate change will be developed for productive reconversion and ecosystem restoration at the landscape level. The ecosystem services expected to be improved are water regulation, landscape connectivity, economic and food resilience of families; they also show the importance of intervening in degraded areas or improving soil conditions as a fundamental element where life is sustained.

An important consideration to make the productive reconversion proposals viable is the acceptance of the participants to change a historical use of the land, which most of the time has been degrading productive systems such as banana, cassava and cattle raising monoculture, the inhabitants of the communities view with skepticism another kind of production, The emphasis should be placed on a financial study of the productive proposals, as well as a technical explanation of the production processes and marketing possibilities before the consolidation stage of the production processes begins. They should also start with a small-scale agroecological production experience, with which they can gain confidence in the topic of ecological production, since it is not possible to produce without commercial chemicals, as they have always received technical support for production from promoters of commercial agrochemical companies.

Considering the above, strategies are proposed for the implementation of adaptation measures in productive reconversion. These are based on the principles of transparency, participation, equity, and trust and on the objectives and impacts proposed in the project and on the quick recognition of the productive areas and productive projects that are viable for the project area and that have been identified through consultations with experts on sustainable production. In general terms, the proposed strategies are as follows:

Start module.

It will address fundamental problems such as the lack of knowledge transfer in sustainable production, provide inputs for soil bioremediation, contribute to the family's food autonomy, and generate surpluses to increase cash flow while the business plan is being built. Capacity building begins with the transfer of knowledge in the following areas agroecology, having as main tool the home garden and farm planning.

Characteristics of the module:

Implementation of an average family vegetable garden of 35 m2, with a small wooden infrastructure and equipment to produce organic fertilizers and vermicompost and a space for the multiplication of plants, water harvesting strategies in places where there is water supply stress in summer.

Complementary actions:

The complementary actions will be prioritized in the diagnostic phase and will be implemented once the initial module is completed, but not exceeding one year, since it corresponds to an amount, the families that most require it will be chosen, for example, in all the piggeries of the beneficiaries of the project will be implemented biodigester so that the excreta have not been thrown into the water sources, this will improve water quality, some houses have their septic tanks clogged and a polluting action is required. The diagnostic sheet will establish where each of the complementary measures are required, but after carrying out the entire evaluation in 100 properties selected by the project, the prioritization must be done until the amount for the implementation of this type of measures is exhausted:

- The efficient stove reduces wood consumption and CO2 emissions and contributes to human well-being.
- The biodigester prevents piggery excreta from being deposited directly into the soil and water bodies, contributing to the care of the quality of both.
- Water crops contribute to building resilience in times of low rainfall, especially in areas of the farm where water limits production.
- Drinking troughs will be installed on properties where water bodies are being affected by livestock incursion.
- The septic tanks will prevent contamination of soil and water by human excreta and will improve the quality of life of the family.

Production of minor species:

Such as hens, pigs, including apiaries, can be implemented on small farms and will support:

- the increase of income to the family,
- diversifying animal production and minimizing dependence on milk production.
- The manure produced will be incorporated into the organic fertilizer production unit and the production of substrates for the family nursery.
- honey and pollen production will contribute to pollination and to valuing the forest as part of the production system.
- Increased food autonomy.

- Contribute to the pollination service.

Agroforestry and silvopastoral systems with ecological restoration potential:

Our goal is to promote agro-successional restoration as an approach that could be used more widely to augment forest restoration efforts temporally and spatially. For centuries, smallholder farmers have refined a range of agroforestry techniques that combine agricultural crop production with growing trees to provide fuelwood, fruit, building materials, and other products (e.g., Nair 1991; Altieri 2004; Miller & Nair 2006; Michon et al. 2007). These agroforestry systems face the same obstacles to growing crops and trees as restorers; therefore, farmers have developed strategies for their particular systems, improving moisture limitation, nutrient conditions, weed competition, and pest effects. In the restoration process of the REDD+ JIGRANTU Project, we consider that the successive agroforestry system is a good strategy to contribute to forest protection.

The financial returns of these systems have been studied extensively, but they offer other benefits to smallholder farmers, such as improved food security and the opportunity to work on the farm. As most agricultural crops are adapted to full sun, shading trees can reduce their productivity compared to non-interspersed as they grow. Most importantly from an agro-successional restoration point of view, these systems reduce tree maintenance costs relative to planting trees alone.

Crop-tree systems, in one type of agroforestry system, mix crops and various tree species progressively through increasing income, biodiversity, and ecosystem structure and function. Hart (1980) in a crop chronosequence, as in natural succession, each stage "produces the physical environment required by the next stage"; therefore, less input is needed to develop a community of late native crops and/or species needs for soil fertility and light exchange and increases in vertical stratification.

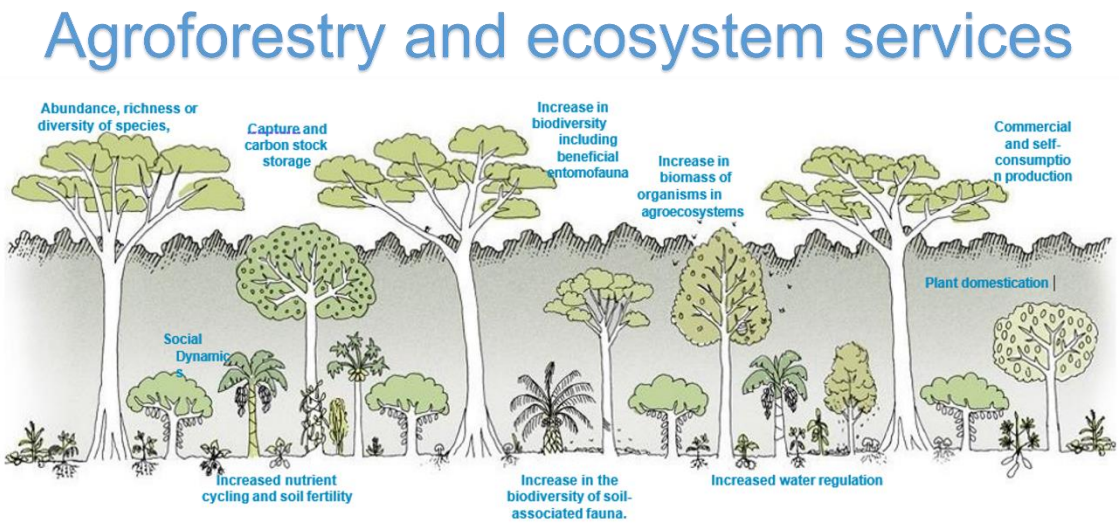
Related systems that expand the time scale of agroforestry have been developed and tested in various areas of the world, for example for the rainforests of Central America, in which beans, maize, cassava and plantain are planted together and leave the system several times. Coconut, cacao, and rubber, all post-successional species, are planted after 1 year and remain in the system for up to 50 years. For successional agroforestry in Colombia and northeastern Brazil, agroforesters have classified 139 tree and crop species into five successional classes, based on species life expectancy and light and soil requirements. The optimal time for planting (at the beginning or after a canopy has been established), spatial location with respect to soil conditions, and density of each species are determined based on these groupings.

A successional agroforestry system in pastures may comprise the following components:

1) Crop species are chosen based on observations of the reference forest and traditional cropping systems.
2) many species are allowed to regenerate naturally or are planted for pest protection, to improve soil quality or for compensatory growth.
3) the natural process of self-thinning is accelerated by selective pruning to increase light levels in the understory strata and nutrients in the clippings to facilitate the growth of subsequent successional species.

Soil quality is critical for species selection in successional agroforestry systems because abandoned agricultural areas have variable soil fertility over a range of spatial scales because of natural substrate and past land use (Figure 41.).

Figure 41. Supply of ecosystem services in an ecological restoration strategy based on agro- successional systems.



7 Risk management

Risks were analyzed following the guidelines of the PMBOK® Guide[124] (Project Management Fundamentals Guide) in social, environmental, and financial terms and

[124] Guide to Project Management Fundamentals

taking into account the methodology *BCR Tool. Permanence And Risk Management. BCR project holder take actions to ensure the project benefits are maintained over time*. Version 1.0 (BCR, 2023)[125]. Table 32. shows the evaluation of the risks identified, considering the probability and impact of each one.

Table 32. Probability and impact matrix

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

The probability of facing social risks was evaluated considering the history and current situation of the communities, based on what was seen during the workshops and the interactions documented in the records. For environmental risks, the probability of occurrence was estimated using official data from IDEAM and the SGC, together with the findings of the Participatory Rural Appraisal and secondary data from the Special Characterization Plans of each Council. For financial risks, detailed information on the project's cash flow, market trends and previous experience in implementing similar projects were analyzed. The impact was calculated considering how the materialization of a risk could affect the execution of the project and the sustainability of the expected results. Table 33. shows the risks identified for the project and their ranking.

Table 33. Project risk analysis

Dimension	Risk	Probability	Impact	Qualification	Classification
1. Social[126]	1.1 Forced displacement of the members of the communities	3	3	9	High
	1.2 Weakening of governance structures	2	2	4	Medium
	1.3 Encroachments in the project area due to loss of territorial control	2	2	4	Medium

[125] risk-and-permanence.pdf
[126] The main problems in the territories were identified in assemblies in each of the community councils that are part of the project, which are presented in: 10. CONCERTATION OF INTERESTED PARTIES\Construction of the REDD+ JIGRANTU Project\Minutes, assemblies, and meetings.

Dimension	Risk	Probability	Impact	Qualification	Classification
	1.4 Population migration young people seeking employment opportunities or study	3	2	6	High
	1.5 Loss of sense of membership and practices cultural differences in the population youth	2	2	4	Medium
	1.6 Deficit in the coverage of public services, health and education	2	2	4	Medium
	1.7 Destruction of heritage and sites of historical and cultural value	3	1	3	Medium
	1.8 Economic dependence on revenues generated by the commercialization of the CCV	1	2	2	Low
2. Environmental[127]	2.1 Events extreme climatic events (floods, mass movements and adaptive capacity)	3	3	9	High
	2.2 Displacement of deforestation actions for the implementation of the project	2	2	4	Medium
	2.3 Expansion of the agricultural frontier	2	2	4	Medium
	2.4 Contamination of rivers, manifesting in gastrointestinal and skin diseases, and vaginitis	3	2	6	High
	2.5 Poor waste management (lack of landfill)	3	2	6	High
	2.6 Ecological imbalance due to the presence of introduced species such as cachama and mojarra silver in the Atrato river	2	2	4	Medium
	2.7 Pests and diseases in production systems for low technical assistance	2	2	4	Medium
	2.8 Modification of the use of rivers and streams	1	2	2	Low
	2.9 Changes in land use in project	1	2	2	Low
3. Financial[128]	3.1 Market price sensitivity	1	3	3	Medium

[127] To support the risk analysis, cartography is presented that determines the risk level at the national level by IDEAM located in 2. TECHNICAL ANNEXES\RISK ANALYSIS\CARTOGRAPHY-ENVIRONMENTAL RISKS

[128] To support the risk analysis, we present the cash flow of the REDD+ JIGRANTU project located in 2 TECHNICAL ANNEXES\RISK ANALYSIS\SUPPORTS\ JIGRANTU project cash flow.xlsx

Dimension	Risk	Probability	Impact	Qualification	Classification
	3.2 Annual budget deficit	1	3	3	Medium
	3.3 The project reaches break-even point after more than of 5 years	1	2	2	Low
	3.4 Delays in the implementation of project activities for bad budget programming	1	2	2	Low
	3.5 Financial feasibility of the project	1	2	2	Low

7.1 Mitigation measures

Table 34. shows the mitigation measures defined to mitigate the risks identified. These measures are directed in accordance with the strategic lines, programs and activities defined in the project's Benefit Sharing System[129].

Table 34. Risk management mitigation measures

Risk	Mitigation measures
1.1 Forced displacement of the members of the communities	• Strengthening of council governance structures • Operation of the PQRDS mechanism
1.2 Weakening of governance structures	Execution of the strategic line of strengthening governance and culture.
1.3 Encroachments in the project area due to loss of territorial control	Execution of the strategic line of strengthening governance and culture.
1.4 Population migration young people seeking employment opportunities or study	• Capacity building in the Professional Scholarship Plan program • Improvement of educational infrastructure • Implementation of PPS with emphasis on adaptation to climate change
1.5 Loss of sense of membership and practices cultural differences in the population youth	• Formulation of the ethnodevelopment Plan • Formulation and implementation of a strategy for the rescue and multiplication of ancestral knowledge • Strengthening of cultural events • Design and implementation of a participation strategy
1.6 Deficit in the coverage of public services, health, and education	• Improvement of social infrastructure • Basic sanitation infrastructure • Health infrastructure
1.7 Destruction of heritage and sites of historical and cultural value	• Formulation of the ethnodevelopment Plan • Formulation and implementation of a strategy for the rescue and multiplication of ancestral knowledge

[129] Location of the project benefit distribution system: 2. TECHNICAL ANNEXES\SDB

Risk	Mitigation measures
	• Strengthening of cultural events • Improvement of social infrastructure
2.1 Events extreme climatic events (floods, mass movements and adaptive capacity)	• Conservation and monitoring of the project area • Risk management plan according to Nature-based Solutions (NBS) • REDD technical capacity building
2.2 Displacement of deforestation actions for the implementation of the project	Monitoring of vegetation cover in the leakage area defined for the project.
2.3 Expansion of the agricultural frontier	• Formulation of the ethnodevelopment Plan • Construction of the environmental management plan of the community councils • Articulation in the execution of REDD actions with the Ethnodevelopment Plan and Environmental Management Plan of the Community Councils • Strengthening capacities in sustainable productive actions with emphasis on increasing socio-ecosystem resilience. • Strengthening capacities in ecosystem restoration and conservation action
2.4 Contamination of rivers, manifesting in gastrointestinal and skin diseases, and vaginitis	• Adequacy of waterways • Design and implementation of the ecosystem protection and restoration strategy. • Risk management plan according to Nature-based Solutions (NBS)
2.5 Poor waste management (lack of landfill)	• Improvement of social infrastructure • Basic sanitation infrastructure
2.6 Ecological imbalance due to the presence of introduced species such as cachama and mojarra silver in the Atrato river	• Formulation of the ethnodevelopment Plan • Construction of the environmental management plan of the community councils • Adequacy of waterways • Design and implementation of the ecosystem protection and restoration strategy.
2.7 Pests and diseases in production systems for low technical assistance	• Strengthening capacities for implementation of actions • Technical assistance for the management of production systems
3.1 Market price sensitivity	• Strengthening capacities for the formulation and execution of projects. • Technical and accounting formulation of the Sustainable Productive Projects to be executed. • Strengthening the marketing of PPS products, and development of its own brand
3.2 Annual budget deficit	• Formulation of the ethnodevelopment Plan • Construction of the environmental management plan of the community councils • Implementation of PPS with emphasis on adaptation to climate change.

7.2 Reversal risk management

The community is committed to carrying out their project and ensuring the protection of their territory and culture, both of which are vital to them. However, to mitigate the risk of project reversion and comply with BioCarbon Registry requirements and considering that the project is part of the AFOLU sector, an automatic discount of 20% of the total GHG reductions quantified for each verification period is made. This discount is carried out to ensure the existence of VCCs that can offset any additional emissions that may arise in the event of any risk materializing.

8 Environmental Aspects

The environmental aspects were evaluated using the methodology of Conesa, 2010 and based on the BCR TOOL methodology. *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 (BCR, 2023)[130], The project's activities will be evaluated in direct and indirect influence, where the possible impacts that may be generated by the project's activities will be evaluated. In this case, the biotic environment was evaluated, which corresponds to the biodiversity and ecosystem components.

8.1 Description of the area of influence

Area of direct influence corresponds to the project's target area in the community councils of Rio Jiguamiando, La Grande and Turriquitado.

Indirect area of influence: It was delimited as those areas closest to the project that may be affected by the execution of its activities, corresponding to the leak area and reference area.

8.1.1 Description of the biotic environment

8.1.1.1 Biodiversity:

The region is home to a wide diversity of wildlife. Among the birds that call this area home are the blue-billed curassow, the rufa-crowned hummingbird, several species of macaws and parrots. The aquatic habitats of the marshlands favor the presence of

[130] no-net-harm.pdf

amphibians such as the glass frog and harlequin frog. Reptiles include the emerald boa, tree snakes and turtles that inhabit fresh and saline waters. Mammals include the paramo tapir, jaguar and various species of monkeys. The wetlands and mangroves are home to fish and crustaceans, such as the catfish and bocachico, which are important for the Atrato River basin. In addition, this area is crucial for the conservation of aquatic birds, including rare and endangered species, and harbors essential habitats for the wild mouse, harpy eagle, tapir, morrocoy turtle, manatee, and white-tailed deer. However, local communities have faced difficulties due to the decline of fish species, which has affected their economy and food security.

8.1.1.2 Ecosystems

Swampy areas

This ecosystem is characterized by being flooded or waterlogged for prolonged periods of time; they play an important role in regulating the hydrological cycle and are home to a diversity of species, amphibians and birds. In the surrounding grasslands there are canals and ditches that help drain the swamps to create waterways for transporting timber and cultivation areas. Within the project area there are 4,862.21 hectares in swampy areas.

Sub Andean humid forest.

This ecosystem is characterized by precipitation rates exceeding 8000 millimeters per year, which enriches the entire water system and favors the presence of different species of fauna and flora such as Dracophyllum spp, Heliconia spp, Alouatta spp, Hyalinobatrachium spp, among others, within the project there are 427.53 hectares of sub-Andean humid forest.

Basal flooded forest

It is a lowland forest that experiences short periods of flooding in the wet season submerging the roots and stems of the trees, therefore, the vegetation develops its own characteristics such as aerial roots or pneumatophores, to survive these periods, within the project there are 22,823.76 hectares of basal flood forest.

Humid basal forest

The altitudinal range is between 0 and 800 meters above sea level, with a temperature above 24º C. Within the project there are 23,520.29 hectares of basal flooded forest.

8.1.1.3 Environmental zoning

Environmental zoning corresponds to the differentiation of the territory based on the degrees of environmental sensitivity (susceptibility of the components of the environment to deterioration or degradation due to the action of external factors) and environmental importance (capacity to offer environmental goods and/or services to its surroundings), to establish whether special management is required for the execution of the project.

The above was defined after establishing and/or identifying whether the project has the presence of Areas of Special Environmental Interest (AEIA), such as floodable ecosystems, tropical rainforests, areas with special land management, areas susceptible to geological and hydrometeorological hazards in order to determine analysis criteria expressed in qualitative, quantitative and/or cartographic form, to establish a scale of sensitivity values (very high, high, moderate, low and very low).

Table 35. below defines the environmental sensitivity and importance used for zoning:

Table 35. Sensitivity categories

CATEGORY	SENSITIVITY
Very Low (5)	Corresponds to those elements of the system that have the capacity to return to their original state after an intervention and therefore have a high resistance to undergo changes, recovering naturally in the short term.
Low (4)	Corresponds to those elements of the system that have a high capacity to return to their original state after an intervention and that have a good resistance to undergo changes. Their recovery occurs by natural mechanisms in The long-term and it is necessary to implement preventive actions.
Medium (3)	Correspond to those elements of the system that have an average capacity to return to their original state after an intervention and have a moderate resistance to change. Their recovery occurs in the short term by implementing mitigation actions and/or in the long term by implementing prevention measures.
High (2)	Corresponds to those elements of the system components that have a low capacity to return to their original state after an intervention and therefore have a low resistance to undergo changes, recovering in the long term through the implementation of mitigation actions or recovery actions. and/or rehabilitation in the short term.
Very High (1)	Corresponds to those elements of the system that have a very low capacity to return to their original state after an intervention and therefore have a low resistance to undergo changes, recovering in the long term through the implementation of restoration or rehabilitation actions, or that it is not possible to recovery.

Table 36. Categories of importance

CATEGORY	IMPORTANCE
Low (3)	Corresponds to those elements of the system that have a low capacity to generate environmental goods and/or services in influence.

Medium (2)	Corresponds to those elements of the system that have a moderate capacity to generate environmental goods and/or services in influence.
High (1)	Corresponds to those elements of the system that have a high capacity for the generation of environmental goods and/or services in influence.

Elements of evaluation and analysis

The environmental zoning is carried out according to the attributes, parameters, and weightings for the media, assigned to each of them, in addition to considering current environmental regulations. In this sense, three (3) aspects are considered to develop the environmental zoning, and in each one the representative criteria were analyzed (Table 37.)

Table 37. Means and Aspects considered for environmental zoning.

BIOTIC
Natural ecosystems
Subtractions from the Second Law Forest reserve
Zoning and Land Use Management

Zoning of the regulatory legal framework

The zoning of the legal and regulatory framework is conceived as an initial layer, so that the zoning can be observed with the restrictions or exclusions determined by the regulations or laws in force, independently of the intermediate zoning.

National natural system of protected areas

The project area is located within the Pacific forest reserve declared in the second law of 1959, established for the development of the forest economy and protection of soil, water and wildlife, classified as a Protected Forest Zone within the project area is represented by 55% of the project area and is considered an area of special importance because it has a low capacity for regeneration and recovery, anthropogenic interventions in this area can cause great impact on ecosystems and biodiversity.

Terrestrial ecosystems

Natural ecosystems that do not present any type of transformation as described above will have less capacity for regeneration and therefore their sensitivity in the zoning to project and non-project activities will be high.

Water systems

The water system within the project is formed by the main river of the Jiguamiando River in which different tributaries from nearby micro-watersheds converge, within the community councils of La Grande and Turriquitado there is a complex ecosystem of lakes and swamps, all of which are of vital importance for the maintenance of biodiversity and the supply of drinking water, Water is a natural resource that is very sensitive to contamination, and to return to drinkable conditions it requires the application of chemical treatments that allow its recovery, which is considered highly sensitive considering its importance the conservation of the surrounding vegetation favors infiltration and flood control.

Source areas of environmental contamination

The source areas of environmental contamination will be delimited as those deforested areas used for cattle ranching because they are an important source of methane and nitrous oxide during the animal digestion process; when the land is adapted for the expansion of grazing areas, a deforestation event occurs, therefore those surrounding areas will be more susceptible and due to the change in land use will have a low regeneration capacity.

In turn, agricultural areas cause soil sedimentation that contaminates water tributaries, as well as the application of pesticides and fertilizers that can run off into the tributaries, and the surrounding areas are more sensitive to deforestation.

IMPACT ASSESSMENT

The following is a detailed description of the attributes adapted from the Conesa (2010) methodology to be used in the construction of the evaluation matrix to obtain the importance value matrix (see annex: Impact matrix):

Nature (Sign): Indicates the beneficial or detrimental nature of the activities that will influence each component; the values for its qualification are presented in Table 38..

Table 38. Rating Values for Nature

VALUE	NEGATIVE	POSITIVE	NEUTRAL
±1 o N	When action produces an unfavorable modification in the environment or in any of its components.	When action produces a favorable modification in the environment or in one of its components.	When the action produces a non-significant modification on the socioeconomic environment and a degree of uncertainty is generated. Depending on multidimensional and/or multicausal factors, they can become Positive or negative impacts.

Source: (Conesa Fdez, 2010), adapted by (Consultant, 2023).

Intensity (I): Intensity represents the degree of destruction or impact of the activities on the component and the specific area in which it operates, regardless of the extent affected. Table 39. presents the ranges for the intensity rating.

Table 39. Rating Values for Intensity

VALUE	NEGATIVE	POSITIVE
1	Low: Minimal or scarce effect. alteration of the factor under consideration	Low: Beneficial incidence, but minimal and not very high. significant impact on the environment.
2	Medium: Refers to a degree of moderate impact of the effect on the environment.	Medium: Refers to a moderate degree of incidence of the effect on the environment.
4	High: Degree of strong incidence that acts on the medium.	High: Degree of strong impact acting on the environment
8	Very High: Very high degree of incidence strong acting on the medium	Very High: Very strong degree of incidence that acts on the medium.
12	Total: Total destruction of the component in the area in which it is impact is produced.	Total: Very high beneficial impact on the component in the area in which it occurs the impact

Source: (Conesa Fdez, 2010), adapted by Biotrade 2023

Extent (EX): The extent refers to the theoretical area of influence of the impact in relation to the project environment in which the factor is located, i.e. the percentage of the area affected by the action with respect to the environment; the values determined for its evaluation are shown in Table 40..

Table 40. Extension Rating Values

VALUE	NEGATIVE	POSITIVE
1	Punctual: When only the site where the activity that generates the impact is being carried out is affected.	Punctual: When the benefit is given only on the site where the activity that generates the benefit is being carried out. impact.
2	Partial: If the effect manifests itself in a larger area where a specific activity is carried out.	Partial: If the effect is manifested in one area where a specific activity is carried out
4	Wide or Extensive: If the effect is manifested in a larger area where it is. executes the activity punctually and partially.	Wide or Extensive: If the effect manifests itself in a larger area where the occasional and partial activity.
8	Total: If the impact does not support a precise location within the project's environment is total	Total: If more than 90% of the study area is affected.
(+4) *	Critical: If the effect, whether one-time or not, is occurs at a crucial or critical location.	General: If the effect, whether one-time or not, is occurs at a crucial or critical location

Note. *If the impact is punctual, partial, extensive or total, but occurs in a place of high environmental sensitivity, 4 additional units (+4) will be added to the corresponding value. Source: (Conesa Fdez, 2010), adapted by Biotrade S.A.S (2023)

Moment (MO): The moment is considered to be the time elapsed between the occurrence of the action or execution of the activity and the beginning of the effect or impact on the component; Table 41. shows the ranges established for its assessment.

Table 41. Rating Values for Momentum

VALUE	NEGATIVE	POSITIVE
1	Long term: The time elapsed between the execution of the action and the occurrence of the action of the effect is greater than 5 years.	Long term: The time elapsed between the execution of the action and the occurrence of the effect is greater than 5 years.
2	Medium term: The time elapsed is between 1 and 5 years	Medium term: The elapsed time is between 1 and 5 years.
4	Immediate: When the time elapsed between the execution of the action and the appearance of the effect is shorter of 1 year.	Immediate: When the time elapsed between the execution of the action and the appearance of the effect is less than 1 year.

VALUE	NEGATIVE	POSITIVE
(+4)*	Critical: If it is considered an impact with critical characteristics that may occur at any time.	Critical: If it is considered an impact with critical characteristics that can occur in the following situations any time

Note: * If the impact is considered critical, 4 units (+4) must be added to the value assigned to evaluate the time of occurrence of the impact. Source: (Conesa Fdez, 2010), adapted by Biotrade S.A.S (2023)

Persistence (PE): This refers to the time that in theory the effect will remain from its appearance and after which the recovery process will begin, either naturally or through the adoption of measures; Table 42. shows the rating values for Persistence.

Table 42. Rating Values for Persistence

VALUE	NEGATIVE	POSITIVE
1	Fleeting: duration less than 1 year.	Fleeting: duration less than 1 year.
2	Temporary: between 1 and 10 years	Temporary: between 1 and 10 years
3	Persistent: between 10 and 15 years	Persistent: between 10 and 15 years
4	Permanent: over 15 years old	Permanent: over 15 years old

Source: (Conesa Fdez, 2010), adapted by Biotrade 2023

Reversibility (VR): Reversibility is defined as the possibility of reconstruction of the component affected by the execution of project activities in a natural way and without anthropic intervention. The values established for the rating of reversibility are presented in the Table 43..

Table 43. Rating Values for Reversibility

VALUE	NEGATIVE	POSITIVE
1	Short term: Recovery of the environment in a period of less than 1 year.	Short term: Regression of the state of the environment in a period of less than 1 year
2	Medium term: Recovery of the average over a period of 1 to 10 years.	Medium term: Regression of the state of average over a period of 1 to 10 years.
3	Long term Recovery of the environment in an interval of 10 to 15 years.	Long term Recovery of the environment in a interval of 10 to 15 years.
4	Irreversible: When the altered environmental factor returns to its original conditions within a certain period more than 10 years.	Irreversible: Regression of the state of the environment to its original conditions in more than 10 years.

Source: (Conesa Fdez, 2010), adapted by Biotrade 2023

Synergy (SI): Synergy refers to the action of two or more causes whose effect is greater than the sum of their individual effects. These effects have a greater effect on the

component than if the activities that cause them are carried out independently. Table 44. shows the values established to evaluate synergy.

Table 44. Synergy Rating Values

VALUE	NEGATIVE	POSITIVE
1	Non-synergistic: When the actions that provoke the manifestations act in a different way than the actions that provoke the manifestations independently.	Non-synergistic: When the actions that provoke the manifestations act in a different way than the actions that provoke the manifestations independently.
2	Synergistic: When the actions that the effect of the manifestations is reinforced by the simultaneous occurrence of the manifestations.	Synergistic: When the actions that the effect of the manifestations is reinforced by the simultaneous occurrence of the manifestations.
4	Very Synergistic: When the actions that provoke the manifestations occur simultaneously, potentiating the potential of the manifestations significant effect.	Very Synergistic: When the actions that provoke the manifestations occur simultaneously, potentiating the potential of the manifestations significant effect.

Source: (Conesa Fdez, 2010), adapted by Biotrade 2023

Accumulation (AC): This is defined as the progressive increase in the manifestation of the effect when the activity(ies) that is generating it persists continuously or repeatedly. The ranges of accumulation are shown in the Table 45..

Table 45. Qualification Values for Accumulation

VALUE	**NEGATIVE**	**POSITIVE**
1	Simple: It occurs when the effect is maintained or diminished by the suspension of the activity that generates it.	Simple: It occurs when the effect is maintained or diminished by the suspension of the activity that generates it.
4	Cumulative: It occurs when, after the continuity of an action, the effect is increase.	Cumulative: It occurs when, after the continuity of an action, the effect is increase.

Source: (Conesa Fdez, 2010), adapted by Biotrade S.A.S (2023).

Effect (EF): This attribute refers to the form of manifestation of the effect on a component because of an activity (Table 46.).

Table 46. Rating Values for Effect

VALUE	NEGATIVE	POSITIVE
1	Indirect: It occurs when its manifestation is not a direct consequence of the action but is a consequence of the action is presented from an effect.	Indirect: It occurs when its manifestation is not a direct consequence of the action but occurs because of an effect.
4	Direct: This occurs when the repercussion of the action has direct consequences on the medium	Direct: It occurs when the repercussion of the action has direct consequences on the environment.

Source: (Conesa Fdez, 2010), adapted by Biotrade 2023

Periodicity (PR) Refers to the regularity of manifestation of the effect; the levels established for the qualification of this parameter are shown in Table 47..

Table 47. Rating Values for Periodicity

VALUE	NEGATIVE	POSITIVE
1	Irregular: It is presented in a sporadic, with less frequency and certainty.	Irregular: Occurs sporadically, with less frequency and certainty.
2	Periodic: When manifestation timeframes present a regularity and established cadence.	Periodical: When the of manifestation present a regularity and established cadence.
4	Continuous: the manifestations of the effect remain constant in the time.	Continuous: The manifestations of the effect remain constant over time.

Source: (Conesa Fdez, 2010), adapted by Biotrade 2023

Recoverability (CM): Refers to the possibility of partial or total recovery of the affected component because of project implementation. This reconstruction is by means of human intervention, i.e., using management measures. The following Table 48. shows the values and levels established for the recoverability rating.

Table 48. Recoverability Rating Values

VALUE	NEGATIVE	POSITIVE
1	Immediately recoverable: It is referring to the dissipation of the impact in the short term.	Immediate dissipation: Refers to to the dissipation of the impact in the short term.

VALUE	NEGATIVE	POSITIVE
2	Medium-term recoverable: the recovery of the environment or the dissipation of the impact occurs in the medium term and/or ends when the generating activity is completed ends.	Medium-term dissipation: the recovery of the environment or the dissipation of the impact occurs in the medium term and/or ends when the generating activity has ceased ends.
4	Mitigable and Correctable: When actions aimed at reducing negative impacts and effects must be implemented or when actions aimed at recovering, restoring, or repairing environmental conditions must be implemented affected by a project, work or activity	Potentiable: When the implementation of actions allows for potentializing or increasing the positive impacts and effects resulting from a project, work, or activity.
8	Irrecoverable: When actions must be implemented to compensate and reimburse communities, regions, localities and the natural environment for the negative impacts or effects generated by a project, work or activity that cannot be avoided, corrected, mitigated, or replaced	Uncertain dissipation: It is assumed that the effect generated by the impact does not dissipate within a visible period and that part of its impact remains in the environment.

Source: (Conesa Fdez, 2010), adapted by Biotrade 2023

CALCULATION OF THE IMPORTANCE INDEX

Once a value has been assigned to each impact within the parameters, the importance of the action on each environmental factor will be quantified. The importance will be represented according to the following formulation:

I = +/- [TA+PM+PR+PT+2LE+RV+RE+3IN+SI+AC]

As a result of this process, an importance matrix will be obtained with negative impact values ranging from -13 to -56. Once the importance values for each negative impact are obtained, they will be classified according to the following ranges (Table 49.)

Table 49. Classification and Ranges of Impacts of a Negative Nature

IMPACTS OF A NEGATIVE NATURE			
IRRELEVANT	-13	A	-25
MODERATE	-26	A	-50
SEVERE	-51	A	-75
CRITICAL	-76	A	-100

Source: (Conesa Fdez, 2010), adapted by (Biotrade, 2023).

Positive impacts will be classified in ranges called considerable, relevant and very relevant, and in turn will be highlighted in the importance value matrix, the ranges are shown in Table 50..

Table 50. Classification and Ranges of Impacts of a Positive Nature

IMPACTS POSITIVE NATURE			
CONSIDERABLES	13	A	30
RELEVANT	31	A	47
HIGHLY RELEVANT	48	A	100

Source: (Conesa Fdez, 2010), adapted by (Biotrade, 2023).

IDENTIFICATION OF ACTIVITIES GENERATING SOURCES OF IMPACTS

Based on the characterization of the biotic environments, the most relevant impact-generating activities were identified in the Area of Direct Influence and Area of Indirect Influence (with greater emphasis on the AID, considering that the direct materialization of impacts is generated in this area) and a general description of these activities in their current condition is presented.

SCENARIO WITHOUT PROJECT

Livestock

Livestock within the project is an activity that involves raising and caring for animals such as cattle, pigs, mainly for the purpose of producing meat, milk, and other related products. Benefits include the provision of animal foods essential to the human diet, the generation of employment in rural areas and the contribution to the local economy. However, its implementation requires the search and deforestation of land for grazing, which leads to the emission of greenhouse gases that contribute to climate change, and the intensive use of natural resources, which can affect the environment and sustainability. Therefore, it is essential to promote sustainable livestock practices and proper livestock management to minimize their negative impacts on the natural environment and public health.

Agriculture

Agriculture is the fundamental basis for food security within the project, employment generation and one of the main sources of income; however, it can also lead to negative impacts, such as environmental degradation, pollution, and loss of biodiversity.

Artisanal mining

Artisanal mining within the project area is mainly carried out in the community of Urada and is an important source of income for the community. For gold extraction, artisanal tools such as sieves, and water pumps are used to wash the soil.

Timber Extraction

Timber extraction is an activity that involves selective logging of mature trees used for construction and furniture; in the project area there are 4 logging resolutions detailed below (see Table 21.)

Settlement area

The project area is made up of 3 community councils with the following distribution of communities:

- Community Council of the Rio Jiguamiando: It is made up of 13 communities: Santa fe, Nueva Esperanza, Bracito, Caño Seco, Centro Jigua, Vergel, Bella flor, Pueblo Nuevo, Laguna, Hobo, Puerto Lleras, Las Menas y Laguna
- Community Council of La Grande: It is comprised of a community.
- Community Council of Turriquitado: It is made up of a community of 10 families.

SCENARIO WITH PROJECT

To define the activities of the project scenario, review chapter 2.3, where the project activities are described and detailed, considering the Benefit Sharing System proposed by the community.

IDENTIFICATION AND EVALUATION OF ENVIRONMENTAL IMPACTS

Based on the recognized activities, the environmental impacts subject to the evaluation process in the scenario with project for ecosystems and biodiversity are identified.

Table 51. Identification of impacts

BIOTIC	**Flora**	Alteration in the structure and function of plant communities
		Alteration in the composition of plant communities.
		Alteration in the abundance of the plant communities.
		Modification of vegetation cover and/or green areas
	Biodiversity	Alteration of wildlife populations and communities
		Modification of the habitat of wildlife species
		Displacement of wildlife species
	Ecosystems	Alteration in the Main Ecological Structure

9 Socio-economic aspects

9.1 Main settlements of the project

The REDD+ JIGRANTU project links three Community Councils of Afro-descendant communities: Jiguamiando, La Grande and Turriquitado, with recognition and titling of collective territories as described in the Table 52..

Table 52. Titles of collective territories of the Community Councils of the project

Collective Territory	Degree Resolution	Date	Titled Area
Community Council of the Rio Jiguamiando	02801	22/11/2000	54,973 ha 8,368 m2
Community Council of La Grande	02806	22/11/2000	13,455 ha 5,255 m2
Turriquitado Community Council	02799	22/11/2000	9,406 ha 1,760 m2

Source: Biotrade S.A.S with information on the respective resolutions.

The development of this chapter was carried out based on the methodology of 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 (BCR, 2023)[131].The Community Council of La Grande is located entirely in the municipality of Carmen del Darien, while the Rio Jiguamiando Community Council is related to other municipalities, but in low proportion with respect to its area with the municipality of Carmen del Darien. In this way, the municipality of Carmen del Darien has the greatest importance in the socioeconomic characterization due to its territorial influence in the project, since almost 85% of the three (3) Community Councils are linked to it, leaving 15% of the project territory to the municipality of Riosucio (Table 53.).

The municipality of El Carmen del Darien, located in the northwestern region of the Department of Choco, enclave of the Bajo Atrato of Choco. With an approximate distance of 369 km to the south, it connects with the capital of the department, Quibdo, and in its territorial limits it meets municipalities of the department of Antioquia. The territorial

[131] no-net-harm.pdf

extension of El Carmen del Darien covers around 370,000 hectares, which is crossed longitudinally by the Atrato River, whose course flows from south to north.

Table 53. Percentage distribution of municipalities in the project

Municipality	Community Council	Area (ha)	%
Carmen del Darien	Community Council La Grande	13,252.14	17.91%
	Community Council of the Rio Jiguamiando	41,131.32	55.57%
	Community Council Turriquitado	9,255.80	12.51%
Carmen del Darien in the project area		**63,639.26**	**85.98%**
Riosucio	Community Council of the Rio Jiguamiando	10,373.01	14.02%
Riosucio in the project area		**10,373.01**	**14.02%**
Total project area		**74,012.27**	**100%**

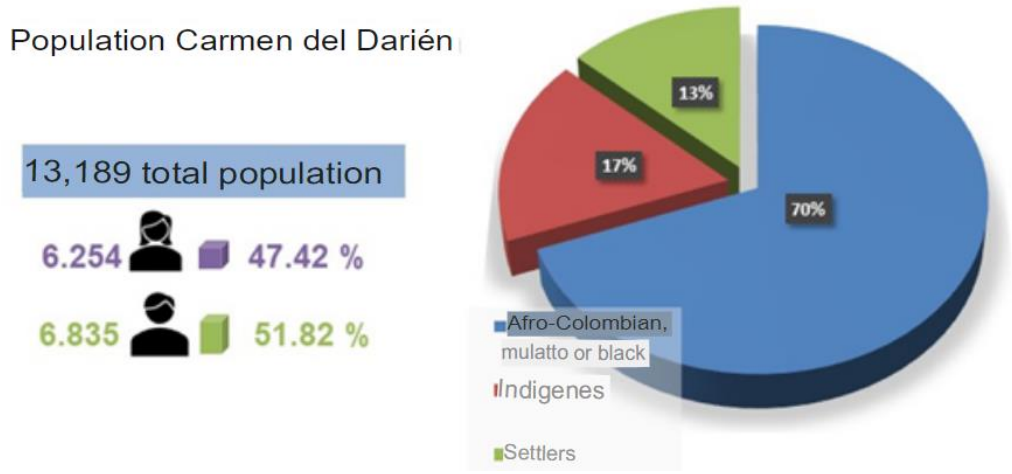
Source: Biotrade S.A.S, based on information in the 2020-2023 Development Plan[6]

9.2 Demographics and population

9.2.1 Population information for the municipality of Carmen del Darien

According to the information reported by DANE in the 2018 census, the municipality of Carmen del Darien has a population of 13,189 inhabitants, of which 6,935 (52.58%) are men and 6,254 women (47.42%). This population is mainly located in rural areas, only 14.13% (1,864 people) are in urban areas. Its people are characterized by being mostly Afro-Colombian, mulatto or black (9,152 people), there is also an indigenous population (2,279 people) and settlers from the departments of Cordoba and Antioquia (1,758 people)[6] (Figure 42.).

Figure 42. Carmen del Darien Demographic Data



Source: Biotrade S.A.S *with information from the Mayor's Office of Carmen del Darien[6].*

9.2.2 Demographics of the project's Community Councils

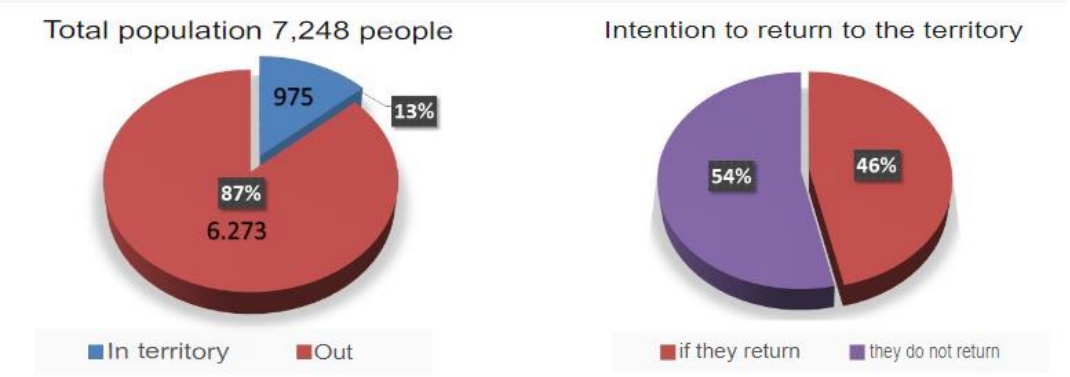
In relation to the demographic information concerning the scope of the REDD+ JIGRANTU project, the analysis was carried out through the census data provided by each of the three Community Councils involved. These analyses are adjusted to their characteristics, considering aspects such as the distribution of the population in various communities and the presence of inhabitants both inside and outside the territory.

The most complex demographic characterization corresponds to the territory of Jiguamiando, mainly due to its high concentration of displaced inhabitants compared to the other two Community Councils involved in the REDD+ project. In addition, it presents an additional challenge because the available census data comes from an exercise that was conducted more than a decade ago, covering the period between June 2011 and April 2012

9.2.2.1 Demographic characteristics of the Jiguamiando River Community Council

Taking the case of the Jiguamiando River Community Council, it has the largest population of the project, corresponding to 7,248 people. However, only 975, or about 13 per cent, of the people are within the territory of the Council, while 6,273, or about 87 per cent of the people, are outside, living elsewhere (Figure 43.).

Figure 43. General population of the Jiguamiando River Community Council

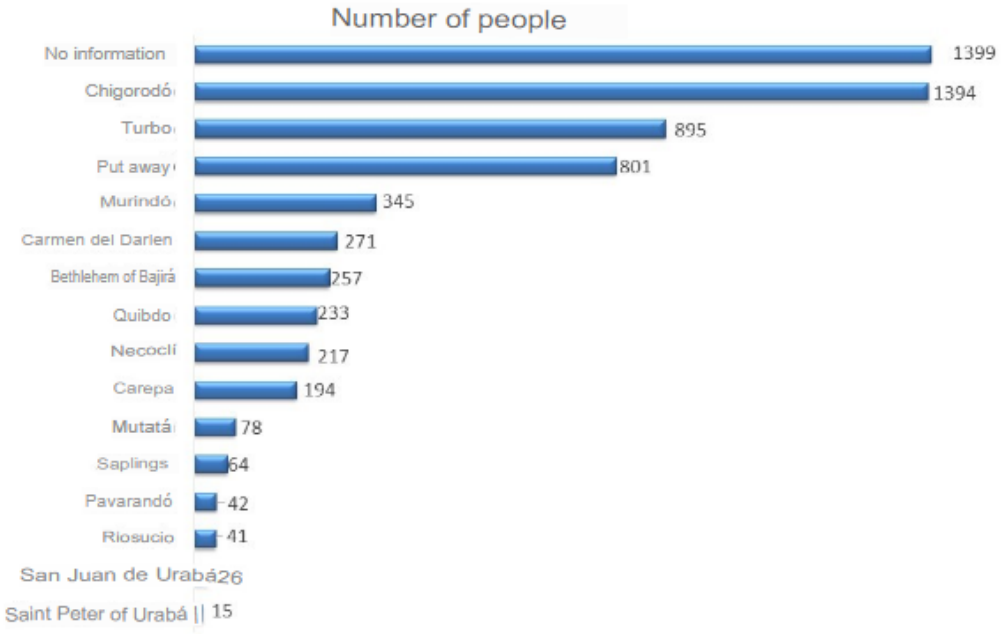


Source: Biotrade S.A.S with Jiguamiando census information[132]

[132] The census information of the project is presented in: 16. FORMULATION EVIDENCE\JIGRANTU Censuses

The population outside the territory of Jiguamiando is mainly found in Chigorodo, where 1,394 people live in the community, followed by Turbo with 895 people and Apartado with 801 people. Other places with a significant number of people correspond to Murindo with 345, Carmen de Darien with 271, Belen de Bajira with 257, Quibdo with 233 and Necocli with 217. On the other hand, in Carepa 194 people. The municipalities of Mutata with 78, Arboletes with 64, Pavarando with 42, Riosucio with 41, San Juan de Urada with 26 and San Pedro de Urada with 15 had the lowest number of people. Without information on the place of residence, 1399 people are presented (Figure 44.).

Figure 44. Cities and municipalities where the displaced population of Jiguamiando is located.



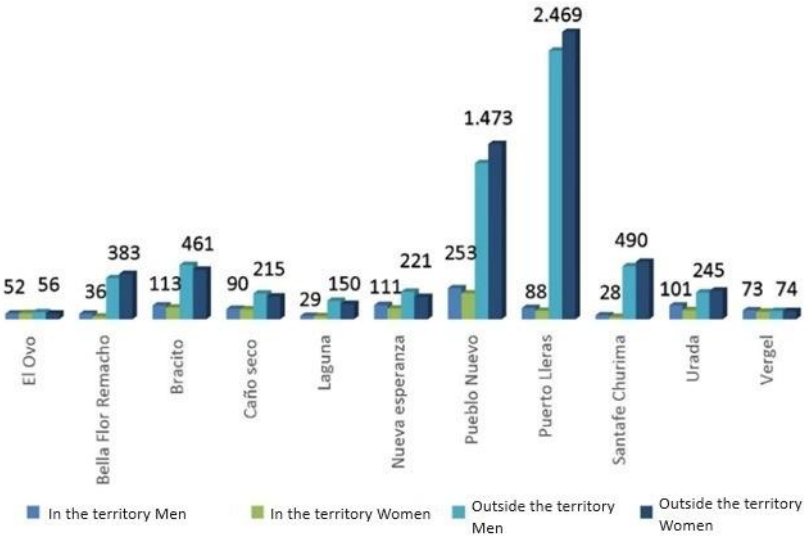
Source: Biotrade S.A.S with Jiguamiando census information

Although the figures are not up to date, the reference scenario shows the challenge involved in the return of people who show interest in returning to inhabit their territory, which corresponds to 46% of the population that is abroad, that is, approximately 2,885 people. A situation that has been considered in the study of restitution of rights[133] as an unprecedented challenge in the country due to the analytical, logistical, administrative and community complexity that the return of these people and their families represents.

[133] Report on the socio-economic characterization of the collective territory of Jiguamiando

The Community Council of the Rio Jiguamiando has the particularity of having its population distributed in eleven (11) communities: El Obo, Bella Flor Remacho, Bracito, Caño Seco, Laguna, Nueva Esperanza, Pueblo Nuevo, Puerto Lleras, Santafe de Churima, Urada and Vergel. These communities also have a population that inhabits the territory and another that is reported to have residency abroad but is part of the community. (see Figure 44.). Regarding the population in the territory, the community with the largest number of inhabitants is Pueblo Nuevo with 253 people and 1,473 people outside, but if they return to inhabit their communities, the largest amount of population corresponds to Puerto Lleras with 2,557 people (2,469 who live outside plus the 88 who are inside the community) (Figure 45.).

Figure 45. Population inside and outside the Jiguamiando River Community Council by communities.



Source: Biotrade S.A.S with Jiguamiando census information

Another relevant aspect in the analysis of census information is the distribution by gender, age groups and ethnicity.

The population of Jiguamiando exhibits a balance between men and women. Within the Council, this proportion translates into 55% men (540 people) and 45% women (434 people). On the other hand, among those who reside outside the territory, the ratio is established at 49% men (3,050 people) and 51% women (3,187 people).

About information by age group, the analysis was carried out from the date of birth of the persons registered in the census data. This update allows us to see the age data of the population to date but limits the information of minors between 0 and 11 years old, because it corresponds to children born after 2012 and were left out of the census study.

With the information updated by age groups of the population, similarity is observed both between the inhabitants of the Community Council and those who reside outside it. There is a significant presence of the adult population, specifically in the 28 to 59 age group. In second place is the youth population aged 18 to 27. Within the territory, the third place is occupied by adults over 60 years of age, while outside the Council, this position is occupied by adolescents between 12 and 17 years of age.

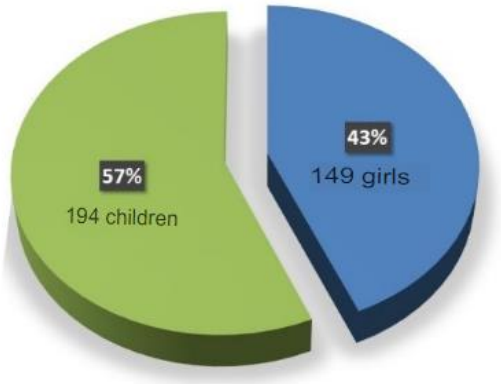
It should be noted that the smallest age group is made up of adolescents within the territory, and older adults in the population residing outside the Council (Figure 46.).

Figure 46. Age groups population Jiguamiando

Source: Biotrade S.A.S with Jiguamiando census information

To have accurate information on the distribution of age groups in Jiguamiando, it would be necessary to carry out a new census, however, to broaden the panorama of the child population, the 2023 enrollment data at the educational headquarters of the Rio Jiguamiando Community Council were reviewed (Figure 47.).

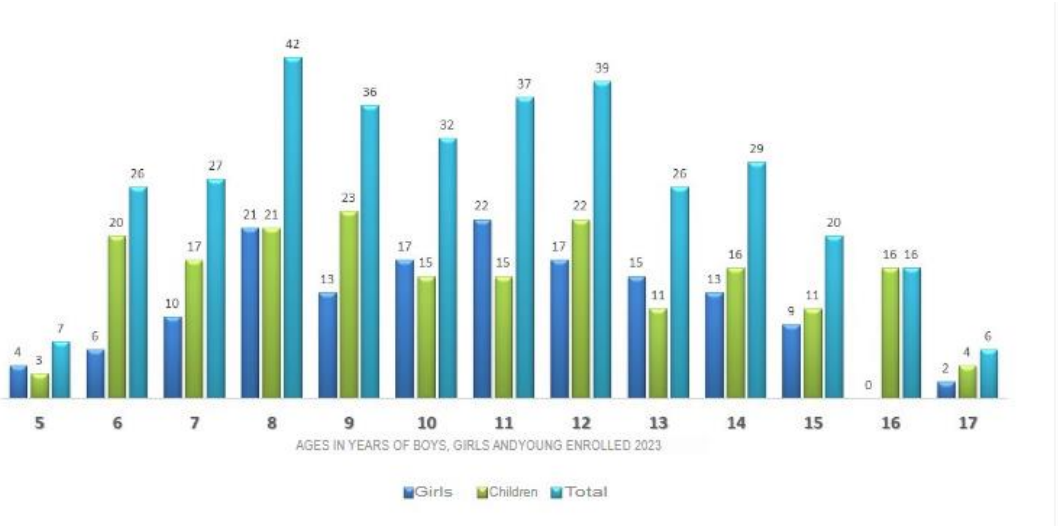
Figure 47. Percentage distribution of children enrolled in Jiguamiando.



Source: Biotrade S.A.S with Jiguamiando census information

A total of 343 children and young people enrolled in grades 0 to 9 have been identified in the 11 educational centers located in the territory of Jiguamiando, aged between 5 and 17 years. Most of these students are boys (male), representing 57% of the total (Figure 48.).

Figure 48. Distribution by age and gender of enrollees (2023) in Jiguamiando



Source: Biotrade S.A.S with Jiguamiando census information

Boys and girls in the age range of 8 to 12 years are particularly noteworthy, as they make up the largest group: 42 students are 8 years old, 39 are 12 years old, 37 are 11 years old, 36 are 9 years old and 32 are 10 years old. In addition, there are 29 14-year-olds, 27 7-year-olds, and 26 in each of the 13- and 6-year-old groups. In the 15-year-old age group, there are 20 students. On the other hand, the enrolment of 16-year-olds is made up of only 16 males. To a lesser extent, we find 5-year-old boys and girls, with a total of 7, and 17-year-olds, with only 6 students (see Figure 48.).

The majority of the population of Jiguamiando is black, 62% or 4,463 people belong to this ethnic group, however, there is a significant percentage of mestizos (38%) which corresponds to 2,772 people. There are only 13 indigenous people, which represents a very low percentage of the total population. (see Table 54.)

Table 54. Population distribution of Jiguamiando by Ethnicity

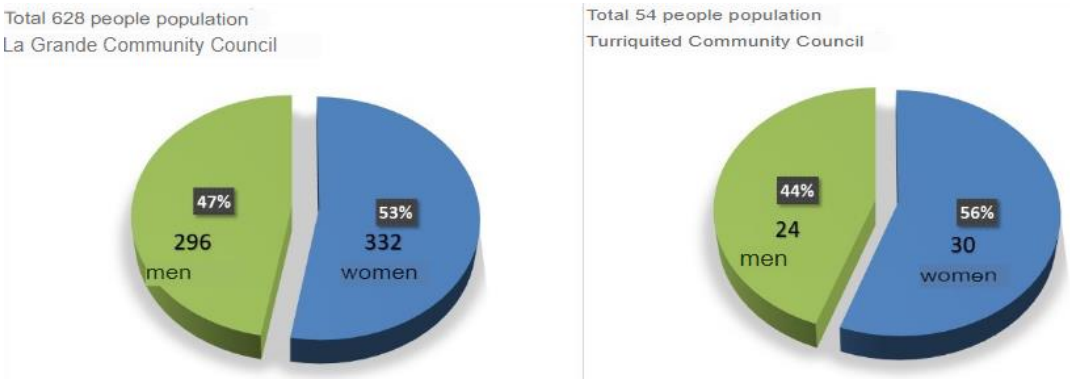
Ethnic group	People Inside	People Outside	Total
Indigenous	4	9	**13**

Mongrel	577	2,195	**2,772**
Black	394	4,069	**4,463**
Grand Total	**975**	**6,273**	**7,248**

Source: Biotrade S.A.S with Jiguamiando census information

On the other hand, the other two Community Councils, La Grande and Turriquitado, are each composed of a single community. The members of each of these councils belong to the Afro-Colombian ethnic group, although their populations vary markedly in size. While in the Community Council of Black Communities of La Grande the population rises to 628 individuals, in the Community Council of Turriquitado there is a figure of only 54 people. Gender distribution within these Councils is relatively equitable. (see Figure 49.)

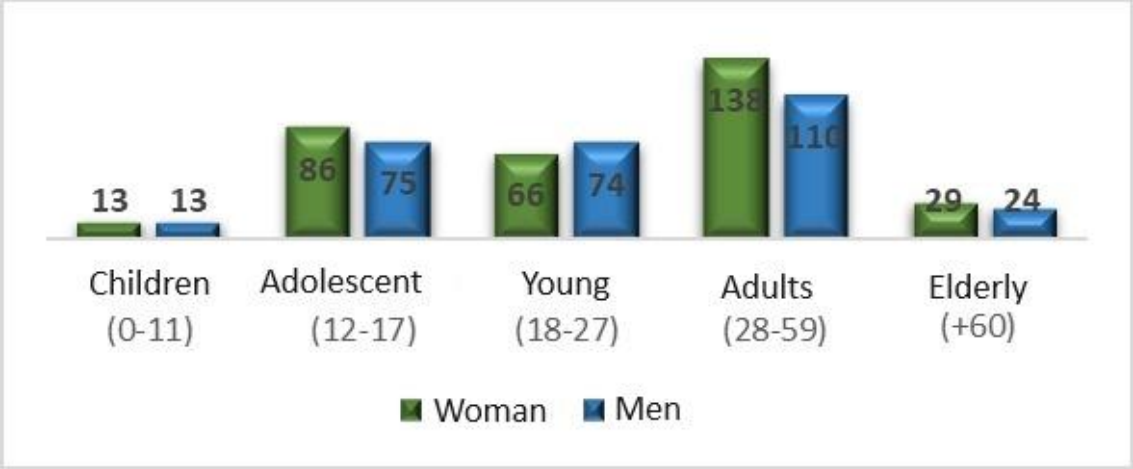
Figure 49. Population in the Councils of La Grande and Turriquitado



Source: Biotrade S.A.S with census information from the Councils

In La Grande, the population is mostly made up of adults in the age range of 28 to 59 years, with 138 women and 110 men. The next demographic group is teenagers, with 88 young women and 75 young men in the 12-17 age group. Subsequently, there are young people between 18 and 27 years old, made up of 66 women and 74 men. In fourth place are people over 60 years of age, with 29 older women and 24 older men. Finally, there are 26 infants in the range of 0 to 11 years old, equally distributed between girls and boys. (see Figure 50.)

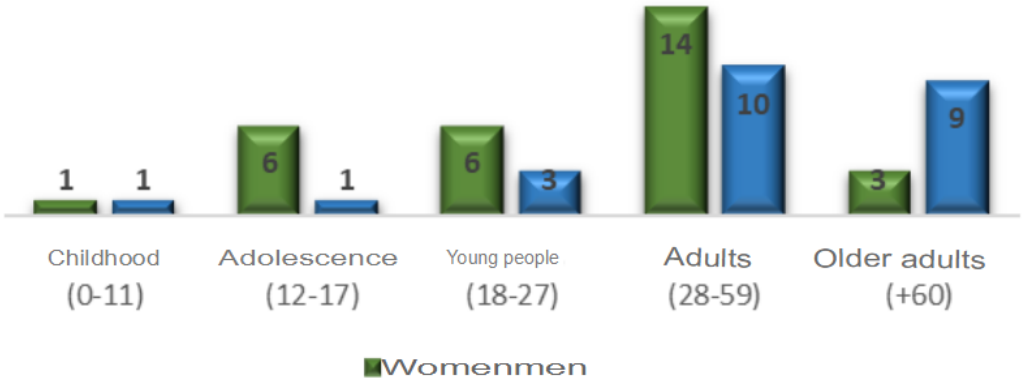
Figure 50. Population of the Community Council of La Grande by age group



Source: Biotrade S.A.S *with census information from the Councils*

The population of the Community Council of Turriquitado is characterized by its small size. Within this community, made up of around 30 families, only 10 have a permanent presence in the territory. In terms of population distribution, the predominant group, as in the other Councils, corresponds to adults between 28 and 59 years old, with thirty-four (34) people. The next is the presence of people over 60 years of age, which corresponds to twelve (12) older adults. In addition, nine (9) young people between 18 and 27 years old, seven (7) adolescents between the ages of 12 and 17 years old, as well as two (2) children in the range of 0 to 11 years old, one of each gender (see Figure 51.).

Figure 51. Population of Turriquitado Community Council



Source: Biotrade S.A.S with census information from the Councils

9.3 History of the settlement of the territory

9.3.1 History of the municipality of Carmen del Darien

El Carmen del Darien went from being a township, called Curbarado, belonging to the municipality of Riosucio, to being elevated to the category of municipality in the year 2000. This was the year in which political-administrative transformations took place in the territory of Bajo Atrato, with the recognition and issuance of several titles to collective territories of black communities in the region, and additionally, the division of the Municipality of Riosucio into three units, one of which was that of the Municipality of Carmen del Darien, by means of Ordinance No. 018 of 22 September 2000. the other is the "Municipality of Belen de Bajira" and the third is the area that continues to be circumscribed to the head of the old Riosucio[134].

The village of Curbarado, today a territory of the municipality of Carmen del Darien, was officially founded in mid-1913, but its history dates back to pre-Columbian times with human settlements in the area that served as a route for the Spanish conquistadors who traveled along the Atrato River to Vigia de Curbarado[6].

During the Spanish colony, the Curbarado River, known as the Muchilero River by the Embera Indians, was crossed by traffickers and adventurers in search of communication with Riosucio. Among the first settlers were figures such as Don Basiliso Caicedo and his wife Doña Brigida Murillo, considered founders, along with other individuals such as Ceferino Mena, Primitivo Mena, Simon Torres, Damian Moya, Francisca Caicedo, Sencion Machado, Jose Maria Murillo, and Rufina Cuesta.

9.3.2 History of the territory of the Community Council of the Rio Jiguamiando

This Community Council is made up of thirteen (13) communities. Its settlement process is characterized by a series of distinct stages. In the nineteenth century, between the middle and the end, the first settlers arrived in places such as the current Puerto Lleras and Caño Seco, whose inhabitants came mainly from areas near the Atrato River. In the first half of the 20th century, a new wave of settlement occurred when Justo Dennis, originally from France, led the settlement of the first settlers in what would later be known as Pueblo Nuevo[133].

[134] PEC La Grande

Between the 1960s and 1980s, the first communities were consolidated in Urada, El Vergel, Bracito and Bella Flor Remacho. The decade of the 80's marked a significant period with the settlement of towns such as Santa Fe Churima, Nueva Esperanza, El Ovo and Laguna[133].

It is important to note the difference between the first settlements and the founding of each village as a defined community, which was often marked by the creation of a school. For example, Pueblo Nuevo was formalized as a community in 1985 when two communities were officially united[133].

These different periods of settlement were influenced by different interests. In the beginning, the villagers were attracted to the Tagua, a palm used to make plates and vessels. As the 20th century progressed, the territory became a refuge during conflicts between liberals and conservatives. Subsequently, in the 1960s, Urada became a focus of interest for mining. Migration from Caribbean departments, such as Cordoba and Sucre, also contributed to the ethnic and cultural configuration of the populations, most of whom are mestizos today[133].

9.3.3 History of the territory of the Community Council of La Grande

This Community Council is made up of a single community and the story described in this section was narrated in the workshops of the Special Characterization Plan process[134]. However, it should be noted that the settlement of these territories, as recognized in the titling of the collective territory, corresponds to the legacy of the occupation of territories in search of refuge by the African population that was enslaved at the beginning of the eighteenth century.

In 1907 Jose Isabel Blandon, Manuel Jose Blandon, Isidro Cuesta, Damian Cuesta, Francisco Romaña and Jose Tomas Pedroza, founded the community of La Grande, inhabiting small rancherias, and as they were grouped into families they established the settlement. It should be noted that Mr. Jose Tomas Pedroza is credited with the creation of the collection center in the lower Atrato de Tagua area, a material widely used for the preparation of dishes and vessels[134].

In principle, the Community was located in a mostly swampy territory, which is why it adopted its name in derivation from the Cienega which they call La Grande or La As Grande. However, its inhabitants say that due to a great earthquake that occurred in 1992, the community had to be relocated a few meters from its original position[134].

9.3.4 History of the territory of the Community Council of Turriquitado

The community of Turriquitado was founded in 1930 by Calixto Rodriguez and Evaristo Palacios Mena, located upstream near the mouth of the Turriquitado channel, however,

due to the earthquake of 1992 it was moved to the place where it is currently located. The first settlers were the Rodriguez, Palacios, and Mena families[134].

This Council is made up of a single community and is currently inhabited by only ten (10) families out of a total of thirty (30). In other words, two-thirds of the community is uprooted from its territory. The causes of displacement are attributed to different waves of violence, damage from the 1992 earthquake and floods. The lack of opportunities to generate economic resources has made it difficult for these families to return[134].

The community of Turriquitado has fraternal relations with the other communities with which it borders, especially with the communities of Murindo, Opogado, Vigia de Curvarado and Bella Luz.

9.4 Land use and economic activities.

9.4.1 Aspects of the economic and productive development of Carmen del Darien

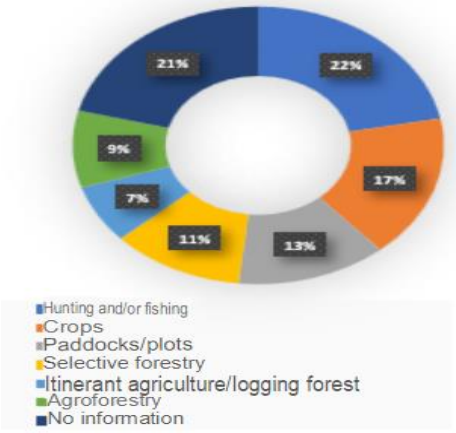
The economic use of land in the municipality of Carmen del Darien is oriented to six types of coverage, considering the distribution of the area destined to the activity with respect to the total territory of the municipality.

The main use corresponds to hunting and fishing for subsistence, covering 21.88% of the area. It is followed by the significant presence of permanent or semi-permanent crops, which represent 16.68%. With a similar percentage weight, the mosaics of pastures and transitional crops in plots are presented, with 13.13%, together with the selective use of woods of high commercial value, with 11.59%. Agroforestry systems are at a lower rate with 8.96%. Finally, transitional crops, shifting cultivation and logging in forested areas complete the picture with 6.79% (Table 55.).

Table 55. Economic uses of the land in the municipality of Carmen del Darien, Choco.

Coverage/Usage	Area (ha)	%
Subsistence fishing and/or hunting	66,192.99	21.88%
Permanent and semi-permanent crops	50,448.20	16.68%
Mosaics of paddocks and transitional crops scattered on plots	39,735.84	13.13%
Selective timber harvesting of species with high commercial price; one to five species in number of 10 species per ha	35,074.10	11.59%
Agroforestry systems	27,115.66	8.96%
Transitional crops, shifting or opening cultivation or logging in forest areas	20,548.89	6.79%
No information	63,409.22	20.96%
TOTAL	**302,524.90**	**100%**

Source: Development Plan 2020-2023[6]



Fishing: Thanks to the ichthyological richness of the Atrato River, fishing is one of the main resource-generating activities in the municipality of Carmen del Darien, although it is mostly subsistence. This activity is especially concentrated in the districts of La Grande, Turriquitado, Montaño, Curbarado, Vigia de Curbarado, Puerto Lleras and in the southern part of the floodplain of the Atrato River. During the bocachico season (December to March), fishing becomes the most important productive activity for the communities, adopting a more commercial approach than a subsistence one. Markets are supplied in Riosucio, Turbo, Quibdo, San Juan and the center of the country. At this time, communities in the middle and upper areas of the tributaries migrate and establish temporary camps to take advantage of the abundance of fish in the Atrato and its tributaries. Species caught in the fishery include the bocachico (*Prochilodus magdalenae*), dentex (*Megaleroporinus muyscurum*), guacuco (*Hypostomus plecostomus*), quicharo (*Hoplias malabaricus*), and catfish or maiden (*Pseudoplatystoma fasciatum)*[6].

Currently, fishing is a sector that presents difficulties due to the impact of the different swamps located in the region, making it difficult to obtain fish; and the low prices paid to the producer, due to the lack of associativity and organization of the fishermen[6].

The implements used for the development of fishing are basically manual, among which the following stand out: cast nets, hooks, tolas, trammel nets or nets, arrows, harpoons and traps; Canoes are used as transport vehicles, and lately a few are being moved around in low-powered outboard motors[6].

Agriculture: Agriculture in the municipality is used for family self-consumption and the sale of surpluses in the municipal capitals. Although the rural territory has an agricultural vocation, several factors limit its effective development, such as the economic difficulties of the inhabitants, the instability of public order and the recurrent flooding of the Atrato River and its tributaries. These conditions prevent agriculture from being the central engine of social and economic progress for local communities. (IIAP, 2012), cited in[6].

Approximately forty-two (42) types of traditional crops are grown in the region, with bananas standing out as the most relevant, historically important in foreign trade and fundamental in the local diet. Other notable crops include maize, rice, cassava, which are managed in agroforestry systems, and mixed gardens that are integrated into local households. These orchards contain chontaduro, borojo, lemon, guava, pineapple and other fruit trees[6].

The family production units, which consist of small plots and farms of a few hectares, grow a variety of products such as corn, rice, cocoa, plantain, cassava, achin, sugarcane

and various fruit trees, including papaya, guava, lulo, soursop, borojo, avocado, mango, lemon, caimito and passion fruit, along with wild species[6].

Production methods involve local techniques such as zocola, cutting, grave, pike and repica, cleaning, hollowing, sowing, reseeding, birding, weeding, and harvesting. Post-harvest management is limited, with low-level sorting, traditional packaging, and a lack of proper storage or pest and rodent measures. These practices indicate poor post-harvest management in production[6].

Livestock activity: According to the National Livestock Census carried out by the Colombian Agricultural Institute in 2016, the municipality of Carmen del Darien has 204 cattle farms with 13,907 head of cattle, 2,236 poultry in 75 farms, 24 buffaloes in 2 farms, 491 horses, 3 sheep and 253 pigs in 53 farms[6].

Regarding livestock, the municipality is experiencing a resurgence of activity, especially towards the basins of the Curbarado, Jiguamiando and Domingodo rivers. Almost 60% of the production is marketed at considerably low prices for producers, due to the lack of organization in the market, and 40% is destined for self-consumption. To maximize the economic results from livestock farming, it is crucial to make a considerable effort in terms of management and application of agricultural technology, as well as to provide technical assistance. In this way, you will be able to obtain better results and generate more solid income from this activity[6].

Forest economics. The Choco region is characterized by the potential in the development of a forest economy of importance for the country, historically the timber forest resource of the Choco jungles has been exploited with capital investments that have promoted industrialized exploitation companies, however, the way in which the activity has been developed has not generated an improvement in the well-being and quality of life of the forests and their people. that could be achieved with Sustainable Forest Management (SFM)[135].

The local population is linked to timber exploitation because it has experience, traditional or inherited cultural knowledge and seeks to generate an economic resource, but as in any primary process, the effort and costs in the activities of felling, cutting, transport and local trade, is made in a low-benefit relationship in these first links of the chain. In other

[135] Defined in 2020 by the MADS – FAO, as "*The process of planning and implementing practices for the management and use of forests and other wooded lands to meet specific environmental, economic, social, and cultural objectives*" quoted in document (ONFA Andina, MADS, 2022)

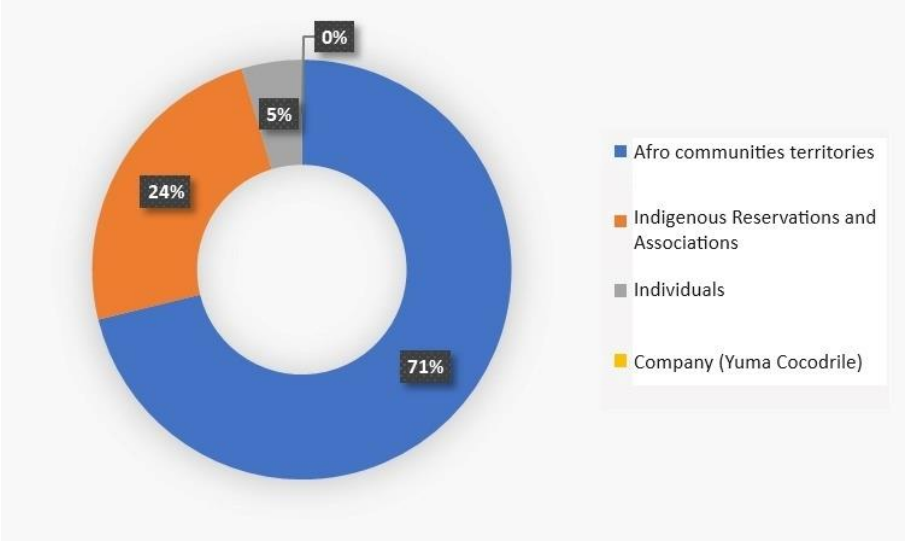
words, the economic returns of forest harvesting are generated in the stages of major commercialization and transformation, where the local community does not participate.

The environmental sector in Colombia, headed by the Ministry of Environment and Sustainable Development, has made efforts, especially in the last 10 years, to promote the balance between forest conservation and the economic development of territories, through the use of forest resources (timber and non-timber). The normative arrangements and development of public policy in favor of Sustainable Forest Management are the result of extensive technical and legal studies, with the participation of multiple actors and international cooperation.

In the period from 2018 to 2022, Codechoco issued 123 persistent logging permits, of which 119 were granted to collective territories of black communities, who also received the highest percentage of timber mobility permits, approximately 71%, corresponding to 53,214 permits. The next level of safe-conducts was for indigenous communities with approximately 24%, which corresponds to 18,088 authorizations. There was also a total of 3,463 laissez-passer passes granted to natural persons and only 3 laissez-passer granted to Yuma Crocodile Products SAS, which manufactures alligator leather goods[136] (Figure 52.).

Figure 52. Safe-conducts granted by CODECHOCO in 2018-2023

[136] With safe conduct to traffic: the timber business that devours the jungles of Choco



Source: SUNL 2018-2022 Codechoco[136].

A study carried out in November 2022, by an independent media, "*With safe conduct to traffic: the timber business that devours the forests of Choco"* shows an unfortunate situation of what is happening in the dynamics of persistent forest exploitation permits in the territory, where the win-lose business strategy is maintained. The investor of capital for the use of timber wins, at the expense of the communities that put the territory and their labor to obtain a small percentage.

As evidenced by the statistics, permits and authorizations are granted for territories of collectively managed ethnic communities. However, these communities often lack the capital to cover the costs associated with permits: studies of management plans, forest inventories, and payment of the Compensatory Fee for Timber Forest Harvesting (TCAFM). On the other hand, it is the owners of sawmills in the region or in nearby departments who have the financial capacity to assume the expenses of the permits, which fluctuate between 60 and 100 million pesos.

In the investigation carried out by Cuestion Publica, reference is made to the existence of laundering networks associated with timber trafficking. These networks involve individuals who call themselves "entrepreneurs", who financially support the obtaining of licenses. These same individuals submit fictitious timber inventories and then illegally transport the timber. These illicit operations often have the collaboration of police and CODECHOCO officials[136].

Realigning the path of forest harvesting towards the balance in conservation and sustainable development is almost a titanic task, since the institutional adjustments proposed for the change of approach are very recent and present innumerable

challenges in their implementation, especially associated with promoting the culture of formality, encouraging the market of wood produced under SFM and controlling the unequivocal behaviors in the forest chain associated with fraud and fraud. corruption.

9.4.2 Aspects of the Economy and Productive Activities in the Community Councils of the Project

9.4.2.1 Forest harvesting

Considering the relevance of forests in national development, the Colombian Government has been leading the management aimed at the conservation, use and sustainable management of these ecosystems, simultaneously promoting measures to control deforestation and forest degradation. Since 2009, in line with the provisions of the United Nations Framework Convention on Climate Change (UNFCCC), the development of the National Strategy for Reducing Emissions from Deforestation and Degradation (REDD+) has been initiated, with the support of various entities and international cooperation programs, such as the Gordon & Betty Moore Foundation, GIZ, FCPF, and the UN-REDD Program of the United Nations, among others (MADS, 2018)[33].

As a result of this participatory preparation process, the Integrated Strategy for Deforestation Control and Forest Management called "Forests Territories of Life" (EICDGB) has been developed. This strategy, in accordance with UNFCCC guidelines, has been established as the country's National REDD+ Strategy. Through this public policy framework, the necessary actions have been delineated to decrease deforestation, forest degradation and associated greenhouse gas emissions, adopting an integral perspective of the forest and its contribution to national development (MADS, 2018) [33].

The objective of the Strategy (EICDGB) is *"to reduce deforestation and forest degradation by promoting and establishing forest management in the Colombian territory, under a comprehensive rural development approach, which contributes to the good living of local communities, contributes to local development and increases ecosystem resilience, promoting climate change adaptation and mitigation".*

The specific objectives of this strategy are aligned with the activities of the REDD+ JIGRANTU Project as shown in Table 49 and include activities related to Sustainable Forest Management with the implementation of Sustainable Productive Projects PPS, promoting a forest economy based on forest goods and services for integrated rural development and the closing of the agricultural frontier (Objective 2).

Table 56. Alignment of the specific objectives of the EICDGB and the activities of the REDD+ JIGRANTU Project.

Specific objective of the EICDGB	REDD+ JIGRANTU Project Activities
1. Consolidate the territorial governance of ethnic groups, peasant, and rural communities, and strengthen citizen awareness through the management of information and knowledge to consolidate a culture of co-responsibility for the care and sustainable use of forests.	strategic line A, B and C, specifically in the following actions: **Aa1.** Formulation of the Ethno-Development Plan **Ab4.** Design and implementation of a participation, empowerment and governance strategy for women, youth, elderly, disabled and other minority groups. **Ac5.** Formulation and implementation of a strategy for the rescue and multiplication of ancestral knowledge. **Ac6.** Strengthening of cultural events with the participation of different generations. **Ad7.** Facilities for recreation and sports, health, education and culture. **Be8.** Strengthening of REDD technical capacities with emphasis on increasing socio-ecosystemic resilience for climate change adaptation. **Be9.** Capacity building for REDD project administration **Be10.** Capacity building for project formulation and implementation. **Bf15.** Capacity building in governance and culture actions. **Ci29.** Diagnosis of the environmental and social offer for the implementation of Sustainable Productive Projects (PPS).
2. Promote a forest economy based on forest goods and services for integrated rural development and the closing of the agricultural frontier.	Strategic line C **Ch24**. Infrastructure for sustainable productive alternatives **Ci29.** Diagnosis of the environmental and social offer for the implementation of Sustainable Productive Projects PPS. **Ci30.** Technical and accounting formulation of the PPS to be executed. **Ci31.** Implementation of PPS with emphasis on climate change adaptation. **Ci32.** Strengthening for the commercialization of PPS products, and development of its own brand. **Ci33.** Strengthening of productive associations of women and men.
3. Decrease degradation and deforestation through cross-sectoral management of environmental and territorial planning policies and regulations.	strategic line A, B and C, specifically in the following actions: **Aa1.** Formulation of the Ethno-Development Plan **Aa2.** Construction of the environmental management plan of the community councils. **Bf11.** Capacity building in sustainable productive actions led by women. **Bf12.** Capacity building in sustainable productive actions with emphasis on increasing socio-ecosystemic resilience. **Bf13.** Capacity building in ecosystem restoration and conservation actions. **Bf14.** Capacity building in social infrastructure **Ch19.** Home improvement **Ch20.** Improvement of educational infrastructure **Ch21.** Basic Sanitation Infrastructure **Ch22.** Health infrastructure **Ch23.** Communications infrastructure **Ch25.** Adequacy of waterways

Specific objective of the EICDGB	REDD+ JIGRANTU Project Activities
	Ch26. Construction and maintenance of bridges and roads **Ch27.** Construction of recreational scenarios (such as parks, etc.).
Generate reliable, consistent, timely and quality information on the supply, status, pressure and dynamics of forest resources to support decision-making processes at the national, regional and local levels, enabling the implementation of control and monitoring actions by the environmental authorities for an efficient administration of the country's forest resources, and to monitor the application of social and environmental safeguards.	strategic line B, C and D, specifically in the following actions: **Be8.** Strengthening of REDD technical capacities with emphasis on increasing socio-ecosystemic resilience for climate change adaptation. **Be9.** Capacity building for REDD project administration **Be10.** Capacity building for project formulation and implementation. **Bf16.** Capacity Building in Community Monitoring **Bg17.** Formulation and implementation of the plan for undergraduate and graduate scholarships, courses or training programs. **Bg18.** Formulation of a strategy for special quotas for women in the scholarship plan. **Ci29.** Diagnosis of the environmental and social offer for the implementation of Sustainable Productive Projects PPS. **Dj34.** Diagnosis of the state of ecosystems and ecosystem services and vulnerability to the effects of climate change. **Dj35.** Design and implementation of the ecosystem protection and restoration strategy. **Dj36.** Strengthening the conservation and monitoring of the manatee (*Trichechus manatus*) and the slider turtle (*Trachemys callirostris*). **Dj37.** Design and implementation of a community monitoring program for the conservation and enhancement of ecosystem resilience. **Dk38.** Oversight and monitoring of the implementation of REDD actions. **Dl39.** PQRDS System **Dm40.** Definition of strategies for monitoring and evaluation of environmental and social safeguards. **Dn41.** Risk management plan in accordance with Nature-based solutions. **Dn42.** Integral strategy for adaptation to climate change.
5. To make the regulatory, institutional, and financial adjustments that will provide the State with the necessary instruments for forest management and the effective reduction and control of deforestation.	strategic line A, B and D, specifically in the following actions: **Aa1.** Formulation of the Ethno-Development Plan **Aa2.** Construction of the environmental management plan of the community councils. **Bf12.** Capacity building in sustainable productive actions with emphasis on increasing socio-ecosystemic resilience. **Bf13.** Capacity building for ecosystem restoration and conservation action. **Bf15**. Capacity building, governance, and culture actions **Bf16.** Capacity building in community monitoring **Dj34.** Diagnosis of the state of ecosystems and ecosystem services and vulnerability to the effects of climate change. **Dj37.** Design and implementation of a community monitoring program for the conservation and enhancement of ecosystem resilience. **Dk38.** Oversight and monitoring of the implementation of REDD actions. **Dn41.** Risk management plan in accordance with Nature-based solutions. **Dn42.** Integral strategy for adaptation to climate change.

In the framework of the EICDGB, recognizing the importance and ecosystem services associated with forests, measures and activities related to Sustainable Forest Management and Community Forest Management of the territory are included, in which Colombia intends to strengthen the governance and management of natural forests, to improve the quality of life of the populations that inhabit and depend on these ecosystems, expanding the area of natural forests under sustainable community management Ario[137].

With the above context, it is understood that persistent forest harvesting in areas with REDD+ projects present a unique opportunity to harmonize forest conservation with sustainable development. First, the implementation of sustainable harvesting practices allows the generation of income for local communities, thus encouraging participation in the conservation of forest ecosystems. This approach not only strengthens the local economy, but also creates a closer link between communities and their natural environments, fostering a greater commitment to long-term protection[138].

In addition, persistent forest harvesting can contribute to the mitigation of deforestation by providing a viable economic alternative to indiscriminate logging (MADS, 2018)[33]. By establishing sustainable management practices (provided for in Management Plans), the natural regeneration of forests is ensured, and biodiversity is promoted, which aligns with the objectives of REDD+ projects in reducing carbon emissions and conserving biodiversity.

Persistent forest harvesting in REDD+ project areas represent a comprehensive strategy that harmonizes conservation objectives with economic development. By providing a framework that balances local income generation, deforestation mitigation and biodiversity conservation, this strategy becomes a valuable tool for moving towards a sustainable and resilient future for communities and forests.

According to Santos et al. (2018)[137] although a regulatory structure to promote forestry in natural forests has existed in Colombia since 1993, its implementation is still limited and the policy instruments have not been suitable to meet the demands of rural communities seeking to manage their own forests.

With the development of the REDD+ JIGRANTU Project, it is expected to support Sustainable Forest Management through community forestry in the territories that are

[137] Sustainable Forest Management through community forestry
[138] Community Forestry Initiatives in Colombia

part of the project, thus counteracting illegal activities, ranging from the illegal extraction of forest products to the establishment of illicit crops, illegal mining or the change of cover to uses related to the expansion of the agricultural frontier, actions that have occurred within the project area. The REDD+ JIGRANTU project activities include the design and implementation of Sustainable Production Projects with technical, economic and legal instruments, as well as capacity building, technical assistance and productive linkages that allow the communities that are part of the project to consolidate local development models based on forest goods and services.

Among the community forestry initiatives in Colombia presented by Castellanos *et al.* (2022)[138], six REDD+ initiatives stand out 6 REDD+ initiatives with activities for the use of forest products stand out, which, according to the authors, leads to more significant economic advantages for the communities involved, which contributes to their sustainability over time. These initiatives emerge as allies in the fight against deforestation by promoting appropriate practices in the use and harvesting of forest ecosystems by the participating local communities, which not only ensures the profitability of forestry activities, but also supports the ecological succession of species in the forest.

The use of the forest's timber resources is one of the characteristic activities of the black communities of the community councils in the territory, both in terms of traditional use and opportunities to generate economic income under a Sustainable Forest Management approach.

The Community Council of the Jiguamiando River, unlike Turriquitado and La Grande, has carried out persistent forest permit processes during 2019, 2020 and 2022, for the realization of Sustainable Forest Management (SFM)[139] through the preparation of technical forestry studies of inventories and management plans. In this regard, it is key to mention that this action can be framed within the concept of Community Forestry, considering that it corresponds to permits on collective lands.

The regional corporation of Choco – Codechoco, has issued in favor of the Community Council of the Rio Jiguamiando, seven (7) resolutions approving persistent exploitation permits, three (3) in 2019, two (2) in 2020 and two (2) in 2022, with Annual Cutting Units (UCA) of 400 to 500 hectares each, with an average volume in cubic meters (m3) of 11,155 in each permit, for the use of species such as: Higueron (*Ficus insipida*), Choiba

[139] Forest Management Documents in the Rio Jiguamiando Community Council

(*Dipteryx oleifera*), Guino (*Carapa guianensis*), Caracoli (*Anacardium excelsum*), Roble (*Tabebuia rosea*), Sande (*Brosimum utile*), Abarco (*Cariniana pyriformis*), Amargo (*Andira adermis*), Cativo (*Prioria copaifera*), Cedro (*Cedrela odorata*) y Balsamo (*Myroxylon balsamum*) (see Table 57.)

Table 57. Jiguamiando Persistent Logging Permits

Year	Resolution	Area to be exploited	Species	Volume granted
2019	No. 0010 of 01/02/2019	400 hectares	Caracoli (*Anacardium excelsum*) Sande *(Brosimum utile)* Guino (*Carapa guianensis)* Choiba (*Dipteryx oleifera)* Higueron *(Ficus maxima)* Roble *(Tabebuia rosea)*	11,000 m^3
2019	No. 1712 of 12/26/2019	500 hectares	Caracoli (*Anacardium excelsum*) Amargo *(Andira inermis)* Guino (*Carapa guianensis)* Cedro (*Cedrela odorata*) Choiba (*Dipteryx oleifera)* Higueron *(Ficus schippii)* Cativo *(Prioria copaifera)* Roble *(Tabebuia rosea)*	11,461 m^3
2019	No. 1713 of 12/26/2019	500 hectares	Caracoli (*Anacardium excelsum*) Amargo *(Andira inermis)* Guino (*Carapa guianensis)* Cedro (*Cedrela odorata*) Choiba (*Dipteryx oleifera)* Higueron *(Ficus schippii)* Roble *(Tabebuia rosea)*	11,074 m^3
2020	No. 1310 of 11/17/2020	500 hectares	Abarco (*Cariniana pyriformis*) Credro (*Cedrela odorata*) Caracoli (*Anacardium excelsum*) Choiba (*Dipteryx oleifera*) Higueron (*Ficus insipida*) Roble (*Tabebuia rosea*)	14,611 m^3
2020	No. 1311 of 11/17/2020	500 hectares	Abarco (*Cariniana pyriformis*) Cedro (*Cedrela odorata*) Caracoli (*Anacardium excelsum*) Choiba (*Dipteryx oleifera*) Higueron (*Ficus insipida*) Roble (*Tabebuia rosea*)	14,400 m^3
2022	No. 2296 of 12/27/2022	500 hectares	Caracoli (*Anacardium excelsum*) Sande *(Brosimum utile)* Abarco (*Cariniana pyriformis*) Credro (*Cedrela odorata*) Choiba (*Dipteryx oleifera*) Higueron (*Ficus insipida*) Balsamo (*Myroxylon balsamum*) Roble (*Tabebuia rosea*)	10,000 m^3

Year	Resolution	Area to be exploited	Species	Volume granted
2022	No. 2297 of 12/27/2022	400 hectares	Abarco (*Cariniana pyriformis*) Balsamo (*Myroxylon balsamum*) Caracoli (*Anacardium excelsum*) Credro (*Cedrela odorata*) Choiba (*Dipteryx oleifera*) Guino (*Carapa guianensis)* Higueron (*Ficus insipida*) Roble (*Tabebuia rosea*) Sande *(Brosimun utile)*	10,000 m^3

Source: Biotrade S.A.S with Codechoco resolutions on persistent forest harvesting for the Jiguamiando CC.

Regarding the safe-conducts, it is observed that the mobilization of wood on behalf of the Community Council of the Jiguamiando River between 2019 and 2022 reached a total of 11,130.69 cubic meters (m^3), which corresponds to approximately 8% of the wood mobilized in the municipality of Carmen del Darien in the same period (134,231.10 total wood mobilized per municipality) (see Table 58.).

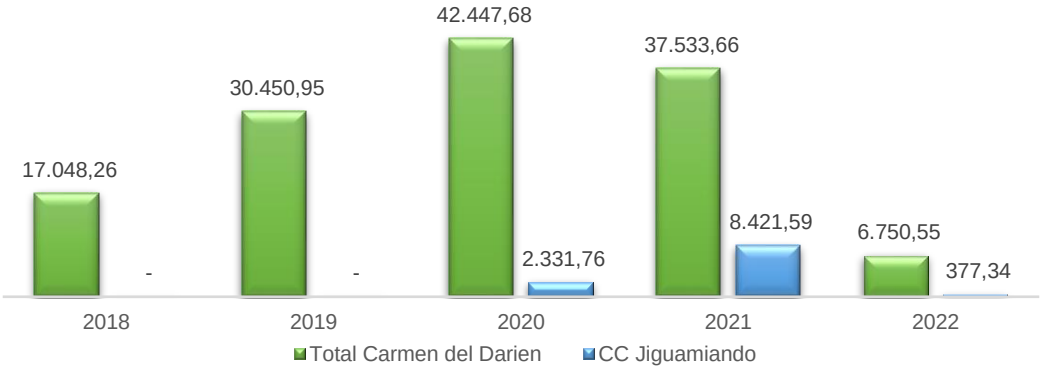
Table 58. Volume (m^3) of wood mobilized per year in the municipality of Carmen del Darien and the Community Council of the Jiguamiando River

Year	Carmen del Darien	Jiguamiando River Community Council
2018	17,048.26	-
2019	30,450.95	-
2020	42,447.68	2,331.76
2021	37,533.66	8,421.59
2022	6,750.55	377.34
Total	**134,231.10**	**11,130.69**

Source: Biotrade S.A.S with information SUNL 2018-2022 Codechoco,

According to information from the "Single National Online Safe-Conduct" (SUNL) system, in the period 2018 – 2022, in the municipality of Carmen del Darien, the trend of wood mobility was increasing between the years, the largest volume of wood mobilized in the municipality of Carmen del Darien was in 2020 with 42,447.68 m^3.

Figure 53. Volume (m^3) of wood mobilized per year in the municipality of Carmen del Darien and the Community Council of the Rio Jiguamiando.



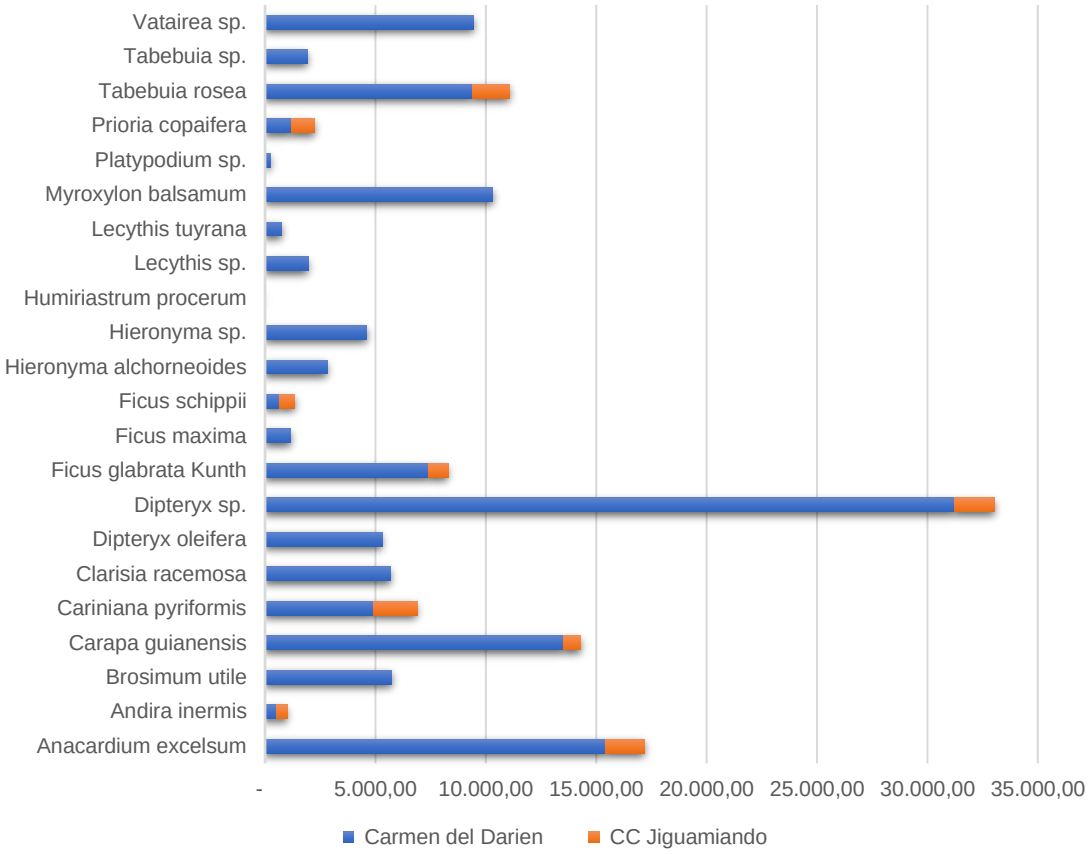
Source: Biotrade S.A.S with information SUNL 2018-2022 Codechoco,

Table 59. Volume (m^3) of wood mobilized between 2018-2022 of 21 forest species in the municipality of Carmen del Darien and the Jiguamiando River Community Council

Forest species scientific name	Carmen del Darien	CC Jiguamiando
Anacardium excelsum (Caracoli)	15,423.31	1,759.31
Andira inermis (Amargo)	504.06	504.06
Brosimum utile	5,747.95	-
Carapa guianensis (Guino)	13,521.31	766.01
Cariniana pyriformis (Abarco)	4,890.84	1,999.96
Clarisia racemosa	5,702.08	-
Dipteryx oleifera	5,299.00	-
Dipteryx sp.(Choiba)	31,223.19	1,829.93
Ficus glabrata Kunth (Higueron)	7,424.32	862.02
Ficus maxima	1,172.41	-
Ficus schippii	668.47	668.47
Hieronyma alchorneoides	2,827.42	-
Hieronyma sp.	4,589.50	-
Humiriastrum procerum	14.98	-
Lecythis sp.	1,948.57	-
Lecythis tuyrana	749.99	-
Myroxylon balsamum	10,307.56	-
Platypodium sp.	245.94	-
Prioria copaifera (Cativo)	1,203.35	1,052.44
Tabebuia rosea	9,387.40	1,688.49
Tabebuia sp.	1,917.49	-
Vatairea sp.	9,461.96	-
Total	**134,231.10**	**11,130.69**

Source: Biotrade S.A.S *with information SUNL 2018-2022 Codechoco,*

Figure 54. Volume (m^3) of wood mobilized between 2018-2022 of 21 forest species in the municipality of Carmen del Darien and the Jiguamiando River Community Council



Source: Biotrade S.A.S with information SUNL 2018-2022 Codechoco.

9.4.2.2 Fishing activity

Artisanal fishing is developed as the central axis in the generation of economic income of the Community Councils of La Grande and Turriquitado. While these territories could venture into persistent logging, they have chosen to focus on the richness of the marshes and their aquatic resources.

According to information in the field, fishermen are receiving daily income of 50,000 per day and a maximum of 200,000 in the fishing season.

The swamps of these territories present a variety of species, among them the Bocachico (*Prochilodus magdalenae*), a species of fauna of importance in the Atrato River basin

due to its endangered status[140], also evidences the presence of Yellow Mojarra (*Caquetaia Kraussii*), Quicharo (*Hoplias malabaricus*), Maiden (*Pseudoplatystoma fasciatum*), Guacuco or Corroma (*Hypostomus plecostomus*) (Figure 55.).

Figure 55. Fishermen in Cienaga La Grande

Source: Biotrade S.A.S

The Council of La Grande is a member of the ASOPESVIGRAN association, which has advanced the strengthening of fishing activity through the management and execution of projects with the purpose of improving marketing channels. They have received support from AUNAP through projects to supply equipment, elements, and supplies such as boats, safety elements, electronic scales, power plants, chillers, among others.

9.4.2.3 Agriculture

According to the information in the Special Characterization Plans[134, 141] , and from the interviews of the Participatory Rural Diagnosis (DRP) it can be stated that the productive activities before the victimizing events (mid-70's), in the Community Council of La Turriquitado and La Grande, were mainly based on traditional production systems and agroforestry systems, where products such as rice, bananas, achote, corn, cassava and achin were harvested. While, at present, they are mainly focused on agriculture, it is associated with orchards and bread crops, since the main income-generating activity is artisanal fishing.

[140] Population structure and ethology of two endangered fauna species, Bocachico and Manatee, in the middle and lower basin of the Atrato River
[141] PEC Turriquitado

On the other hand, with respect to the territory of Jiguamiando, the main productive regions correspond to the use of forestry and commercialization of wood, commercial crops of cassava and plantain, and extensive livestock[133].

By 2012, when the socioeconomic study of the Rio Jiguamiando Community Council was carried out, it was observed that cassava planting on an industrial scale covered around 10,000 hectares. This cultivation was promoted both by foreign owners and by the local population, who cultivated it on a small scale.

As for commercial banana crops, it was estimated that they could cover up to 4,000 hectares in the Community Councils of Curvarado and Jiguamiando, thanks to the financial support of companies such as Banacol and Augura. In addition, small-scale banana production by community members was recorded. In that same year, in 2012, it was estimated that extensive cattle ranching occupied approximately 6,000 hectares between the Councils of Curvarado and Jiguamiando.

In the income analysis, families outside the territory of Jiguamiando have more income than those inside, however, in both cases the average income per family is less than a monthly minimum wage.

The low incomes of the families that remain in the territory indicate that they have not had the opportunity to market the products they produce. These products include plantain, rice, and cassava, as well as, to a lesser extent, chontaduro, papaya, sugarcane, lulo, caimito, zapote, borojo, guama, lemon, guava-apple, mango, tangerine, orange, avocado, coconut, chocolate, and soursop. Before the river blockage, conflict, and displacement, these products were often successfully traded, thanks to merchants from Quibdo coming down the Atrato River to purchase the products that local workers traded. Today, this dynamic is completely different, as there are no effective marketing channels for products.

9.5 Socio-cultural information

9.5.1 Education.

Turriquitado has one school that has been abandoned, because there is not enough population of school age living in the territory.

The community of La Grande has a total of 70 students, ranging from preschool to ninth grade, with 4 teachers, who need equipment to carry out the didactic activities, they also need improvement of the facilities and desks, and these belong to the Jorge Lozano Valencia educational center.

Jiguamiando has 11 educational centers where complete primary and high school up to 10th grade are offered, young people who want to finish their studies are sponsored by their families to finish the 11th grade in cities such as Chigorodo, Apartado or others.

Name of the Educational Venue	No. Enrolled 2023
CE PUEBLO NUEVO - HEADQUARTERS	37
BELLA FLOR REMACHO VENUE	14
OVO HEADQUARTERS	20
JIGUA HEADQUARTERS	27
LA ESPERANZA HEADQUARTERS	98
LAS DELICIAS VENUE	16
LAS MENAS HEADQUARTERS	54
NUEVO DESPERTAR DE LAGUNA VENUE	28
PUERTO LLERAS HEADQUARTERS	20
URADA HEADQUARTERS	31
VERGEL HEADQUARTERS	13
Total	**358**

Source: Matriculadas Jiguamiando 2023

9.5.2 Health

The problem in the health sector is the precarious physical infrastructure, which is deficient and does not allow the provision of health services with quality, timeliness, and relevance, so it is necessary to promote the construction and provision of health centers in the community. Taking into account that when a person gets sick they have to be taken to Curbarado because it is the closest center and that at the time can provide adequate care, most people 90% are affiliated to the subsidized regime, 5% to the contributory regime, and the other 5% are without affiliation due to the different changes that have occurred in the companies providing services.

In terms of health, we consider pregnant women and breastfeeding women in the first place, showing that not even half of them in both cases received prenatal check-ups or maternal and child programs, which can lead to high infant mortality. Of the people who fell ill in the 6 months prior to the self-census, the majority visited the doctor (71) or used home remedies (69), which must be seen because 162 people in the basin do not have a health regime.

Table x. People inside and outside the territory with access to health and expectation of return. Jiguamyandó. 2012

	Persons within the territory				People outside the territory and with a desire to return				People outside the territory and with no desire to return			
Community	Regime Contributory	Regime Subsidized	Regime Special	No regime of health	Regime Contributory	Regime Subsidized	Regime Special	No regime of health	Regime Contributory	Regime Subsidized	Regime Special	No regime of health
Beautiful Flower Rivet	0	31	0	2	15	88	0	12	70	173	5	20
Santa Fe	0	21	0	0	56	169	8	17	37	149	4	15
New Hope	0	99	0	13	12	83	0	19	4	100	0	2
New Town	0	150	0	77	210	385	11	22	249	502	21	42
Puerto Lleras	0	64	0	17	504	822	5	63	288	707	20	40
Urada	1	41	0	13	55	89	0	7	15	70	0	0
Bracito	0	87	0	22	25	161	1	16	28	206	0	13
Lagoon	0	17	2	0	11	38	1	5	11	78	0	2
Vergel	1	59	0	3	8	29	0	0	4	32	0	0
Dry spout	0	78	0	0	0	72	4	8	37	88	6	14
The Obo	0	39	0	15	3	46	0	0	3	2	0	0
Total	2	686	2	162	899	1982	30	169	746	2107	56	148

Source: Socioeconomic characterization report of the collective territory of Jiguamiando. DACN 2012

9.5.3 Public services

Turriquitado and La Grande: no aqueduct, no sewerage, no public energy service. Solid waste: open waste collection and disposal days.

10 Consultation with interested parties (stakeholders)

10.1 Community consultation

The work scenario of the project begins with the selection of Biotrade S.A.S as the guarantor company of the conditions and compliance with the requirements established by the Black Communities, after a time of internal evaluation of the social and technical presentation of the formulation of REDD projects that the company carried out in person in the region. Bearing in mind the social and technical commitment of this selection, the process of formulating the project has been characterized by compliance with the principles of participation, transparency, trust, justice, and equity.

Twenty-three (23) meeting spaces and workshops have been set up to link the community of the three (3) Community Councils, as well as specific work and study with leaders for the appropriation and strengthening of the project's technical capacities. Most of the workspaces have been carried out in person in the project area or in urban capitals of the region, using audiovisual and printed material in large format with graphic content, images and simple texts that facilitate the understanding of the different REDD themes. The evidence of the creation of spaces with communities is located in. 10. CONCERTATION OF INTERESTED PARTIES/1-23 COMMUNITY MINUTES.

The company has made available the human, operational and financial resources for the development of the different workspaces and the formulation of the project.

Table 60. Relationship of meeting spaces with communities

No.	Date and place	Thematic	Participation (total persons)
1	July 13 and 14, 2022 *Escalar Room - Apartado*	Socialization about REDD projects, carbon credits and work proposal by BIOTRADE S.A.S.	8
2	October 20 and 21, 2022 *Jigua Center Community Hall*	Working space with leaders of the Community Councils of Turriquitado, La Grande and Rio Jiguamiando. Preliminary to the ASSEMBLIES.	26
3	October 22, 2022 *Jiguamiando River Community Council*	ASSEMBLY • What is the REDD+ mechanism? • Steps to build a REDD+ JIGRANTU project. • Explanation of alliance contract • Profit distribution system and organization chart • Autonomous space for voting on the REDD+ JIGRANTU project.	146
	October 23, 2022 *Jiguamiando River Community Council*	• Working group to gather information for the Participatory Rural Appraisal -DRP.	55
4	October 25, 2022 *Socialization of the Caño Seco and Bella Flor Remacho community project.*	• What is the REDD+ mechanism? • Steps to build the REDD+ JIGRANTU project	32
5	October 28, 2022 *La Grande Community Council*	ASSEMBLY • What is the REDD+ mechanism? • Steps to build the REDD+ JIGRANTU project. • Explanation of alliance contract • Profit distribution system and organization chart • Autonomous space for voting on REDD+ project JIGRANTU	90 (27 displaced colony)
	October 29, 2022 *La Grande Community Council*	• Working group to gather information for the Participatory Rural Appraisal -DRP.	48
6	October 28th and 29th *Turriquitado Community Council*	ASSEMBLY • What is the REDD+ mechanism? • Steps to build the REDD+ JIGRANTU project. • Explanation of alliance contract • Profit distribution system and organization chart. • Autonomous space for voting on REDD+ project JIGRANTU	30

No.	Date and place	Thematic	Participation (total persons)
		• Working group to gather information for the Participatory Rural Appraisal - DRP.	
7	November 01, 2022 Salon escalar - Apartado	Socialization of the project for displaced population • What is the REDD+ mechanism? • Steps to build the REDD+ JIGRANTU project. • Explanation of alliance contract • Profit distribution system and organization chart	29
8	June 12, 2023 *Balen de Bajira*	Working space with leaders • Audit considerations. • Socialization and adjustment of the operating manual • Review of the conservation action process • Fiduciary commitments	18
9	June 21, 2023 *Meet platform (virtual)*	Logistical preparation and budget for field trip for the diagnostic survey of conservation actions.	3
10	August 24, 2023 *Meet platform (virtual)*	Meeting with leaders to present the progress of the project formulation.	5
11	October 13, 2023 *Oceano Apartado Building*	Working meeting with leaders and FIDUCIA	9
12	October 14, 2023 *Escalar Apartado Room*	• Socialization of the results of the PdD with the displaced community of La Grande and Jiguamiando, residents of Apartado. • Presentation of FIDUCIA's work methodology.	52
13	October 14, 2023 *Salon Sajona Chigorodo*	• Socialization of the results of the PdD with the Jiguamiando displaced community, residents of Chigorodo. • Presentation of FIDUCIA's work methodology.	39
14	October 16, 2023 *La Grande Community Council*	• Socialization of PdD results. • Analysis of risks, barriers, benefits and safeguards.	88
15	October 17, 2023 *Turriquitado Community Council*	• Socialization of PdD results. • Analysis of risks, barriers, benefits and safeguards.	22
16	October 18, 2023 *Curvarado*	• Socialization of the results of the PdD with the displaced community of La Grande and Jiguamiando, residents of Curvarado. • Analysis of risks, barriers, benefits, and safeguards.	41
17	October 19, 2023 *Caño Seco Community Jiguamiando River Community Council*	• Socialization of PdD results.	35
18	October 20, 2023	• Socialization of PdD results.	42

No.	Date and place	Thematic	Participation (total persons)
	Nueva Esperanza Community Jiguamiando River Community Council	• Analysis of risks, barriers, benefits and safeguards.	
19	October 22, 2023 *Laguna Community Jiguamiando River Community Council*	• Socialization of PdD results.	39
20	October 23, 2023 *Urada Community Jiguamiando River Community Council*	• Socialization of PdD results.	19
21	October 23, 2023 *Puerto Lleras Community Jiguamiando River Community Council*	• Socialization of PdD results.	25
22	October 24, 2023 *Pueblo Nuevo Community Jiguamiando River Community Council*	• Socialization of PdD results. • Analysis of risks, barriers, benefits and safeguards.	67
23	October 25, 2023 *Centro Jigua Community Jiguamiando River Community Council*	• Socialization of PdD results.	55

Source. Biotrade S.A.S (2023)

It has been estimated that 78% of the Community Councils will be involved in the workshops and meetings of the project, considering the census data of the councils, the average family composition is 5 members and that at least one member per family has participated in the different spaces.

10.1.1 Organizations and Associations in Community Councils

Among the community actors with a direct relationship with the Councils, five (5) socio-business organizations were identified, four (4) of them linked to the Jiguamiando River Community Council and one (1) with the La Grande Community Council. For the Turriquitado Community Council, no organizations were identified, the absence of these organizations is attributed to the low population density in this community. The following (see Table 61.) presents the characterization of each of these five (5) organizations, differentiating them by Council, their corporate purpose, date of incorporation, interest of the organization, the relevance of each organization for the REDD+ JIGRANTU project, and highlights are described below.

Table 61. Characterization of community actors - socio-entrepreneurial type in the Community Councils.

Community Council	Organization	Company object (date of incorporation)	Interests	Relevance
Community Council of the Rio Jiguamiando	ASOMUJIGUA Women's Association of La Cuenca del Rio De Jiguamiando.	*It is a community organization IFRS classification in Colombia - group II. Legally created on December 13, 2017.*	Manage and implement sustainable productive projects led by women.	It is an organization with experience and trajectory in project implementation. It is recognized as a key actor for the development of REDD project activities, associated with gender inclusion and promotion of sustainable product projects.
	ASOMUNUVITE- Nueva Esperanza Women's Association in Defense of Life and Territory (Asociacion de Mujeres de Nueva Esperanza en Defensa de la Vida y el Territorio).	*Classified as a micro-enterprise IFRS classification in Colombia - group III. Incorporated on November 24, 2022*	Manage resources to formulate and implement projects that generate autonomy and empowerment of women.	It is recognized as a key actor for the development of REDD project activities, associated with gender inclusion and promotion of sustainable product projects.
	Weaving Trust in Jiguamiando Corporation	*Classified as a micro-enterprise IFRS classification in Colombia - group III. Incorporated on May 11, 2021*	Promotion and management of research, cultural, sports and recreational projects.	It has been identified as an important organization for the implementation of REDD actions, especially related to the Strengthening Governance and Culture strategy.
	Association of Producers for the Sustainable Community Development of the Jiguamiando River Watershed	Classified as a micro-enterprise IFRS classification in Colombia - group III. Incorporated on August 24, 2020.	Managed to encourage agricultural production and entrepreneurship to promote economic and social development.	As a productive association, it becomes a key actor for the implementation of REDD actions, especially related to the "Sustainable Development" strategy.
La Grande Community Council	ASOPESVIGRAN Association of fishermen of the community councils of Vigia de Curvarado, La Grande and Villanueva Montaño.	*Classified as a micro-company IFRS classification in Colombia - group III. Incorporated on April 24, 2018.*	Strengthening artisanal fishing as an alternative productive strategy to forestry.	As a productive association, it becomes a key actor for the implementation of REDD actions, especially related to the "Sustainable Development" strategy.

Source: Biotrade S.A.S, 2023. With certificates of existence and legal representation, from the following organizations.

ASOMUJIGUA Although its legal documentation is up to date thanks to the efforts of Mrs. Nohelia Paz, its operation has presented difficulties because there is no constant economic activity to keep the women founders of the association motivated and involved. The association was originally formed as part of a project to promote the production of handicrafts in Tagua; however, there was no organizational strengthening to continue with the project without the support of external facilitators.

The project "Mujeres en Resistencia" (Women in Resistance), locally named, is currently being implemented under the Peaceful Opportunities for Rural Women program, financed by the Ministry of Agriculture, Koica and WFP. With the participation of 30 women, mainly in Pueblo Nuevo, who have received support for the development of a productive process with sheds, capacity building, seeds for vegetable gardens, among others.

CORPORATION WEAVING TRUST IN JIGUAMIANDO. In the legal documents it is registered with nine (9) associate members. In its certificate of existence from the Chamber of Commerce, it is described as an organization constituted with the objective of promoting on its own or in association with other entities either in the official or private sector, through the conclusion of agreements or contracts of any investigative body, technical study, and cultural formulation, design and execution of the different plans and programs, projects and works of the various sectors mentioned above in the corporate purpose of the Corporation with emphasis on the focus on the law10 of 1993.

ASOMUNUVITE- Nueva Esperanza Women's Association in Defense of Life and Territory. As a recently constituted association, November 2022, it has little experience in project implementation. On the other hand, its Board of Directors is made up of six (6) members and the function of this organization is to manage resources to formulate and implement projects that generate autonomy and empowerment in the women of Nueva Esperanza.

ASSOCIATION OF PRODUCERS FOR THE SUSTAINABLE COMMUNITY DEVELOPMENT OF THE JIGUAMIANDO RIVER BASIN. It is an active association, with a participation of thirteen (13) associates. It was constituted with the following objective:

> *"The purpose of the association is to bring together those people who participate in the activity of agricultural production and business entrepreneurship to create a legal organizational structure, carrying out activities to develop this productive sector, through the promotion or establishment of products and services required*

by the community on the basis that every person and group are able to deploy their initiative and to provide their collaboration for the common good, while promoting the economic and social development of the associates".

ASOPESVIGRAN Association of fishermen from the community councils of Vigia de Curvarado, La Grande and Villanueva Montaño. This organization is related to the La Grande Community Council and, as its name indicates, involves two other community councils. The association is made up of 300 members distributed as follows: Vigia 49, Montaño 120 and in La Grande 131.

ASOPESVIGRAN has had support from projects to strengthen artisanal and responsible fishing processes as an activity that allows conservation actions to be achieved with no-logging agreements. It has also promoted gender equity through the integration of women into the business process. Approximately 30% of the total number of associates are women, which means that the La Grande Community Council has approximately 40 women associates.

10.2 Consultation with Neighbors

The neighboring communities, which correspond to three (3) Community Councils and an Indigenous Reserve, have been integrated into socialization spaces, through the participation of leaders and legal representatives in meetings to present the project, who have been personally invited by leaders of Jiguamiando and La Grande. The aide memoires of these spaces are presented as evidence in the project folder: 10. CONCERTATION OF INTERESTED PARTIES/1-2 MINUTES OTHER ACTORS.

The Company has assumed the costs of traveling the legal representatives of the neighboring communities for the participation of the socialization spaces.

Date & Place	Thematic	Neighboring Community	Participants
01 and 02 November 2022 Apartado Scalar Room	Socialization of the REDD mechanism	• Urada Jiguamiando Indigenous reservation	11
October 26 Nativity scene of Bajira	Socialization of PDD, institutional actors and neighbors	• PDI Community Council • Vigia de Curvarado Community Council • Montaño Community Council	3

10.3 Consultation with institutions and organizations

With the legal representatives and leaders of the Community Councils linked to the project, an analysis of institutional actors and organizations of importance in the participation of socialization spaces was carried out, establishing thirteen (13) key organizations to be invited to the presentation of PdD held on October 26 in Belen de Bajira (Support: Minutes of institutional meeting).

To facilitate the analysis of the institutional and organizational actors related to the territory of the Community Councils, a characterization was made with the typology, rights, interest of the organizations and relevance of each one of them for the project, thus identifying potential spaces for socialization, synergies, and articulation spaces (see Table 62.).

Table 62. Characterization of institutions of importance to the REDD+ JIGRANTU Project

Typology	Actor	Rights	Interests	Relevance
Public entity - Environmental	Pacific Environmental Research Institute (Instituto de Investigaciones Ambientales del Pacifico) IIAP	According to its legal constitution, it is in charge of the scientific research of the Biogeographic Choco.	It is identified as a key actor, as it has been a facilitator of environmental and conservation processes in the Community Councils of the JIGRANTU project.	It is of interest for the project to articulate actions for the generation and production of information and knowledge of the Biogeographic Choco.
Public entity - Environmental	National Authority of Aquaculture and Fisheries (Autoridad Nacional de Acuicultura y Pesca) AUNAP	Authority, for purposes of research, management, administration, control and surveillance of fishery resources.	Implementing the fisheries and aquaculture policy in Colombia.	Compliance with the requirements for the conservation of water resources, Management of projects to continue strengthening fishing activities.
Public entity - Environmental	Regional Autonomous Corporation for the Sustainable Development of Choco (Corporacion Autonoma Regional para el Desarrollo Sostenible del Choco) CODECHOCO	Develop and implement a Territorial Climate Change Management Plan in accordance with Law 1931 of 2018. Other forest harvesting permits, timber and non-timber. Administer and manage natural resources and environmental supply.	Grant permits for commercial logging of timber and non-timber forest products. Carry out community monitoring actions.	It is especially important to join efforts with CODECHOCO in the implementation of the REDD actions of the "Monitoring and Conservation" strategy.
Public entity - Political Administrative	Municipality of Carmen del Darien	Political and administrative authority of the municipality of Carmen del Darien, in planning and management; public services; economic development promotion.	In the implementation of the Municipal Development Plans, it has provided the Community Councils with supplies and equipment for health, education, recreation, communications, among other social welfare programs.	The relationship of articulation and generation of management links with the Mayor's Office of Carmen del Darien, becomes relevant to the extent that the implementation of REDD actions, especially related to the "Sustainable Development Program".
Public entity - Environmental	Secretaria de Medio Ambiente -SAMA. Alcaldia Carmen del Darien	A unit of the Mayor's Office, which is in charge of the environmental management of the municipality.	Allied with the Community Councils, to advance in the fulfillment of conservation actions.	SAMA is key in guiding and managing the implementation of several REDD actions, especially the "Monitoring and Conservation" strategy.
Second-level private organization - Social	Association of Community Councils and Ethnic-Territorial Organizations of the Bajo Atrato - ASCOBA	Representation of the Community Councils in collective action coordination bodies.	ASCOBA advanced the protection management of the Atrato River - sentence T-622. And leads the Guardians of the Atrato program.	The Community Councils of La Grande and Turriquitado are part of this second level association, so maintaining the relationship between the JIGUANTU project and

Typology	Actor	Rights	Interests	Relevance
				ASCOBA contributes to the visibility and opening of opportunities to strengthen REDD actions.
Public entity - Social	Ombudsman's Office Carmen del Darien	Autonomous entity for the protection and promotion of human rights	It may intervene to control administrative actions that may affect the rights of citizens, ensuring that government decisions respect the principles of legality and justice.	Accompanying compliance with precautionary measures of the Humanitarian Zones and Biodiversity Zones of the Jiguamiando River Community Council.
First level organization - Humanitarian	Victims' Bureau	Representation of the victims of the armed conflict; to participate in the design, implementation and monitoring of public policies related to their rights and reparation.	Processes of restitution of rights, defense of life and territory.	Accompaniment in the fulfillment of actions that contribute to the maintenance of REDD actions.
Private religious-humanitarian organization	Social Pastoral of Apartado Parish of Rio Sucio	Accompanying Community Councils in the defense of their territorial rights and promoting cultural programs.	The Humanitarian Zones and Biodiversity Zones processes for the defense of life and territory, especially Jiguamiando, have had the active participation of several religious and humanitarian organizations, in which the Pastoral Social and Parish of Rio Sucio have participated.	The relationship with the Parish of Rio Sucio and the Pastoral Social de Apartado, is essential for the implementation of REDD actions, especially the Strengthening of Governance and Culture program, taking into account that these are organizations that have fought for decades for ethnic territorial rights.
Public Entity - Educational	SENA - Regional Carmen del Darien	Technical, technological and business skills training and education.	Offering technical, technological and complementary training programs in the Community Councils, for the development of skills and competencies needed in the workplace.	Key entity, with which support can be managed for ongoing capacity building processes.

Source: Biotrade S.A.S (2023).

10.4 Summary of comments received

The public consultation of the REDD+ JIGRANTU project on the BioCarbon Registry platform began on October 20, 2023 and concluded on November 19, 2023. Throughout this period, no public comments were received from stakeholders, institutions or other actors involved in the platform.

On the other hand, in order to understand the general perception of the community with respect to the REDD project, an evaluation of satisfaction with the information presented during the PdD socialization meetings held from October 14 to 25, 2023 was carried out. A total of 100 surveys were conducted among the attendees, who gave an average rating of 4 out of 5 regarding the clarity of the information. Among those surveyed, 43% stated that they had a clear understanding of all the topics without the need to go into any of them in depth. On the other hand, 14% expressed the need for further explanation on the implementation of the Benefit Sharing System projects, while 7% pointed out resource management and capacity building as areas of importance.

In relation to the other stakeholders, neighbors and organizations, there has been a notable interest in supporting the implementation of the project. This is largely due to the transparent and well-planned process that has been supported by the valuable technical accompaniment provided by Biotrade S.A.S. The quality of the planning process has been identified as a solid guarantee for the socially and environmentally responsible execution of the project. In addition, the commitment to transparency and community participation has generated an environment conducive to collaboration and continued stakeholder support.

10.5 Consideration of comments received

The company's information e-mail address (informacion@biotradeco2.com) and contact telephone numbers for management and field support have been provided for the presentation of questions, complaints, claims, suggestions and other queries that arise from interested parties.

11 Sustainable Development Objectives (SDG)

This section was developed using the BCR Tool. Sustainable Development Goals (SDGs). Version 1.0 (BCR, 2023)[142]. The assessment highlights that the project contributes significantly to the achievement of several SDGs. This positive impact is based on its commitment to improve community well-being, which is framed by the project's benefit-sharing system[143] with its 4 strategic lines that aim to promote the strengthening of governance and Afro culture; capacity building; sustainable development; and conservation and monitoring. These lines aim to promote sustainable economic and social development alternatives, as well as to strengthen territorial environmental management. The project also plays a crucial role in climate change adaptation and mitigation.

• SDG 1 - End Poverty: The Project contributes to improving access to services in households. This implies progress in reducing poverty and improving well-being. In addition, Nature-Based Solutions strengthen the capacity to address disaster risk challenges at the local level, contributing to the resilience of vulnerable communities.

• SDG 2 - Zero Hunger: Sustainable Productive Projects promote agricultural practices that improve productivity while adapting to climate challenges. Implementation includes approaches such as sustainable agriculture, crop diversification and efficient natural resource management. In this way, it seeks to ensure food security and environmental sustainability in the agricultural sector.

• SDG 3 - Health and Wellness: Adequate and well-planned health infrastructure helps ensure the availability and accessibility of essential health services, which directly impacts on improving the coverage and quality of health care.

• SDG 4 - Quality Education: Through capacity building, equitable participation in educational opportunities is promoted, ensuring inclusive and accessible education for all, regardless of gender. In addition, the improvement of educational infrastructure seeks to ensure essential services in the following areas schools, such as adequate facilities, potable water, and sanitation. These actions aim to create an environment conducive to education by improving the quality and accessibility of education.

• SDG 5 - Gender Equity: By focusing on women's participation and empowerment, some activities can influence the creation and strengthening of legal frameworks to promote

[142] SDG-Tool.pdf
[143] Available in: Folder 2. TECHNICAL ANNEXES/Operational Manual

equality and prevent gender discrimination. Capacity building in sustainable productive actions led by women has a direct impact on women's equal rights to own and control land.

• SDG 6 - Clean Water and Sanitation: Infrastructure for basic sanitation, such as sewerage systems and wastewater management, contributes to providing safely managed services. This is achieved by ensuring access to safe and healthy facilities that prevent water contamination and reduce the risk of waterborne diseases. In addition, this infrastructure contributes by ensuring safe wastewater treatment, thereby reducing water pollution, preventing water-related diseases, and promoting sustainable water management and public health.

• SDG 7 - Affordable and clean energy: Alternative energy infrastructure contributes to providing renewable energy sources that aim to be more sustainable and have a lower environmental impact compared to conventional energy sources. This is reflected in increasing the share of renewable energy in total final energy consumption, thus promoting the transition to cleaner and more sustainable energy patterns.

• SDG 8 - Decent work and economic growth: The implementation of Sustainable Productive Projects (SPP) contributes to addressing socio-ecosystem resilience and generating sustainable employment. By promoting projects that promote sustainability and economic diversification, employment opportunities can be created, positively impacting the unemployment rate. Attention to climate change adaptation strengthens economic and social resilience, thus contributing to the achievement of employment-related objectives.

• SDG 9 - Industry, innovation, and infrastructure: Activities contribute to improving transportation infrastructure by upgrading waterways and building/maintaining bridges and roads. This facilitates efficient transportation of passengers and cargo, positively impacting the volume and quality of transportation. This infrastructure improvement promotes connectivity and accessibility, contributing to a more efficient and sustainable transportation system. In addition, other activities mentioned above include strengthen small-scale industries, improving their infrastructure and technical formulation, boosting the sector's efficiency and competitiveness.

• SDG 11 - Sustainable Cities and Communities: The project contributes to improving living conditions and moving towards more sustainable cities. The improvement of housing and basic sanitation infrastructure seeks to improve the quality of housing and reduce the presence of slums. The construction of recreational scenarios promotes quality of life and reduces the presence of slums. In addition, actions for the preservation and protection of cultural and natural heritage contribute to sustainable development, strengthening ecosystem services and guaranteeing heritage conservation. Local

disaster risk reduction strategies strengthen climate resilience and community participation.

• SDG 13 - Climate Action: There are activities that contribute to addressing risk management and adaptation to climate change. They strengthen the capacity of local governments to adopt disaster risk reduction strategies in line with national strategies, thus improving the resilience of communities to disasters. In addition, monitoring the implementation of REDD actions seeks to reduce greenhouse gas emissions, aligning with the objective of mitigating climate change and promoting sustainable practices in natural resource management.

• SDG 15 - Life of Terrestrial Ecosystems: Promoting the sustainable management of forest resources and biodiversity conservation contributes to the achievement of this goal. Capacity building and the implementation of Sustainable Production Projects seek to harmonize productive actions with environmental sustainability, including forest management. The formulation of governance tools establishes legal frameworks that promote the fair and equitable distribution of benefits, advancing towards the objective of guaranteeing the sustainable use of natural resources.

• SDG 16 - Peace, justice and strong institutions: The design and implementation of a participation, empowerment and governance strategy seeks to ensure the inclusion of diverse groups in decision-making processes. On the other hand, the PQRDS System facilitates citizen participation and feedback, strengthening the perception that decision-making is inclusive and participatory. These actions seek to promote transparency and equitable participation in governance, thus contributing to a fairer and more participatory environment.

Also, within the evaluation framework of the tool provided by the Biocarbon Registry for the Sustainable Development Goals (SDGs), the project is carrying a detailed analysis is carried out in the 'REDD Activities Matrix[144]'. This matrix evaluates, for each activity projected in the Benefit Sharing System (BDS), the SDG to which it is oriented, clearly establishing the targets to be met. The contribution of the activities to the achievement of the SDGs is presented below and is detailed in the SDG reporting tool[145].

[144] Document available in: Folder 2. TECHNICAL ANNEXES\5. MONITORING PLAN
[145] SDG reporting tool available in 2. TECHNICAL ANNEXES\3. SDG\Tool-SDG_REDD+JIGRANTU-V3.xlsx

ODS	Global SDG indicator	Project activity	Contribution of the project activity
1. End of poverty	1.4.1 Proportion of the population living in households with access to basic services	Ch19. Home improvement	These activities help increase the number of people who have access to services in their homes. Ultimately, this ensures that everyone, especially those with fewer resources, benefit, considering that the department of Choco is one of the places with the most basic needs in the country, according to the Unsatisfied Basic Needs Index.
		Ch21. Basic Sanitation Infrastructure	
		Ch23. Communications infrastructure	
	1.5.3 Number of countries with disaster risk reduction strategies at the national and local level	Dn41. Risk management plan in accordance with Nature-based Solutions (NBS).	This activity is closely linked to the ability of Nature-Based Solutions to address the challenges associated with disaster risk at the local level.
2. Zero hunger	2.4.1 Proportion of the agricultural area in which productive and sustainable agriculture is practiced	Ci31. Implementation of PPS with emphasis on climate change adaptation.	Sustainable Production Projects promote agricultural practices that improve productivity while adapting to climate challenges. Implementation includes approaches such as sustainable agriculture, crop diversification and efficient natural resource management. In this way, they seek to ensure food security and environmental sustainability in the agricultural sector.
3. Health and wellness	3.8.1 Essential health services coverage	Ch22. Health infrastructure	Adequate and well-planned health infrastructure helps ensure the availability and accessibility of essential health services, which has a direct impact on improving health care coverage and quality.
4. Quality education	4.3.1 Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, broken down by sex	Bg17. Formulation and implementation of the plan for undergraduate and graduate scholarships, courses or training programs.	Through these activities, in particular capacity building, equal participation in educational opportunities is promoted, thus helping to ensure inclusive and accessible education for all, regardless of gender.
		Bg18. Formulation of a strategy for special quotas for women in the scholarship plan.	
		Be8. Strengthening of REDD technical capacities with emphasis on increasing socio-ecosystemic resilience for climate change adaptation.	
		Be9. Capacity building for REDD project management.	
		Be10. Capacity building for project formulation and implementation.	
		Bf11. Capacity building in sustainable productive actions led by women.	
		Bf12. Capacity building in sustainable productive actions with emphasis on increasing socio-ecosystemic resilience.	
		Bf13. Capacity building in ecosystem restoration and conservation actions.	

ODS	Global SDG indicator	Project activity	Contribution of the project activity
		Bf14. Capacity building in social infrastructure	
		Bf15. Capacity building in governance and culture actions.	
		Bf16. Capacity Building in Community Monitoring	
	4.a.1 Proportion of schools offering basic services, broken down by type of service	Ch20. Improvement of educational infrastructure	The improvement of educational infrastructure seeks to ensure that schools provide essential services, such as adequate facilities, drinking water, sanitation, electricity, among others. Improving these conditions in schools ensures an environment conducive to education and contributes to achieving goals related to the quality and accessibility of education.
5. Gender equality	5.1.1 Determine whether or not there are legal frameworks to promote, enforce and monitor gender equality and non-discrimination	Ab4. Design and implementation of a participation, empowerment and governance strategy for women, youth, elderly, disabled and other minority groups.	This activity indirectly contributes to the indicator by working on women's participation and empowerment, which can influence the creation and strengthening of legal frameworks to promote equality and prevent gender discrimination.
	5.a.2 Proportion of countries in which the legal system (including customary law) guarantees women's equal rights to own and/or control land	Bf11. Capacity building in sustainable productive actions led by women.	Capacity building in sustainable productive actions led by women can have a direct impact on women's equal rights to land ownership and control in aspects such as economic empowerment, which can positively influence their ability to access and control land ownership, as financial autonomy can include participation in the development of laws and policies that affect land ownership and control rights. Strengthening women's capacities in sustainable productive actions not only contributes to their economic empowerment, but can also influence the legal and policy framework to ensure women's equal right to own and control land.
6. Water and sanitation	6.2.1 Proportion of the population using: a) safely managed sanitation services and b) hand washing facilities with soap and water	Ch21. Basic Sanitation Infrastructure	Infrastructure for basic sanitation, such as sewerage systems, adequate latrines and wastewater management systems, contributes directly to the provision of safely managed basic sanitation services. This includes access to safe and healthy facilities that prevent water contamination and reduce the risk of waterborne diseases.
	6.3.1 Proportion of wastewater safely treated		Basic sanitation infrastructure contributes to this indicator by ensuring safe wastewater treatment. This infrastructure, which includes treatment and sewerage systems, plays a role in reducing water pollution, preventing water-related diseases, and promoting sustainable water management and public health.
7. Affordable	7.2.1 Share of renewable energy in total final energy consumption	Ch28. Infrastructure for alternative energies	Alternative energy infrastructure contributes by providing renewable energy sources that aim to be more sustainable and have a lower

ODS	Global SDG indicator	Project activity	Contribution of the project activity
and non-polluting energy			environmental impact compared to conventional energy sources. This is reflected in the increase in the share of renewable energy in total final energy consumption, thus promoting the transition to cleaner and more sustainable energy patterns.
8. Decent work and economic growth	8.5.2 Unemployment rate, by sex, age and persons with disabilities	Ci31. Implementation of PPS with emphasis on climate change adaptation.	The implementation of Sustainable Productive Projects (SPP) contributes to addressing socio-ecosystem resilience and generating sustainable employment. By promoting projects that promote sustainability and economic diversification, employment opportunities can be created, positively impacting the unemployment rate. Attention to climate change adaptation strengthens economic and social resilience, thus contributing to the achievement of employment-related objectives.
9. Industry, innovation and infrastructure	9.1.2 Volume of passenger and cargo transportation, by means of transport	Ch25. Adequacy of waterways Ch26. Construction and maintenance of bridges and roads	These activities contribute to improving transportation infrastructure. Upgrading waterways and building/maintaining bridges and roads facilitates efficient transportation of passengers and cargo, which positively impacts the volume and quality of transportation. This contributes to sustainable development by improving connectivity and accessibility, thus promoting a more efficient and sustainable transportation system.
	9.3.1 Share of small-scale industries in the total value added of the sector	Ch24. Infrastructure for sustainable productive alternatives Ci29. Diagnosis of the environmental and social supply for the implementation of PPS. Ci30. Technical and accounting formulation of the PPS to be executed. Ci32. Strengthening for the commercialization of PPS products, and development of its own brand. Ci33. Strengthening of productive associations of women and men.	These activities are aimed at strengthening small-scale industries in a comprehensive manner. They improve the infrastructure for sustainable production alternatives and the technical and accounting formulation of Sustainable Production Projects (PPS), promoting the efficiency and competitiveness of the sector. The diagnosis of the environmental and social supply provides crucial information for overcoming specific challenges, enriching the knowledge base and enhancing research and development in small-scale industries. The strengthening of marketing and private labels enhances the competitiveness and value of products, while support for productive associations boosts efficiency and competitiveness, contributing to the sector's total value added.
11. Sustainable cities and communities	11.1.1 Proportion of the urban population living in slums, informal settlements, or inadequate housing	Ch19. Home improvement Ch21. Basic sanitation infrastructure Ch27. Construction of recreational scenarios (such as parks, etc.).	These activities contribute to improving living conditions. Housing improvement seeks to improve the quality of housing infrastructure, reducing the proportion of the population living in inadequate housing. Basic sanitation infrastructure contributes to healthier living conditions, reducing the proportion of the population living in improvised settlements with precarious facilities. The construction of recreational scenarios improves the environment, promoting quality

ODS	Global SDG indicator	Project activity	Contribution of the project activity
			of life and reducing the presence of slums. These actions seek to move towards more sustainable and livable cities.
	11.4.1 Total per capita expenditure on the preservation, protection and conservation of all cultural and natural heritage, broken down by source of funding (public and private), type of heritage (cultural and natural) and level of government (national, regional and local/municipal).	Ac5. Formulation and implementation of a strategy for the rescue and multiplication of ancestral knowledge. AC6. Strengthening of cultural events with the participation of different generations. Ad7. Facilities for recreation and sports, health, education and culture.	The activities contribute to promoting the preservation and protection of the cultural and natural heritage. The formulation and implementation of strategies for the rescue of ancestral knowledge and the strengthening of cultural events promote the conservation of cultural heritage. In addition, equipment for recreation, sports, health, education and culture contributes to the development of spaces and services that preserve the cultural and natural heritage, allocating expenses for its protection and conservation from various sources and levels of government.
	11.b.2 Proportion of local governments adopting and implementing local disaster risk reduction strategies in line with national disaster risk reduction strategies.	Dn41. Risk management plan in accordance with Nature-based Solutions (NBS).	This activity contributes by integrating sustainable approaches and solutions that strengthen ecosystem services. By adopting local strategies aligned with national disaster risk reduction strategies, the plan promotes climate resilience, ensures coherence with national policies and encourages community participation. This activity strengthens the capacity of local governments to manage disaster risk effectively and in accordance with broader objectives.
13. Climate Action	13.1.3 Proportion of local governments adopting and implementing local disaster risk reduction strategies in line with national disaster risk reduction strategies.	Dn41. Risk management plan in accordance with Nature-based Solutions (NBS). Dn42. Integral strategy for adaptation to climate change.	Both activities, by addressing risk management and climate change adaptation, can strengthen the capacity of local governments to adopt and implement disaster risk reduction strategies in line with national strategies. This contributes to community resilience to disasters and aligns local actions with national climate change and risk management objectives.
	13.2.2 Total greenhouse gas emissions per year	Dk38. Oversight and monitoring of the implementation of REDD actions	By monitoring the implementation of REDD actions, we seek to reduce greenhouse gas emissions by avoiding deforestation and promoting forest conservation. This contribution is aligned with the objective of mitigating climate change and promoting sustainable practices in the management of natural resources.
15. Life of terrestrial ecosystems	15.1.1 Forested area as a proportion of total area	Dj34. Diagnosis of the state of ecosystems, ecosystem services and vulnerability to the effects of climate change. Dj35. Design and implementation of the ecosystem protection and restoration strategy. Dj37. Design and implementation of a community monitoring program for the	The diagnosis of the state of ecosystems, ecosystem services and vulnerability to climate change provides critical information for sustainable forest management. The design and implementation of ecosystem protection and restoration strategies seeks to preserve and improve forest cover. In addition, the community monitoring program contributes to the conservation and enhancement of ecosystem resilience, promoting sustainable forest management practices.

ODS	Global SDG indicator	Project activity	Contribution of the project activity
		conservation and enhancement of ecosystem resilience.	
	15.2.1 Progress in sustainable forest management	Bf12. Capacity building in sustainable productive actions with emphasis on increasing socio-ecosystemic resilience. Ci31. Implementation of PPS with emphasis on climate change adaptation. Dm40. Definition of strategies for monitoring and evaluation of environmental and social safeguards.	Capacity building in sustainable productive actions, with an emphasis on increasing socio-ecosystem resilience, promotes more sustainable practices in forest resource management. The implementation of Sustainable Production Projects (SPP) with a focus on climate change adaptation seeks to harmonize productive actions with environmental sustainability, including forest management, and the definition of strategies for monitoring and evaluating environmental and social safeguards helps to ensure that practices are respectful of the forest environment.
	15.5.1 Red List Index	Dj36. Strengthening the conservation and monitoring of the manatee (*Trichechus manatus*) and the slider turtle (*Trachemys callirostris*).	Strengthening the conservation of these species contributes to this indicator through the preservation of threatened species, data collection to assess extinction risk, habitat and ecosystem protection, community collaboration and contribution to biodiversity. This direct and focused activity has an impact on improving the overall status of the red list index, reflecting the commitment to biodiversity conservation and sustainability.
	15.6.1 Number of countries that have adopted legislative, administrative, and regulatory frameworks for fair and equitable benefit-sharing	Aa1. Formulation of the Ethnodevelopment Plan Aa2. Construction of the environmental management plan of the community councils. Ab3. Articulation in the execution of REDD actions with the ethno-development plan and environmental management plan of the Community Councils.	The formulation and development of governance tools contribute to the establishment of legal and regulatory frameworks that promote a fair and equitable distribution of the benefits derived from the use of natural resources. These tools seek to ensure community participation, transparency in decision-making and the implementation of measures that promote sustainability in resource utilization. In this way, progress is made towards the goal of achieving a fair distribution of benefits and the conservation of biodiversity.
16. Peace, justice and strong institutions	16.7.2 Proportion of population that considers decision-making to be inclusive and participatory, broken down by gender, age, disability, and population group.	Ab4. Design and implementation of a participation, empowerment and governance strategy for women, youth, elderly, disabled and other minority groups. Dl39. PQRDS System	The design and implementation of a participation, empowerment and governance strategy seeks to ensure the inclusion of various groups, such as women, young people, the elderly, the disabled and other minority groups, in the decision-making processes. On the other hand, the PQRDS (Petition, Complaint, Claim, Complaint and Suggestion) System facilitates citizen participation and feedback, strengthening the perception that decision-making is inclusive and participatory, disaggregated by gender, age, disability and population group. These actions seek to promote transparency and equitable participation in governance, thus contributing to a fairer and more participatory environment.

12 REDD+ Safeguards

REDD+ safeguards are measures aimed at preventing the affectation of social, economic or environmental rights, as well as the occurrence of negative impacts due to the design and implementation of REDD+ activities. In addition, they include measures to improve the obtainment and distribution of benefits derived from the implementation of REDD+ activities.

The REDD+JIGRANTU Project has addressed the interpretation of the safeguards developed by the BioCarbon Registry using the proposed Tool for demonstrating compliance with REDD+ Safeguards. Version 1.1. (Brigard & Urrutia, BCR, 2023)[146]. Table 63. below presents the summary of the development of the tool in the file "PDD safeguards monitoring plan" available in the folder 2 Technical Annexes/9 safeguards monitoring. The definition of indicators for monitoring, reporting and verification is presented in section 17.1.2.

[146] BCR-Tool-Safeguards-REDD+

Table 63. Summary of Safeguards compliance interpretation

Interpretation of safeguards BioCarbon Registry	Description	Compliance
1. "The complementarity or compatibility of the measures with the objectives of national forestry programs and international conventions and agreements on the subject".	The measures adopted must be in line with the purposes and goals established in forest policy at both the national and international levels. Particularly with regard to the sustainable management of biodiversity, forests and actions aimed at climate change adaptation and mitigation.	As evidence of compliance, the JIGRANTU REDD+ Project's complementarity and compatibility analysis document is presented, relating various national and international policies focused mainly on forest management and climate change adaptation. The construction of this analysis document should be constantly updated to include and analyze new policies that consider these issues.
	Complementarity is understood as those measures that improve, add to, complement, deepen or develop the purposes and goals of national forest policy, as well as those of international conventions and agreements.	
	Compatibility relates to the condition that specific project activities cannot contradict the objectives or goals of such policies. Therefore, it is necessary that these activities are in line or aligned with these objectives.	
2. "Transparency and effectiveness of national forest governance structures, taking into account national legislation and sovereignty. Provide transparent and consistent information that is accessible to all stakeholders and regularly updated. Be transparent and flexible to allow for improvements over time. Build on existing systems, if any."	It is required to demonstrate that the project activities comply with national, regional, and local regulations. Special emphasis should be placed on the differential approach to information management, considering the different cultures, languages and customs relevant to the territory where the project is carried out.	Three indicators related to legal compliance, socialization, dissemination and transfer of information and the Project's PQRDS system are considered to support this safeguard.
	The projects must have suitable mechanisms that allow the socialization, dissemination and transparency of the information associated with the project, which must be kept up to date. The realities of the territory must be considered in terms of accessibility to information, specifically in terms of language and real and effective access to it, through appropriate technological means. The information provided must be complete and sufficient to understand the complexity of the Project, so that the interested parties can fully understand it and make decisions, when appropriate, in a prior and informed manner.	Regarding the first indicator, the legal compliance matrix of the REDD+ JIGRANTU project is considered, which is in line with section 4 of the PdD and will be continuously updated considering the advances in national policy. Regarding the socialization, dissemination and transfer of information, the project stakeholders are the leaders and communities of the community councils, institutions and organizations, displaced communities, and neighbors of the project.
	The holder must evidence the existence of a mechanism to attend interested parties with a system of Petitions, Complaints, Claims and Suggestions (PQRS). In compliance with this obligation, a complete copy of all petitions, complaints, claims	The procedure for following up on all requirements for the processing of PQRDS is presented, which are aligned with activity DI39. PQRDS system and indicator 68DI39 related to resolution reports, which must be

Interpretation of safeguards BioCarbon Registry	Description	Compliance
	or requests received, together with their corresponding responses, must be filed.	presented in each monitoring report as of verification period 2.
Respect for the knowledge and rights of indigenous peoples and members of local communities, taking into consideration relevant international obligations and national circumstances and legislation, and bearing in mind that the United Nations General Assembly has adopted the United Nations Declaration on the Rights of Indigenous Peoples".	Project development requires the recognition of traditions, ancestral knowledge and local knowledge in relation to the management of existing ecosystems. It is crucial to maintain constant contact with the communities present in the territory, so that the project is developed based on the recognition of and respect for local and ancestral knowledge, traditions and knowledge.	As part of the recognition of local communities, project activities are in line with the provisions of Decree 1384 of 2023 with the formulation of the Ethnodevelopment Plan and the Environmental Management Plan of the community councils (Activities Aa1 and Aa2). In addition, as evidence of compliance, activity Ac5 is considered with the strategy document for the rescue and multiplication of ancestral knowledge, with per capita information on the protection of cultural heritage in verification period 3.
	The territory must be surveyed and an inventory made of the communities that inhabit it, assessing whether these communities form part of ethnically differentiated groups or are local farming communities.	As support for compliance, the JIGRANTU REDD+ Project's community mapping document is presented, which shows a characterization of the communities present in the territory and the Benefit Sharing System, which was built considering the rights, qualities and qualities of the communities.
	The project owner has the power to suggest new modalities for the sustainable use of the territory. It may also restrict certain activities carried out by the communities, as long as they agree to such limitations.	The implementation of Sustainable Productive Projects (PPS) with emphasis on climate change adaptation (Activity Ci31) takes into account new forms of sustainable land use, compliance is linked to indicator 52Ci31 PPS implementation report document, which will be submitted every 2 years from verification period 2.
4. "The full and effective participation of stakeholders, in particular indigenous peoples and local communities, in the measures referred to in paragraphs 70 and 72 of this decision".	Mechanisms with reasonable timeframes and deadlines must be put in place so that the communities have the opportunity to understand the information and express their position on decisions related to the project, allowing them to play an active role in the discussions. Procedures should be established for decision making in the formulation and implementation of the project, such information should be recorded through minutes or reports.	For the follow-up and reporting of this safeguard, the decisions that must be approved at the assembly are considered, considering the internal regulations of the internal councils and in which it is required to ratify the decisions made. The minutes of the assemblies held for the approval of the REDD+ JIGRANTU Project of the 3 community councils are presented below.
5. The compatibility of the measures with the conservation of natural forests and biological diversity, ensuring that the measures identified in paragraph 70 of	It is essential to work closely with communities for the conservation, protection, restoration and sustainable use of ecosystems.	The documents that serve as the basis for the diagnosis of the state of ecosystems, ecosystem services and vulnerability to the effects of climate change are considered (Indicator 58Dj34). The conservation

Interpretation of safeguards BioCarbon Registry	Description	Compliance
the present decision are not used for the conversion of natural forests, but instead serve to incentivize the protection and conservation of these forests and their ecosystem services and to enhance other social and environmental benefits.		actions document presents the monitoring of the activities carried out by the community for the protection and conservation of ecosystems. In addition, the document on the traditional use of wild birds by Afro-descendant communities in the lower basin of the Atrato River, Colombia associated with ecosystem services in the region is presented.
	The actions carried out in the project must adhere to the relevant environmental regulations related to the use and exploitation of natural resources. The person responsible for the project must evidence compliance with these regulations by presenting the necessary permits and authorizations, when applicable.	As evidence of compliance, a summary of the persistent forest harvesting permits and resolutions granted by CODECHOCOCO to the Community Council of the Rio Jiguamiando is presented, in accordance with the provisions of Decree 1076 of 2015 and related to community forestry.
	It is necessary to demonstrate that the project has not been involved in activities that result in the conversion of natural forests to other land use purposes. This implies the presentation of technical evidence to support the claim that the activities have not resulted in the conversion of natural forests to other types of land use. To demonstrate this information, copies of the relevant files must be kept.	This includes forest monitoring activities, which are carried out by means of GIS Geographic Information Systems analysis, supervision of the state of the forest cover through walks and actions to identify areas of GHG emissions. Each monitoring report aims to reduce at least 10% of the average deforestation that occurred in the previous 2 years.
6. Adoption of measures to deal with the risks of reversion.	Every decision related to the project must be oriented to ensure its sustainability over time, and close collaboration with the communities and other stakeholders is essential. Risk identification and planning strategies to mitigate and overcome potential challenges are required.	The risk analysis of the JIGRANTU REDD+ Project is shown, the mitigation measures are related to the project activities that address the various risks (Section 7 of the PdD).
7. Adoption of measures to reduce the displacement of emissions.	Projects must include measures to prevent and reduce emissions leakage, identifying its causes and designing strategies to ensure effective monitoring and control of this phenomenon.	To comply with this safeguard, the report on the development of GIS monitoring actions in the leakage area and community monitoring with the identification of critical areas and events of GHG emissions are taken into account in order to reduce the displacement of emissions. The establishment of the leakage area for monitoring deforestation in this zone is presented.

13 Special categories, related to co-benefits

As a special category, the project will focus on the conservation and recovery of the marshes as ecosystems highly vulnerable to the effects of climate change and the conservation of their fauna, especially the Manati *Trichechus manatus* and the hicotea *Trachemys callirostris,* species in a state of vulnerability.

The Afro-descendant communities of the Community Councils of La Grande and Turriquitado were greatly affected by the activities of the Maderas del Darien company 2000-2013[147], the violence caused by the company's support of illegal groups caused a large exodus of communities. The violence caused by the company's support to illegal groups caused a large exodus of communities, the exaggerated extraction of timber greatly weakened the ecosystem, causing sedimentation of rivers, and the damage to marshes was evident in terms of reduced biodiversity and water regulation. Once the company left the region, the communities decided to stop logging on a large scale and only used the forest for the construction and repair of social infrastructure such as houses and schools.

Until 2014 the economic activities carried out by the inhabitants of these two Community Councils were focused on timber harvesting, artisanal fishing, subsistence agriculture and illicit crops, once the activities of Maderas del Darien were stopped and the implementation of illicit crops was prohibited, a decision set out in the internal regulations of the communities, this tremendous change led to a close socio- ecological relationship with the bodies of water. The marshes and rivers became economically, biologically and culturally important for the inhabitants, a relationship that continues to strengthen year after year.

The reduction of selective logging, the restoration of the forest on the riverbanks to prevent the advance of sedimentation (which makes the rivers unnavigable), has caused the watercourses to be maintained, thus improving water regulation. By reducing the area planted with illicit crops, the contamination of water bodies due to the use of hazardous and very hazardous agrochemicals used in their production has been reduced, and these actions have contributed to improving water quality.

The actions for the conservation of the water bodies favored the populations of fish, manatee *Trichechus manatus* and Hicotea *Trachemys callirostris* turtle, the latter two

[147] Loggers helped paramilitaries dispossess lands in Uraba and Darien

were hunted animals being part of the diet of the communities, especially the turtle, which was consumed at Easter. When the manati and the turtle became protected species by national regulations (Resolution 1912 of September 15, 2017 Ministry of Environment and Sustainable Development MADS), the communities participated in awareness days and knowledge of the regulation by CODECHOCO and IIAP, since January 2018 the communities made efforts to avoid hunting of the two species and initiated practices such as releasing juvenile manatees if they get caught in fishing trammel nets and turtles are moved in marshes where populations are very low, to favor their reproduction and repopulation and avoid capture at Easter by people outside the territory.

The actions carried out by the communities have been carried out from their own knowledge in a very empirical way and without support from NGOs, private or public institutions, however, it is necessary to provide technical and scientific support to strengthen the conservation actions of aquatic ecosystems and the species of fauna and flora that inhabit them, evaluate the impact of actions based on reliable data give the basis for the creation of management strategies to improve the conservation status of the manatee and the Hicotea in the marshes of the community councils of La Grande and Turriquitado.

The scientific knowledge generated by the communities themselves will help strengthen capacities and appropriation of these ecosystems, allowing support for the design and implementation of management plans for the marsh, much more efficient in the future, for this reason within the actions of the action line 4 of community monitoring and conservation of biodiversity, the action was designed: Dj36 Strengthening the conservation and monitoring of the manatee *Trichechus manatus* and the turtle *Trachemys callirostris.*

Swamps are ecosystems that are highly vulnerable to the effects of climate change, which is why biodiversity conservation actions in them are also actions that counteract the effects of climate change.

In general, the situation of the four living species of this group (*Trichechus manatus, Tinunguis, T. senegalensis and Dugong dugong*) is worrying, since in some areas there are evident processes of geographic extinction. The main threats to these animals are of human origin, especially hunting, habitat degradation and negative interactions with boats and fisheries. Depending on the geographic region, threats vary, and it is essential to carry out a local analysis that will allow us to propose relevant conservation strategies.

The manatee (*Trichechus manatus*), also known as sea cow. It belongs to the order of sirenians, that is, those mammals completely adapted to marine life, which are characterized by being large, heavy and very slow moving. There are three species of

manatees in the world: the Antillean or Caribbean (*Trichechus manatus*), the Amazonian (*Trichechus inunguis*) and the African (*Trichechus inunguis*), all of which are vulnerable. The first two species live in Colombia and are under threat[148].The two Colombian species (*Trichechus manatus* and *Trichechus inunguis*) are part of the lists of threatened species of APPENDIX I of the CITES Convention (Convention on International Trade in Endangered Species of Fauna and Flora) and the Red Book of the IUCN (International Union for Conservation of Nature); They are listed as endangered EN at the national level, as amended by Resolution 584 (endangered species) of 2002, of the Ministry of Environment, Housing and Territorial Development, due to a number of factors, including the deterioration of their natural populations, the destruction of their habitats by deforestation, the drying up of wetlands, and aquatic pollution.

In addition to all this, there are direct anthropic factors such as the inadequate implementation of economic and agricultural development systems that are not suitable for areas with a low capacity to resist environmental impact; the pressure focused basically on the irrational extraction of natural resources, as a result of an erroneous cultural conception of the perpetuity of fauna and flora; the conditions of extreme poverty and marginalization of the riverside towns. Although the regional (CARs and UAESPNN) and local (municipalities) environmental authorities have the legal and operational instruments to carry out an effective conservation and management of the manatee in Colombia, they do not have the technical capacity to carry out a good management[149].

In general, little research has been carried out on *Trichechus manatus* and *Trichechus inunguis* in Colombia, most of them in an isolated manner and on the initiative of some governmental and non-governmental entities. As these species are threatened, emblematic and present in the Caribbean, the Orinoco and the Amazon, they are an opportunity to propose conservation and management strategies articulated with the National Environmental Policies oriented by the Ministry of Environment, Housing and Territorial Development, such as the *"National Policy for Inland Wetlands of Colombia", the "National Environmental Policy for the Sustainable Development of the Oceanic and Coastal and Insular Spaces of Colombia" and the "National Environmental Policy for the Sustainable Development of the Oceanic and Coastal and Insular Spaces of Colombia", as well as the "National Environmental Policy for the Sustainable Development of the Oceanic and Coastal and Insular Spaces of Colombia", and the "National Environmental*

[148] The manatee, a vital species for ecosystems
[149] Caicedo-Herrera, D.; F. Trujillo; C.L. Rodríguez. & M.A Rivera. 2004. National Program for the Conservation and Management of Manatees (Trichechus sp) in Colombia. Omacha Foundation - Ministry of Environment, Housing and Territorial Development. Bogota. 170p.

Policy for the Sustainable Development of the Oceanic and Insular Spaces of Colombia", "Conservation and sustainable use of biodiversity", where manatees are key species.

They are fundamental to ecosystems because they help maintain the flow and quality of water, and their feces serve as food for fish in wetlands. However, many people take advantage of when manatees become entangled in fishing nets to eat or hunt them and do not release them afterwards. Climate change has also had some consequences for this mammal. In Colombia, for example, in 2016 alone, 38 manatees died in the Canal del Dique due to the El Niño phenomenon.

In the country, their population oscillates between 800 and 1,000 specimens, a worrying number considering the importance of this species for the ecosystems. They consume between 8 and 10 percent of their weight (about 200 or even 600 kilos) in aquatic plants, which helps to avoid the accumulation of these in their habitat.

The extinction of this animal would be fatal for these ecosystems and its repopulation is not easy. They have a gestation period of 12 to 13 months. The young are with their mother for two years and reach sexual age at five years of age. Females can become pregnant again after three years and normally have one or two calves. If the manatees live in optimal conditions, they can live up to 60 years.

The Management and Conservation Program for manatees *Trichechus* sp. in Colombia seeks to guarantee the survival of these species by implementing conservation, research, valuation and management strategies through inter-institutional coordination and active community participation in the watersheds where they are distributed.

Of the four specific objectives that the REDD+ JIGRANTU Project expects to develop, will contribute to the fulfillment of the third one: Support and strengthen the efforts of the scientific community and consolidate the collaboration between them, the local communities, and other stakeholders, to guarantee the permanence of manatee populations in Colombia.

To this end, a manatee conservation monitoring program will be established with the support of agreements with the scientific sector and the community, also contributing to the technical and scientific capacity building program for local communities. While strengthening the capacities of the local people to carry out these two actions, a local manatee management plan is expected to be designed in year 10 in the marshes of the community councils of La Grande and Turriquitado.

14 Grouped Project (if applicable)

The REDD+ JIGRANTU project is not grouped.

15 Other GHG programs

The JIGRANTU REDD+ Project has not been registered in any other GHG program or registry.

16 Avoidance of double counting

The Avoiding Double Counting (ADC) tool was used for the development of this chapter. BCR avoid double counting of emissions reductions/removals. Version 1.0 (BCR, 2023)[150]. To avoid the generation of overlapping projects that intend to be developed in the same project area, the main GHG initiative registration platforms were checked to eliminate the possibility of generating double counting at the national level.

In this review there was an overlap with the project registered in EcoRegistry by CERCARBONO with ID:99 called Pedeguita Jiguamiando REDD+. A right of petition was sent to the registry platform, the developer and the certifier of the project and a comment was made regarding this overlap[151]. In response, CERCARBONO requested the withdrawal of the areas corresponding to the community council of the Jiguamiando River where the overlap was presented to the developer of the ID:99 project and modified the name to Pedeguita and Mancilla REDD+ clarifies that changes around this in the PdD and supporting documentation will be made in a new verification event.

The registration of the REDD+ JIGRANTU Project in the National Registry of GHG Emission Reductions (RENARE) under ID 4181[152] avoids the generation of overlaps that are not compatible with future programs or projects. By registering the project in RENARE, a clear delimitation of its implementation is established, which avoids conflicts and confusion in the accounting of greenhouse gas (GHG) emission reductions complying with the provisions of Article 45 of Resolution 1447 of 2018. This measure

[150] Avoiding Double Counting
[151] https://www.ecoregistry.io/project-comment-list/99
[152] REDD+ JIGRANTU Project in RENARE

promotes transparency and integrity of the results obtained by the project avoiding inconsistencies at the national level.

The REDD+ JIGRANTU Project has not been registered in any platform besides the BioCarbon Registry, which ensures that credits to be sold as offsets in voluntary markets cannot be re-offered and thus avoid double counting. To ensure robust and transparent accounting, and to avoid overstatement of Project-related benefits, the following criteria were evaluated.

Table 64. Avoidance of double counting

Criteria	Does it happen?	Justification
A ton of CO_2e is counted more than once to demonstrate compliance with the same GHG mitigation target.	No	A ton of CO_2e is not counted more than once to demonstrate compliance with the same GHG mitigation target.
One ton of CO_2e is counted to demonstrate compliance with more than one GHG mitigation target.	No	One ton of CO_2e is not counted to demonstrate compliance with more than one GHG mitigation target.
One ton of CO_2e is used more than once for remuneration, benefits, or incentives.	No	The serial guarantees that a VCC will not be issued more than once.
A ton of CO_2e is verified, certified, or credited by assigning more than one series to a single mitigation result.	No	The serial guarantees that a VCC will not be issued more than once.

17 Monitoring plan

Based on the characterization of the applicability conditions mentioned in Chapter 5 and the carbon sinks mentioned in Chapter 4, this monitoring plan describes the procedures to follow up and monitor project activities that contribute to GHG emission reductions or removals, in order to verify changes in carbon stocks and project emissions and leakage.

Monitored data and parameters should be archived for a period of at least two years after the end of the last project period, including monitored data and parameters, methodology, quality control and sampling models.

17.1 Project Boundary Monitoring

The monitoring of the project boundaries will be carried out through the use of Geographic Information Systems (GIS) tools, taking advantage of the georeferencing of

the project area, the reference region and the area of possible project leakage. This process will be carried out throughout the development of the project, complying with the technical specifications required for the creation of cartographic products.

As for the monitoring of the reduction of emissions caused by deforestation and degradation, it will be carried out for the geographical areas covered by the project. Periodic verification of deforestation and degradation in the project area will be carried out according to the monitoring variables, which addresses the expected reduction of greenhouse gas emissions with the implementation of REDD+ activities.

17.1.1 Monitoring of REDD+ actions

The monitoring plan for REDD actions was developed based on the activities programmed here, establishing the monitoring indicators, monitoring methodology, monitoring time and responsible parties.

As mentioned in chapter 2.3 Project activities, in which a detailed description of each activity was provided, in the case of the activities that show progress in the monitoring report in the first period, the legal representatives of each Community Council and Biotrade's technical team are responsible for reporting information on progress; this situation will change for the following verification and monitoring periods, since the personnel responsible for this purpose will already have been appointed.

The information on the *indicator results in the reporting period and Documents to support the information* is filled in specifically for the indicators reported in the first verification and monitoring period. The other tabs that present blank information for these cells, is because their report will be made from the following verification periods.

Activity ID	Aa1
Indicator ID	1Aa1
Indicator name	No. of documents prepared for the construction of the Ethnodevelopment Plan.
Type	Product
Goal	5 documents in the monitoring period V1 - V2 - V3
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the documents prepared in each phase of preparation, diagnosis and formulation of the Ethno-Development Plan will be considered.
Frequency of monitoring	Biennial
Responsible for measurement	**Biotrade Technical Team and Legal Representatives* MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	Formulation document of the REDD JIGRANTU Project, for the management of own resources that allows progress in the construction of self-government instruments such as the ethno-

	development plan and the environmental management plan of the collective territories.
Documents to support the information	PdD V.5
Remarks	The activity is reported in the first monitoring period (V1), considering that the PdD is an advance in the management of resources for the construction of this instrument of self-government. It is projected to have the Ethno-Development Plan as a guiding instrument in the V3 period (2025-2026)[153] .

Activity ID	Aa1
Indicator ID	2Aa1
Indicator name	No. of contracts for professionals and technicians for the elaboration of the Ethnodevelopment Plan.
Type	Result
Goal	6 hires in the monitoring period V2 - V3
Unit of measure	Number of new hires
Monitoring methodology	For the measurement and reporting of this indicator, the number of contracts and consultancies for the elaboration of the Ethnodevelopment Plan will be taken into account.
Frequency of monitoring	Annual
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Aa2
Indicator ID	3Aa2
Indicator name	No. of document Environmental management plan
Type	Product
Goal	1 documents in the monitoring period V4
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the construction of the Environmental Management Plan under the characteristics defined in ARTICLE 2.2.12.2.2 of Decree 1384 of 2023 will be taken into account.
Frequency of monitoring	Unique in period V4
Responsible for measurement	MRV coordinator; directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	

[153] The SDB, the battery of indicators and other planning actions will be subject to modification according to what is defined in the Ethnodevelopment Plan.

Documents to support the information	
Remarks	

Activity ID	Aa2
Indicator ID	4Aa2
Indicator name	No. of contracts for professionals and technicians for the preparation of the Environmental Management Plan.
Type	Result
Goal	6 hires in the monitoring period V3 - V4
Unit of measure	Number of new hires
Monitoring methodology	For the measurement and reporting of this indicator, the number of contracts and consultancies for the preparation of the Environmental Management Plan will be taken into account.
Frequency of monitoring	Annual
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Aa3
Indicator ID	5Aa3
Indicator name	No. Report document with actions to articulate REDD project articulation to own government instruments
Type	Product
Goal	1 document in each monitoring period V5-V14
Unit of measure	Document number
Monitoring methodology	For the measurement and reporting of this indicator, a report will be prepared for each of the monitoring periods in which the articulation of REDD actions is presented, in accordance with the provisions of the Ethno-development Plan and the Environmental Management Plan.
Frequency of monitoring	Biennial
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ab4
Indicator ID	6Ab4
Indicator name	No. of Participation Strategy documents
Type	Product

Goal	5 documents in the monitoring period V3
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the following participation strategy documents are considered: 1. for women, 2. for youth, 3. for the elderly, 4. for persons with disabilities and 5. for other minority groups.
Frequency of monitoring	Unique in period V3
Responsible for measurement	MRV Coordinator; directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ab4
Indicator ID	7Ab4
Indicator name	% Participation of women
Type	Impact
Goal	Minimum 50%.
Unit of measure	Percentage of women's participation
Monitoring methodology	For the measurement and reporting of this indicator, the number of women participating in the meetings, workshops or surveys conducted is taken into account.
Frequency of monitoring	Annual
Responsible for measurement	MRV Coordinator; directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ab4
Indicator ID	8Ab4
Indicator name	% Youth participation
Type	Impact
Goal	Minimum 25%.
Unit of measure	Percentage of youth participation
Monitoring methodology	For the measurement and reporting of this indicator, the number of young people participating in meetings, workshops or surveys is taken into account.
Frequency of monitoring	Annual
Responsible for measurement	MRV Coordinator; directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ab4
Indicator ID	9Ab4
Indicator name	% Elderly participation
Type	Impact
Goal	100%
Unit of measure	Percentage of senior citizen participation
Monitoring methodology	For the measurement and reporting of this indicator, the number of adults over 60 years of age participating in special programs is taken into account.
Frequency of monitoring	Annual
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ab4
Indicator ID	10Ab4
Indicator name	Minority interest
Type	Impact
Goal	100%
Unit of measure	Percentage of minority groups
Monitoring methodology	For the measurement and reporting of this indicator, the number of participants from other minority groups in special programs is taken into account.
Frequency of monitoring	Annual
Responsible for measurement	MRV Coordinator; directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ab4
Indicator ID	11Ab4
Indicator name	Participation of people with disabilities
Type	Impact
Goal	100%
Unit of measure	Percentage of people with disabilities
Monitoring methodology	For the measurement and reporting of this indicator, the number of participants of people with disabilities in special programs is taken into account.
Frequency of monitoring	Annual
Responsible for measurement	MRV coordinator; directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	

Documents to support the information	
Remarks	

Activity ID	Ac5
Indicator ID	12Ac5
Indicator name	No. of documents of Strategy for the rescue and multiplication of ancestral knowledge, with information on per capita expenditure for the protection of cultural heritage.
Type	Product
Goal	1 documents in the monitoring period V3
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the preparation of the strategy document for the rescue and multiplication of ancestral knowledge with information on per capita spending for the protection of cultural heritage is considered.
Frequency of monitoring	Unique in period V3
Responsible for measurement	MRV coordinator; directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ac6
Indicator ID	13Ac6
Indicator name	No. of reports on cultural events, rescue and multiplication of ancestral knowledge with information on per capita expenditure.
Type	Product
Goal	1 document in each monitoring period V1-V14
Unit of measure	Document number
Monitoring methodology	For the measurement and reporting of this indicator, the report of cultural events within the framework of the strategy for the rescue and multiplication of ancestral knowledge with per capita expenditure statistics is considered.
Frequency of monitoring	Annual
Responsible for measurement	**Biotrade Technical Team and Legal Representatives* MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	Documentation provided by the legal representative of the Community Council of the Jiguamiando River is reported: - Plan for the cultural recovery of Jiguamiando, in 2019. - Implementation of the significant experience *"Sabio intercambio de saberes"* advanced in 2019. - The realization of the patron saint festivities in 2019.
Documents to support the information	Cultural Empowerment Narrative Report.pdf

	Cultural strengthening. Annex 1. Presentation jiguamiando.pptx Wise exchange of knowledge.mp4 Report on the traditional festivities of San Juan Photographs of the patron saint festivities
Remarks	

Activity ID	Ad7
Indicator ID	14Ad7
Indicator name	No. families benefited
Type	Result
Goal	Coverage of all families living in the Community Council V3-V14.
Unit of measure	Number of families living in each Community Council
Monitoring methodology	For the measurement and reporting of this indicator, the participation of people representing families in the supply of equipment and/or supplies for recreation and sports, health, education and culture is considered.
Frequency of monitoring	Biennial
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ad7
Indicator ID	15Ad7
Indicator name	Per capita expenditure on endowments for recreation and sports, health, education and culture.
Type	Result
Goal	5% of the budget invested in endowments for recreation and sports, health, education and culture V3 - V14
Unit of measure	Percentage of purchases in each monitoring period
Monitoring methodology	For the measurement and reporting of this indicator, the description and quantity of equipment and supplies established in the Benefit Sharing System's purchasing plans are considered.
Frequency of monitoring	Biennial
Responsible for measurement	MRV Coordinator; directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Be8
Indicator ID	16Be8

Indicator name	No. of training events in REDD techniques
Type	Impact
Goal	2 events in each monitoring period V1-V14
Unit of measure	Number of events
Monitoring methodology	For the measurement and reporting of this indicator, the number of training events on REDD techniques is considered.
Frequency of monitoring	Biennial
Responsible for measurement	*Biotrade Technical Team and Legal Representatives MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	The workshops, meetings and socialization spaces held with the community of the Community Councils during the formulation process of the JIGRANTU REDD+ Project are reported, considering that knowledge was imparted on REDD mechanism, climate change, actions to reduce GHG, carbon market, among other topics related to REDD+ projects.
Documents to support the information	Six (6) meeting minutes, memories of the workshops held in the communities of the Community Councils in 2022.
Remarks	

Activity ID	Be9
Indicator ID	17Be9
Indicator name	No. of REDD project management training events
Type	Impact
Goal	1 training event in monitoring periods V2, V5, V8, V11 and V14
Unit of measure	Number of events
Monitoring methodology	For the measurement and reporting of this indicator, the number of REDD project management training events is considered.
Frequency of monitoring	In specific monitoring periods: V2, V5, V8, V11 and V14
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Be10
Indicator ID	18Be10
Indicator name	No. of training events on project formulation
Type	Impact
Goal	1 training event in monitoring periods V2, V4, V6, V8, V10, V12 and V14
Unit of measure	Number of events
Monitoring methodology	For the measurement and reporting of this indicator, the number of training events on project formulation is considered.
Frequency of monitoring	In specific monitoring periods: V2, V4, V6, V8, V10, V12 and V14

Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Bf11
Indicator ID	19Bf11
Indicator name	No. Training events, as well as planning and follow-up, for the strengthening of PPSs for women
Type	Impact
Goal	1 training, planning and follow-up event, in the monitoring periods Short-term V2; Medium-term V4; Long-term V9
Unit of measure	Number of events
Monitoring methodology	For the measurement and reporting of this indicator, the number of PPS strengthening events for women is considered.
Frequency of monitoring	In specific monitoring periods: V2-V4 and V9
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Bf12
Indicator ID	20Bf12
Indicator name	No. of plan documents for capacity building in sustainable productive actions with emphasis on increasing socio-ecosystemic resilience.
Type	Product
Goal	1 documents in the monitoring period V2
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the construction and definition of the document Plan for strengthening capacities in sustainable productive actions with emphasis on increasing socio-ecosystemic resilience is considered.
Frequency of monitoring	Unique in period V2
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Bf12

Indicator ID	21Bf12
Indicator name	No. Training events for strengthening PPS with emphasis on increasing socio-ecosystemic resilience.
Type	Impact
Goal	1 training event, in each monitoring period V1-V14
Unit of measure	Number of events
Monitoring methodology	For the measurement and reporting of this indicator, the number of capacity building events in sustainable productive actions with emphasis on increasing socio-ecosystemic resilience is considered.
Frequency of monitoring	Biennial
Responsible for measurement	**Biotrade Technical Team and Legal Representatives* MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	Two events were presented during the first monitoring period for the strengthening of Sustainable Production Projects: - Progress made through the ASOPESVIGRAN association in the La Grande Community Council -Strengthening and sustainable production of plantain crops in the Jiguamiando River Community Council.
Documents to support the information	ASOPESVIGRAN AND BANANA
Remarks	

Activity ID	Bf13
Indicator ID	22Bf13
Indicator name	No. Training events on ecosystem restoration and conservation
Type	Impact
Goal	1 training event, in each monitoring period V3 - V14
Unit of measure	Number of events
Monitoring methodology	For the measurement and reporting of this indicator, the number of training events on ecosystem restoration and conservation is considered.
Frequency of monitoring	Biennial
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Bf14
Indicator ID	23Bf14
Indicator name	No. Training events on sustainable self-construction of social infrastructure
Type	Impact
Goal	1 training event in each monitoring period V3 - V14
Unit of measure	Number of events

Monitoring methodology	For the measurement and reporting of this indicator, the number of training events on sustainable self-construction of social infrastructure is considered.
Frequency of monitoring	Biennial
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Bf15
Indicator ID	24Bf15
Indicator name	No. of governance and culture training events
Type	Impact
Goal	1 training event, in each monitoring period V3 - V14
Unit of measure	Number of events
Monitoring methodology	For the measurement and reporting of this indicator, the number of governance and culture training events is considered.
Frequency of monitoring	Biennial
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Bf16
Indicator ID	25Bf16
Indicator name	No. of training events for Community Monitoring
Type	Impact
Goal	1 training event, in each monitoring period V3 - V14
Unit of measure	Number of events
Monitoring methodology	For the measurement and reporting of this indicator, the number of training events for Community Monitoring is considered.
Frequency of monitoring	Biennial
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Bg17
Indicator ID	26Bg17

Indicator name	No. of scholarship plan document
Type	Product
Goal	1 document in the monitoring period V2
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the construction and definition of the Scholarship Plan document is considered.
Frequency of monitoring	Unique in period V2
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Bg17
Indicator ID	27Bg17
Indicator name	No. of scholarships awarded in gender equity
Type	Result
Goal	10 grants in each monitoring period V3 - V14
Unit of measure	Number of scholarships
Monitoring methodology	For the measurement and reporting of this indicator, the number of scholarships granted to women and men under equal conditions is considered.
Frequency of monitoring	Biennial - as of monitoring period V3
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Bg18
Indicator ID	28Bg18
Indicator name	No. of strategy documents for a women's scholarship scheme
Type	Product
Goal	1 document in the monitoring period V2
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the construction and definition of the protocolized document containing the scholarship strategy for women is considered.
Frequency of monitoring	Unique in period V2
Responsible for measurement	MRV coordinator; directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ch19
Indicator ID	29Ch19
Indicator name	No. of housing improvement plan document with statistical information on the proportion of the population benefited.
Type	Product
Goal	1 document in the monitoring period V3
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the plan document containing the investment planning structure and infrastructure implementation schedule is considered.
Frequency of monitoring	Unique in period V3
Responsible for measurement	MRV Coordinator; directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ch19
Indicator ID	30Ch19
Indicator name	% of homes with improvements
Type	Result
Goal	100% housing prioritized in the V8 plan
Unit of measure	Percentage of homes requiring improvements
Monitoring methodology	For the measurement and reporting of this indicator, the programming and investments established in the infrastructure plan are considered.
Frequency of monitoring	Unique in the V8 period
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Result of the indicator in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ch20
Indicator ID	31Ch20
Indicator name	No. of document educational infrastructure improvement plan
Type	Product
Goal	1 documents in the monitoring period V3 and V9
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the plan document containing the investment planning structure and infrastructure implementation schedule is considered.
Frequency of monitoring	In specific monitoring periods: V3 and V9
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.

Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ch20
Indicator ID	32Ch20
Indicator name	% implementation of educational infrastructure improvement
Type	Result
Goal	100% improvement of educational infrastructure as defined in the V4 and V10 plans
Unit of measure	Percentage of educational infrastructure improvement
Monitoring methodology	For the measurement and reporting of this indicator, the programming and investments established in the infrastructure plan are considered.
Frequency of monitoring	In specific monitoring periods: V4 and V10
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ch21
Indicator ID	33Ch21
Indicator name	No. of basic sanitation infrastructure plan document with statistical information on the proportion of the population benefited.
Type	Product
Goal	1 document in the monitoring period V3
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the plan document containing the investment planning structure and infrastructure implementation schedule is considered.
Frequency of monitoring	Unique in period V3
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ch21
Indicator ID	34Ch21
Indicator name	of basic sanitation infrastructure

Type	Result
Goal	100% basic sanitation infrastructure defined in the V8 plan
Unit of measure	Percentage of basic sanitation infrastructure
Monitoring methodology	For the measurement and reporting of this indicator, the programming and investments established in the infrastructure plan are considered.
Frequency of monitoring	Unique in the V8 period
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ch22
Indicator ID	35Ch22
Indicator name	No. of document health infrastructure plan
Type	Product
Goal	1 document in the monitoring period V5 and V11
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the plan document containing the investment planning structure and infrastructure implementation schedule is considered.
Frequency of monitoring	In specific monitoring periods: V5 and V11
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ch22
Indicator ID	36Ch22
Indicator name	% of health infrastructure
Type	Result
Goal	100% infrastructure defined in the V6 and V12 plan
Unit of measure	Percentage of health infrastructure
Monitoring methodology	For the measurement and reporting of this indicator, the programming and investments established in the infrastructure plan are considered.
Frequency of monitoring	In specific monitoring periods: V6 and V12
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ch23
Indicator ID	37Ch23
Indicator name	No. of document Communications infrastructure plan
Type	Product
Goal	1 document in the monitoring period V3 and V9
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the plan document containing the investment planning structure and infrastructure implementation schedule is considered.
Frequency of monitoring	In specific monitoring periods: V3 and V9
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ch23
Indicator ID	38Ch23
Indicator name	% implementation of communications infrastructure
Type	Result
Goal	100% of the communications infrastructure defined in the V4 and V10 plan.
Unit of measure	Percentage of communications infrastructure
Monitoring methodology	For the measurement and reporting of this indicator, the programming and investments established in the infrastructure plan are considered.
Frequency of monitoring	In specific monitoring periods: V4 and V10
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ch24
Indicator ID	39Ch24
Indicator name	No. of documents infrastructure plan for sustainable productive alternatives with emphasis on climate change adaptation
Type	Product
Goal	1 document in the monitoring period V3, V7 and V11
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the plan document containing the investment planning structure and infrastructure implementation schedule is considered.
Frequency of monitoring	In specific monitoring periods: V3, V7 and V11
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.

Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ch24
Indicator ID	40Ch24
Indicator name	% of infrastructure implementation for sustainable productive alternatives with emphasis on climate change adaptation
Type	Result
Goal	100% of the PPS infrastructure defined in the V4, V8 and V12 plan.
Unit of measure	Percentage of PPS infrastructure
Monitoring methodology	For the measurement and reporting of this indicator, the programming and investments established in the infrastructure plan are considered.
Frequency of monitoring	In specific monitoring periods: V4, V8 and V12
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ch25
Indicator ID	41Ch25
Indicator name	No. of reports on unclogging of rivers and adequacy of waterways with statistics on volume of passenger and cargo transport
Type	Product
Goal	1 document in each monitoring period V2 to V14
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the reports on the unclogging of rivers and the adequacy of waterways with statistics on the volume of passenger and cargo transportation are considered.
Frequency of monitoring	Biennial
Responsible for measurement	MRV Coordinator; directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ch26
Indicator ID	42Ch26

Indicator name	No. of plan document for construction and maintenance of bridges and roads with methodology for measuring the volume of passenger and cargo transportation.
Type	Product
Goal	1 document in the monitoring period V2
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the plan document containing the investment planning structure and infrastructure implementation schedule with methodology for measuring the volume of passenger and cargo transportation is considered.
Frequency of monitoring	Unique in period V2
Responsible for measurement	MRV Coordinator; directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ch26
Indicator ID	43Ch26
Indicator name	No. of construction and maintenance reports for bridges and roads
Type	Product
Goal	1 document in each monitoring period V1 to V14
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, bridge and road construction and maintenance reports are considered.
Frequency of monitoring	Biennial
Responsible for measurement	**Biotrade Technical Team and Legal Representatives* MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	One (1) report on the construction and maintenance of bridges and roads in the Jiguamiando River Community Council.
Documents to support the information	Bridge and road construction and maintenance report
Remarks	

Activity ID	Ch27
Indicator ID	44Ch27
Indicator name	No. of plan document for the construction of recreational scenarios with statistical information on the proportion of the population benefited.
Type	Product
Goal	1 document in the monitoring period V4
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the plan document containing the investment planning structure and

	infrastructure implementation schedule with statistical information on the proportion of the population benefited is considered.
Frequency of monitoring	Unique in period V4
Responsible for measurement	MRV coordinator; directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ch27
Indicator ID	45Ch27
Indicator name	% construction of recreational scenarios
Type	Result
Goal	100% infrastructure defined in the V5 and V6 plan
Unit of measure	Percentage of sports venues
Monitoring methodology	For the measurement and reporting of this indicator, the programming and investments established in the infrastructure plan are considered.
Frequency of monitoring	In specific monitoring periods: V5 and V6
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ch28
Indicator ID	46Ch28
Indicator name	No. of alternative energy infrastructure plan document (associated to the PPSs)
Type	Product
Goal	1 documents in the monitoring period V3, V7 and V11
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the plan document containing the investment planning structure and infrastructure implementation schedule is considered.
Frequency of monitoring	In specific monitoring periods: V3, V7 and V11
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ch28
Indicator ID	47Ch28

Indicator name	% implementation of alternative energy infrastructure (associated with PPS)
Type	Result
Goal	100% of the PPS infrastructure defined in the V4, V8 and V12 plan.
Unit of measure	Percentage of PPS infrastructure
Monitoring methodology	For the measurement and reporting of this indicator, the programming and investments established in the infrastructure plan are considered.
Frequency of monitoring	In specific monitoring periods: V4, V8 and V12
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ci29
Indicator ID	48Ci29
Indicator name	No. of document Diagnosis of the environmental and social supply for the implementation of PPSs
Type	Product
Goal	1 document in the monitoring period V2
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the construction of the diagnostic document will be considered.
Frequency of monitoring	Unique in period V2
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ci29
Indicator ID	49Ci29
Indicator name	No. of contracts for professionals and technicians for the elaboration of the PPS diagnostic.
Type	Result
Goal	10 hires in the monitoring period V2
Unit of measure	Number of new hires
Monitoring methodology	For the measurement and reporting of this indicator, the number of contracts and consultancies for the construction of the diagnosis will be considered.
Frequency of monitoring	Unique in period V2
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	

Documents to support the information	
Remarks	

Activity ID	Ci30
Indicator ID	50Ci30
Indicator name	No. of document Consolidated report of formulated projects
Type	Product
Goal	1 document in monitoring periods V2, V4, V6, V8, V10, V12 and V14
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the construction of the consolidated document that reports the formulated projects is considered.
Frequency of monitoring	In specific monitoring periods: V2, V4, V6, V8, V10, V12 and V14
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ci31
Indicator ID	51Ci31
Indicator name	No. of document PPS implementation report
Type	Product
Goal	1 document in each monitoring period V2- V14
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, we consider the construction of the report document that reports the progress in the implementation of sustainable productive projects, which contains the statistical follow-up. To monitor the forest PPS of permanent use, the "Protocol for Monitoring and Control of Forest Uses in Natural Forest" will be considered, within the framework of the National Strategy for Prevention, Monitoring, Control and Forest Surveillance
Frequency of monitoring	Biennial
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ci31
Indicator ID	52Ci31

Indicator name	Percentage increase in the number of families that improve their income
Type	Result
Goal	50% families in the medium term, reported in V8; 100% families in the long term, reported in V14.
Unit of measure	Percentage (families defined in the diagnostic baseline)
Monitoring methodology	For the measurement and reporting of this indicator, the diagnostic baseline (Ci29) of families and their economic income is considered in order to have a coverage of 50% of families that improve their income, in the medium term, and 100% of families in the long term, with respect to the baseline.
Frequency of monitoring	In specific monitoring periods: V8 and V14
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ci31
Indicator ID	53Ci31
Indicator name	Percentage decrease in unemployment rate
Type	Result
Goal	50% in the medium term, reported in V8; 100% in the long term, reported in V14
Unit of measure	Percentage (unemployment rate defined in the diagnostic baseline)
Monitoring methodology	For the measurement and reporting of this indicator, the diagnostic baseline (Ci29) of the unemployment rate (TD) is considered, to cover the 50% employment supply established in the TD, in the medium term, and 100% in the long term, with respect to the baseline.
Frequency of monitoring	In specific monitoring periods: V8 and V14
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ci31
Indicator ID	54Ci31
Indicator name	No. of hectares transformed into sustainable productive projects
Type	Result
Goal	1,009 hectares transformed as of the monitoring period. 50% V8; 100% V14
Unit of measure	Hectares

Monitoring methodology	For the measurement and reporting of this indicator, degraded or deforested hectares that have the potential to be transformed into sustainable productive processes are considered, 50% in the medium term and 100% in the long term.
Frequency of monitoring	In specific monitoring periods: V8 and V14
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ci32
Indicator ID	55Ci32
Indicator name	Percentage increase in sales of products from sustainable production projects
Type	Result
Goal	5% increase in each monitoring period from V3 to V14
Unit of measure	Percentage
Monitoring methodology	For the measurement and reporting of this indicator, the percentage increase in sales of products from sustainable production systems is considered.
Frequency of monitoring	Biennial from period V3 to V14
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ci33
Indicator ID	56Ci33
Indicator name	No. of associations benefited
Type	Result
Goal	5 associations benefited V3-V14
Unit of measure	Number of associations
Monitoring methodology	For the measurement and reporting of this indicator, community productive associations are considered, especially those that remain constituted and functional.
Frequency of monitoring	Biennial
Responsible for measurement	MRV Coordinator; directors of each Board; Biotrade S.A.S.
Result of the indicator in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Ci33

Indicator ID	57Ci33
Indicator name	No. of document Report on improvement of administrative and management capacity
Type	Product
Goal	1 document in each monitoring period V3- V14
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, we consider the generation of management reports that allow us to follow up on the organizational and administrative capacities of the Community Productive Associations.
Frequency of monitoring	Biennial
Responsible for measurement	MRV coordinator; directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Dj34
Indicator ID	58Dj34
Indicator name	No. of document Diagnosis of the state of ecosystems, ecosystem services and vulnerability to the effects of climate change.
Type	Product
Goal	1 document in the monitoring period V3
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the documents and reports that contribute to the construction of the diagnosis of the state of the ecosystems and their natural resources are considered.
Frequency of monitoring	In periods V1 and V3
Responsible for measurement	**Biotrade Technical Team and Legal Representatives* MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	On this occasion we will consider the diagnostic document of the conservation actions of the REDD+ JIGRANTU Project carried out by the social team of Biotrade S.A.S., which details the conservation actions being carried out by the Community Councils that are part of the Project and the graduate work done by one of the members of the Community Council of La Grande, which aims to learn about the traditional use of meat and wild bird by-products in Curvarado and La Grande.
Documents to support the information	Diagnosis of the conservation actions of the REDD+ JIGRANTU project that integrates the Community Councils: Turriquitadado, la Grande and Jiguamiando and the document on Traditional use of wild birds by Afro-descendant communities in the lower basin of the Atrato River, Colombia.
Remarks	For the reporting of this indicator, documents and reports that contribute to the construction of the diagnosis of the state of the ecosystems and their natural resources are considered.

Activity ID	Dj34
Indicator ID	59Dj34
Indicator name	No. of contracts for professionals and technicians for the elaboration of the diagnosis
Type	Result
Goal	3 hires in the monitoring period V3
Unit of measure	Number of new hires
Monitoring methodology	For the measurement and reporting of this indicator, the number of contracts and consultancies for the construction of the diagnostic will be considered.
Frequency of monitoring	Unique in period V3
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Dj35
Indicator ID	60Dj35
Indicator name	No. of document Ecosystem protection and restoration strategy
Type	Product
Goal	1 document in the monitoring period V3
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the strategy document for the protection and restoration of ecosystems is considered.
Frequency of monitoring	Unique in period V3
Responsible for measurement	MRV Coordinator; directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Dj35
Indicator ID	61Dj35
Indicator name	No. of hectares under restoration for land reclamation due to private title effects
Type	Result
Goal	1,500 hectares of land reclamation in restoration process, reported at the monitoring period 50% V8; 100% V14
Unit of measure	Hectares
Monitoring methodology	For the measurement and reporting of this indicator, the number of hectares in restoration processes is considered as 50% in the medium term and 100% in the long term.
Frequency of monitoring	In specific monitoring periods: V8 and V14
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.

Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Dj35
Indicator ID	62Dj35
Indicator name	No. Agreements with private properties for the cleanup and restoration of collective territory
Type	Product
Goal	Thirty-one (31) agreements in the period V4
Unit of measure	Number of agreements
Monitoring methodology	For the measurement and reporting of this indicator, the signing of agreements with private landowners who have degraded and deforested the collective territory will be considered.
Frequency of monitoring	In specific monitoring periods: V4
Responsible for measurement	MRV Coordinator; directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Dj36
Indicator ID	63Dj36
Indicator name	No. of documents of the Strategy for Strengthening the conservation and monitoring of the manatee (*Trichechus manatus*) and the loggerhead sea turtle (*Trachemys callirostris*)
Type	Product
Goal	2 documents in the monitoring period V3
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the strategy document on Strengthening the conservation and monitoring of the manatee (*Trichechus manatus*) and the loggerhead sea turtle (*Trachemys callirostris*) is considered.
Frequency of monitoring	Unique in period V3
Responsible for measurement	MRV Coordinator; directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Dj36
Indicator ID	64Dj36

Indicator name	No. Reports with measures and actions aimed at improving the protection and monitoring of the manatee (*Trichechus manatus*) and the slender-horned turtle (*Trachemys callirostris*)
Type	Product
Goal	1 document in each monitoring period
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the reports of sighting reports and actions to improve the protection of the manatee (*Trichechus manatus*) and the leatherback turtle (*Trachemys callirostris*) are considered.
Frequency of monitoring	Biennial
Responsible for measurement	**Biotrade Technical Team and Legal Representatives* MRV coordinator; directors of each Board; Biotrade S.A.S.
Indicator result in the reporting period	1 document of the Manatee sighting report in the Community Councils of La Grande and Turriquitado during the first monitoring period.
Documents to support the information	Manatee Registration Report
Remarks	

Activity ID	Dj37
Indicator ID	65Dj37
Indicator name	No. of documents Community Monitoring Program
Type	Product
Goal	1 document in the monitoring period V3
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the community monitoring program document is considered.
Frequency of monitoring	Unique in period V3
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Dj37
Indicator ID	66Dj37
Indicator name	No. Community monitoring reports
Type	Product
Goal	1 document in each monitoring period V1-V14
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, community monitoring reports are considered.
Frequency of monitoring	Biennial
Responsible for measurement	**Biotrade Technical Team and Legal Representatives* MRV Coordinator; Directors of each Board; Biotrade S.A.S.

Indicators result in the reporting period	One (1) conservation action report detailing the follow-up of the restoration of the Jiguamiando River unclogging process in the La Grande Community Council.
Documents to support the information	Reforestation control log report
Remarks	

Activity ID	Dk38
Indicator ID	67Dk38
Indicator name	No. of No. of Oversight and control reports
Type	Product
Goal	1 document in each of the monitoring periods V2-V14
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, we consider the generation of reports for oversight and control.
Frequency of monitoring	Biennial
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Dl39
Indicator ID	68Dl39
Indicator name	No. of PQRDS resolution reports
Type	Product
Goal	1 document in each of the monitoring periods V2-V14
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the generation of PQRDS resolution reports is considered.
Frequency of monitoring	Biennial
Responsible for measurement	MRV Coordinator; directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Dm40
Indicator ID	69Dm40
Indicator name	No. of strategy documents for monitoring and evaluation of environmental and social safeguards
Type	Product
Goal	1 document in the monitoring period V2-V14
Unit of measure	Number of documents

Monitoring methodology	For the measurement and reporting of this indicator, the construction of the strategy for the monitoring and evaluation of environmental and social safeguards is considered.
Frequency of monitoring	Biennial
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Dm40
Indicator ID	70Dm40
Indicator name	No. Environmental and social safeguards monitoring and evaluation reports
Type	Product
Goal	1 document in each monitoring period V2-V14
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, we consider the generation of reports of
Frequency of monitoring	Biennial
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Dn41
Indicator ID	71Dn41
Indicator name	No. of community councils that have a Risk Management Plan according to nature-based solutions (SbN).
Type	Impact
Goal	3 community councils with a risk management plan in accordance with SbN- V3
Unit of measure	Number of community councils
Monitoring methodology	For the measurement and reporting of this indicator, the construction of the Risk Management Plan is considered as a component of the Ethnodevelopment Plan, to be implemented by each of the three community councils, recognized as local governments.
Frequency of monitoring	Unique in period V3
Responsible for measurement	MRV Coordinator; directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	Dn42
Indicator ID	72Dn42
Indicator name	No. of community councils that have a comprehensive climate change adaptation strategy.
Type	Impact
Goal	3 community councils that have a comprehensive climate change adaptation strategy - V2
Unit of measure	Number of community councils
Monitoring methodology	For the measurement and reporting of this indicator, the construction of a comprehensive climate change adaptation strategy is considered, to be implemented by each of the three councils.
Frequency of monitoring	Unique in period V2
Responsible for measurement	MRV Coordinator; Directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

Activity ID	D42
Indicator ID	73D42
Indicator name	No. Reports on the implementation of a comprehensive strategy for adaptation to climate change
Type	Product
Goal	1 document in each monitoring period V3-V14
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, we consider the generation of reports of
Frequency of monitoring	Biennial
Responsible for measurement	MRV coordinator; directors of each Board; Biotrade S.A.S.
Indicators result in the reporting period	
Documents to support the information	
Remarks	

17.1.2 Monitoring of REDD safeguards

The monitoring sheets for the thirteen (13) indicators established for the seven (7) social and environmental safeguards established by BioCarbon Registry are presented[24].

ID Safeguard	SVG-1
Indicator ID	SVG-1.1
Indicator name	Complementarity and compatibility of REDD+ activities with national and international agreements
Type	Product
Goal	1 document in each monitoring period

Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the construction and updating of the document with national and international policies regarding the sustainable management of biodiversity, forests and climate change mitigation is considered.
Frequency of monitoring	Biennial
Responsible for measurement	Biotrade S.A.S. Technical Team
Indicator result in the reporting period	Document with the creation of the matrix document with analysis of complementarity and compatibility with national and international policies regarding sustainable management of biodiversity, forests and climate change mitigation.
Documents to support the information	JIGRANTU REDD+ Project Complementarity and Compatibility Analysis Matrix
Remarks	N/A

ID Safeguard	SVG-2
Indicator ID	SVG-2.1
Indicator name	Legal compliance
Type	Product
Goal	1 document in each monitoring period
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the construction and updating of the Project's legal compliance matrix is considered.
Frequency of monitoring	Biennial
Responsible for measurement	Biotrade S.A.S. Technical Team
Indicator result in the reporting period	1 document with the national, regional and local legislation applicable to the context of the REDD+ JIGRANTU Project.
Documents to support the information	Legal compliance matrix
Remarks	N/A

ID Safeguard	SVG-2
Indicator ID	SVG-2.2
Indicator name	Socialization, dissemination and transfer of information
Type	Result
Goal	100% of project stakeholders have access to project information.
Unit of measure	Percentage
Monitoring methodology	Compliance with the indicator will be measured in relation to the number of project stakeholders reported with respect to the number of total stakeholders identified, within the project stakeholders are: - Leaders and community of the community councils of Rio Jiguamiando, La Grande and Turriquitado - Displaced community - Institutions and organizations - Project neighbors.

Frequency of monitoring	Biennial
Responsible for measurement	MRV Coordinator; directors of each community council and Biotrade S.A.S. **In the first verification period (2019-2022), legal representatives of each community council and Biotrade S.A.S. technical team.*
Indicator result in the reporting period	100% of project stakeholders have access to project information (Section 10 of the DoP and MR).
Documents to support the information	Minutes of socialization with the different stakeholders of the project: Communities, neighbors and institutions.
Remarks	It will be ensured that project stakeholders have adequate information according to their social characteristics and language. For 100%, it is considered that all project stakeholders, communities, displaced people, neighbors and institutions are informed.

ID Safeguard	SVG-2
Indicator ID	SVG-2.3
Indicator name	PQRDS System
Type	Product
Goal	1 PQRDS resolution report document for each of the V2-V14 monitoring periods.
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the generation of PQRDS resolution reports is considered.
Frequency of monitoring	Biennial
Responsible for measurement	MRV Coordinator; directors of each community council and Biotrade S.A.S. **In the first verification period (2019-2022), legal representatives of each community council and Biotrade S.A.S. technical team.*
Indicator result in the reporting period	JIGRANTU REDD+ Project PQRDS management procedure document.
Documents to support the information	JIGRANTU REDD+ Project's PQRDS management procedure.
Remarks	The first monitoring report presents the procedure for following up on all the requirements for processing the PQRDS.

ID Safeguard	SVG-3
Indicator ID	SVG-3.1
Indicator name	Ancestral knowledge and local knowledge
Type	Product
Goal	1 strategy document for the recovery and multiplication of ancestral knowledge V3
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the preparation of the document on the strategy for the rescue and multiplication of ancestral knowledge with information on per capita spending for the protection of cultural heritage is considered.
Frequency of monitoring	Unique in period V3

Responsible for measurement	MRV Coordinator; directors of each community council and Biotrade S.A.S.
Indicator result in the reporting period	
Documents to support the information	
Remarks	

ID Safeguard	SVG-3
Indicator ID	SVG-3.2
Indicator name	Recognition of local communities
Type	Product
Goal	1 document in each monitoring period
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the community mapping document is considered.
Frequency of monitoring	Biennial
Responsible for measurement	MRV Coordinator; directors of each community council and Biotrade S.A.S. **In the first verification period (2019-2022), legal representatives of each community council and Biotrade S.A.S. technical team.*
Result of the indicator in the reporting period	Mapping document of the communities present within the JIGRANTU REDD+ Project area.
Documents to support the information	- Community mapping document - JIGRANTU REDD+ Project Settlement Map - Benefit Sharing System - Tours in the project area - Evidence of work tables with the communities (Minutes)
Remarks	N/A

ID Safeguard	SVG-3
Indicator ID	SVG-3.3
Indicator name	New forms of sustainable land use
Type	Product
Goal	1 document in each monitoring period V2-V14
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, we consider the construction of the report document that reports the progress in the implementation of Sustainable Productive Projects, which contains the statistical follow-up.
Frequency of monitoring	Biennial
Responsible for measurement	MRV coordinator; directors of each community council and Biotrade S.A.S.
Result of the indicator in the reporting period	
Documents to support the information	
Remarks	

ID Safeguard	SVG-4
Indicator ID	SVG-4.1
Indicator name	Full and effective participation of local communities
Type	Result
Goal	100% of the decisions comply with the internal regulations of the community councils and the regulations of the collective territories of black communities.
Unit of measure	Percentage
Monitoring methodology	The monitoring and reporting of this indicator will be measured considering the number of decisions that must be approved in assemblies to ratify the decisions.
Frequency of monitoring	Biennial
Responsible for measurement	MRV Coordinator; directors of each community council and Biotrade S.A.S. **In the first verification period (2019-2022), legal representatives of each community council and Biotrade S.A.S. technical team.*
Indicator result in the reporting period	100% of the decisions were approved in the assembly for the formulation of the REDD+ JIGRANTU Project within the community councils.
Documents to support the information	- Acta asamblea en el consejo comunitario del Rio Jiguamiando - Acta asamblea en el consejo comunitario de La Grande - Acta asamblea en el consejo comunitario de Turriquitado
Remarks	N/A

ID Safeguard	SVG-5
Indicator ID	SVG-5.1
Indicator name	Conservation, protection, restoration and sustainable use of ecosystems
Type	Product
Goal	1 document Diagnosis of the state of ecosystems, ecosystem services and vulnerability to the effects of climate change in the monitoring period V3
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the documents and reports that contribute to the construction of the diagnosis of the state of the ecosystems and their natural resources are considered.
Frequency of monitoring	In periods V1 and V3
Responsible for measurement	MRV Coordinator; directors of each community council and Biotrade S.A.S. **In the first verification period (2019-2022), legal representatives of each community council and Biotrade S.A.S. technical team.*
Indicator result in the reporting period	Document of actions in conservation and wildlife harvesting within the La Grande Community Council.
Documents to support the information	- Conservation actions document of the REDD+ JIGRANTU Project - Traditional use of wild birds by Afro-descendant communities in the lower Atrato River basin, Colombia.

Remarks	For the reporting of this indicator, documents and reports that contribute to the construction of the diagnosis of the state of the ecosystems and their natural resources are considered.

ID Safeguard	SVG-5
Indicator ID	SVG-5.2
Indicator name	Use and exploitation of natural resources
Type	Product
Goal	1 summary document of permits or authorizations for the use and exploitation of natural resources
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the document summarizing the permits or authorizations for the use and exploitation of natural resources is considered.
Frequency of monitoring	Biennial
Responsible for measurement	MRV Coordinator; directors of each community council and Biotrade S.A.S. **In the first verification period (2019-2022), legal representatives of each community council and Biotrade S.A.S. technical team.*
Result of the indicator in the reporting period	Summary document of forest harvesting permits for the period 2019 to 2022 for the community council of the Jiguamiando River.
Documents to support the information	- Summary document of forest harvesting permits granted to the community council of the Jiguamiando River in the period 2019 to 2022 - Resolutions with authorization for persistent forest harvesting.
Remarks	N/A

ID Safeguard	SVG-5
Indicator ID	SVG-5.3
Indicator name	Forestry control and surveillance
Type	Impact
Goal	Decrease of at least 10% in forest loss with respect to the average of the two previous years.
Unit of measure	Percentage
Monitoring methodology	Forest and biodiversity monitoring activities are carried out through analysis of the Geographic Information System, community monitoring through tours and activities to identify GHG emission zones.
Frequency of monitoring	Biennial
Responsible for measurement	MRV Coordinator; directors of each community council and Biotrade S.A.S. **In the first verification period (2019-2022), legal representatives of each community council and Biotrade S.A.S. technical team.*
Indicator result in the reporting period	22% decrease in forest loss considering the average non-forest from 2017 and 2018 (495.5 ha) and from 2019 to 2022 (385.9 ha).
Documents to support the information	- Shapes with the forest areas in the project area - Summary of non-forest forest in the project areas

Remarks	N/A

ID Safeguard	SVG-6
Indicator ID	SVG-6.1
Indicator name	Reduce the risks of reversion
Type	Product
Goal	1 document with an analysis of the risks faced by the project
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, a risk analysis is considered and updated every monitoring period.
Frequency of monitoring	Biennial
Responsible for measurement	MRV Coordinator; directors of each community council and Biotrade S.A.S. **In the first verification period (2019-2022), legal representatives of each community council and Biotrade S.A.S. technical team.*
Indicator result in the reporting period	Document with the identification of the risks associated with the project.
Documents to support the information	- JIGRANTU REDD+ Project Risk Analysis - Chapter 7 of the Project Document presenting information on risk management.
Remarks	N/A

ID Safeguard	SVG-7
Indicator ID	SVG-7.1
Indicator name	Forestry control and monitoring to control the displacement of emissions.
Type	Product
Goal	1 document with the report on the development of GIS monitoring actions in the area of leaks.
Unit of measure	Number of documents
Monitoring methodology	For the measurement and reporting of this indicator, the report considers the development of GIS monitoring actions of the leakage area and community monitoring with the identification of critical areas and events of GHG emissions to reduce the displacement of emissions.
Frequency of monitoring	Biennial
Responsible for measurement	MRV Coordinator; directors of each community council and Biotrade S.A.S. **In the first verification period (2019-2022), legal representatives of each community council and Biotrade S.A.S. technical team.*
Indicator result in the reporting period	Identification of the leakage area of the project and loss of forest in this area.
Documents to support the information	- JIGRANTU REDD+ Project Leakage Area Delimitation - Leakage Area Monitoring: Shapes with forest areas 2007 to 2022 - Summary of non-forest forest in project areas
Remarks	N/A

17.2 Data and parameters for quantifying emission reductions

During the activities carried out by the project in the biodiversity conservation and ecosystem services item in the indicator of number of tons of CO_2 not emitted, it is expected to calculate the reduction of emissions, for which the following parameters will be calculated in detail:

17.2.1 Annual deforestation in the project area

Annual deforestation in the project area is quantified from satellite analysis of the forest area at the beginning of the monitoring period and at the end of the monitoring period from which the annual change in forest cover within the project area is estimated with the following equation:

$$CSB_{proy,año} = \left(\frac{1}{t_2 - t_1}\right) * \left(A_{REDD+proy,1} - A_{REDD+proy,2}\right)$$

Where:

$CSB_{proy,año}$ = Annual change in the area covered by forest in the project area (ha)
t_2 = Year end of monitoring period
t_1 = Initial year of the monitoring period
$A_{REDD+proy,1}$ = Area of forest in the project area at the beginning of the monitoring period (ha)
$A_{REDD+proy,2}$ = Area of forest in the project area at the end of the monitoring period (ha).

17.2.2 Annual deforestation in the leakage area

The annual deforestation in the leakage area is calculated from the following equation.

$$CSB_{f,año} = \left(\frac{1}{t_2 - t_1}\right) * \left(A_{f,1} - A_{f,2}\right)$$

Where:

$CSB_{f,año}$ = Annual change in area covered by forest in the leakage area (ha)
t_2 = Year end of monitoring period
t_1 = Initial year of the monitoring period
$A_{f,1}$ = Area in forest, in the leakage area at the beginning of the monitoring period (ha)
$A_{f,2}$ = Area in forest, in the area of leakage at the end of the monitoring period (ha)

17.2.3 GHG emissions in the monitoring period

GHG emissions are calculated from carbon dioxide equivalent, which includes aboveground carbon, soil carbon and dead wood carbon sinks as detailed below:

17.2.3.1 Annual emission in the project area and leakage

The annual emission from deforestation in the project area is calculated from the following equation:

$$EA_{REDD+proy,año} = DEF_{REDD+proy,año} * tco_{2eq}$$

Where:

$EA_{REDD+proy,año}$ = Annual emission in the project area (tCO_2e /ha)
$DEF_{REDD+proy,año}$ = Annual deforestation in the project area (ha)
$tC0_{2eq}$ = Total carbon dioxide equivalent

The annual emission from deforestation in the leakage area is calculated from the following equation:

$$EA_{f,año} = (DEF_{f,año} * tco_{2eq}) - EA_{lb,f,año}$$

Where:

$EA_{f,año}$ = Annual emission in the leakage area (tCO_2e/ha)
$DEF_{f,año}$ = Annual deforestation in the leakage area (ha)
$tC0_{2eq}$ = Total carbon dioxide equivalent
$EA_{lb,f,año}$ = Annual emission from deforestation in the leakage area (tCO_2e)

17.2.4 Quantification of the project's emission reductions

Emission reductions from avoided deforestation in the monitoring period are estimated according to the equation:

$$RE_{DEF,REDD+proy} = (t_2 - t_1) * EA_{DEF,lb,año} - EA_{DEF,REDD+proy,año} - EA_{DEF,f,año}$$

Where:

$RE_{DEF,REDD+proy}$ = Emission reductions from avoided deforestation in the scenario with project (tCO_2e)
t_2 = Year end of monitoring period
t_1 = Initial year of the monitoring period

$EA_{DEF,lb,año}$ = Annual emission from deforestation in the baseline scenario (tCO_2e)
$EA_{DEF,REDD+proy,AÑO}$ = Annual deforestation emissions in the project area (tCO_2e)
$EA_{DEF,f,año}$ = Annual emission from deforestation in the leakage area (tCO_2e)

17.3 Additional information to determine baseline or reference scenario

The reference scenario is defined based on the comparability of biotic, abiotic, and socioeconomic aspects where the following aspects should be monitored:

1. Agents and causes of deforestation and degradation: based on land use analysis, bibliographic references, or interviews.
2. Land tenure analysis: changes in land dynamics such as second law extraction or changes from collective to private territory should be monitored.
3. Land use corresponds to an analysis of land use in the reference area.
4. Forest area and ecosystems: the area of forest present in the reference region and the dynamics of deforestation rates should be monitored.
5. Political context. Monitor the changes that may occur in the contexts of the collective territories.

17.4 Information related to the environmental impact assessment of GHG project activities.

The environmental and social impacts are related to the implementation of activities, which are listed in chapter 2.3 Project activities, and were evaluated using the Conesa 2010 methodology.