GOBERNACIÓN DE ANTIOQUIA República de Colombia	**INFORME DE SEGUIMIENTO A LA CONTRATACIÓN ESTATAL**	Código: FO-M7-P6-016 Versión: 03 Fecha de aprobación: 22/04/2024

NÚMERO DE INFORME	01					
SUPERVISIÓN	X					
INTERVENTORÍA	☐					
TIPO DE INFORME	**PARCIAL**	☐	**PARA PAGO**	X	**FINAL**	X
PERIODO DE INFORME	Desde:	Fecha 11/12/2025		Hasta:	Fecha: 31/12/2025	
PERIODO PARA PAGO	Desde:	Fecha 11/12/2025		Hasta:	Fecha: 17/12/2025	

1. INFORMACIÓN GENERAL E HISTORIAL DEL CONTRATO / CONVENIO

CONTRATO	☐	**NÚMERO:**	4600018863	
CONVENIO	☐	**FECHA DE SUSCRIPCION:**	12/11/2025	
MODALIDAD DE SELECCIÓN:			Mínima cuantía	
IDENTIFICACIÓN DEL PROCESO EN SECOP:			16961X	
FECHA DE INICIO DEL CONTRATO/CONVENIO:			11/12/2025	
OBJETO: Adquisición de Bonos de Carbono para la Compensación de la Huella de Carbono de la Gobernación de Antioquia-Cad vigencia 2024.				
ORGANISMO CONTRATANTE /CONVENIANTE:			**DEPARTAMENTO DE ANTIOQUIA – SECRETARIA DE TALENTO HUMANO Y SERVICIOS ADMNISTRATIVOS**	
CONTRATISTA / CONVENIANTE	NOMBRE:		CO2CERO SAS BIC.	
	NIT		901245493-8	
VALOR [$]:	INICIAL:		$ 21.000.000 VEINTIUN MILLONES DE PESOS ML IVA INCLUIDO	
		No.	**VALOR ADICIONADO**	**% DE ADICION**
		N/A	N/A	N/A
	VALOR TOTAL:		$ 21.000.000 VEINTIUN MILLONES DE PESOS ML IVA INCLUIDO	
REGISTRO PRESUPUESTAL	RPC NUMERO:		4500065999 – Secretaría de Talento Humano y Servicios Administrativos - $21.000.000	
	FECHA DE LIBERACION (IMPRESIÓN):		10/12/2025	
VALOR Y PORCENTAJE DE ANTICIPO:			N/A	
PLAZO:	INICIAL		Diez (10) días, contados a partir de la suscripción del acta de inicio, sin superar el 31 de diciembre de 2025.	
			FECHA DE INICIO	**FECHA DE TERMINACION**
			11/12/2025	31/12/2025
	PRÓRROGAS	**No.**	**TIEMPO PRORROGADO**	**NUEVA FECHA DE TERMINACIÓN**
		N/A	N/A	N/A
HISTORICO DE SUSPENSIONES:		**No.**	**FECHA INICIO SUSPENSIÓN**	**FECHA REANUDACIÓN** / **FECHA DE TERMINACION**

	N/A	N/A	N/A	N/A
FECHA DE TERMINACIÓN ACTUAL	17/12/2025			
TIENE GARANTÍAS VIGENTES, ACTUALIZADAS Y APROBADAS			N/A	
SUPERVISOR(ES)/ INTERVENTOR	NOMBRE(S)/ RAZON SOCIAL:	Beatriz Elena Jiménez Zúñiga Supervisora Técnica - CC 32.294.242		
	NUMERO CONTRATO INTERVENTOR:	N/A		
% DE EJECUCIÓN FÍSICA	100%			
% DE EJECUCIÓN DE RECURSOS	100%			

2. CUMPLIMIENTO DE LAS OBLIGACIONES, ACTIVIDADES O COMPROMISOS DE LAS PARTES

Previo a la suscripción del acta, se verificó el cumplimiento de los documentos y requisitos necesarios para el inicio del contrato, conforme a las condiciones establecidas en la invitación pública para la Adquisición de bonos de carbono para la compensación de la huella de carbono de la Gobernación de Antioquia – Vigencia 2024. Así mismo, se solicitó al contratista la certificación de pago de aportes al Sistema de Seguridad Social Integral y parafiscales.

El contrato se ejecutó mediante la adquisición de 1.509 bonos de carbono, correspondientes al Proyecto REDD+ PAZcífico Sur, ubicado en 18 consejos comunitarios del departamento de Nariño, con una extensión de 371.748 hectáreas. El proyecto tiene como objetivo la reducción de emisiones de GEI por deforestación y degradación forestal, cuenta con metodología REDD+ certificada bajo el estándar CERCARBONO V4.1, y fue validado y verificado por ICONTEC, conforme a la normativa ambiental vigente.

La ejecución presupuestal ascendió a $15.090.000 de un total asignado de $21.000.000, alcanzando una ejecución financiera del 71,86 %. Los recursos no ejecutados quedaron debidamente reservados en el RPC N.° 4500065999.

Las actividades contractuales se desarrollaron dentro del plazo de diez (10) días establecido en el acta de inicio. Para la verificación del cumplimiento del objeto contractual, se anexan los informes, actas y demás soportes correspondientes.

2.1. CUMPLIMIENTO DE LAS OBLIGACIONES, ACTIVIDADES O COMPROMISOS DEL CONTRATISTA/CONVENIANTE EJECUTOR.

2.1.1. EJECUCIÓN FÍSICA Y FINANCIERA DE LOS CONVENIOS/CONTRATOS DERIVADOS DE CONFORMIDAD CON LO INFORMADO POR EL CONVENIANTE O CONTRATISTA EJECUTOR

No se suscribieron contratos derivados N/A.

% DE EJECUCIÓN FÍSICA CONSOLIDADA DE LOS CONTRATOS/CONVENIOS DERIVADOS	N/A.
% DE EJECUCIÓN FINANCIERA CONSOLIDADA DE LOS CONTRATOS/CONVENIOS DERIVADOS	N/A.

2.1.2. SEGUIMIENTO TÉCNICO DEL CONTRATO/CONVENIO:

Se realiza seguimiento al cumplimiento de los compromisos establecidos en los estudios previos del contrato dentro del componente técnico por parte del proveedor.

OBLIGACIONES/COMPROMISOS PACTADOS DEL COMPONENTE TÉCNICO	% EJECUCIÓN DEL PERIODO INFORMADO	% EJECUCIÓN ACUMULADO	MEDIO DE VERIFICACIÓN	OBSERVACIÓN
Entregar el certificado de la adquisición de 2.100 bonos de carbono, cumpliendo los requerimientos técnicos descritos en el numeral 3, donde conste que el Departamento de Antioquia es el titular de la compensación.	100%	100%	Certificados emitidos / En el siguiente enlace se puede verificar la información https://www.ecoregistry.io/projects-list/cercarbono-co2	El contratista cumplió conforme lo establecido de la oferta.
Entregar el certificado de aprobación de registro y asignación del proyecto por un organismo de validación y verificación competente.	100%	100%	Proyecto REDD+ PAZcífico / https://www.ecoregistry.io/projects-list/cercarbono-co2	Informes el PDD Project Description Document del proyecto REDD+ PAZcific Sur y el informe de Validación y Verificación.
Entregar informe del proyecto del cual se generan los bonos de carbono y brindar acceso a la plataforma requerida para que la gobernación de Antioquia pueda consultar el histórico de retiro de los certificados	100%	100%	Proyecto REDD+ PAZcífico / https://www.ecoregistry.io/projects-list/cercarbono-co2	Se han atendido todas las obligaciones técnicas y contractuales

TOTAL	100%	100%		

Método de cálculo del % de ejecución del periodo informado: El porcentaje de cumplimiento se calculó con base en el tiempo de ejecución del contrato, aplicando la relación entre los días ejecutados y los días contratados. El contrato inició el 11 de diciembre y tuvo un plazo de diez (10) días, finalizando el 20 de diciembre, ejecutándose la totalidad del tiempo previsto dentro del período informado. En consecuencia, el porcentaje de cumplimiento del período y el cumplimiento acumulado corresponden al 100 %.

2.1.2.1 SEGUIMIENTO COMPONENTE SOCIAL DEL CONTRATO/CONVENIO:

N/A.

2.1.2.2 SEGUIMIENTO COMPONENTE AMBIENTAL DEL CONTRATO/CONVENIO:

N/A.

2.1.2.3 SEGUIMIENTO AL COMPONENTE DE SEGURIDAD Y SALUD EN EL TRABAJO DEL CONTRATO/CONVENIO:

N/A

2.1.3. SEGUIMIENTO ADMINISTRATIVO Y LEGAL DEL CONTRATO/CONVENIO:

Obligaciones establecidas en el acuerdo marco, se realiza seguimiento a las que aplican a la entidad

OBLIGACIONES/COMPROMISOS PACTADOS DEL COMPONENTE ADMINISTRATIVO Y LEGAL	CUMPLE/NO CUMPLE	MEDIO DE VERIFICACIÓN	OBSERVACIÓN
Disponer de los medios necesarios para la ejecución del contrato, conforme a lo estipulado en la invitación pública.	CUMPLE	Proyecto REDD+ PAZcífico / https://www.ecoregistry.io/projects-list/cercarbono-co2	Se han atendido todas las obligaciones técnicas y contractuales
Presentar de manera oportuna los documentos necesarios para el pago de conformidad con la forma de pago establecida en el presente documento.	CUMPLE	Prefactura / factura y planillas de pago de seguridad social	Se han atendido todas las obligaciones técnicas y contractuales
Atender en forma oportuna las instrucciones del supervisor del contrato.	CUMPLE	Correos – comunicación oficial y expediente del contrato	Se atendieron de forma oportuna de acuerdo a los lineamientos establecidos en el

			contrato
Informar a la supervisión sobre cualquier anomalía, inconveniente o dificultad relacionado con los aspectos sociales y ambientales durante la ejecución de las actividades objeto del contrato, y las posibles soluciones para la resolución de los mismos.	CUMPLE	Correos – comunicación oficial y expediente del contrato	Se atendieron de forma oportuna de acuerdo a los lineamientos establecidos en el contrato
La información entregada durante la ejecución del contrato, goza de confidencialidad. El contratista manifiesta que es jurídicamente capaz de salvaguardar la información recolectada y suministrada, obligándose a: 1: Guardar confidencialidad sobre los mecanismos y sistemas de información que se le brinda. 2. Reconocer y dar manejo adecuado a la información recolectada en desarrollo del objeto contractual. 3. Responsabilizarse por la información suministrada. 4.Suministrar información veraz, completa y correcta, en desarrollo de las diferentes actuaciones.	CUMPLE	Expediente del contrato	Se siguieron todas las instrucciones consignadas en el acuerdo marco de contrato.
Presentar en debida forma la factura correspondiente a la prestación del bien, obra o servicio. Si el contratista está obligado a facturar electrónicamente, deberá presentar al Departamento la factura electrónica validada previamente por la DIAN, como requisito necesario para el pago de los bienes y/o servicios contratados, de acuerdo con las instrucciones y directrices de la DIAN.	CUMPLE	Soportes contables de acuerdo a las directrices sobre temas tributarios	El contratista cumple con lo normativo en materia tributaria
Estarán a cargo del Contratista y de acuerdo al régimen tributario los IMPUESTOS, TASAS Y CONTRIBUCIONES, establecidos por las diferentes autoridades nacionales, departamentales o municipales	CUMPLE	Expediente del contrato	Se siguieron todas las instrucciones consignadas en el acuerdo marco de contrato.

El Contratista, bajo la gravedad de juramento, manifiesta que ni él ni sus representantes legales, apoderados, revisor f iscal o quien haga sus veces: i). Están incluidos en la lista ONU emitida por el Consejo de Seguridad de las Naciones Unidas o la lista emitida por la oficina de control de activos extranjeros de las Naciones Unidas (OFAC) también conocida como lista Clinton, ni en ninguna otra lista restrictiva emitida por organismos nacionales o internacionales, policiales, judiciales o de investigación con igual fin; ii). Han participado en actividades de lavado de activos o financiación del terrorismo.	CUMPLE	Expediente del contrato	Se siguieron todas las instrucciones consignadas en el acuerdo marco de contrato.
Las demás que tengan relación directa con la naturaleza y objeto del contrato, entre otras.	CUMPLE	Informe de seguimiento con sus respectivos anexos	Se ha dado cumplimiento a lo consignado en todos los documentos del proceso y del acuerdo marco

2.2. CUMPLIMIENTO DE LAS OBLIGACIONES, ACTIVIDADES O COMPROMISOS DEL DEPARTAMENTO DE ANTIOQUIA.

Obligaciones establecidas en el acuerdo marco, se realiza seguimiento a las que aplican a la entidad

OBLIGACIONES/COMPROMISOS PACTADOS	CUMPLE/NO CUMPLE	MEDIO DE VERIFICACIÓN	OBSERVACIÓN
Coordinar el proyecto de acuerdo con la normatividad establecida.	CUMPLE	Expediente del contrato	Se siguieron todas las instrucciones consignadas en el acuerdo marco de contrato.
Ejercer el seguimiento, control, vigilancia, verificación, asesoría al contrato, por medio de la Supervisión, de acuerdo con la Ley 80 de 1993, III. DEL CONTRATO ESTATAL, en el Artículo 32.	CUMPLE	Correos electrónicos / expediente del contrato	Se siguieron todas las instrucciones consignadas en el acuerdo marco de contrato y se dieron las orientaciones pertinentes.
Exigir al Contratista la ejecución idónea y oportuna del objeto del contrato.	CUMPLE	Expediente del contrato / facturas / informes	El contratista cumplió con lo establecido dentro del alcance del contrato.

Pagar el presente contrato en la forma prevista, previa presentación de los informes de la supervisión y soportes de ejecución por parte del contratista.	CUMPLE	Informe de supervisión / certificado de bonos / recibo de satisfacción	Se realizó el informe conforme a lo establecido por el área de contable para efectos de pago.
Informar por escrito, de manera oportuna e inmediata al CONTRATISTA las posibles irregularidades encontradas durante el desarrollo del contrato.	N/A	N/A	Para este contrato no se presentaron irregularidades se desarrollo dentro de lo establecido en la aceptación de la oferta y en los términos legales
Verificar la efectiva prestación del servicio y el cumplimiento de todos los compromisos adquiridos por parte del Contratista, entre otras.	CUMPLE	Informe de supervisión / certificado de bonos / recibo de satisfacción	El contratista cumplió con lo establecido dentro de la oferta y los estudios previos
Asignar un supervisor por parte de la entidad contratante Departamento de Antioquia, para que ejerza las respectivas funciones.	CUMPLE	Se delegó a la funcionaria Beatriz Elena Jiménez para realizar las funciones	Se asigna mediante el radicado no.2025020051136 / 11/12/2025
Las demás que tengan relación directa con la naturaleza y objeto del contrato, entre otras.	CUMPLE	Informe de seguimiento con sus respectivos anexos	Se ha dado cumplimiento a lo consignado en todos los documentos del proceso y del acuerdo marco

2.3. SEGUIMIENTO FINANCIERO Y CONTABLE DEL CONTRATO / CONVENIO:

RESUMEN DE LA EJECUCIÓN FINANCIERA				
ENTIDAD	**DEPARTAMENTO**	**ASOCIADO(S) si aplica**	**OTROS**	**TOTAL**
1. Recursos iniciales comprometidos	$21.000.000	N/A	N/A	$21.000.000
2. Adiciones	N/A	N/A	N/A	0
3. TOTAL RECURSOS COMPROMETIDOS	$21.000.000	N/A	N/A	$21.000.000
4. Anticipos	N/A	N/A	N/A	0
5. Recursos pagados / desembolsados	N/A	N/A	N/A	0
6. TOTAL RECURSOS ENTREGADOS	0	0	0	0
7. Recursos ejecutados	$15.090.000	0	0	$15.090.000
8. Recursos no ejecutados	$5.910.000	0	0	$5.910.000

2.4. INFORMACIÓN COMPLEMENTARIA:

Durante la ejecución del contrato no se presentaron observaciones para el control financiero, ni situaciones relacionadas con contratos de mandato, rendimientos financieros o devoluciones de contribución especial. La ejecución de los recursos se realizó conforme a lo pactado

3. REUNIONES Y/O VISITAS REALIZADAS EN EL PERIODO DE SEGUIMIENTO

N/A.

FECHA	TIPO DE REUNIÓN Y/O VISITA	CONCLUSIONES/OBSERVACIONES
N/A.	N/A.	N/A.

4. CONTROL DE PAGOS O DESEMBOLSOS

FORMA DE PAGO O DESEMBOLSO: La Secretaría de Talento Humano y Servicios Administrativos del DEPARTAMENTO realizará un (1) pago único por el monto total de los bonos adquiridos, teniendo en cuenta el valor bono propuesta en la oferta por el valor aceptado en la oferta incluida todos los costos directos e indirectos, tasas y contribuciones que conlleven la celebración y ejecución total del contrato y se efectuará el pago en pesos colombianos, sujeto a la entrega de los bonos de carbono a nombre del Departamento de Antioquia, la certificación e informe del proyecto según las estipulaciones de los requisitos técnicos descritos en el numeral 3 del Estudio Previo.

CONCEPTO	FECHA	VALOR CONTRATO	VALOR PAGO / DESEMBOLSO	AMORTIZACIÓN ANTICIPO	VALOR NETO A PAGAR	SALDO	COMPROBANTE DE EGRESO
Valor Inicial	12/11/2025	$21.000.000		0		21.000.000	
Adiciones	N/A	N/A				21.000.000	
Pago No.1 / Desembolso	Fecha [dd/mm/aa] Fecha del Recibo a Satisfacción		$15.090.000	N/A	$15.090.000	$5.910.000	(Detallar el número y fecha del **documento de pago** generado en el Sistema SAP). Este numeral se diligencia en el informe siguiente a la autorización del pago/desembolso respectivo, cuando la dependencia encargada (Secretaría de Hacienda/Dirección Financiera Salud) realice el pago o desembolso.
TOTALES		$21.000.0000	$15.090.000	N/A	$15.090.000	$5.910.000	

De conformidad con el Recibo a Satisfacción anexo al informe; el supervisor/interventor autoriza el pago/desembolso No. 01 al contratista/conveniante, por valor de: $15.090.000 (Quince millones noventa mil pesos), el cual se relaciona en la tabla anterior.

5. VERIFICACIÓN DE PAGOS DE SEGURIDAD SOCIAL Y APORTES DE PARAFISCALES

El contratista/conveniante acredita que se encuentra a paz y salvo por concepto del pago de aportes a los sistemas de seguridad social en salud, pensiones, ARL y parafiscales, de él (y de sus empleados, según el caso), de conformidad con lo dispuesto en el artículo 50 de la ley 789 de 2002 y el artículo 23 de la ley 1150 de 2007 mediante la certificación emitida el 26 de noviembre de 2025 donde se encuentra a paz y salvo de pago de seguridad social integral.

Adicionalmente, el supervisor/interventor verificó y revisó las planillas y demás soportes entregados por el conveniante/contratista que acreditan el pago por concepto de seguridad social y parafiscales.

6. CONTROL Y MITIGACIÓN DE RIESGOS

De conformidad con lo establecido en la normatividad vigente y el Manual de identificación y cobertura del riesgo expedido por Colombia Compra Eficiente, la Entidad deberá realizar el control y mitigación de los riesgos identificados y clasificados para el proceso de contratación en la matriz de riesgos del estudio y documentos previos, razón por la cual esta supervisión ha realizado las siguientes acciones de control y seguimiento a los riesgos previsibles que se han presentado durante la ejecución y liquidación del presente contrato.

Así mismo, si durante la ejecución del contrato se presentan riesgos imprevisibles, que por su misma naturaleza no fueron contemplados en la matriz de riesgos, también se deberá diligenciar la tabla con los controles y tratamientos respectivos a que hubiere lugar.

RIESGO	DESCRIPCIÓN DEL RIESGO/ RIESGO	QUIEN TIENE ASIGNADO EL RIESGO	TRATAMIENTO/ MITIGACIÓN	CUANDO Y COMO SE REALIZÓ EL MONITOREO	EVIDENCIA
(No se ha materializado)	No se ha materializado	No se ha materializado	No se ha materializado	No se ha materializado	No se ha materializado

Nota 2: Los riesgos que no han sido relacionados en este numeral, han sido monitoreados por la supervisión del contrato durante la vigencia del contrato, sin embargo, no ha sido necesario implementar el tratamiento de mitigación señalado en la matriz de riesgo de los documentos del proceso de contratación, en consideración a que a la fecha no se han presentado o materializado durante la ejecución y liquidación contractual.

7. CONTROL Y MITIGACIÓN DE INCUMPLIMIENTOS

N/A.

8. ANOTACIONES ADICIONALES

N/A.

9. ANEXOS

- Acreditación de paz y salvo de seguridad social integral y planillas
- Informes el PDD Project Description Document del proyecto REDD+ PAZcific Sur y el informe de Validación y Verificación.
- Informe de supervisión 01
- Prefactura por parte del proveedor y/o contratista
- Planilla de recibido a satisfacción

Para constancia, se firma la presente acta el 17 de diciembre de 2025.

Nombre: Beatriz Elena Jiménez Zúñiga
SUPERVISOR/INTERVENTOR

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Project Description Document

REDD+ PAZcific Sur

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of Elaboration date	February 6, 2023
Contact	Juan Sebastian Cotrino Francis Cornejo Naranjo

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Acronyms and Acronyms

Acronym/Acronym	Definition
DANE	National Administrative Department of Statistics
GEI	Greenhouse gases
IAvH	Alexander von Humboldt Institute
IDEAM	Institute of Hydrology, Meteorology and Environmental Studies of the Ministry of Environment and Sustainable Development of Colombia
IGAC	Augustine Codazzi Geographical Institute
INCODER	Colombian Development Institute
ENCOURAGE	Colombian Institute of Agrarian Reform
MADS	Ministry of Environment and Sustainable Development
0000MININTE-RIOR	Ministry of the Interior
PDD	Project Description Document
PMCC	Climate Change Mitigation Program or Project
ODS	Sustainable development goals
OVV	Validation and Verification Body

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1. Information on the climate change mitigation program or project (PMCC)

1.1. PMCC Title

REDD+ PAZcific Sur

1.2. PMCC holder information

Complete names)	Farmers of Patía Grande Alto Mira and Frontera Catangueros Gualajo River Progress Telembi Integration Friendship Helping hands Mexican old patio Rescue the rods Isagualpi basin union Chagui River Junction Rosario River Union Union on the Cauna River sweet plank salty plank Imbilpí del Carmen
Name of institution (if applicable)	Community councils
Roles o responsibilities	Proponents of the project and responsible for the execution of activities in the field, monitoring and reporting of activities to reduce deforestation. They exercise forest carbon rights and legal ownership of the territory.
Identification (RUT)	Farmers of Patía Grande 840000397-6 High view and border 840000219-3 Catangueros 840000035-6 Progress 840000630-8 Imbilpí del Carmen 840000450-9 Integration of Telembí 840000349-2

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	Friendship 840000584-7 Helping hands from Patía Grande 900121749-1 The memory of our ancestors of the Mexican River 900324346-9 Union Patía old 840000342-1 Rescue the sticks 840000360-4 Gualajo River 840000646-5
Location	Nariño: Barbacoas, El Charco, Roberto Payán, Magüí Payán, San Andrés de Tumaco and Olaya Herrera
Phones)	+ 57 1 320 254 8295
Email	gerencia@agroimpulso.org

1.3. Information from other institutional participants of the PMCC

Full name(s) Francis Cornejo	
Name of institution (if applicable)	Agroimpulso Foundation
Roles o responsibilities	ASSOCIATE PROJECT MANAGER, facilitates communication between the project proponent and the entities involved in the development of the initiative. Guides and supports the development of REDD+ activities and the investments that derive from the implementation of the initiative. Manage information from community councils to structure the project.
ID	901211139-9
Location	Av Roosevelt # 26 – 59 Cali (Valle del Cauca)
Phones)	+ 57 1 320 254 8295
Email	gerencia@agroimpulso.org

Full name(s) Mauricio Rodríguez Castro	
Name of institution (if applicable)	CO2CERO SAS
Roles o responsibilities	PROJECT TECHNICAL ASSOCIATE, structures the technical inputs necessary to achieve the objectives of the initiative. Manages the services and products of entities external to the initiative to achieve project certification.

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	Accompanies field activities, diagnoses and technical surveys that contribute to the correct achievement of the initiative.
ID	901245493-8
Location	Cra. 45a #104 B 16. Bogotá (Colombia)
Phones)	+601 604 72 79
Email	info@co2cero.co

1.4. PMCC objective

Reduce emissions generated by deforestation and forest degradation within the eighteen (18) Community Councils located in the department of Nariño in the municipalities of Barbacoas, El Charco, Roberto Payán, Magüi Payán, San Andrés de Tumaco and Olaya Herrera, which make up the project.

- Evaluate the emissions avoided by community councils through their conservation, restoration and sustainable management actions for a period of 20 years.
- Identify activities that mitigate and prevent the growth of de-risking factors. afforestation and degradation at the local level for a period of 20 years.
- Guarantee compliance with the regulatory and socio-environmental framework related to the REDD+ PAZcífico Sur project for a period of 20 years.
- Generate a transparent and equitable distribution of benefits according to the resources obtained from the commercialization of avoided GHG emissions within the project limits for a period of 20 years.
- Guarantee free, prior and informed consent, and the participation of all actors involved in the GHG mitigation initiative, consolidating a continuous flow of information between the parties.

1.5. PMCC Description

The REDD+ PAZcífico Sur project is an initiative developed in eighteen (18) community councils in the department of Nariño, with the support of Fundación Agroimpulso and CO2CERO SAS, whose objective is the reduction of emissions due to deforestation and forest degradation in 371,748 hectares during a period of twenty (20) years, through conservation, improvement and increase activities in carbon reservoirs.

The support for achieving these objectives will be the strengthening of the fundamental axes of development of a community, which are improved from a socioeconomic, cultural and environmental perspective, directed at activities that improve capabilities.

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workers' techniques, empower all social groups within the community and generate a sense of ownership over the natural resources of their property

REDD+ PAZcífico Sur projects the reduction of 9,416,407 tCO2e during its credit period, with an annual average of 470,820 tCO2e, also including the total emission of 1,103,548 tCO2e within its leakage belt. Reduced emissions within the project boundary are calculated taking into account the release of CO2e in the carbon pools of aboveground biomass, belowground biomass, dead wood, litter, and soil organic carbon; The emission factor used for the project is differentiating for deforestation and degradation activities. The types of GHG taken into account for the project are seen in Table 1.

Table 1 Types of GHG involved in the PAZcífico Sur REDD+ project.

Type of GHG	Activity that generates, removes or reduces it
CO2	Gas emitted by the elimination of aerial biomass resulting from deforestation processes within forest areas (forest extraction and biomass burning).
CO2	Gas emitted by the elimination of aerial biomass resulting from degradation processes within forest areas (fragmentation and selective wood extraction).

1.5.1. Sectoral scope and type of PMCC

- Review criterion: Cercarbono protocol for the voluntary certification of carbon good de CERCARBONO V 4.1
- Sectoral scope: Land use – Forest lands
- General activity: Avoidance of GHG emissions
- Specific activity: Reduction of emissions from deforestation and degradation (REDD+). Activities that reduce or avoid GHG emissions by removing or maintaining the carbon content in carbon pools.

- Type: Unplanned deforestation and degradation. Type 1 since it reduces 10,000 or more tons of CO2e, on average per year.
- Methodology: REDD+ for the execution of REDD+ projects consistent with levels national reference standards. CERCARBON V 1.2

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1.5.2. PMCC location and boundaries

Below, the location and limits defined for the PAZcí-fico Sur REDD+ Project are presented, taking into account the methodological and specific requirements of the certification program.

1.5.2.1. Spatial limits

The PAZcífico Sur REDD+ project is located in the southwest of the country in the department of Nariño, in a total of six (6) municipalities that correspond to Barbacoas, El Charco, Roberto Payán, Magüí Payán, San Andrés de Tumaco and Olaya Herrera, as seen in Figure 1. Its geographical location is established at the following coordinates: North 2°12'41.9508" N; South 1°14'13.5708" N, East 77°43'26.8968" W and to the West 78°46'51.3876" W.

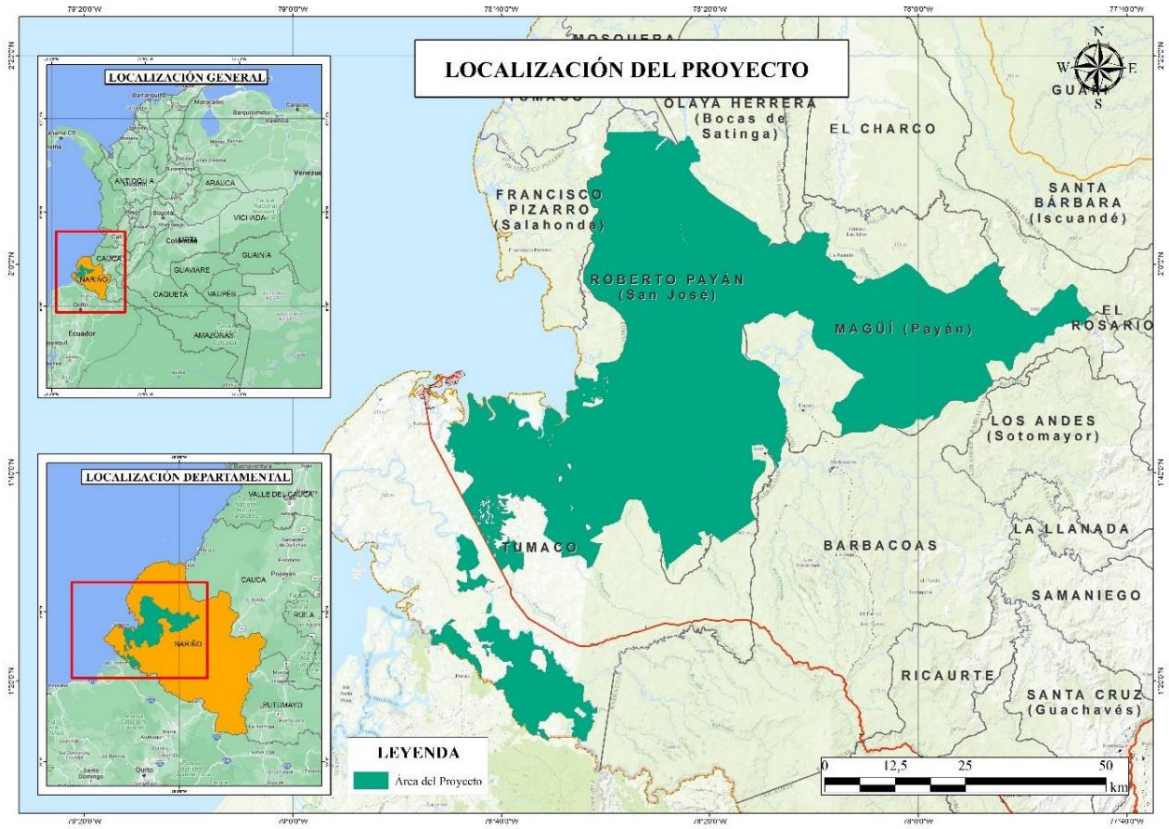


Figure 1. Location of the PAZcífico Sur REDD+ project.
Source: (CO2CERO SAS, 2022)

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Additionally, the geographical coordinates of the eighteen (18) community councils involved in the initiative are presented.

Table 2 Geographic coordinates community councils REDD+ PAZcífico Sur project.

Community Council	Longitud	Latitude
Farmers of Patía Grande	78° 25' 51.085" W	1° 57' 4.626" N
Union Rio Rosario	78° 35' 32.066" W	1° 37' 22.612" N
Union of Isagualpi basins	78° 21' 0.986" W	1° 38' 48.735" N
Rescue the rods	78° 41' 30.960" W	1° 43' 16.200" N
Union Patía old	78° 16' 37.144" W	2° 1' 11.939" N
Catangueros	78° 20' 38.240" W	1° 50' 38.206" N
Union on the Cauna River	78° 40' 32.867" W	1° 35' 43.805" N
The memory of our ancestors of the Mexican river	78° 32' 55.311" W	1° 39' 1.782" N
High view and border	78° 38' 15.381" W	1° 21' 30.895" N
Gualajo River	78° 36' 15.151" W	1° 41' 36.792" N
Progress	78° 27' 0.618" W	2° 6' 39.870" N
Telembí integration	78° 15' 59.861" W	1° 45' 59.138" N
Union of the chagüí river	78° 27' 45.332" W	1° 44' 2.807" N
Helping hands from Patía Grande	77° 58' 57.463" W	1° 54' 16.513" N
Friendship	78° 1' 12.059" W	1° 47' 0.142" N
salty plank	78° 31' 33.415" W	1° 45' 37.669" N
Imbilpí del Carmen	78° 32' 13.548" W	1° 42' 59.738" N
sweet plank	78° 30' 53.736" W	1° 43' 49.363" N

Source: (CO2CERO SAS, 2022)

The project area borders to the north with the Sanquianga National Natural Park; to the west with protection areas (Type A) of the Pacific Forest Reserve established in Law 2 of 1959 and the Cabo Manglares Bajo Mira and Frontera National Integrated Management District; to the South, with the Tumaco Peasant Reserve Zone, protection areas (Type A) of the Pacific Forest Reserve established in Law 2 of 1959; and to the east, protection areas (Type A) of the Pacific Forest Reserve established in Law 2 of 1959.

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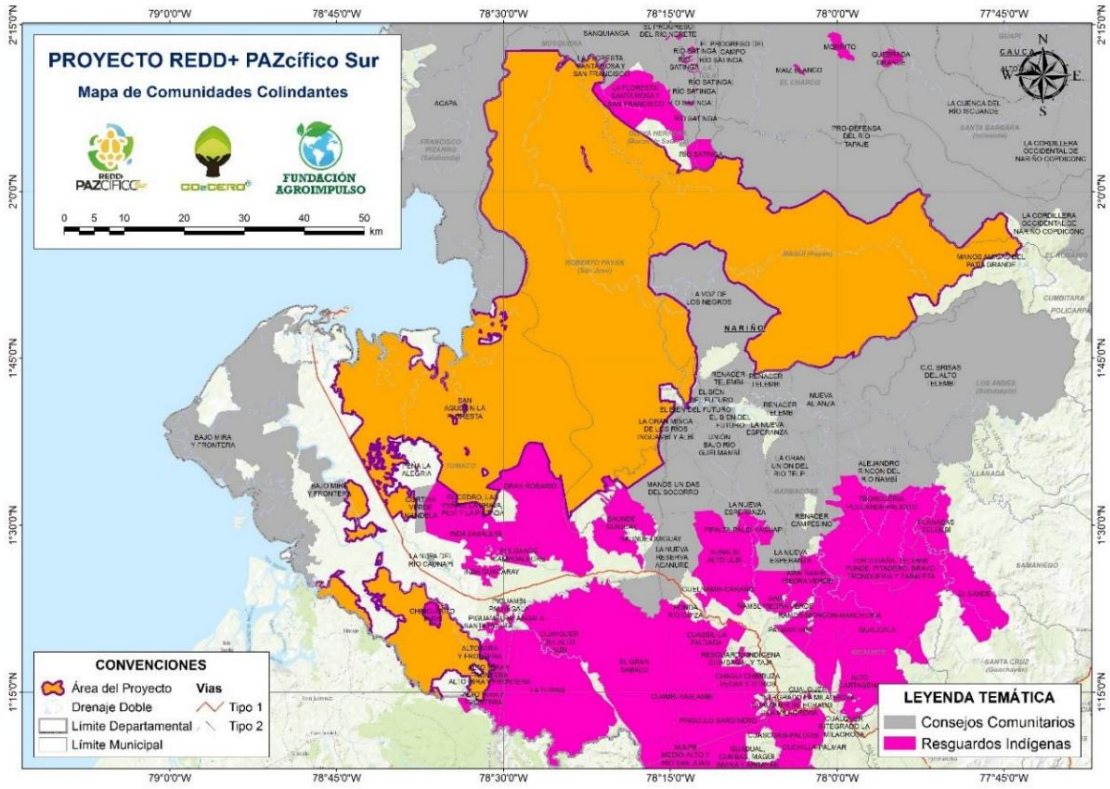


Figure 2. Map of neighboring communities.

Source: (CO2CERO SAS, 2022)1

Additionally, it can be seen in Figure 2 that the neighboring communities are:

- In the northern direction, the Acapa, Sanquianga and El Resguardo Community Councils La Floresta, Santa Rosa and San Francisco Indigenous;
- To the east it limits with the community councils Prodefensa Del Río Tapaje, Brisas Del Alto Telembi, Renacer Telembi and The Voice of the Blacks;
- To the south with the Manos Unidas Del Socorro Community Councils, Cortina Verde Man-dela, La Gran Minga De Los Ríos Inguambí and Albí and with the Indigenous Reservations Saunde Guiguay, Great Rosary, The Cedar, The Rocks, The Brave, Pilvi and The Painted
- To the East with the Bajo Mira y Frontera Community Council.

1.5.2.2. Time limits

[1] Built from ANT, 2020 (https://data-agenciadetierras.opendata.arcgis.com/data-sets/fc3fc9592dd8460faf2b7f0bad0f8b33_0/explore?location=4.101836%2C-72.744581%2C6.38)

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Project duration: 20 years
Start date: 01.01.2017
Completion date: 12/31/2036

1.5.2.3. PMCC total area

The total area of the PAZcífico Sur REDD+ project corresponds to 371,747.58 hectares, of which 335,845.67 hectares correspond to eligible area.

1.5.2.4. Accreditation period

Start date: 01.01.2017
Completion date: 12/31/2036
Accreditation period: 20 years

1.6. Ownership or right to use the area, facility or process

Table 3 describes the information on the ownership of the Community Councils on the areas designated for the implementation of the REDD+ PAZ-Southern Pacific project.

Table 3. Ownership of Community Council properties.

N.°	Community Council	Legal representative	RUT	Resolution
1	Farmers of Patía Grande	Luis Herney Meadow Creek	840000397-6	1123 of May 23, 2000
2	High view and border	Ricaurte Ocampo	840000219-3	0525 of March 2, 2006
3	Catangueros	Victor Alfonso Ordoñez Ortiz	840000035-6	2202 of December 3 2002
4	Progress	Alexander Nova-rhino Quiñones Castillo	840000630-8	1178 of May 12, 1998 Updated 448 of December 3, 2020
5	Imbilpí del Carmen	Jose Mauricio Dajome	840000450-9	2544 of December 23, 2002
6	Tele-mbí integration	Pablo Elías An-Gulo Quiñones	840000349-2	0491 of April 10, 2002
7	Friendship	Daniel Cabezas Rodríguez	840000584-7	2800 of November 22-bre 2000 Updated 043 of March 19, 2020
8	Helping hands from Big Pa-tía	German Arbo-leda	900121749-1	1130 of May 23, 2000

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N.º	Community Council	Legal representative	RUT	Resolution
9	The memory of our ancestors of the River Mexican	Evulo Baltazar Molano Castillo	900324346-9	0400 of April 28, 2003
10	Union Patía old	Edwin Ricardo Quiñonez Teno- river	840000342-1	4915 of December 29 from 1998
11	Rescue the sticks	Titus Stupid Grove	840000360-4	2786 of December 13 2006
12	Gualajo River	Ivis Marina Ar- boleda Mon- size	840000646-5	2538 of December 23 2002
13	sweet plank	Jasmany Arbo- leda Preciado	840000647-2	1021 of May 31, 2005 208 of August 22, 2016
14	salty plank	In Marcela Riascos	840000386-5	2539 of December 23, 2002
15	Union of basins Isagualpi	Jaber Alirio Chi- I call Preciado	840000401-8	2699 of December 21 2001
16	Union of the Chagüí River	Olver Cordoba Guerrero	840000648-1	2201 of December 3 2002
17	Rosario River Union	Irma Rosa Mos- wanted Mos- want	840000330-3	2546 of December 23 2002
18	Union at Cauna River	Janie Jonifer Valencia Leather	900025971-1	8403 of September 11, 2014

Source: CO2CERO SAS – Agroimpulso Foundation (2022).

1.7. Characteristics and conditions prior to the start of the PMCC

The following chapter describes the diagnostic, physical and biotic conditions of the area of influence of the PAZcífico Sur REDD+ Project.

1.7.1. Pacific subregion

Below is a description of the Pacific subregion.

1.7.2. Generalities

The Colombian Pacific is located in the west of the country, with an extension that goes from the south of Panama in the Darién Gap, to the north of Ecuador, bounded by the national limits of both countries, to the northeast with the Urabá of Antioquia and to the west

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with the Pacific Ocean, with an approximate area of 116,000 km2 of Colombian territory.

The Pacific Region is part of the so-called biogeographic Choco, which covers the western territory of Panama, Colombia and Ecuador with an approximate area of 175,000 km2.
At the national level it contains four departments, with greater representation by Choco, along with Valle del Cauca, Cauca and Nariño Colombiano (Ombudsman's Office, 2018). Within the region, four subregions are identified, as presented in Table 4.

Table 4. Pacific subregions

Subregion	Description
Pacific coastal plains	It includes areas bordering the Pacific Ocean in western Colombia, with mangrove ecosystems, flooded forests, swamp vegetation and coasts. It has wide landscape and cultural diversity, with levels of social development in fishing activities, timber harvesting and artisanal mining.
Baudó mountain range	Composed of a low mountain system, north of the mouth of the Baudó River in the Pacific Ocean, with an extension to the Serranía del Limón, Colombian-Panamanian province of Darién, with a peak elevation of 1,400 meters above sea level in Alto del Buey. .
Alluvial valleys of the Atrato and San Juan rivers	Dominated by alluvial valleys, with humid characteristics marked by high rainfall associated with its proximity to the coast and the confluence that occurs with the mountainous areas that make up the valley, promoting the presence of endemisms and high plant biodiversity. It ends in its connection with the Micay River.
Andean – Pacific	It has a warm dry to temperate climate, with steep to broken relief, with the presence of some formations of volcanic origin due to the existence of the western mountain range. It houses the main urban agglomerations of the region, economic business activities associated with the sugar production chains.

Source: (Delgado et al., 2007) & (Hernández et al., 1992).

It has a great variety of biological formations with representation of 13 biomass composed of coastal ecosystems, mountain ranges, flooded forests to ecosystems with altitudinal gradients in Andean, sub-Andean and high-Andean forests, together with wide and floodable valleys (Galindo , Palacios, Bernal, Otero, & Betancourth, 2009).

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1.7.3. geology

The Colombian Pacific coastal basin as a convergence zone of the Nazca, South American and Caribbean plates, is limited by the Pacific Ocean on the western side, and on the eastern side by the Pacific platform and the western mountain range, with pre- presence of a relatively flat relief and characteristic elevations that generate dominance of igneous and sedimentary rocks mainly and with the presence of thrust and strike-slip faults (IGAC, 2001). Its evolution is the result of a continuous process of subduction and accretion at the edge of the South American plate, generating a configuration of basins ahead of the volcanic arc (Agencia Nacional de Hidrocarburos, 2006).

The geology of the region is distinguished in different ways according to its geomorphology. In the plain areas, sedimentary material predominates, with a wide presence of Pliopleistocene deposits. The Andean-Pacific zone is made up of volcanic and meta-sedimentary rocks from the Cretaceous with the presence of quartzdioritic plutons from the Tertiary with the presence of volcanic activity in the department of Nariño (Delgado et al., 2007).

In the area of the alluvial valleys and depressions there is a dominance of Tertiary sedimentary rocks, with the presence of igneous rocks from the Pliopleistocene (Delgado et al., 2007). The Serra-nía del Baudó is dominated by the UVA formation, on the western margin of the Pacific with the presence of alluvial-type sedimentary material, alluvial terraces, homoclinal spines and conglomeratic sandstone (IIAP, 2015).

1.7.4. Hydrography

The Pacific Macrobasin covers longitudinally an approximate distance of 740 km, with greater representation in area by the direct basin of the Patía River. The average flow of the Pacific River basin corresponds to 9,419 m3 /s (IIAP, 2013). It has the presence of 78 second-order basins, several of which drain their mouth into the sea, six (6) drain their waters directly into the Atlantic Ocean (Atrato, León, Sinú, Acandí, Tolo and Mulato) and twenty-one (21) drain to the Pacific Ocean (some such as Baudó, San Juan, Mira, Patía and San Juan del Micay), which are established as the fundamental unit of planning and territorial ordering (IIAP, 2015).

The Pacific slope is fed by water from the western mountain range, from the Pacific hydrographic zone, which contains the Atrato, San Juan, Baudó, Mira, Patía and San Juan de Micay, of which those with the highest average flow rate are

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Mira River with 827.06 m3 /s and the Patía with 213.5 m3 /s, while the ones with the lowest flow are the Blanco River with 3.39 m3 /s. Allowing the identification of a 13% reduction according to historical data from 1988 to 2003 (Delgado et al., 2007).

The basins of the 240 rivers and tributaries of the region are characterized by short, fast-flowing rivers with a wealth of widely exploited minerals, among which are gold, magnesium, nickel, tin, among others. There is also the presence of water complexes that make up the hydrography of the area with lagoons, estuaries and mangroves; lagoons such as Telpis, Santo Domingo, Verde, La Cocha, among others, the latter considered a Ramsar wetland. The water network constitutes an important transportation and communication system between communities, presenting itself as the main means for transportation, marketing, mobilization and cultural exchange (IIAP, 2015).

1.7.5. Regional Project Area

The region of influence of the REDD+ PAZcífico Sur project is described below.

1.7.5.1. Generalities

The department of Nariño is located in the southwest of the country; It has an approximate surface area of 3,326,506 ha, corresponding to 2.9% of the total extension of the national surface (Delgado et al., 2007). It limits to the north with the department of Cauca, to the south with the Republic of Ecuador, to the east with the departments of Putumayo and Cauca, and to the west with the Pacific Ocean. In the department, three bio-geographic provinces are differentiated: Chocó, Norandina and a sector of the Amazon (Hernández et al., 1992; Delgado et al., 2007), as described in Table 5.

Table 5. Biogeographic characteristics of the department of Nariño.

Biogeographic province	Set	Subset Features	
crashed	Plain of Pa- specific	Pacific Coast	Climate wet and warm Physiographic landscape: marine-coastal plains, meandering alluvial plain
		Plains	Climate: humid to super humid, temperate Physiographic landscape: alluvial terraces of various levels; hills and ridges
		Hills and terraces	
Norandina or Complex Andes Ecoregional North	Colombian massif	Inter-Andean slopes	Warm dry, temperate and cold climate, with a strongly steep relief, formations of volcanic origin, influenced by the presence of the Doña Juana volcanic complex, towards the upper part of the Mayo and Juanambú river basins.

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Biogeographic province	Set	Subset	Characteristics
	Knot of the Pastures	Inter-Andean slopes	Temperate, humid climate, broken to strongly broken relief, with formations of volcanic origin; The municipalities of Imués, Tan-gua, Sandoná, Consaca, Ancuya and Linares are located.
		Highlands	Cold to extremely cold climate, flat areas of tectonic origin with geomorphological formations of predominantly volcanic origin, densely populated with agricultural predominance; They belong to the Túquerres-Ipiales, Yacuanquer-Valle de Atriz plateau.
Amazon	Amazon foothills		Located towards the basins of the San Miguel and Guamuez rivers. Temperate to warm climate, dissected hills with a cover of humid forest are evident. honey.

Source: (Hernández et al., 1992; Delgado et al., 2007)

1.7.5.2. Geology and geomorphology

In the department, five geomorphological units are differentiated, with particular geological characteristics, which are shown below:

Table 6. Geomorphological units of the department of Nariño.

Unit Geological Features	
peaceful plain	Large deposit of semi-consolidated plioplesi-thocene and recent materials
Cordillera occidental	Consisting of volcanic and metasedimentary rocks of a simatic nature from the Cretaceous, affected by quartzioritic plutons of Tertiary age.
Cauca-Patía Depression	Consisting of Tertiary sedimentary rocks and a filling of volcanic materials of Pliopleistocene age that make up the Nariñense plateau.
Central-eastern mountain range	Sialic block formed by Precambrian rocks, similar to those found in the Guayanese Shield, includes granodioritic and granitic plutons from the Mesozoic.
Eastern Andean foothills	It consists of a succession of sedimentary rocks from the Meso-Zoic and Cenozoic.

Source: (Delgado et al., 2007)

1.7.5.3. Hydrography

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The department belongs to the Pacific and Atlantic slopes, and the Pacific and Amazonian hydrographic zones; In the first of them the basins of the Mira, Patía and San Juan de Micay rivers are located, and in the second the basin of the Putumayo River. Table 7 presents this classification down to the subbasin level.

Table 7. Hydrology of the department of Nariño.

Slope	Hydrographic zone	Basin	Subbasin
From Pacific	Peaceful	Mira River	San Juan-Guiza
		Patia River	Mayo Juanambú Guatemala Telephone Magui Patía Viejo
		Saint John of Micay	Brawl Iscuandé
From the Atlantic	Amazon	Putumayo	San Miguel Guamuez

Source: (Corponariño (2002) & Delgado et al., 2008)

With respect to the variation in flow levels, for the Guaguí River basin in the municipality of Barbacoas, according to (Bastidas & Naranjo, 2021), it is found that in the period between the years 2000-2002 there is an average flow of 127.1 m3 /s and for the 2010-2012 analysis of 139.3 m3 /s, observing an increase between the two periods of approximately 9.6%. Additionally, according to (De La Rosa et al., 2015), in the middle basin of the Patía River, the precipitation trend was increasing in the period of
1983-2014, this is directly proportional to the maximum, average and minimum flow levels; where precipitation values were obtained in the range of 2,398 m3 /s to 7024 m3 /s; having a decreasing trend in flow levels in the last 31 years and stating that the variations in flow levels are due to external factors such as pollution, climate change and solid material that is thrown into the river.

1.7.6. Biome

The project area presents three (3) large biomes and five (5) biomes, as shown in Table 8, according to the information reported in the Shapefile of Continental, Maritime and Coastal Ecosystems of Colombia, generated by IDEAM in the year 2017, with the Tropical Humid Zonobiome being more representative with 24,474.17 ha (65.84%).

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Table 8. Biomes present in the project area.

Great Biome	Biome	Area (ha)	Area (%)
Orobioma del Zonobioma Húmedo Tropical	Orobioma Subandino	1.341,15	0,36%
Pedobioma del Zonobioma Wet Tropical	Halobiome	20.198,40	5,43%
	Helobioma	87.563,48	23,55%
	Hydrobiome	17.897,38	4,81%
Tropical Wet Zonobiome	Tropical Wet Zonobiome	24.474,17	65,84%
Total general		**371.748**	**100%**

Source: (IDEAM, 2017).

The second most representative biome corresponds to the Helobiome with 87,563.5 ha (23.55%), followed by the Halobiome with 20,198.40 ha (5.43%), Hydrobiome 17,897.38 ha (4.81%) and finally the Subandino Orobiome with 1,341.15 ha (0.36%). The classification generated by the Alexander Von Humboldt Institute (IAvH), indicates the presence of five (5) biomes within the project area as shown in Table *9* and graphically in the

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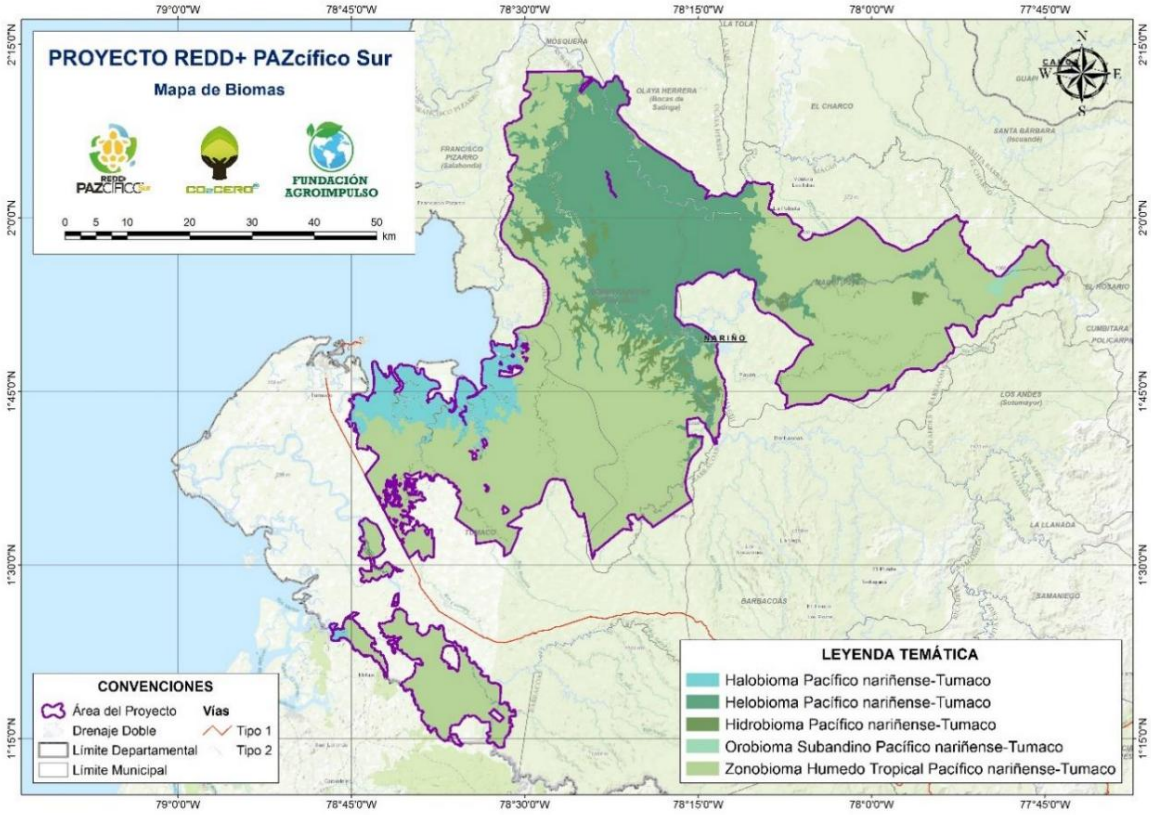


Figure 3. ***Biomes Project Area***

Table 9. Biomes present in the project area according to IAvH.

Biome	Area (ha)	Area (%)
Pacific Tropical Humid Zonobiome of Nariñense-Tumaco	244.747,17	65,84%
Nariño-Tumaco Pacific Helobiome	87.563,48	23,55%
Nariño-Tumaco Pacific Halobiome	20.198,40	5,43%
Nariño-Tumaco Pacific Hydrobiome	17.897,38	4,81%
Nariño-Tumaco Pacific Subandine Orobiome	1.341,15	0,36%
Total general	**371.748**	**100%**

Source: (IDEAM, 2017).

Like the biomes described above, the biome with the greatest representativeness in the project area according to IAVH, corresponds to the Pacific Tropical Humid Zonobiome of Nariño-Tumaco with 244,747.17 ha (65.84%), followed by the Pacific Helobiome of Nariño. -Tumaco with 87,563.48 ha and an area percentage of 23.55%, Pacific Nariñense-Tumaco Halobiome 20,198.40 ha (5.43%), Pacific Nariñense-Tumaco Hydrobiome 17,897.38 ha

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(4.81%) and finally the Nariño-Tumaco Pacific Subandino Orobiome with 1,341.15 ha (0.36%).

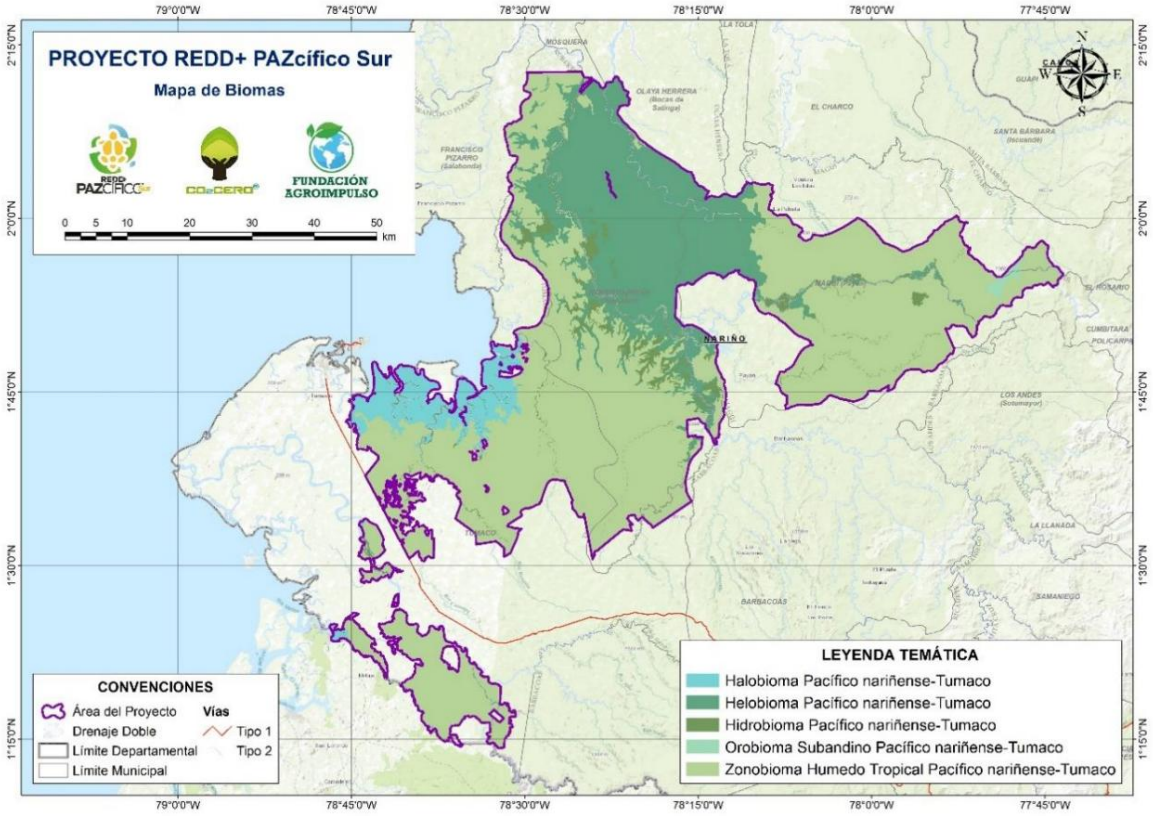


Figure 3. Map of Biomes according to IAvH within the project area.
Source: **(CO2CERO SAS, 2022)2 .**

It should be noted that the information base Shapefile is the one generated by (IDEAM, 2017), it presents some areas without interpretation within the project limits, due to this the interpretation of the missing biomes was carried out, based on the drainage dynamics. doubles associated with areas with information gaps. In this way, the double drainage layer was intercepted with the Continental Ecosystems layer and an equitable distribution was made between the different biomes obtained with the percentage of missing area.

1.7.7. Ecosystems

[2] Created from IDEAM, 2017. Available at: http://www.siac.gov.co/catalogo-de-mapas

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According to the information reported in the Shapefile of Continental, Maritime and Coastal Ecosystems of Colombia generated by (IDEAM, 2017), the natural forest ecosystem is the one with the greatest representativeness with an area of 173,301.47 ha (46.62%), followed by Secondary vegetation 119,368.59 ha (32.11%) and Heterogeneous agricultural areas 36,455.81 ha (9.81%), as presented in Table 10 and graphically in the

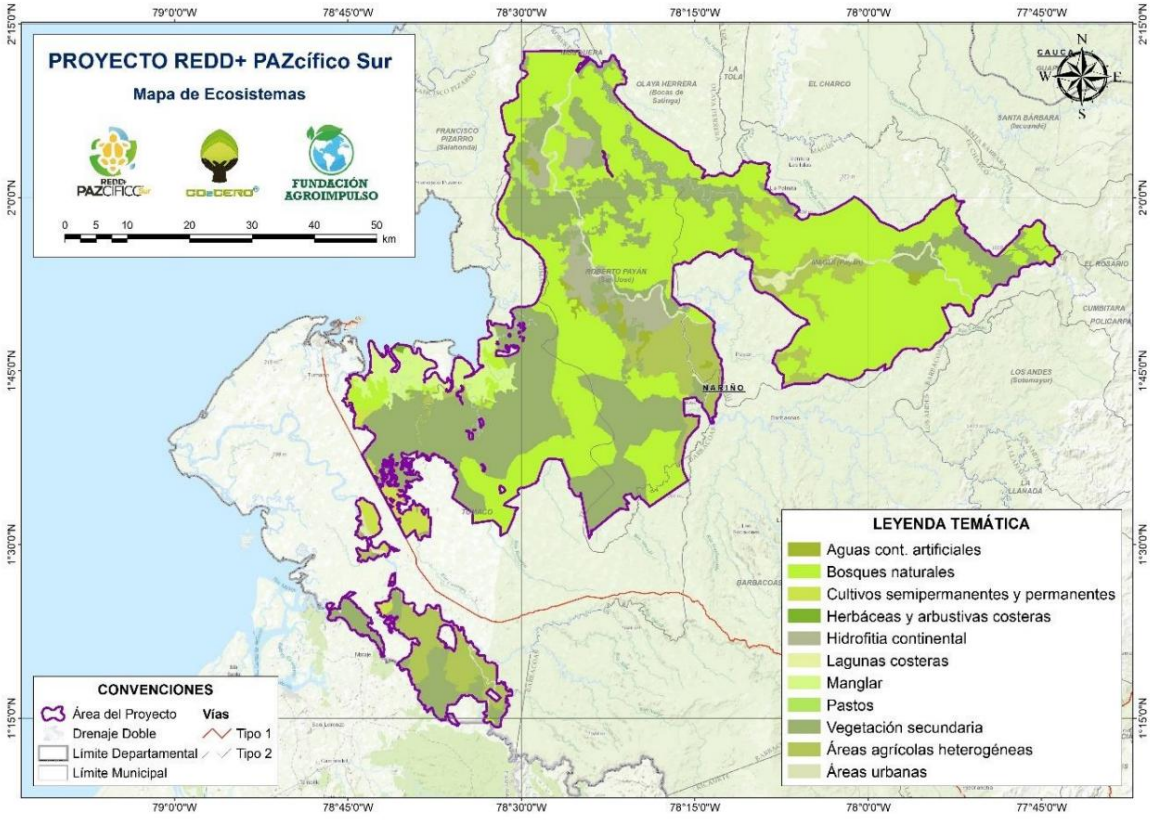


Figure 4.

Table 10. Ecosystems present in the project area.

Ecosystem	Area (ha)	Area (%)
Natural forests	173.301,47	46,62%
Secondary vegetation	119.368,59	32,11%
Heterogeneous agricultural areas	36.455,81	9,81%
Continental hydrophyta	12.736,73	3,43%
Missing	12.125,45	3,26%
Coastal lagoons	7.041,50	1,89%
Semi-permanent and permanent crops	6.040,30	1,62%

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Artificial continental waters	3.350,54	0,90%
Pastures	1.100,48	0,30%
Herbaceous and coastal shrubs	205,77	0,06%
Urban areas	20,94	0,01%
Total general	**371.748**	**100%**

Source: **(IDEAM, 2017)**

Among the least representative ecosystems, with less than 5% of the area are the Continental hydrophytia, Coastal lagoons, Semi-permanent and permanent crops, Artificial continental waters, Pastures, Coastal herbaceous and shrubby plants, and Urban areas.

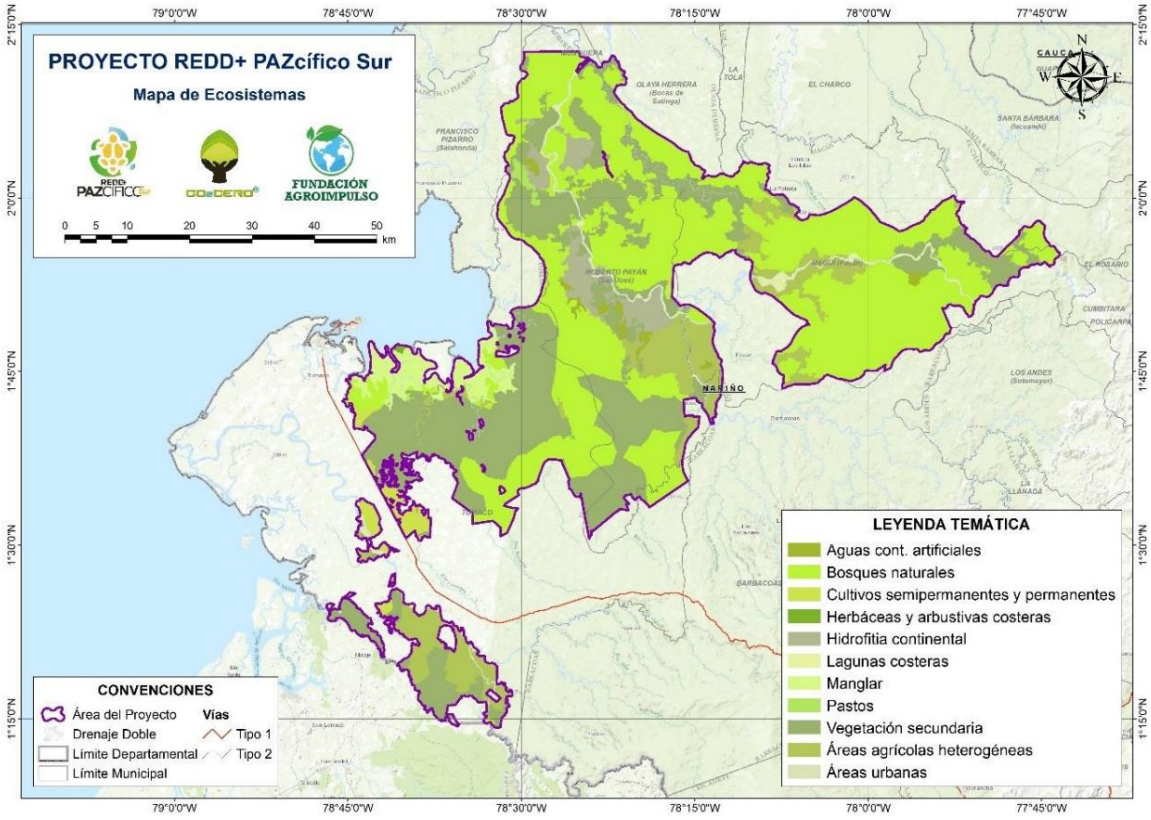


Figure 4. Map of Ecosystems within the project area.

Source: (CO2CERO SAS, 2022). [3]

[3] Created from IDEAM,2018.

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Additionally, the project seeks to generate positive externalities on the biodiversity and the socioeconomic environment of the community, through forest management and conservation plans, flow of resources and design of new production alternatives relating conservation, management of the forest and protection of mangroves. Due to the above, the mangrove is recognized as one of the strategic ecosystems in the project area, which has a total of 12,125.45 ha, corresponding to 3.26%, which provides important ecosystem services for the community, being carbon capture, one of the most relevant thanks to its large proportion of roots and underground biomass, having the soil as the main carbon store, since it can accumulate up to 4 times more, with respect to terrestrial ecosystems (Alongi, 2012, 2014; Agraz et al, 2020) and, without adequate management, they could become a source of important GHG emissions, so it is necessary to protect these ecosystems given their high vulnerability due to multiple impacts related to social conflicts in the area *(see Analysis of deforestation and degradation factors)* and illegal degradation of the same.

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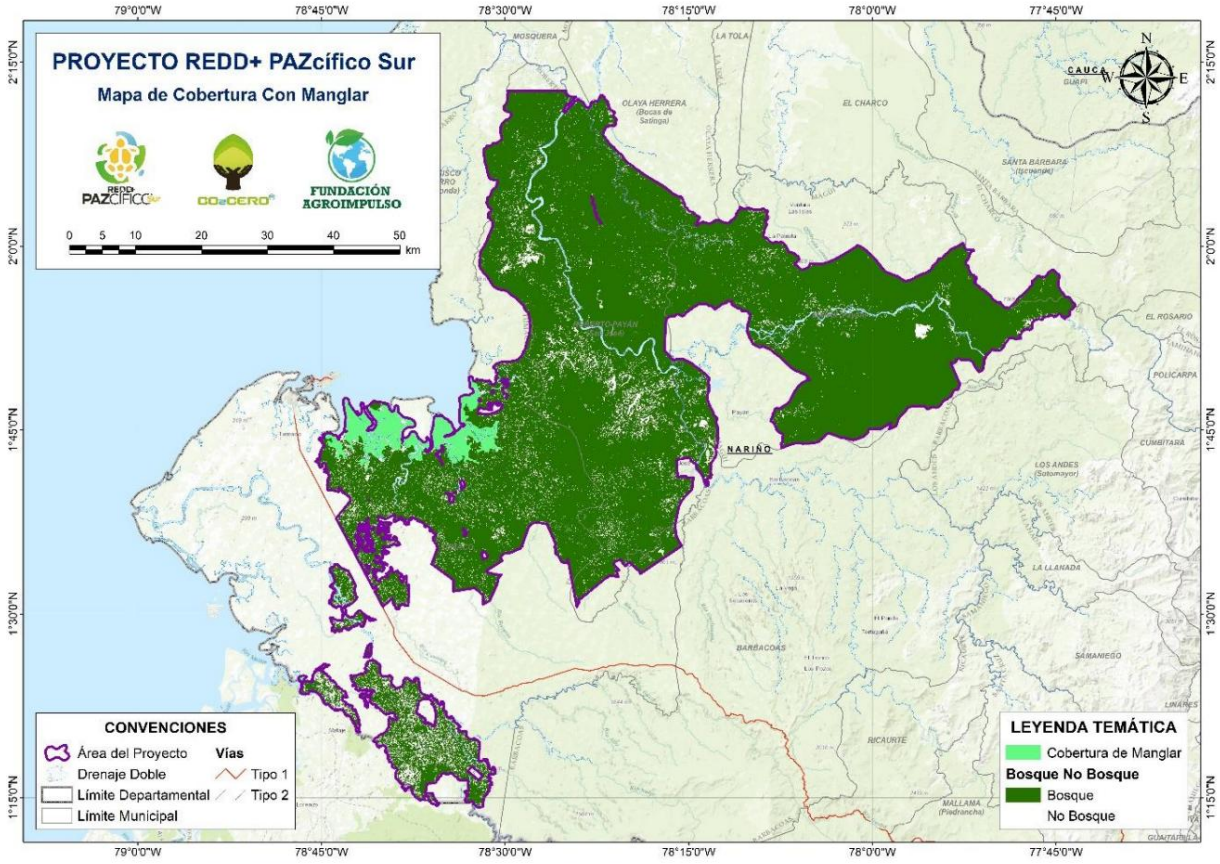


Figure 5. Map of Forest vs Mangrove in the project area
***Source:* (CO2CERO SAS, 2022)**

It should be noted that the information base Shapefile is the one generated by the IDEAM (2017) of Continental, Maritime and Coastal Ecosystems of Colombia, it presents some areas without interpretation within the project limits, due to this the interpretation of the missing ecosystems was carried out. , based on the dynamics of double drainage associated with areas with information gaps. In this way, the double drainage layer was intercepted with the Continental Ecosystems layer and an equitable distribution was made between the different biomes obtained with the percentage of missing area.

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1.7.8. Vegetation

The land covers come from the information reported by IDEAM in the 2018 land cover profile, identifying, according to Table 11 and Figure 6, that the most representative coverage corresponds to the high dense forest of mainland with an area of 18,3145.55 ha equivalent to 49.27%, followed by the fragmented forest with pastures and crops, 30,474.11 ha (8.20%), with lower representation (less than 1%) are Forest open high floodplain, lagoons, lakes and natural swamps, permanent tree crops, dense low terra firma forest, open shrubland, clean pastures, oil palm, dense wooded floodplain grassland, open low floodplain forest, ponds for continental aquaculture, exploitation of gold, Weeded pastures, Discontinuous urban fabric, High open terra firma forest, Continuous urban fabric, Dense low floodplain forest and Other permanent tree crops.

Table 11. Coverage according to Corine Land Cover present in the project area.

Roof	Area (ha)	Area (%)
Tall dense mainland forest	183.145,55	49,27%
Fragmented forest with pastures and crops	30.474,11	8,20%
Mosaic of crops with natural spaces	22.405,01	6,03%
Mosaic of crops, pastures and natural spaces	22.032,29	5,93%
High secondary vegetation	19.381,07	5,21%
Mosaic of pastures and crops	14.206,17	3,82%
Fragmented forest with secondary vegetation	13.874,50	3,73%
High dense floodplain forest	9.247,65	2,49%
swampy areas	8.845,44	2,38%
Crop Mosaic	7.068,36	1,90%
Rivers	6.830,45	1,84%
Pasture mosaic with natural spaces	6.289,07	1,69%
Low secondary vegetation	5.854,20	1,57%
Dense floodable grassland without trees	3.997,94	1,08%
High floodplain open forest	3.555,71	0,96%
Natural lagoons, lakes and swamps	2.682,95	0,72%
Permanent tree crops	2.251,64	0,61%
Dense lowland forest	2.160,04	0,58%
open bush	1.296,36	0,35%
clean pastures	1.262,92	0,34%
oil palm	1.252,84	0,34%

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Roof	Area (ha)	Area (%)
Dense wooded floodplain grassland	1.218,45	0,33%
Low open floodplain forest	677,06	0,18%
Ponds for continental aquaculture	501,41	0,13%
gold mining	490,69	0,13%
Weeded Pastures	223,95	0,06%
Discontinuous urban fabric	153,90	0,04%
Tall open mainland forest	62,12	0,02%
Continuous urban fabric	217,82	0,06%
Dense low floodplain forest	50,03	0,01%
Other permanent tree crops	37,89	0,01%
Total general	**371.748**	**100,00%**

Source: (IDEAM, 2018)

The 2018 IDEAM Land Cover Shapefile presents some areas of the project without interpretation, for which an adjustment was made to the missing land covers (166 hectares), adding them to the most representative category around them, as well as the approval of visual patterns, mainly the adjustment to the rivers was carried out.

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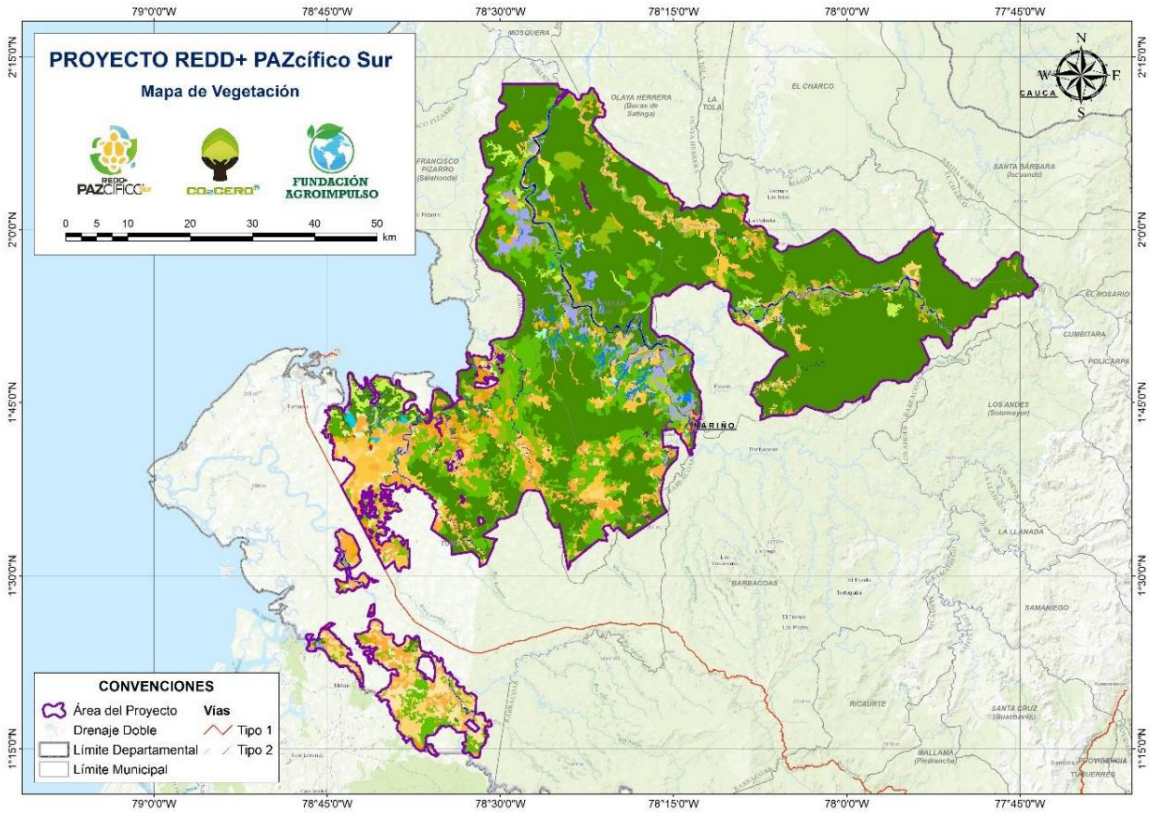


Figure 6. Land cover map according to Corine Land Cover in the project area.

Source: (CO2CERO SAS, 2022)4 .

Table 12. Land cover thematic legend according to Corine Land Cover.

THEMATIC LEGEND
1.1.1. Continuous urban fabric
1.1.2. Discontinuous urban fabric
1.3.1. Mining extraction areas
2.2.3. Permanent tree crops 2.3.1.
Clean pastures 2.3.3.
Weeded Pastures
2.4.1. Crop mosaic 2.4.2.
Mosaic of pastures and crops 2.4.3.
Mosaic of crops, pastures and natural spaces 2.4.4.
Pasture mosaic with natural spaces 2.4.5. Mosaic
of crops with natural spaces 3.1.1. dense forest
3.1.2. open forest
3.1.3. Fragmented forest
3.2.1. Herbazal
3.2.2. Arbustal
3.2.3. Secondary or transition vegetation
4.1.1. Marshy areas 5.1.1.
Rivers
5.1.2. Natural lagoons, lakes and swamps
5.1.4. Artificial bodies of water

[4] Created from Corine Land Cover Methodology adapted to Colombia; IDEAM,2018.

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Some of the forest species identified within the area of dense, open and fragmented forests, according to (Acosta & Riascos, 2008), are those presented in Table 13, where additionally, the threat status is established according to IUCN, finding seven (7) species in a vulnerable state *(Mora oleifera, Humiriastrum procerum, Aniba perutilis, Swietenia macrophylla, Cedrela odorata, Brosimum utile and Pelliciera rhizop-horae),* in an almost threatened state two (2) species *(Dacryodes acutipyrena and Minquartia guianensis).* Additionally, the important species for the community are analyzed according to their use and internal management, obtaining the species of Cuangare, Chanul, Sajo, Guayacán and Chaquiro (See Figure 7).



Figure 7 Diagram of importance of species according to deforestation workshops.

In addition, the review of the Threat Status was carried out in accordance with Resolution 1912 of 2017 of the Ministry of Environment and Sustainable Development, finding seven (7) species with some degree of threat, four (4) in danger (Phytelephas tumacana, Mora *oleifera , Magnolia striatifolia and Cedrela odorata)* and three (3) critically endangered *(Humiriastrum procerum, Aniba perutilis and Swietenia macrophylla).*

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Table 13. Forest species identified in dense, open and fragmented forests.

Scientific name	Family	Common name	Threat status se-any IUCN
Avicennia sprouting	Acanthaceae	Mangle negro	Minor concern
Panamanian campnosperma	Anacardiaceae	Hello	Not evaluated
Phytelephas tumacana	Arecaceae	Tagua	Endangered
Euterpe oleracea	Arecaceae	Palma nadi	Not evaluated
Cocoa nuts	Arecaceae	Coconut palm	Not evaluated
Iryanthera juruensis	Arecaceae	Oaf	Minor concern
Astrocaryum standleyanum	Arecaceae	Güérregue	Minor concern
Welfia regia	Arecaceae	bitter palm	Not evaluated
Aiphanes simplex	Arecaceae	palm chonta	Not evaluated
Ceiba pentandra	Bombacaceae	Ceiba	Minor concern
Protium cranipyrenum	Burseraceae	Anime	Not evaluated
Dacryodes acutipyrena	Burseraceae	Caraño	almost threatened
Calophyllum longifolium	Calophyllaceae	Mario	Minor concern
Laguncularia racemosa	Combretaceae	Mangle blanco	Minor concern
Mora oleifera	Fabaceae	Mangle Born	Vulnerable
Goupia glabra	Goupiaceae	Piaunde	Minor concern
The humerus is tall	Humiriaceae	Chana	Vulnerable
Aniba is useful	Lauraceae	Cumin	Vulnerable
Magnolia striatifolia	Magnoliaceae	Pandala	Endangered
Apeiba is smooth	Malvaceae	Peinemono	Minor concern
Carapa guianensis	Meliaceae	male cedar	Minor concern
Swietenia macrophylla	Meliaceae	Mahogany	Vulnerable
Cedrela scented	Meliaceae	Cedar	Vulnerable
Brosimum utile	Moraceae	True	Vulnerable
Poulsenia armata	Moraceae	coat mother	Minor concern
Virola raids	Myristicaceae	Nuanamo	Not evaluated
Minquartia guianensis	Olacaceae	Guayacan	almost threatened
glorious Sobralia	Orchidaceae	wild orchid	Not evaluated
Rhizophora mangle	Rhizophoraceae	red mangrove	Minor concern
Pelliciera rhizophora	Tetrameristaceae	Missing piñuelo	Vulnerable

Source: (Acosta & Riascos, 2008)

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1.7.9. Physiography

The physiographic information comes from the Shapefile of Continental, Maritime and Coastal Ecosystems of Colombia generated by IDEAM in 2017, where it is obtained that the alluvial plain landscape with 120,044.35 ha corresponding to 32.32% of the total area with greater importance is the relief of Terrazas level 1; followed by the foothills with 113,800.6 ha corresponding to 31.12% of the area, with greater importance in the relief of fans; In third position is the Lomerío landscape with 80,455.00
ha (21.66%), as shown in Table 14.

Table 14. Landscapes and reliefs present in the project area.

Landscape	Relieve	Area (ha)	Area (%)
Lomerio	Lomas	26,12	0,01%
	Hills and hills	80.493,66	21,65%
Mountain	Hills and hills	11.503,54	3,09%
THAT	THAT	17.897,38	4,81%
Foothills	Recent fan	198,35	0,05%
	Fans	113.616,59	30,56%
	Alluvial fans	77,31	0,02%
floodplain	Flood plan	33.216,10	8,94%
	Terraces	32.954,67	8,86%
	Terraces level 1	53.970,25	14,52%
Marine plain	Tide plan	20.198,40	5,43%
AND	AND	7.595,21	2,04%
Total general		**371.748,00**	**100%**

Source: (IDEAM, 2017)

1.7.10. Climate classification

According to the Caldas-Lang climate classification from the Shapefile of Continental, Maritime and Coastal Ecosystems of Colombia generated by IDEAM in 2017, it is evident, according to Table 15 and Figure 8, that the warm superhumid climate has greater representativeness with 195,410.37 ha corresponding to 52.57% of the total area predominant in the east of the project area, followed by the warm humid climate with 157,098.67 ha equivalent to 42.26% of the total area and are located mainly in the west of the project area.

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Table 15. Climates according to Caldas Lang present in the project area.

Climate	Area (ha)	Area (%)
Warm Superhumid	195.410,37	52,57%
Warm wet	157.098,67	42,26%
THAT	17.897,38	4,81%
Warm wet	1.098,82	0,30%
Temperate Superhumid	242,33	0,07%
Total general	**371.748**	**100%**

Source: (IDEAM, 2017)

With less representation are the superhumid temperate climates with 1,098.82 ha (0.30%), the humid temperate climates with 242.33 ha (0.07%) that are located to the northwest of the study area. In addition, there are areas where the climatic classification described as not applicable is observed, corresponding to lagoons and rivers, which represent 17,897.38 ha, with a percentage of 4.81% of the total project area.

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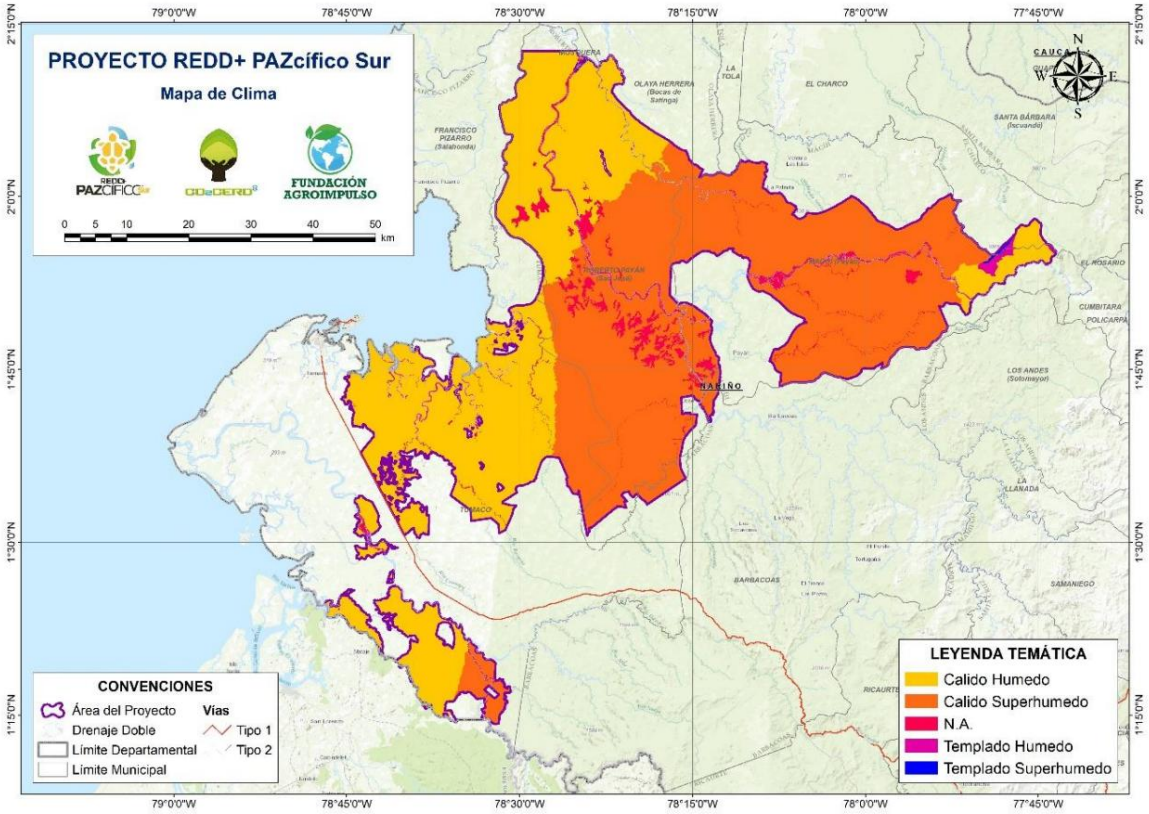


Figure 8. Climate map of the project area.
Source: (CO2CERO SAS, 2022).

It should be noted that the Caldas-Lang (2012) climate classification Shapefile generated by IDEAM presents some areas without interpretation within the project, therefore, the adjustment of the missing climate areas was carried out. Thus, the double drainage layer was intercepted with the climate classification layer, distributing the area equally in the different types of climate. In this way, the uninterpreted area was adjusted according to the area of influence of the surrounding polygons.

1.7.11. Precipitation and temperature

According to the shapefile of total annual precipitation generated by IDEAM in 2012, within the project area there are six categories of precipitation that range within the ranges of 1500 to 7000 mm per year.

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Table 16. Project area precipitation categories.

Precipitation	Area (ha)	Area (%)
3000-4000 mm	113.597,20	30,56%
4000-5000 mm	104.186,10	28,03%
2500-3000 mm	60.002,58	16,14%
5000-7000 mm	58.378,77	15,70%
2000-2500 mm	35.437,44	9,53%
1500-2000 mm	145,47	0,04%
Total general	**371.748**	**100%**

Source: IDEAM (2012).

In Table 16, it can be seen that the precipitation category that presents the greatest dominance within the project area is between 3000-4000 mm with 113,597.20 hectares that correspond to 30.56% of the total area, in second place. , areas with rainfall of 4000-5000 mm are presented with 28.03% of the project area corresponding to 104,186.10 hectares, in third place, there are 60,002.58 hectares (16.14%) with rainfall between 2500 -3000 mm, followed by the category between 5000-7000 mm with an area of 58,378.77 hectares (15.70%). The other precipitation categories occur in less than 10% of the areas, corresponding to precipitation less than 2000 mm per year (Figure 9).

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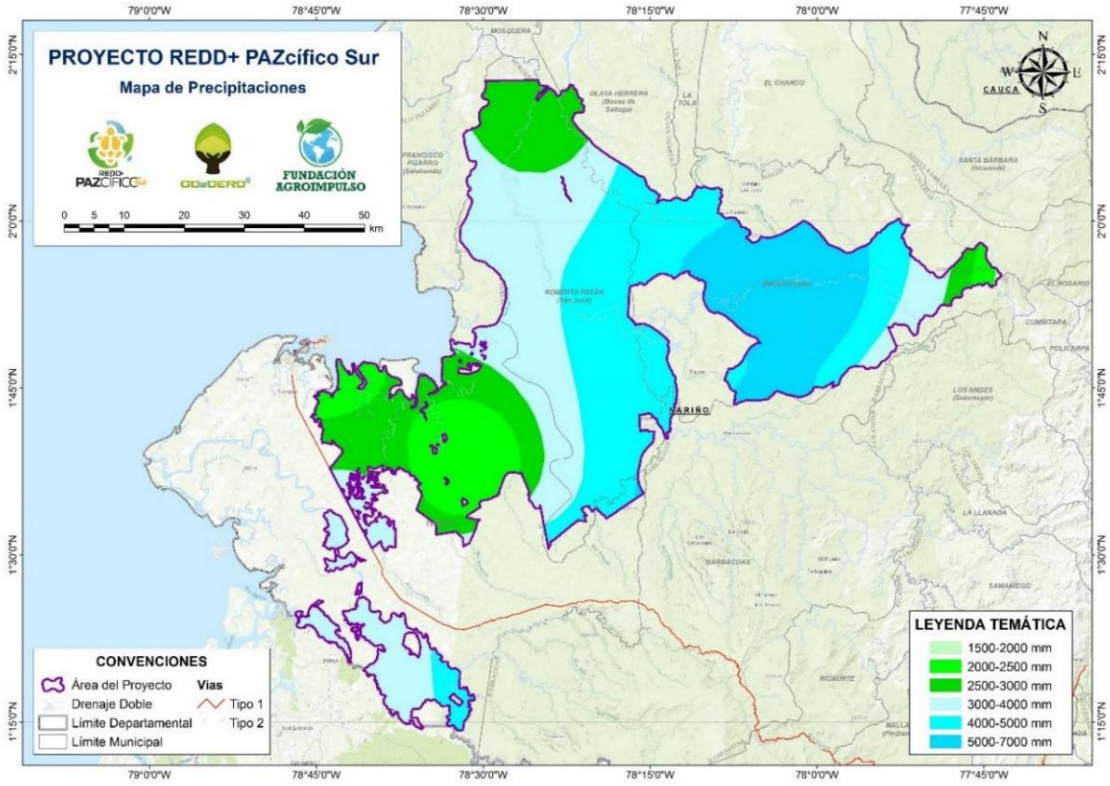


Figure 9. Precipitation Map for the project area.

Source: (CO2CERO SAS, 2022)

Regarding the temperature, according to the annual average temperature shapefile generated by the IDEAM in 2012, two categories are presented in Table 17, the one with the greatest representation corresponds to the category greater than 24°C with 367,664 .4 hectares, which corresponds to 98.90% of the area, while from 18 to 24°C represents 4,083.2 hectares, which corresponds to 1.10% of the total area.

Table 17. Temperature categories.

Temperature categories	Total area	Area (%)
18 a 24°C	4.083,2	1,10%
Greater than 24°C	367.664,4	98,90%
Total general	**371.748**	**100%**

Source: (IDEAM, 2012)

The shapefile of total annual precipitation and average annual temperature generated by the IDEAM in 2012, present areas without interpretation within the limits of the project,

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For this, the interpretation of the missing precipitations and temperatures was carried out, intercepting the double drainage layer with the corresponding temperature and precipitation layers, distributing the missing area to be interpreted according to the area of influence of said categories.

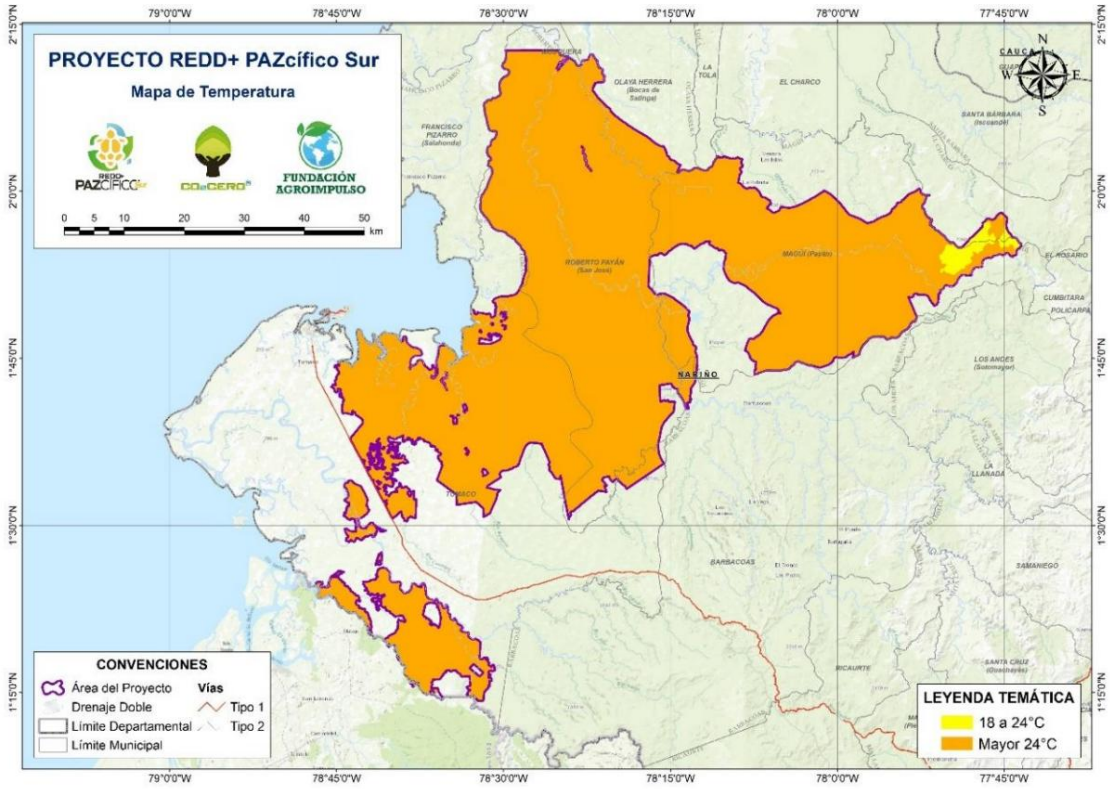


Figure 10. Temperature map for the project area.
Source: (CO2CERO SAS, 2022)

1.7.12. Bioclimatic zoning

According to the classification of life zones proposed by Holdridge (1967) in which he classifies the areas according to the conditions of annual precipitation (mm) and the average annual temperature (°C), three bioclimatic categories present within the area are classified. of the project, as shown in Table 18.

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Table 18. Bioclimatic zoning for the project area

Holdridge	Area (ha)	Area (%)
Tropical moist forest	205.221,44	55,20%
Very humid tropical forest	166.512,72	44,79%
tropical dry forest	13,40	0,01%
Total general	**371.748**	**100%**

Source: (CO2CERO SAS, 2022)

The tropical humid forest (bh-T) is the one that has the greatest representation with 205,221.44 hectares, equivalent to 55.20% of the total area, in areas with rainfall between 4000 and 8000 mm and temperatures greater than 24°C. Secondly, the very humid tropical forest (bmh-T) is presented with 166,512.72 hectares corresponding to 44.79% and with rainfall conditions between 2000 and 4000 mm and temperatures greater than 24°C (Figure 11).

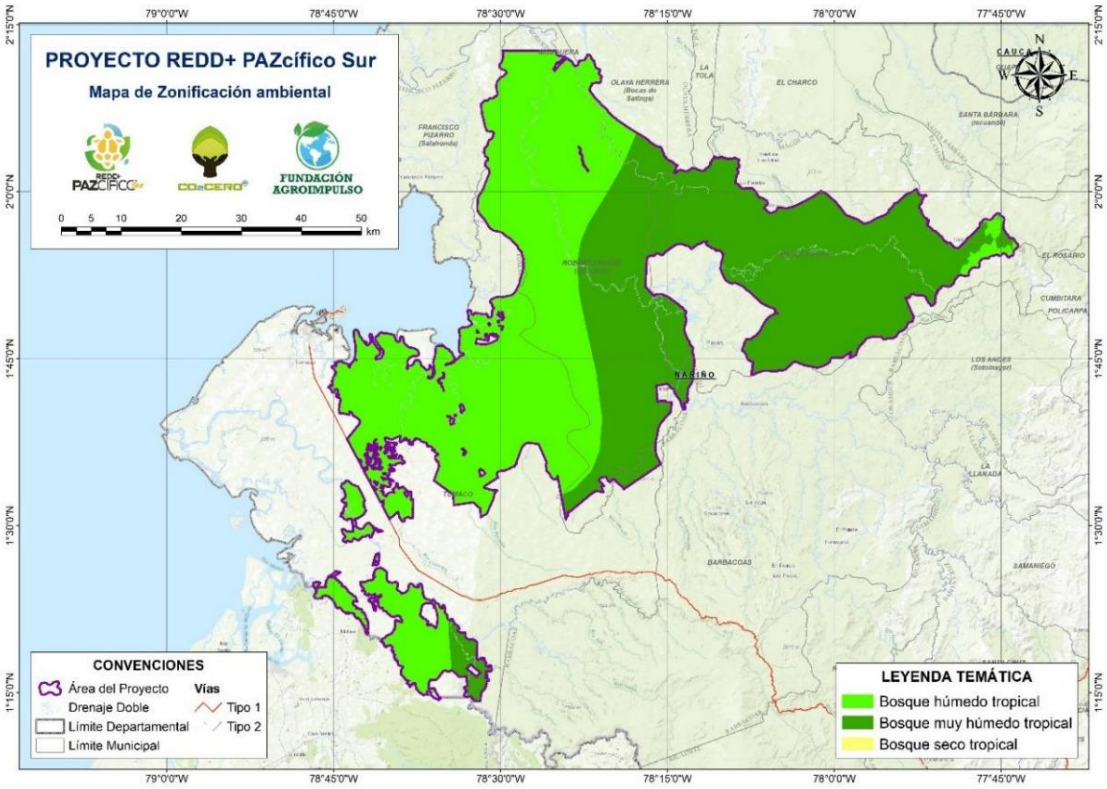


Figure 11. Map of biogeographic zones within the project area.

Source: (CO2CERO SAS, 2022)

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It should be noted that the maps generated by IDEAM present some areas without interpretation within the project, for this the adjustment of the missing bioclimatic zones was carried out.
In this way, the double drainage layer was intercepted with the climatic classification layer, distributing the missing area to be interpreted according to the area of influence of said categories.

1.7.13. Floors

In terms of soils, it is found that in the project area (Table 19 and Figure 12) the soil associations presenting highest representativeness are the Fluvaquentic Endoa-quepts, Typic Humaquepts, Vertic Endoaquepts covering 87,391.63 ha with a 23,000. 5% of the total area, followed by Humic Dystrudepts with 80,455.0 ha (21.6%), Alic Hapludands, Acrudoxic Hapludands, Miscellaneous ashes with 76,741.82 ha (20.6%), Oxic Dystrudepts, Typic Dystrudepts , *Acrudoxic Hapludands, Typical Endoaquents* with 36,783.36 ha (9.9%), *Acrudoxic Hapludands, Alic Hapludands, Aquic Eutrudepts* with 26,013.81 ha (7.0%), *Typic Hydraquents, Hydric Haplohemists, Typic Fluvaquents* with 20,182.15 ha (5.4%).

Table 19. Soil associations present in the project area.

Soil Association Categories	Area (ha)	Area (%)
Fluvaquentic Endoaquepts, Typic Humaquepts, Vertic Endoaquepts	87.391,63	23,51%
Humic Dystrudepts	80.455,00	21,64%
Alic Hapludands, Acrudoxic Hapludands, Miscellaneous Ashes	76.741,82	20,64%
Oxic Dystrudepts, Typic Dystrudepts, Acrudoxic Hapludands, Typic En-doaquents	36.783,36	9,89%
Acrudoxic Hapludands, Alic Hapludands, Aquic Eutrudepts	26.013,81	7,00%
Typic Hydraquents, Hydric Haplohemists, Typic Fluvaquents	20.182,15	5,43%
THAT	18.182,07	4,89%
Typic Dystrudepts, Typic Udorthents	11.494,29	3,09%
AND	7.589,10	2,04%
Oxic Dystrudepts, Xanthic Hapludoxs, Plinthic Haplaquox	6.914,34	1,86%
Total general	**371.748**	**100%**

Source: (IDEAM, 2017).

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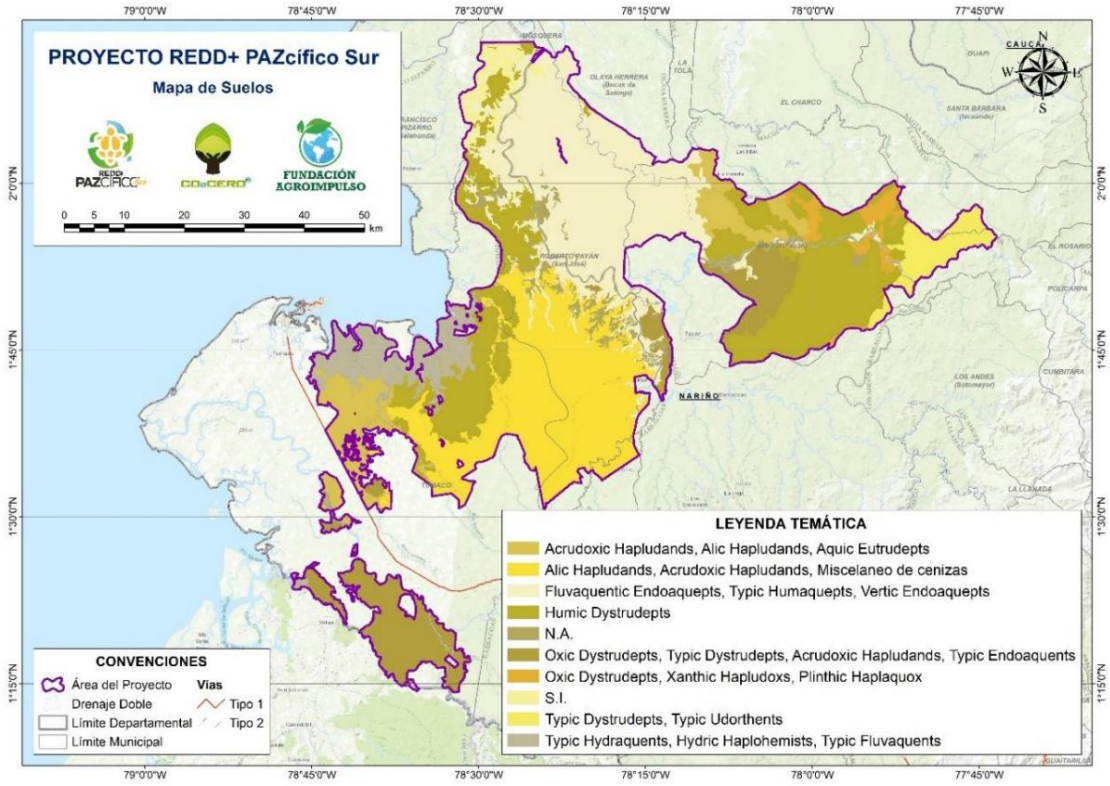


Figure 12. Soil map for the project area.
Source: (CO2CERO SAS, 2022)5

1.7.14. Fauna

Within the project area there is a highly diverse faunal component, associated with the presence of strategic ecosystems, ideal habitats and protection of forests; in addition to presenting cultural relevance for the communities associated with the consumption, commercialization and protection of some of these groups. The fauna groups identified within the project limits are described below.

1.7.14.1. Ichthyofauna

Among the main fish, crustaceans and mollusks that are used by the local communities of the department of Nariño, and that are part of their culture and main source of supply, as well as species of interest for illegal hunting, and existence

[5] Created from https://geoportal.igac.gov.co/contenido/datos-abiertos-agrologia

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of degradation in the ecosystem by the shrimp industry that causes an imbalance in the blooming of algae and consequently the death of the ichthyofauna (See Illustration 1).



Illustration 1. Species of ichthyofauna present in the project area. A. Mugil curates. Source: Us and Revy. (2020) & B. Notarius planiceps. Source: Tse, K. (2015).

Table 20 describes the main species of ichthyofauna, with their threat status according to the IUCN, finding that *Cynoscion sp.* is classified as vulnerable, six (6) are classified as being of least concern *(Macrobrachium panamense, Mugil curema, No-tarius planiceps, Cetengraulis mysticetus, Lutjanus sp. and Achirus mazatlanus), Brotula clar-kae* does not have sufficient data and the remaining five (5) species not evaluated.

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Table 20. Ichthyofauna of the area and degree of threat.

Scientific name	Common name	Threat status
Macrobrachium panamense	Chambero shrimp	Minor concern
Anadara spp.	Piangua	Not evaluated
Littorina zebra and L. fasciata	Liked	Not evaluated
Callinectes toxotes	Crab	Not evaluated
Mugil curema	Lisa cachurreta	Minor concern
Notarius planiceps	Catfish	Minor concern
Cetengraulis mysticetus	Carduma	Minor concern
Cynoscion sp.	Corvina	Vulnerable
Penaeus spp.	Prawn shrimp	Not evaluated
Lutjanus sp.	snapper	Minor concern
Achirus mazatlanus	round sole	Minor concern
Cardisoma thick	blue crab	Not evaluated
Brotula clarkae	Hake	Insufficient data

Source: (Corponariño, 2008; Acosta & Riascos, 2008)

1.7.14.2. Mast fauna

Like ichthyofauna, mastofauna is also used by communities, having great demand in the market and being of hunting interest, with moderate degradation occurring mainly on the coast of Nariño due to the pressure exerted on these species. Additionally, some of these are used as pets (for example, the squirrel) and others in traditional medicine such as the fox. Due to the great demand that is presented, strategic ecosystems must be protected and conserved, such as mangroves that are adjacent to guandals, naidizales and/or hill forests and facilitate the connection and exchange of populations and individuals (Corponariño, 2008 ; Acosta & Riascos, 2008).

Table 21. Mammal fauna of the area and degree of threat.

Scientific name Common name	Threat status	
Dasyprocta punctate	Guatin	Minor concern
Procyon crayfish	pianguero margay	Minor concern
Tayassu fishermen	Tatabro	Vulnerable
Tayassu tayacu	Mind	Not evaluated
Philander oposum	The debt	Not evaluated
Squirrel granatensis	Squirrel	Minor concern
Bradypus variegatus	Parakeet	Minor concern
American Mazama	Deer	Insufficient data
Agoutii paca	Rabbit	Not evaluated

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Source: (Corponariño, 2008; Acosta & Riascos, 2008)

In addition, according to the IUCN, the threat status of the species most representative of the area is described, finding that *Tayassu pecari* is in a vulnerable state, four (4) species are of least concern *(Dasyprocta punctata, Procyon cancrivorus , Sciurus granatensis and Bradypus variegatus),* three (3) not evaluated *(Tayassu tayacu, Philander oposum and Agoutii paca)* and *Mazama Americana* with insufficient data (Table 21).



Illustration 2. Threatened mammals associated with the project area. A. Tayassu pecari. Source: IUCN. (2012); B. Dasyprocta punctate. Source: Rangel, W. (2016). C. Procyon cancrivorus. Source: Bergwitz, U. (2022).

1.7.14.3. Herpetofauna

Colombia is the second country with the greatest wealth of amphibians in the world after Brazil, in the department of Nariño it is found that the majority of amphibian families have endemism values, due to the strategic location that allows specific spaces to be generated for the habitat of these.

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Table 22. Herpetofauna of the area and degree of threat.

Scientific name	Common name	Threat status
Rhinoclemmys melanosterna	Orito Turtle	Not evaluated
Lepidochelys olivácea	loggerhead turtle	Vulnerable
Kinosternon leucostomun	Turtle Tapachula	Not evaluated
Spotted anoles	South American Chameleon White Belly	Minor concern
Anolis parvauritus	Tree Lizard	Not evaluated
The feast of the anoles	Lizard	almost threatened
Diploglossus monotropis	Coral	Minor concern
Holcosus bridgesii	Ameivas de Bridges	Minor concern
Ptychoglossus gorgonae	shadow lizard	Insufficient data
Iguana iguana	Iguana	Minor concern
Erythrolamprus epinephelus	Loggerhead snake	Minor concern
Imantodes inornatus	Cordoncillos	Minor concern
Trachyboa boulengeri	Good rough	Minor concern
A sharp crocodile	Alligator	Vulnerable
Caiman crocodile	Tulicio	Minor concern

Source: (Pinto, 2020)

In addition, the threat status of the main herpetofauna species of the project area is described, finding two (2) species in vulnerable status *(Lepidochelys oliva-cea and Crocodylus acutus), Anolis festae* in near threatened category, eight (8); in minor preo-cupation *(Anolis maculiventris, Diploglossus monotropis, Holcosus bridgesii, Iguana iguana, Erythrolamprus epinephelus, Imantodes inornatus, Caiman crocodilus and Trachyboa boulengeri), two (2) not* evaluated *(Rhinoclemmys melanosterna,* it is found that this species is reported in the Colombian red book of reptiles in the nearly threatened (NT) category *and Anolis parvauritus)* and *Ptychoglossus gorgonae* with insufficient data (Table 22).

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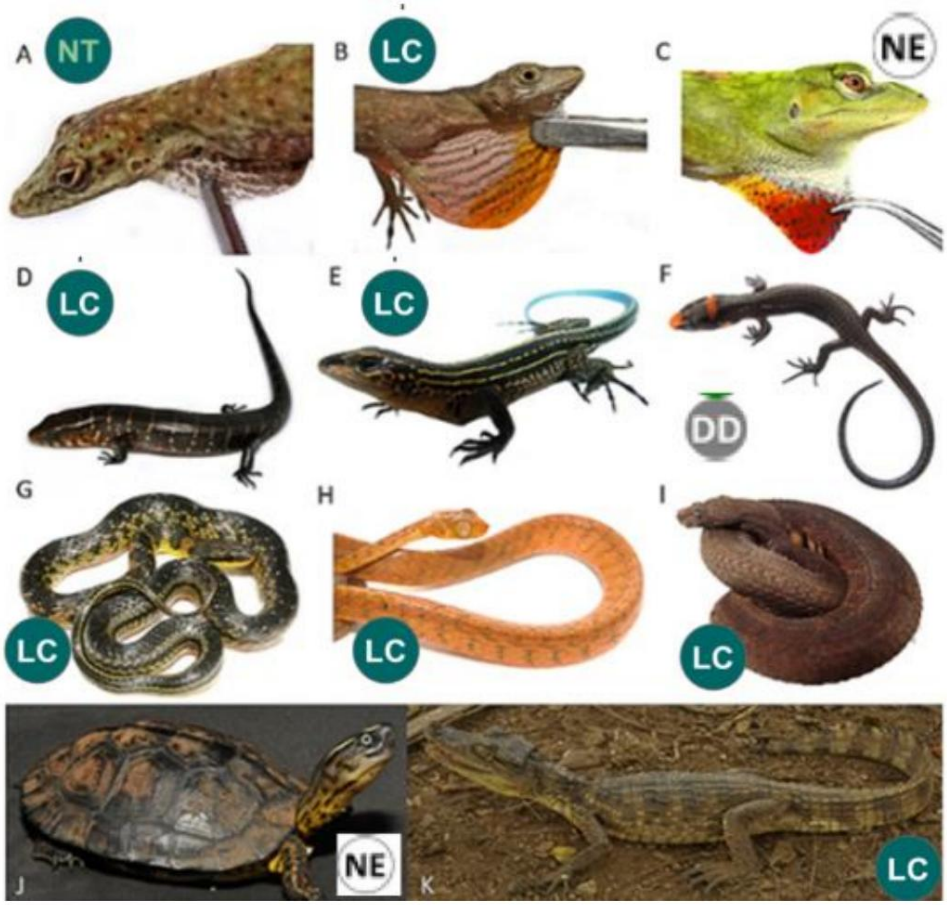


Illustration 3. Reptiles associated with the project area. A, Anolis festae; B, Anolis maculiventris; C, Anolis parvauritus; D, Diploglossus monotropis; E, Holcosus bridges; F, Ptychoglossus gorgonae; G, Erythrolam-prus epinephelus; H, Imantodes inornatus; I, Trachyboa boulengeri; J, Rhinoclemmys melanosterna; K, Cai-man crocodile.

Source: **(Pinto, 2020)**

1.7.14.4. Ornitofauna

The country is categorized as the richest in the world in birds and the department of Nariño is no exception, showing a high abundance and diversity of birds associated with the cultural and biological richness of the different ecosystems that are presented by the strategic location and topography. of the department, being a center of endemism for birds. However, like the mammal fauna, there are records of illegal hunting and extraction actions that reduce the diversity of the area. Some species in this group are found
in Table 23.

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Table 23. Ornithofauna of the area and degree of threat.

Scientific name	Common name Threat status	
A magnificent frigate	Frigate earwig	Minor concern
Charadrius collaris	Chorlitos	Minor concern
Western pelican	Overcoat	Minor concern
Thalasseus maximus	Seagull	Minor concern
Phalacrocorax olivaceus	Patillos	Not evaluated
Tinamus major	Partridge	Minor concern
Penelope purpurascens	mountain turkey	almost threatened
Columbina buckleyi	Ecuadorian dove	Minor concern
Setophaga petechia	Reinita manglera	Minor concern
Numenius Phaeopus	Cachimbuda	Minor concern
Aramides axillaris	Chitagua	Minor concern
It was burning white	Garzon	Minor concern

Source: (Acosta & Riascos, 2008)

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Illustration 4. ***Threatened ornithofauna associated with the project area.*** *A.* ***Ardea alba. Source: IUCN. (2019). B. Magnificent frigate. Source: Clark, C. (2017). C. Charadrius collaris. Source: Bowman, N. (2019). C. Penelope purpurascens. Source: Clinton, H. (2018).***

1.7.15. Social, cultural and economic aspects of the community

Below, the social, cultural and economic aspects that represent the community councils of Agricultores del Patia Grande, Alto Mira y Frontera, Catangueros, El Progreso, Imbilpí del Carmen, Integracion Telembi, La Amistad, Manos Ami are presented. -gas, Mexican, Old Patia, Rescate las varas, Gualajo River, Sweet Plank, Salt Plank, Union of the Isagualpi basins, Union of the Chagui River, Union of the Rosario River and Union of the Caunapi River; information collected from primary data according to the social cartography implemented by the same population *(See 11_ Annexes and complementary/ 04_ Workshop factors of deforestation),* and complemented by secondary information according to their resolutions.

because.

1.7.15.1. Social aspects

The relevant aspects of the communities involved in the REDD+ project are described. PAZcífico Sur, corresponding to the community councils mentioned above,

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who are associated with the RECOMPAS Collective (Network of community councils of Black Communities of the South Pacific) and the United Councils of Magüí.

1.7.15.1.1. Farmers of Patía Grande

Through INCORA Resolution 1123 of May 23, 2000, the vacant lands collectively occupied by the Black Communities, organized in the Patía Grande Farmers Community Council, are titled as "Lands of the Black Communities", located in jurisdiction of the municipality of Roberto Payán, department of Nariño.
Its territory has an area of 31,467 hectares. Its Board of Directors is formed in a similar way for all community councils and is made up of:

- A legal representative
- A president
- A vice-president
- A treasurer
- A secretary
- A prosecutor
- A vowel
- A coordinator

Regarding social situations, according to the (Ombudsman's Office, 2018), it is found that in the municipality there are armed groups such as the ELN, Peasant Resistance and United Guerrillas of the Pacific; In addition, there are threats of incursion by the AGC (Au-todefensas Gaitanistas de Colombia); turning the area into an area with armed conflict caused by a territorial dispute in the navigable section of the Patía River, which borders the municipalities of Roberto Payán and Olaya Herrera.

1.7.15.1.2. Alto Mira and Frontera

Through Resolution 0525 of March 2, 2006 of INCORA, the vacant lands collectively occupied by the Black Communities, organized in the Alto Mira y Frontera Community Council and updated in the Single National Registry of Community Councils through Resolution 208 of October 10, 2017 of the Ministry of the Interior. This council is located to the south east of the municipality of Tumaco, bordering the border of Ecuador from the Mataje River to the Mira River. In this area, illegal armed actors are present in the territory of the Council, reporting cases of homicides, kidnappings, forced displacements, sexual violence, gender-based violence, forced recruitment, disappearances and restrictions on mobility (OCHA, 2017). According to monitoring by (OCHA, 2017), between the months of January and

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September 2017 in Tumaco there were 2 mass displacement events that affected more than 825 people; It is highlighted that in these events cases of mobility restrictions were also reported, affecting approximately 660 people. On August 27, 2017, the last reported forced displacement occurred, where the Puerto Rico, Mata de Plátano and Vallenato villages were affected.

Its board of directors is integrated in the same way as the Patía Grande Farmers Community Council and the other community councils.

1.7.15.1.3. Catangueros

The vacant lands collectively occupied by the Black Communities are awarded as "Lands of the Black Communities", organized in the Catangueros Community Council, through Resolution 2202 of December 3, 2002 of the IN-CORA. This community council is located in the municipality of Roberto Payán, with an extension of its territory of 21,064.93 ha (IIAP, 2015) and its Board of Directors is integrated according to the following positions:

- A president
- A vice-president
- Two prosecutors
- One secretary
- One treasurer
- One legal representative
- Two members
- An advisor

According to the (Ombudsman's Office, 2021), the illegal armed groups that have been sequentially affecting the entire rural area of the municipality of Roberto Payán, made up of the Community Councils of Unión Patía Viejo, Agricultores del Patía, have been strengthened. Grande, Unión Cuencas, El Progreso, Integración Telembí, Catangueros and the Awá Guiguay Indigenous Reservation. These groups advanced from Magüí Payán, where they have also affected the Afro-Colombian population of the Community Councils of Unión Patía Viejo, Manos Amigas and La Amistad.
Furthermore, according to (El Espectador, 2021), it should be considered that the Telembí triangle (Bar-bacoas, Roberto and Magüí Payán) is a key site for armed groups due to its geographical location, as it has a large number of of rivers, the main ones being the Patía and the Telembí; Additionally, it has access to the Pacific Ocean where drug trafficking routes end.

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1.7.15.1.4. Progress

The vacant lands collectively occupied by the Black Communities are awarded as "Lands of the Black Communities", organized in the El Progreso Community Council, through Resolution 1178 of May 12, 1998 of INCORA and updated in the Resolution 448 of December 3, 2020, located in the Roberto Payán municipality, in the villages of El Pampón, El Cedro, Aní, Achote and Paulina (Table 24). Its Board of Directors, which is the highest administrative body and is responsible for directing the Community Council, is made up of: A president, A vice president, A treasurer, A secretary, A) fiscal and Two members.

Table 24. Families located in the villages of the El Progreso Community Council.

Families Sidewalk	
The Pampón	18
The Cedar	10
Soul	5
Let him choose	1
Paulina	2

Source: (Ministry of the Interior, 2017).

In the comparison that was made with the DANE Census (2005) and the National Agricultural Census (2014), it can be seen that the Black population increased by 1,410 people (53%) in the municipality and with respect to the collective territory of the Council Community, 94 families are reported for the year 2007 and for 2018, according to the community information, only 21 families live there, the remaining ones, located in Table 24, are families that reside in the town center and have homes in the villages. that they visit temporarily (Ministry of the Interior, 2017).

1.7.15.1.5. Imbilpí del Carmen

Through Resolution 2544 of December 23, 2002 of INCORA, the vacant lands collectively occupied by the Black Communities are titled as "Lands of the Black Communities", organized in the Imbilpí del Carmen Community Council and are registered with the Resolution 101 of June 29, 2016 in the Single National Registry of Organizations and Community Councils of Black, Afro-Colombian, Raiza-les and Palenqueras Communities of the Ministry of the Interior. Its Board of Directors is composed in the same way as the Patía Grande Farmers community council.

Located in the municipality of Tumaco, this Council also has the presence of illegal armed groups. The (Ombudsman's Office, 2018) issued the last “early alert” regarding the serious risk situation in the municipality of Tumaco due to “the dispute over the

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territorial control between illegal armed groups"; warning that it was necessary to protect about 20,000 people, 5,000 in four neighborhoods of the urban area (Comuna One, Three, Four and Five) and about 15,000 located in collective territories of community councils of Bajo Mira y Frontera, Alto Mira y Frontera, Imbilpí del Carmen and La Nupa, as well as four reservations of the Awá indigenous people.

1.7.15.1.6. Friendship

The vacant lands collectively occupied by the Black Communities are titled as "Lands of the Black Communities", organized in the La Amistad Community Council, through Resolution 2800 of November 22, 2000 of the IN-CORA and updated in Resolution 043 of March 19, 2020. Located in Magüí Payán, where there are records about the presence of the ELN and the armed group Resistencia Campesina, which have an impact on the villages of ASOJUNTAS and the Manos Amigas community councils, La Voice of the Blacks, La Amistad and Unión Patía Viejo. These armed groups put the population at risk, because the clashes that occurred in 2017 could be repeated, among the civilian population (Ministry of the Interior, 2017).

1.7.15.1.7. Friendly Hands of Patía Grande

The vacant lands collectively occupied by the Black Communities are titled as "Lands of the Black Communities", organized in the Manos Amigas Community Council of Patía Grande, through Resolution 1130 of May 23, 2000 of INCORA, located mainly in the municipality of Magüí Payán and to a lesser extent in El Charco. Its Board of Directors is made up of:

- A president
- A treasurer
- A secretary
- A prosecutor
- A vowel

In the area, several cases of violence are reported due to disputes between armed groups seeking control of illegal mining activities, generating the massive displacement of people who were at risk due to the poor condition of the roads and high exposure when crossing areas. of conflict during a river journey of more than 6 hours to reach Magüí Payán (Ombudsman's Office, 2021). In addition to the limitation to access basic services such as food, housing, health, protection and education.

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1.7.15.1.8. The memory of our ancestors of the Mexican River

The vacant lands collectively occupied by the Black Communities are allocated as "Lands of the Black Communities", organized in the Council
Community The memory of our ancestors of the Mexican River, through Resolution 0400 of April 28, 2003, located in the municipality of Tumaco, its Board of Directors is made up of the following personalities:

- A president
- A vice-president
- A treasurer
- A prosecutor
- Seven vowels
- A legal representative

This same structure consolidates the community councils Tablón dulce, Unión Cuencas de Isagualpi and Unión Río Caunapi.

1.7.15.1.9. Union Patía Viejo

The vacant lands collectively occupied by the Black Communities are titled as "Lands of the Black Communities", organized in the Unión Patía Viejo Community Council, through Resolution 4915 of December 29, 1998 of INCORA, located in the Magüí Payán, Olaya Herrera and Roberto Payán municipalities. Through Minute No. 01 of December 10, 2016, the New Board of Directors is updated, being made up of the following personalities as follows:

- A legal representative
- A president
- A treasurer and alternate
- A secretary and substitute
- A prosecutor and substitute
- A member and substitute
- A vice president and alternate

1.7.15.1.10. Las Varas Rescue

The vacant lands collectively occupied by the Communities are titled
Blacks as "Lands of the Black Communities", organized in the Rescate Las Varas Community Council, through Resolution 2786 of December 13, 2006, located in the municipality of Tumaco, according to Registration Minute No. 008 of the April 12,

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2014 by the Mayor's Office of Tumaco, the Board of Directors is composed of a president, a vice president, a treasurer, a secretary and ten members.

1.7.15.1.11. Gualajo River

The vacant lands collectively occupied by the Black Communities are titled as "Lands of the Black Communities", organized in the Río Gualajo Community Council, through Resolution 2538 of December 23, 2002, located in the municipality of Tumaco. and in accordance with the Registration Record No. 006 of January 25, 2016 by the Mayor's Office of Tumaco, its Board of Directors is composed of a president, a vice president, a treasurer, a) prosecutor, One main member, Three members and One legal representative.

1.7.15.1.12. sweet plank

The vacant lands collectively occupied by the Black Communities are titled as "Lands of the Black Communities", organized in the Tablón Dulce Community Council, through Resolution 1021 of May 31, 2005 of INCORA and updated in the Resolution 208 of August 22, 2016, located in the municipality of Tumaco.

1.7.15.1.13. salty plank

The vacant lands collectively occupied by the Communities are titled
Blacks as "Lands of the Black Communities", organized in the Tablón Salado Community Council, through Resolution 2539 of December 23, 2002 of the IN-
CORA, located in the municipality of Tumaco and its Board of Directors is made up of the following personalities:

- A president
- A vice-president
- A treasurer
- A prosecutor
- Four vowels
- A legal representative

1.7.15.1.14. Union of the Chagüí River

Through Resolution 2201 of December 3, 2002 of INCORA, the vacant lands collectively occupied by the Black Communities are titled as "Lands of the Black Communities", organized in the Unión Río Community Council.

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Chagüí, with greater local representation in the municipalities of Tumaco and Roberto Payán, and which is made up of a Board of Directors made up of:

- A president
- A vice-president
- A prosecutor
- A secretary • A treasurer • A legal representative • Five members

1.7.15.1.15. Union of the Rosario River

Collective Titling Resolution No. 002546 of December 23, 2002 issued by IN-CORA, its main address is the Isla Grande village belonging to the Rosario River, Municipality of Tumaco and it is attached to the Network of Community Councils of the South Pacific-RECOMPAS- , Second-level organization that brings together all the Community Councils of the South Pacific (Tumaco and Francisco Pizarro) in the Department of Nariño (PDT Nariño, 2021-2023).
The Community Council is made up of 15 riverside villages of the Rosario River, divided into three zones (upper zone, middle zone and lower zone). Each zone is made up of 5 paths, as seen below:

Table 25. Local communities of the Unión del Río Rosario Community Council.

Zone 1 or lower zone of the Rosa River-Zone 2 or middle zone of the Ro River-Zone 3 or upper zone of the Rosa River-river sario rio		
Trujillo	Santa Maria	San Francisco
Candelo	Bocas de Caunapi-El Llano	Smell
The fifth	Lefties	Big Current
Big Island	The coconut	Chorrera
hide	Long Return	Peña de los Santos

Source: (PDT Nariño, 2021-2023).

Its governance structure is made up of six bodies:

1. General Assembly
2. Legal representative
3. Governing Board
4. Council of Elders
5. Technical Unit
6. Sectoral committees

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1.7.15.2. Cultural aspects

Below, the cultural aspects related to the REDD+ PAZcífico Sur project are described according to the municipalities that influence it.

1.7.15.2.1. San Andrés de Tumaco

According to (Acosta & Riascos, 2008), there is a system of governance of traditional Afro-descendant culture that is exercised by elders and has been characterized by anthropology in some places in the Pacific as the result of the “extended family.” It consists of the regulatory power recognized by people due to their age, lineage, breadth of family ties throughout the coastal territories, knowledge and spontaneous mastery of the organization and geography. In some cases it is expressed in a subtle way, although increasingly weakened, in ceremonies and cultural events such as births, corn plantings, deaths, birthdays, Holy Week, patron saint of the river, etc. The transmission of these systems of knowledge about the management of the jungle, the river and the sea, as well as their natural hegemony or control over the groups, has been eroding. Their interference in hunting, fishing or forays through the jungle (“walks through the mountains”) is observed less and less.

In this municipality are located the Community Councils Bajo Mira y Frontera, Alto Mira y Frontera, Unión del Río Chagüi, Unión Río del Rosario, Rescate las Varas, El Remembrance of Our Ancestors of the Mexican River, Río Tablón Salado, Río Gualajo , Río Tablón Dulce, Imbilpí del Carmen, Unión De Cuencas De Isagualpi, Veredas Unidas A Common Good, ACAPA, La Nupa, Unión Veredal del Río Caunapí.

Furthermore, it is found that in the last 25 years, in the Unión del Río Rosario Community Council, endogenous cultural practices are gradually weakening and giving way to new forms of postmodern urban culture. Even though there are makers of traditional musical instruments such as the bombo, the marimba, the cununo and the guazá, the influence on young people is notable, who are changing native cultural expressions for those imposed from the outside in an evident loss of values and cultural manifestations typical of the region (PDT Nariño, 2021-2023). The majority of the homes have a spatial distribution very typical of the area, which consists of a large social area known as the living room, two or more rooms for bedrooms, and the kitchen; In addition, they have a barbecue that serves as a roof terrace that represents an extension of the kitchen built in the back of the house (PDT Nariño, 2021-2023).

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Finally, because coconut *(Cocus nucifera)* is the most representative economic activity in the area of the Imbilpí del Carmen Community Council, one of the artisanal practices that are used, according to (Salazar, 2019), Legal representative, To keep pests away, it is the so-called "trapping", a trap as its name indicates that traps the "weevil" mosquito, which is the one that affects the palm until it dries out. Also, it is found that the Tablón Dulce has become the center of music and other cultural and artistic manifestations that have served as motivation and support for hundreds of communities in the region (Truth Commission, 2021).

1.7.15.2.2. Olaya Herrera

In the municipality, according to the (Municipal Mayor's Office of Olaya Herrera, 2009), there are some beliefs, customs and traditions that strongly influence the lives of the inhabitants, as:

- Patron Saint Festivities: Celebrated on September 14 of each year. On the last night of this festival, there is a waltz competition that is brought to the city center from the sidewalks and neighborhoods to be taken to the church.
- Carnivals: they are celebrated during the three days before Ash Wednesday, generally there is the custom of throwing water, flour, oil and eggs; in addition to performing popular dances to collect money.
- Holy Week: The consumption of special foods or typical dishes of the region stands out, such as fish tapas, piangua tamales, shrimp, piacuil, chicken, fish, the dish of chau piza with coconut, hair made of papaya green with pa-nela, corn casabe, shrimp ceviche, shell and crab ceviche. • The dances: the bambuco or the currulao and the juga stand out, in which instruments such as marimba, cununo, bombo and guasa take part.

1.7.15.2.3. Barbecues

One of the traditional activities of the inhabitants of the municipality is called mazamo-rreo-barequeo, which consists of traditional open field mining extraction, where gold is obtained through the use of manual tools in the river beds and beaches. , in the process an allusion is made to the bond, the family gathering and the place where every day the communities find the elements required to mainly satisfy local needs (Alcaldía Municipal de Barbacoas, 2020)

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1.7.15.2.4. Roberto Payan

The municipality, according to (Alcaldía Municipal de Roberto Payán, 2020), has festivities, parties and events that take place throughout the year. One of them is Saint Joseph's Day, celebrated in May, it is an artistic celebration where sports and cultural activities are carried out in the main park of the capital. In January, the Monkey Festival is celebrated, organized by the municipal administration through the culture institute. Religious festivals are also held in September in honor of the Virgen de las Mercedes. Likewise, the carnivals of the "Cuenca de los Ríos" and the Afro-Colombian Day are celebrated in

mayo.
The marimba music and traditional songs of the South Pacific of Colombia are UNESCO World Heritage and intangible cultural heritage of the national level. The municipality has an Institute of Culture that unfortunately does not have resources and infrastructure to function correctly (Ministry of Culture, 2019).

1.7.15.2.5. The puddle

At the beginning of the new year, the inhabitants of El Charco participate in a celebration that pays tribute to black people. With lullabies, bundes and other rhythms of Pacific music, natural actors represent the black family, infidelity, birth, death, traditional medicine and the productive practices of the region (Candelo, 2020).

In addition, dances such as the bunde, currulao, bambuco Viejo, juga, patacoré, as well as urban rhythms are part of the training processes that are developed together with different cultural managers of the municipality, who are the trainers of boys, girls, and adolescents. and young people.

1.7.15.2.6. Magui Payan

The population of Magüí, according to **(Municipal Mayor of Magüí, 2006),** specifically, is characterized because the artistic and cultural is connected with religious activities, so much so, that the main cultural, integration and coexistence activity is the patron saint festival. of Jesus of Nazarene, which is celebrated from January 1 to 6 every year. Despite the cultural wealth of the municipality, there is no local entity that promotes and motivates the practice of artistic and cultural activities, meaning that the municipality is alien to everything related to this sector; In Magüí there is only one organization that coordinates and leads the patron saint festivities, and two dispersed organizations that practice artistic activities, one for adults and the children's dance group; It is due to the lack of coordination, motivation and incentive from the municipal administration, which little by little has been losing cultural identity, the sense of belonging and the abandonment of the region's own practices.

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1.7.15.3. Economic aspects

According to the National Agricultural Census (2014), land uses were identified in the territory of ethnic groups within the municipalities present in the project area, obtaining the results observed in Table 26. Where it is found that the areas with natural forest coverage are greater in all the municipalities where the project is located, compared to the total census area in hectares. Followed by agricultural use and with a smaller amount of area used for other land uses.

Table 26. Land use and cover in the territory of ethnic groups.

Municipality	Area in natural forests (ha)	Agricultural area (ha)	Area in other land uses and covers (ha)	Total census area (ha)
San Andrés de Tumaco	165.244	104.902	4.419	274.565
Olaya Herrera	67.935	24.305	1.848	94.088
The puddle	175.894	41.045	27.196	244.135
Roberto Payan	114.615	22.462	6.451	143.528
Barbecues	198.975	20.917	1.064	220.955
Magui Payan	131.524	30.960	11.899	174.383

Source: (DANE. 2014)

Regarding the agricultural use of land in the territory of ethnic groups (Table 27), it is observed that the agricultural area is the one that predominates in all the municipalities where the project is located and in a lower percentage is that destined for agricultural infrastructure.
Describing agricultural use in greater detail (Table 28), there is a greater area destined for the establishment of crops, followed by fallow areas and, to a lesser extent, fallow areas.

Table 27. Agricultural land use in the territory of ethnic groups.

Municipality	Pasture area Stubble area (ha) Agricultural area (ha) (ha)			Area in agricultural infrastructure (ha)
San Andrés de Tumaco	633	11.540	92.723	5
Olaya Herrera	266	55	23.977	7
The puddle	466	757	39.807	16
Roberto Payan	750	288	21.373	52
Barbecues	2.243	3.689	14.943	41
Magui Payan	25	148	30.786	1

Source: (DANE. 2014)

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Table 28. Agricultural land use in the territory of ethnic groups.

	Area under cultivation (ha)	Area under fallow (ha)	Area under fallow Municipality (ha)
San Andrés de Tumaco	91.090	1.576	58
Olaya Herrera	23.821	147	9
The puddle	37.048	2.707	53
Roberto Payan	21.183	155	35
Barbecues	13.890	840	213
Magui Payan	30,506	216	64

Source: (DANE. 2014)

Finally, the Agricultural (UPA) and Non-Agricultural (UPNA) production units were identified, within the municipalities present in the project area, taking into account the destination of the production, by department and municipality in territories of ethnic groups. , obtaining the results observed in Table 29, where self-consumption of the products predominates, followed by direct sale or marketer, direct sale in the market place and sale to a supply center. In a lesser proportion, there is production for industry, with the exception of San Andrés de Tumaco, which has a higher result.

Table 29. UPA according to destination of production, by department and municipality in territories of ethnic groups.

cos

Munich-pious	Auto-with-sumo	Exchange o true-what	Sale of product in batch	Sold to cooperative	Sale a cen-tral from abas-them	Direct sale in market square fallen	Venta di-straight or commercials-zador	Supermarket or large surface	Sold to more-fell internal-tional	For the in-So-third	Another c
San An-drés Tumaco	4.920	113	1	16	2.807	6.217	6.225	2	·	4.015	104
to the incident Herrera	1.938	226	·	1	969	1.236	1.239	4	·	306	88
He Puddle	2.008	710	·	19	1.483	1.916	1.917	·	·	458	47
Roberto Payan	2.241	96	·	2	651	1.014	1.021	·	·	563	29
Barba-with	2.715	98	1	2	1.191	1.510	1.507	·	1	364	16
Magui	1.532	202	·	5	681	903	911	·	2	353	15

Source: (DANE. 2014)

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1.7.15.3.1. San Andrés de Tumaco

According to the Municipal Development Plan (2020-2023) (Alcaldía Distrital de Tumaco, 2020), which takes into account the Municipal Agricultural Assessments (EVA) (2019) for San Andrés de Tumaco, the main agricultural crops by harvested area, In their order they are: cocoa, palm oil, coconut and banana. Based on the above, it can be inferred that permanent crops persist in the area, that is, those crops that are planted, after a relatively long time, reach productive age, produce several harvests and should not be planted again later. of each collection. It is important to show how these production dynamics are preserved within the territories and the REDD+ PAZcífico Sur project is improving and designing some production chains associated with these products, so that the socio-economic and productive dynamics of the territories are strengthened. . In the district of Tumaco, the following predominate, by crop group: other permanent crops, oilseeds, fruit trees, tubers and bananas; Regarding the physical state of agricultural production, much of it is presented as dry grain (cocoa), crude oil (oil palm), fresh fruits and tubers (coconut and banana respectively).

Regarding the structure of the economic activity of the GDP, according to the (District Mayor's Office of Tumaco, 2020), there is primarily a primary economy and a tendency towards tertiary activities in services, where business and labor informality tends to be broad (general characteristics of the department, little evolution in industrialization strategies and inefficient promising sectors, such as agriculture). Women's labor participation is of greater importance than in other municipalities, however, their contribution is not equated with the income received, since there is an income gap; The activity with the lowest participation is mining, and those with the highest participation are those related to communal, social and personal services. The information described above is linked to the following community councils: Unión del Río Chagüí, Río Tablón Salado, Unión Río Caunapi, Unión Río Rosario, Río Gualajo, Imbilpí del Carmen, The memory of our ancestors of the Río Mejicano, Tablón sweet, Alto Mira and Frontera, Rescue the va-ras. The information described above is linked to the following community councils: Unión del Río Chagüí, Río Tablón Salada, Unión Río Caunapi, Unión Río Rosario, Río Gualajo, Imbilpí del Carmen, The memory of our ancestors of the Río Mejicano , Sweet plank, Alto Mira and Frontera, Rescue the rods.

For the Alto Mira y Frontera Community Council, the most important economic activities in the area are based on the agricultural and fishing sector, activities that have been affected by the presence and proliferation of crops for illicit use and illegal mining. The loss of the agrarian vocation is evident, being the main source of sustenance

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and maintenance of illicit crops, which can generate food and nutritional insecurity when the crop eradication and substitution processes are fully carried out (OCHA. 2017). According to the monitoring report of the United Nations Office on Drugs and Crime (UNODC-2017), the department of Nariño and the municipality of Tumaco are the territories most affected by coca crops in the country, concentrating 29% (42,627 hectares) and 16% (23,148 hectares) respectively; In Tumaco, the population centers where this problem is concentrated are La Balsa, Llorente, Guayacana and Restrepo.

Furthermore, in the territory of the Union Community Council of the Rosario River, production does not depend on a single activity, but producers develop a series of practices such as agriculture, fishing, hunting, wood extraction and on a smaller scale. the livestock. Within the agricultural activity they grow a wide range of species, among which cocoa, plantain, coconut, chontaduro, banana, cassava, various fruit trees and oil palm stand out.

In the territory of the Council, two production subsystems are clearly distinguished. differentiated, as seen in Table 30.

Table 30. Economic subsystems of the Unión del Río Rosario Community Council.

Subsystem	Description
Traditional from the lower part of the river	It is practiced in the villages of Trujillo, Cándelo, La Quinta, Isla Grande and Iscuandé. The residents have greater access to the sea, so the activities are represented by fishing. In addition, income is generated from the cultivation of coconut and cocoa trees.
Productive of the middle part of the river	It includes the villages of Santa María, El Llano, Chapilar, El Coco, Vuelta Larga, San Francisco, Ambupí, Corriente Grande, La Chorrera and Peña de los Santos. The main activity is agriculture, through cocoa, banana, sugarcane and subsistence crops. Additionally, minor livestock activities such as pig farming and chicken farming are used for self-consumption.
Productive of the upper part of the river	The main economic activity is agriculture, with cocoa, banana and fruit crops, and forestry is also used.

Source: (PDT Nariño, 2021-2023).

1.7.15.3.2. Olaya Herrera

In terms of employment, Olaya Herrera has a strength in the wood sector, and it is recognized that after the agricultural sector it is the largest generator of employment, its contribution to the total population is only 6.3%. There are 21 sawmills that on average directly employ 21 people and indirectly employ 29 among those in charge.

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of wood extraction, corresponding to a total of 1,050 people (Municipal Mayor's Office of Olaya Herrera, 2009).

Among the other sectors that generate employment is commerce, which directly employs about 500 people and another 100 indirectly who correspond to the so-called coteros or loaders. Among these establishments, restaurants, food and grocery stores, hardware stores, agricultural input stores, appliance stores, clothing, footwear, among others, stand out. The total population employed by the commerce sector represents 3.6%, although it is worth clarifying that the employment offered by these two sectors is of low quality since in most cases their income does not exceed the minimum wage and does not exceed 100%. They do not receive payment of social benefits (Municipal Mayor's Office of Olaya Herrera, 2009).

The state, through its multiple institutions, is another generator of employment. Among these we can highlight the municipal administration, which employs 0.7% of the economically active population. Another generator of official employment is the education sector, which occupies 1. 33%, on the other hand, the health sector employs 0.4% of the economically active population.
The other sectors and state organizations together occupy 0.2% of the population (Municipal Mayor's Office of Olaya Herrera, 2009).

The main economic activities in the municipality and consequently in the Unión Patía Viejo Community Council, focus on artisanal or bread-making agriculture, which they combine with grazing and forestry. The sectors that make up the income of the population are the agricultural sector, forestry, the public sector and fishing. However, it is worth adding that agricultural activity continues to be the economic base

and subsistence.

1.7.15.3.3. The puddle

The Manos Amigas Del Patía Grande Community Council is located within this municipality. The inhabitants, for the most part, depend on agriculture, where banana (6,222 hectares), coconut (1,150 hectares) and cocoa (400 hectares) crops stand out. Logging is carried out in the guandal, natal, mangrove and anidi-zal forests that are exploited in a non-technical way and mining, which in the last 6 years contributed an average of 1,019 ounces of gold per year (Alcaldía El Charco, 2018).

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Sawmills were a job option for dozens of Charqueños before 2000, when there were five companies and they produced three trips of wood a month, but every day the wages are more sporadic and there are only two companies left that spend weeks and even months stopped in the summer season, because they need the pipes to grow in the headwaters of the rivers to lower the wood. The day laborers go into the forests for four months and live in extreme conditions due to the number of mosquitoes and snakes. For 30 or 35 thousand pesos a day they cut trees and throw them into the pipes until they form what they call a “chorizo”, with about two hundred trunks. When they gather fifteen chorizos, they take them along the large river to the sawmills. There they gather between three and four thousand sticks to ship them to Buenaventura (Hernández, 2013).

1.7.15.3.4. Roberto Payan

The case of the Municipality of Roberto Payán, due to its geographical characteristics, has become a field of confrontation between various armed groups that seek to take control of mining and/or coca exploitation. Furthermore, the geographic isolation and hydrographic characteristics of the territory due to its connection to the sea by the Patía River, make it the main incentive for the proliferation of illicit crops and the creation of routes for the trafficking of weapons and drugs. This has brought negative consequences, which are evident in the considerable increase in violence rates, a larger displaced population, deforestation, and conflicts over land use (Galvis, Moyano and Alba, 2016).

1.7.15.3.5. Barbecues

In the economic sector of the municipality, according to (Alcaldía Municipal de Barbacoas, 2020), the Agriculture provides the necessary inputs for daily consumption, logging is used for the construction of boats, homes and furniture manufacturing and even for handicrafts and mining activity has favored some artisanal miners with the search for their media subsistence. Small-scale mining has provided the artisanal miner with the daily resource to support the family, providing the gold necessary for goldsmithing and boosting trade with its daily and permanent distribution. However, it has left many small and large miners in ruin, as mining is an uncertain and high-risk activity. To the above, we could add the presence of coca crops and certain educational services, commercial banking, health, and gambling.

Among the crops, bananas and plantains stand out, mainly associated with fruit trees; pastures with stubble and/or weeds and intervened natural forests. Although it is also found associated to a lesser extent with sugar cane, corn and cassava. The latter can also be found on the middle and lower parts of the trails, especially along

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banks of the main road. Currently, the cultivation of rice is being promoted, which due to climatic conditions constitutes a promising crop. Banana cultivation covers an area of 735 hectares, reaching a production of 3,558 tons, followed by banana cultivation with 505 and cocoa with 230 hectares. The planted area, as well as the yields, have been decreasing year after year, because the plantations do not undergo improvement, irrigation, or any fertilization. It is highlighted that the Telembí Integration Community Council is located in this municipality.

1.7.15.3.6. Magui Payan

In the urban part of the municipality, commercial activities are carried out such as the sale of groceries, clothing, bakeries and butcher shops, as well as small restaurants; while the quality of the soils in the rural part allows its inhabitants to plant various crops, thus for the year 2016, the most planted agricultural products and those that left the most tons were bananas, cocoa and coastal plantain; However, the soil in the area was affected by aerial fumigation for eradication, leaving consequences from which they have not been fully recovered and which, together with the overflowing rivers, does not allow for large-scale production (Municipal Mayor's Office of Magüí Payán, 2020).

Despite the advantages that the municipality has in terms of land, the low level of associativity and productivity does not allow higher levels of production and marketing, in addition to the lack of technical and professional training. For its part, activities such as livestock farming are not profitable in the municipality due to the characteristics of the soil that are not suitable for intensive grazing, with 720 heads of cattle existing in 2016. In addition, Magüí Payán has great wealth mining, this activity is carried out informally in the open pit, but with lower production; In accordance with the aforementioned, information is established as available with respect to the economic sector for the Integration Community Councils of Telembí and La Amistad. The soils of the municipality have been used in forestry and agriculture for many years, without following ecological and technical guidelines that allow their conservation, the balance of the ecosystem and the obtaining of economic benefits, for this reason it has deteriorated significantly. the quality of the environment in many areas.

1.7.16. Project context

The PAZcífico Sur project to reduce emissions from deforestation and degradation is consolidated in the eighteen (18) community councils of the department of Nariño, recognizing the need to reduce the effects that lead to deforestation and forest degradation, and to act on the causes that compromise both the integrity of their

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forest ecosystems as well as the well-being of the residents. The communities have participated in work groups and collective construction, developing analysis activities, territorial diagnosis and prospective, evidencing which are the phenomena that primarily influence its dynamics, these results are used to consolidate the context and the justification of implementing these initiatives within their territories.

For the design of the project, it is essential to recognize the base elements that generate deforestation and forest degradation, which is complemented with the information provided by the communities, their knowledge and experience within the place being the fundamental input to consolidate actions based In his perspective, at the same time, other elements of territorial planning are involved, which facilitate addressing these activities and complying with the schemes established there, aligning objectives and goals of all the parties involved. For this project, a cause-effect diagram is used as a tool that allows correctly designing the axes that will guide REDD+ actions in the territory, based on the identification of direct and secondary causes, the central problem that covers the initiative and the direct and derived effects of the constant manifestation of these events at the ecosystem level.

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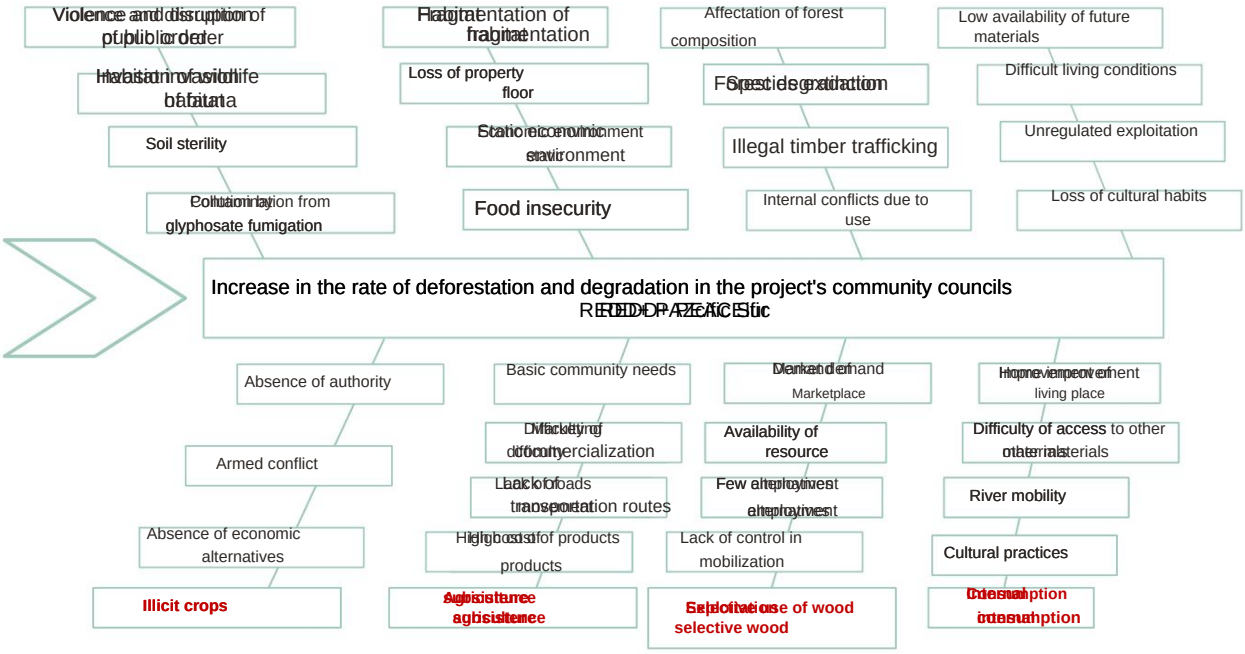


Illustration 5. Problem tree and current situation of the PAZcífico Sur REDD+ Project.
Source: (CO2CERO SAS, 2022)

The cause-effect diagram presented allows us to outline the main causes of deforestation (bottom) as well as the underlying causes that promote its manifestation, within which illicit crops, subsistence agriculture, selective use of wood and acquisition of wood for internal consumption. Among the relevant underlying causes is the absence of the state, lack of economic alternatives, low job opportunities and mobilization difficulties; In turn, all this configures the central problem within the community councils, the increase in the rates of deforestation and forest degradation, from which multiple effects are derived, such as habitat fragmentation, loss of biodiversity, food insecurity and alteration of the tradition and culture of the communities.

This project aims to generate positive value in the community, which reconfigures the dynamics resulting from the manifestation of some of these effects, while promoting a new opportunity in the community to recognize their value for the role they have played. as guardians of the forest and the resources it supports. The REDD+ activities of this project seek to mitigate the occurrence of the direct and underlying causes, and

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avoid the manifestation of some effects, which influence the social, economic and natural context of the communities; At the same time, it contributes to compliance with the Cancun safeguards in their aspects of respect for culture and tradition, equity, transparency, protection of biodiversity and development of governance.

Illustration 6 shows the main objective of this project, being essential to create strategies to reduce the rate of deforestation and forest degradation within the different community councils, which are based on REDD activities, which, in turn, are oriented towards compliance with specific project objectives.

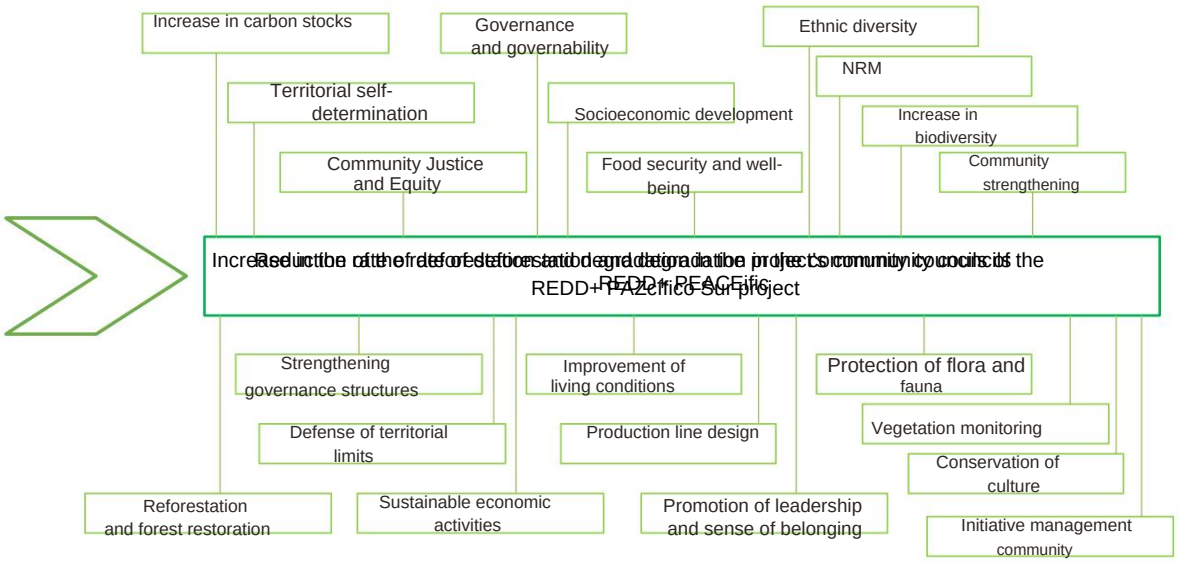


Illustration 6. Objective diagram for the PAZcífico Sur REDD+ project.
***Source:* (CO2CERO SAS, 2022).**

At the bottom of the diagram you can see the REDD+ activities necessary to act on the causes of deforestation and degradation in the territory, while promoting the improvement of living conditions and socioeconomic development of the territory, based on the achievement of monetary and non-monetary benefits, being conditional, lasting over time, achieving community self-management and raising their levels of well-being. Once the general objective of reducing the rate of impact on the forest has been met, the achievement of multiple specific objectives is taken into account (Top part of the diagram) based on socio-environmental safeguards, community autonomy and the regulations associated with REDD+ projects within the National territory.

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1.8. PMCC technologies, products, services

- The PAZcífico Sur REDD+ project quantifies the reduction of emissions from deforestation and forest degradation within the eligible limits of eighteen (18) community councils in the department of Nariño.
- The quantification of avoided emissions for the REDD+ PAZcífico Sur project is consistent with the methodological reconstruction of the national reference level of Colombia, within which the emission factor is determined with local information, specific to the study site.
- The information used to structure the project, describe its context and apply the necessary analyzes comes from official sources such as the Ministry of the Environment, the National Land Agency, the Ministry of the Interior, the Colombian Environmental Information System (SIAC). , Geo open data portal of the Agustín Codazzi Geographic Institute (IGAC) and Institute of Hydrology, Meteorology and Environmental Studies (IDEAM).
- The GHG emissions reductions generated by the project are marketed for the Colombian national market based on the non-causation of the Carbon tax (Decree 926 of 2017) and the voluntary national and international market based on the NDC of each country. and its mitigation goals.
- The resources generated by the commercialization of avoided GHG emissions are applied to the implementation of REDD+ activities to reduce the direct and underlying causes of deforestation, as well as the effects of climate change on the territories, based on a benefit sharing agreement .

1.9. Chronological plan

Below is the chronological plan for the PAZcífico Sur REDD+ project.

Table 31. Chronological plan for the PAZcífico Sur REDD+ project.

Chronological Plan	
Project start date January 1, 2017	
Historical period	January 1, 2007 to December 31, 2016
Projection period	January 1, 2017 – December 31, 2036
Results period	It will depend on the verifications carried out
Project duration	20 years
Verification times	Triennial verifications (3 years) are proposed with a maximum of 5 years.

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2. Methodology

The project is based on the application of the M/UT-REDD+ V 1.2 Methodology for the execution of REDD+ projects consistent with national reference levels. CERCARBON V 1.2.

Taking into account the conditions of the project, where the forest covers are the most representative and are located within the territories of Afro-descendant communities, duly titled, this methodology is defined as the most appropriate, additionally, from the technical aspect Its parameters and calculation methods are adjusted to the variables found and monitored within the project limits.

2.1. Applicability of the methodology

The project meets the conditions of applicability of the methodologies as follows:

i) The project is framed in the reduction of GHG emissions through the development of REDD+ activities

ii) The project is carried out in areas that meet the national definition of stable forest, which are:

a. Minimum area of 1 hectare
b. Minimum height of 5 meters
c. 30% canopy cover
d. 10 years of permanence as a stable forest

iii) The analysis of data, agents and causes of forest decline attributable to deforestation and degradation activities.

iv) The baseline and project scenario is consistent with the methodology developed for the national levels, reservoirs, selected sources and deforestation and degradation activities.

in) The quantification of GHG emissions or removals in the scenario with project and leaks are consistent with the methodology developed by national levels, reservoirs, selected sources and deforestation and degradation activities.

we) The monitoring of GHG emissions, removals or reductions in the project scenario consistent with the sources of data and information used in the projection, including their suitability, integrity, precision and reliability.

vii) The mandatory deposits and emission sources to be considered within the project are evaluated in accordance with the provisions of the methodology.

viii) The project promotes the protection, care and consolidation of governance and culture, through the Cancún safeguards.

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Finally, the project meets the location conditions (physiography, hydrology, soils, etc.) and the threat of deforestation and degradation characterized by a historical trend of the last decade and patterns in terms of agents, drivers and underlying causes of deforestation. and degradation.

2.2. Additionality

Aiming to demonstrate the additionality of the REDD+ PAZcífico Sur project, justifying why the removals of carbon dioxide equivalent (CO2e) would not have occurred in the absence of the implementation of the initiative, thus generating a positive change to the mitigation of the climate change, in accordance with the provisions of Article 43 of Resolution 1447 of 2018 of the MADS and the methodological framework proposed by the program.
grams.

2.2.1. Additionality criteria according to methodology

In accordance with section 4.1 Additionality of the quantification methodology, the PMCC demonstrate their additionality when:

1) They build a cause-effect chain for each PMCC action and its result is derived in at least one REDD+ activity. This analysis has been carried out for the general objective of the project, determining the causes and effects related to the territory, in turn, the specific actions and objectives to be followed during the execution of the initiative are proposed, which correspond to the activities REDD+ proposed for this project (See 1.7.16 Project context).
2) Demonstrate that there are no other initiatives within the territory that finance REDD+ activities or the volume of results corresponds to the PMCC. To determine this requirement, the areas that may be subject to other compensation programs such as Biotic Environment Compensation, other GHG mitigation initiatives (See Figure 15), protection areas defined through the Regis were ***verified .*** -Single National System of Protected Areas (RUNAP) or legal determinations such as Law 02 of 1959 (See ***Figure*** 13). Once the absence of overlaps with these figures has been verified, it is possible to define that there are no other sources of financing that intervene for the implementation of conservation initiatives at the regional and/or local level.

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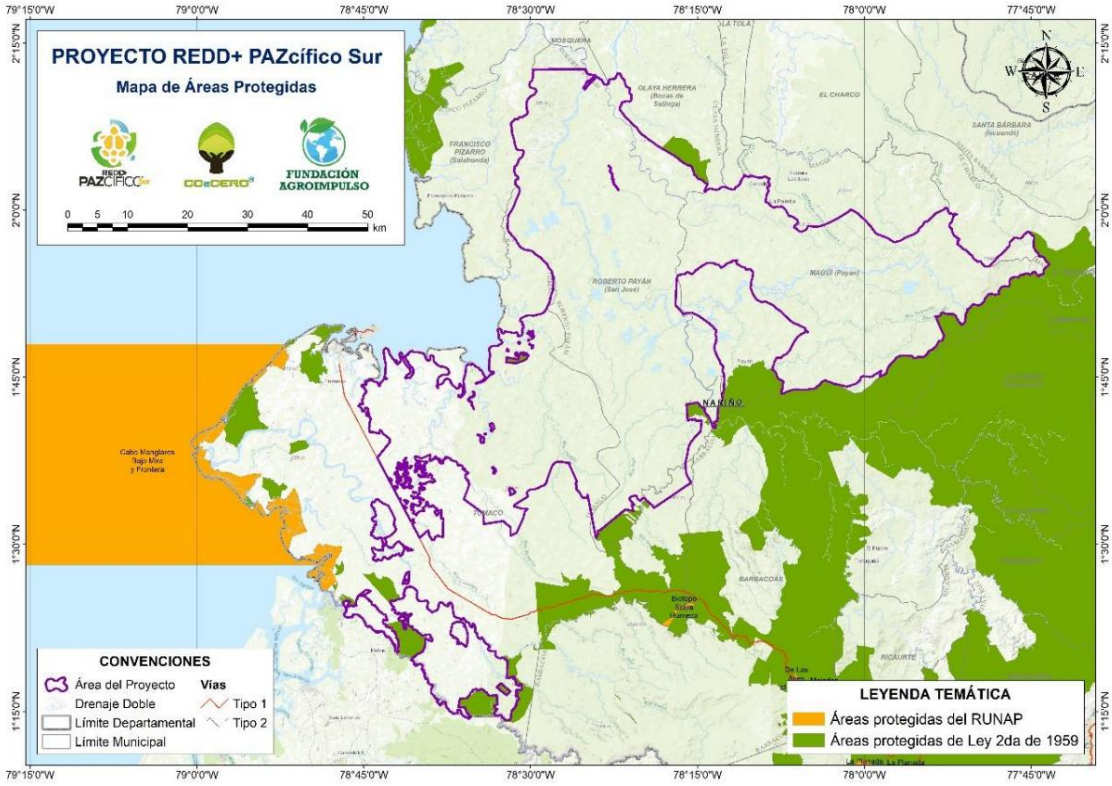


Figure 13 Map of protected and conservation areas.
Source: (CO2CERO SAS, 2022)6

3) Take into account the program tool to demonstrate additionality of climate change mitigation initiatives.

To demonstrate the additionality of the PAZcífico Sur REDD+ project in accordance with the additionality analysis diagram presented in the tool, the elements that support it are presented below.

2.2.1.1. Analysis of the legal framework.

The project complies with the current regulations of the Reporting, Monitoring and Verification System Resolution 1447 of 2018 in relation to Article 43 “Additionality criteria in REDD+ Projects”. In such a way that the owner of the REDD+ Project must demonstrate a net benefit to the atmosphere in terms of reduced emissions or

[6] Created from RUNAP, 2021. Available at: https://runap.nationalparks.gov.co/

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GHG removals and that the mitigation result would not have occurred in the absence of the initiative. Therefore, the project shows the following scenarios:

> *"Those GHG removals due to the capture of carbon dioxide by the natural forest that remains as natural forest are not considered additional, and consequently they are not eligible for national accounting."*

The project demonstrates compliance with this section through the result obtained in the eligibility analysis (See 2.8 Eligibility), within this analysis geographical information of the project limit was used according to available official platforms, which allowed evaluate the presence of forest cover within a period of 10 years or prior to the start date of the initiative, determining it as a stable forest and verifying its losses for periods after the start date, evidencing the real losses of forest cover. forest and under which the avoided GHG emissions are determined, reflecting the contributions of the community councils to the reduction of these phenomena within their territory.

> *"The reductions in emissions or removals of GHG as a result of compensation activities for the biotic component derived from the impacts caused by projects, works or activities within the framework of environmental licenses, concessions, applications for permits, are not considered additional. "unique use of the forest resource due to change in land use, and the request for definitive removals from national and regional forest reserves."*

Within the limits of the project, no activities framed in compensation of the biotic component have been developed. As evidence of this, the compensations registered by the National Environmental License Agency (ANLA) in the Environmental Information System of Colombia are verified. (SIAC), which are presented in geographic layers composed of three (3) shapefiles with polygonal geometry, which are observed in Figure 14 in conjunction with the project limits; As can be seen, there is no overlap in any activity related to biodiversity compensation, 1% compensation or other compensations.

> *"Reductions in GHG emissions or removals resulting from preservation and restoration activities in strategic areas and ecosystems for which payments for reduction and capture environmental services are accessed are not considered additional.*

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of GHG in accordance with the provisions of Chapter 8 of Title 9 of Part 2 of Book 2 of Decree 1076 of 2015."

Compliance with this condition is evidenced by the analysis carried out in 4.1.3 Decrees and Laws mainly from Decree 1076 of 2015. Single Regulatory Decree of the Environment and Sustainable Development, where the absence of environmental restriction areas within the limits of the project is verified; Figure 14 shows that there are no areas such as Zones registered in the RUNAP and/or Forest Reserves established by Law 2 of 1959 with its exclusions as of 2018, in the limits of the project.
This first analysis allows us to infer that the project positively complies with the legal and regulatory requirements related to GHG mitigation initiatives and does not come from a legal requirement resulting from other actions or related activities such as compensation, payments for environmental services or natural reserves.

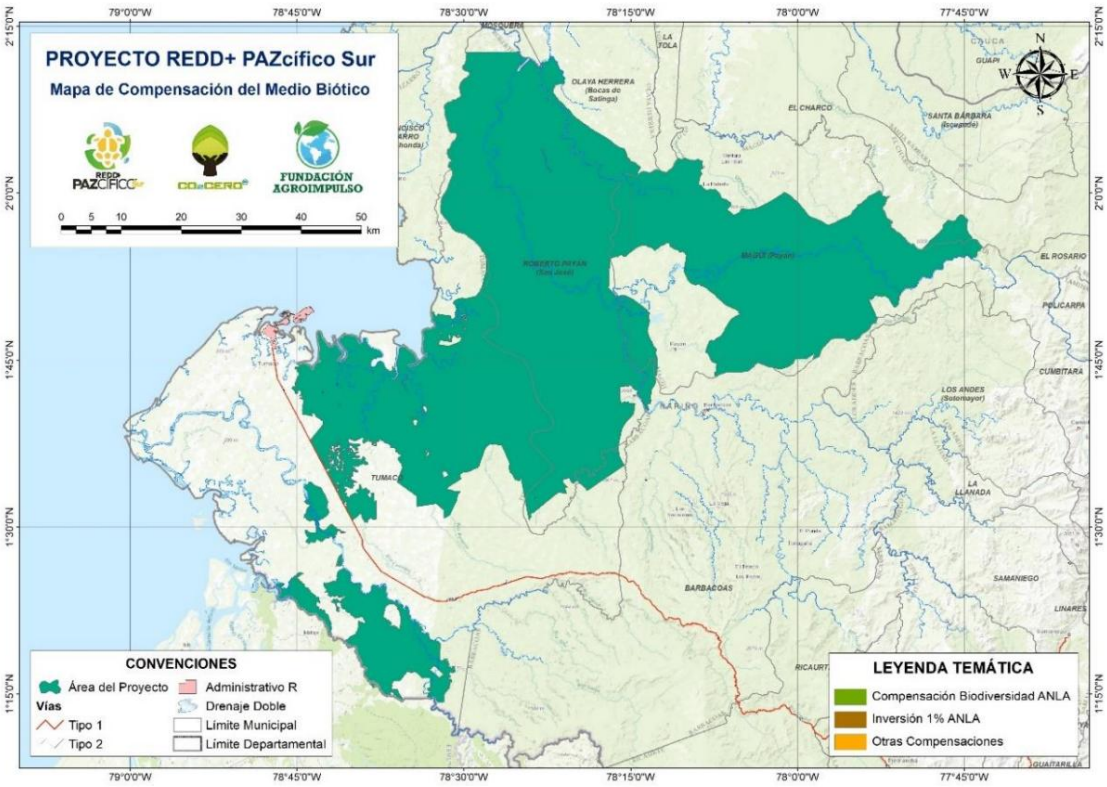


Figure 14 Biotic Environment Compensation Map.
Source: (CO2CERO SAS, 2022)7

[7] Created from ANLA (sf). Available at: https://www.parquesnacionales.gov.co/portal/es/sistema-na-cional-de-areas-protegidas-sinap/compensaciones-ambientales-e-inversion-forzosa-del-1/

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2.2.1.2. Specific cases of additionality

When an initiative demonstrates compliance with its legal framework, it will correspond to any of the following special conditions to be determined as additional:

a) It is the first of its kind.

b) Exclusively implements restoration activities in the forest sector without use commercial.

c) Its income derives exclusively from the carbon market. d) It is designed to neutralize the GHG emissions of a certain company. dam or institution, whose activities would correspond to sectoral areas different from those it normally carries out. e) The activity(s) to be implemented are included in the positive lists on the use of CDM technologies.

Given these criteria for determining the baseline scenario according to the methodological document, the REDD+ PAZcífico Sur project is based on compliance with criterion C. *The Climate Change Mitigation Project has income exclusively from the carbon market.*

In compliance with this, a benefit distribution annex is consolidated that defines the mechanisms, procedures and actors linked to the generation and management of monetary and non-monetary resources from the commercialization of avoided GHG emissions, in turn, the contractual exercises. established with the community and technical partner by the managing partner, show that commercial transactions and monetary resources are manifested in terms of the commercialization of avoided emissions; thus, confirming that the income received by the project comes solely and exclusively from the carbon market. Additionally, in folder *11_Annexes and complementary,* the cost analysis related to the project is presented, which is designed based on the resources expected from the commercialization of avoided GHG emissions over a 20-year horizon.

Finally, with the objective of confirming the use of land in conservation as the most appropriate in the territorial context and that generates the greatest benefits, an analysis of the most probable land uses identified through spatial analysis, diagnostics, -tics in the field and information regarding socioeconomic dynamics of the different community councils, which is presented below:

2.2.2. REDD+ project start date

The date on which emissions reduction activities due to deforestation and degradation begin within the project limits is evident, for which evidence is attached.

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of restoration and monitoring activities, subsequently with the support of institutions external to the community councils, conservation, protection and maintenance actions of natural coverage are promoted. The start date is described in 1.5.2.2
and it is documented in the folder *7_Start date,* corresponding to January 1, 2017.

2.2.2.1. Identification of land use alternatives

The most probable land use scenarios are identified according to the territorial dynamics of the community councils involved in the PAZcífico Sur REDD+ Project.
As a result of the community diagnosis, analysis of deforestation factors and verification of satellite information (See 2.8 Eligibility) and secondary information related to environmental and socioeconomic factors of the population (See 1.7.15 Social, cultural and economic aspects of the community), The probable land uses are determined in Table 32.

Table 32. Analysis of possible land use scenarios in the territory

Land use	Manifestation	Trend	Viability
subsistence farming	Groups of perennial crops, oilseeds, fruit trees, tubers and bananas predominate; basing its economy on products such as dry grain (cocoa), crude oil (oil palm), fresh fruits and tubers (coconut and banana). Agriculture is also found on small plots in the form of family farm units, with crops of banana, sugar cane, cassava and rice.	The planting area used for agricultural crops has been reduced due to the proliferation of crops for illicit use and illegal mining. However, it presents a positive trend taking into account the needs of food security, but it is not considered as a large-scale development factor, due to low technological and road development.	It is a probable scenario, taking into account the needs of production and socio-economic development, however, it has been limited only to production for subsistence of the communities, due to business informality and given labor the geographical and logistical limitations and the low evolution in marketing strategies. Its GHG capture is not significant, due to the structure and biomass that makes it up.
Illicit crops	The municipalities of influence of the community councils have registered the presence of armed actors who harvest illicit crops. Which has created a dynamic economic associated with the same mos, as well as a dispersion of the crop in different places within the project boundary.	At the national level, the policy of eradication of illicit crops is implemented, which has been implemented in different municipalities. from Pacific. However, there is a strengthening of illegal armed groups that are sequentially affecting the entire rural area within the project limit and promoting the existence of cults. illicit assets.	It is not viable because it is an illegal activity in the territory. river, has programs for its eradication and implementation barriers of a regulatory and legal nature. Additionally, it is not a recurring activity endorsed by the community, given the restrictions on the application of other land uses.

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Land use	Manifestation	Trend	Viability
			Its GHG capture has not been estimated given its illicit nature.
Production forestry	Currently, the project limits do not have forest plantation activities for wood production, wood for internal use is extracted from natural forests mainly for development and well-being of the community, mainly for infrastructure and local development.	In the absence of areas for wood production, there will be an influence on natural forest cover, increasing the pressure and the amount of deforested area, translating into GHG emissions from deforestation and/or degradation, in turn. , the related market is illegal, restricting the development opportunity under this framework, which is why it lacks logistics, technological development and market niches.	The financial requirements to establish forest production areas are high and difficult to achieve given the conditions. current conditions of the territory. It does not have adequate logistical and industrial development, reducing the availability of the product to external markets. Likewise, the benefits obtained from commercialization are mainly for third-party logging companies. In terms of GHG capture, a forest plantation scenario would generate effective GHG removals, however, it is not a possible scenario; on the contrary, when the harvesting is on natural forest, emissions are generated by selective extraction. of wood, which does not generate a net benefit to the atmosphere, increases the rate of deforestation and therefore its associated emissions.
Mining	It is constituted as the main activity for the subsistence of the community councils, manifesting itself in an artisanal way and in some cases without licensing, mainly associated with riverside zones and flood-prone areas. At the licensing level, there is an area within the municipalities of Ma-güi Payán and Roberto Payán, and 17 requests for legalization of titles.	Taking into account the requests Since the legalization of mining titles involving nearly 3,622 hectares, it is possible that the areas involved celebrate in the territory with pre-via authorization from the authorities-of involved. At the same time, being a basic subsistence economic activity According to the councils, this phenomenon will increase the effects on the environment, if it is not carried out in a regulated manner, understanding its illegal nature. On the other hand, its economic viability may be finite,	From the legal framework, the activity is not being regulated which prevents its effective execution at the territorial level, concentrating the incomes in few people, in turn the effects generated in surrounding areas can limit the availability of resources and ecosystem services. Area and distance also make chain design difficult. production and means of marketing, in turn, that access routes are restricted due to public order problems. It can generate GHG emissions from some activities

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Land use	Manifestation	Trend	Viability
		understanding the availability of existing minerals within the territory as a non-renewable resource.	extraction and damage to provisioning and support ecosystem services.
Sustainable forest management and forest conservation (PMCC REDD+)	The territory of the community councils has extensive coverage of humid and very humid tropical forest, additionally, the community understands the goods and services that are derived from there, promoting their protection and conservation, to at the same time it measures the relevance that these have for their development and survival. The forest is a stable unit that varies in its structure only if it is altered by anthropogenic agents to a lesser extent by natural effects.	Due to the increase in illicit crops, illegal mining and population growth, forest cover has decreased. However, GHG mitigation initiatives at the national and international level have taken center stage. vancia given the commitments of nations before the united nations framework commission against climate change. REDD+ initiatives within the national territory have also constituted a means of payment for results adequate to generate development, self-recognition and improvement in the quality of life in rural communities.	Currently, the community councils have established within its internal regulations, the protection and care of the environment, which has a direct link with the conservation and protection actions of the forest, at the same time that they find in initiatives approved by the government a legal development mechanism based on its culture and tradition. In terms of emissions avoided GHG emissions, this mechanism turns out to be the most effective and appropriate given the value of forests as carbon sinks and the ownership of the communities over them.

Source: (CO2CERO SAS, 2022)

2.2.2.2. Consistency of land use alternatives

Once the probable land uses have been determined within the project limits, their consistency with regulatory and legislative factors is determined; additionally, their correlation with the environmental, social, technological and economic contexts is verified, according to the dynamics identified in the field. , which were socialized and reflected by the community during the execution of the workshop to analyze deforestation factors (See folder *11_Annexes and complementary\05_Results_DriversDef_Deg).* An analysis is used to quantify the viability of land use defined with respect to these contexts, determining which alternative is appropriate and additional within the territory, in addition to generating the greatest net benefit to the atmosphere in terms of reducing GHG emissions. .

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Table 33. Viability rating of land uses

Land use	Policy-Legal	Environmental	Social	Technological	Economic Result	
Mining	2	1	2	2	3	10
Agriculture	3	2	3	1	1	10
Illicit crops	1	1	1	2	3	8
Production forestry	3	2	3	1	1	10
Sustainable forest management and forest conservation (PMCC REDD+)	2	3	3	3	3	14

Source: (CO2CERO SAS, 2022)

The quantification of the impact occurs according to the viability of land use with respect to the political, environmental, social, technological and economic context, where values are assigned, as follows:

(1) It is a context that does not show viability for this land use
(2) It is a context that provides basic elements for land use to manifest itself
(3) It is an aspect that provides all the necessary elements for the use to be carried out.
ground

This feasibility was evaluated based on the trend, manifestation and probability of occurrence of each scenario in accordance with the regulatory and planning instruments and the consultations carried out in the field, involving the experience of the developer in the quantification of each scenario on the particular context.

The results of the analysis are seen in Table 33, showing that the most attractive land use is the land destined for Sustainable Forest Management and Forest Conservation (PMCC REDD+), complying with the additionality parameters of resolution 1447 of 2018, defining it as an initiative that demonstrates reductions in GHG emissions or removals derived from its implementation, generating a net benefit to the atmosphere.

Likewise, it is observed that alternative land uses, different from land in conservation, present logistical limitations due to access and mobility conditions, in economic terms due to the lack of identification and development of market infrastructure. and in the legal case, some activities are not supported under any framework, on the contrary, they are contrary to national regulations.

Additionality seeks to comprehensively guarantee the environmental, social and financial balance of climate change mitigation initiatives, for which it must be demonstrated that the initiative would not have occurred in the absence of the carbon market or is part of effective mitigation. of climate change through greenhouse gas captures

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greenhouse. In the case of this project, it has been determined that the emissions avoided within its limit are much lower than those existing in the absence of the initiative, which is identified through the baseline scenario, obtaining results of the loss of forest during a period of ten (10) years prior to the start date. Additionally, the project contributes with the resources generated to the improvement of the natural, social and environmental capitals of the territory, while strengthening the sense of belonging, the sustainability of a peaceful territory and an increase in the quality of life. These contributions, as well as the REDD+ activities that seek to reduce emissions in the credit period, are financed at all times by the resources resulting from the sale of carbon credits, and depend exclusively on the administration of these resources and self-management.
community to sustain itself over time.

The REDD+ PAZcífico Sur project has been registered as a subnational initiative in the Colombian monitoring, reporting and verification platform, known as RENARE (See folder 9_Environmental legislation\Radicado_MinAmbiente.JPG), *in* accordance with national regulations, which In turn, it is linked to resolution 1447 of 2018, generating the net benefit to the atmosphere made by the implementation of the initiative, without overlapping with other REDD+ initiatives around it, as shown in the

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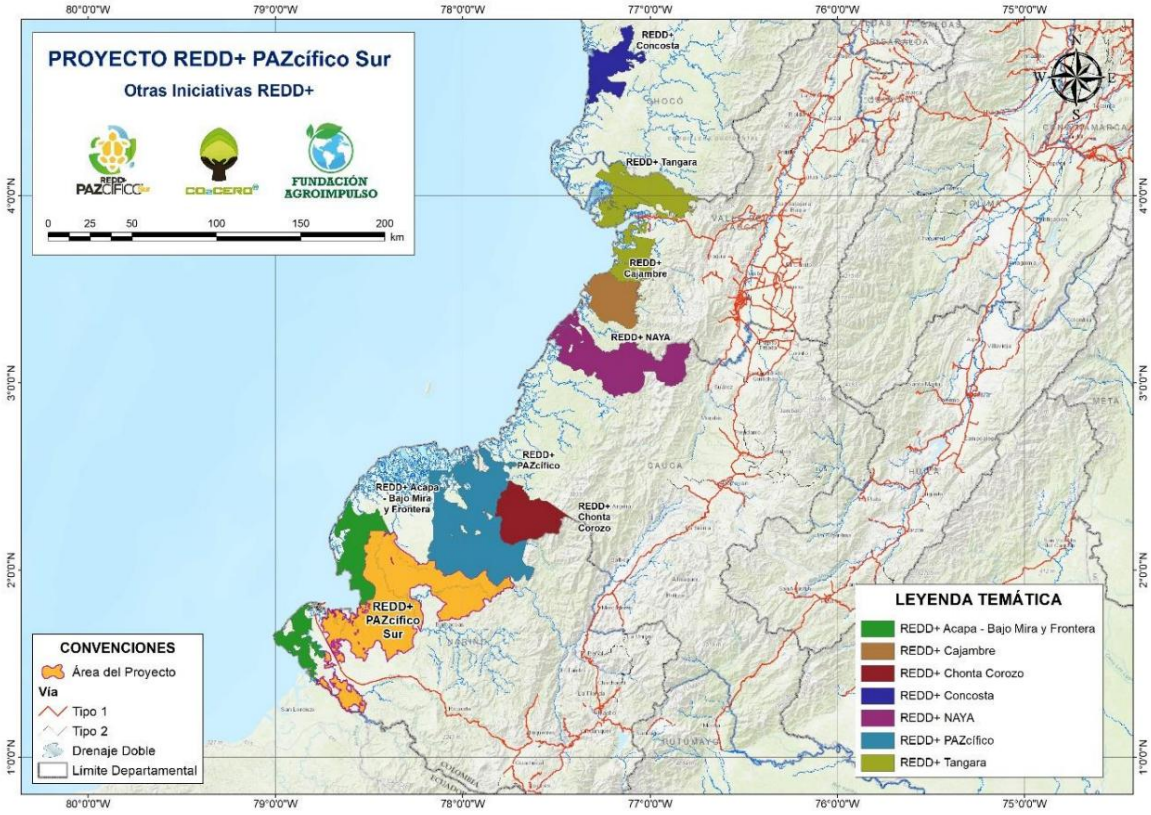


Figure ***15.***

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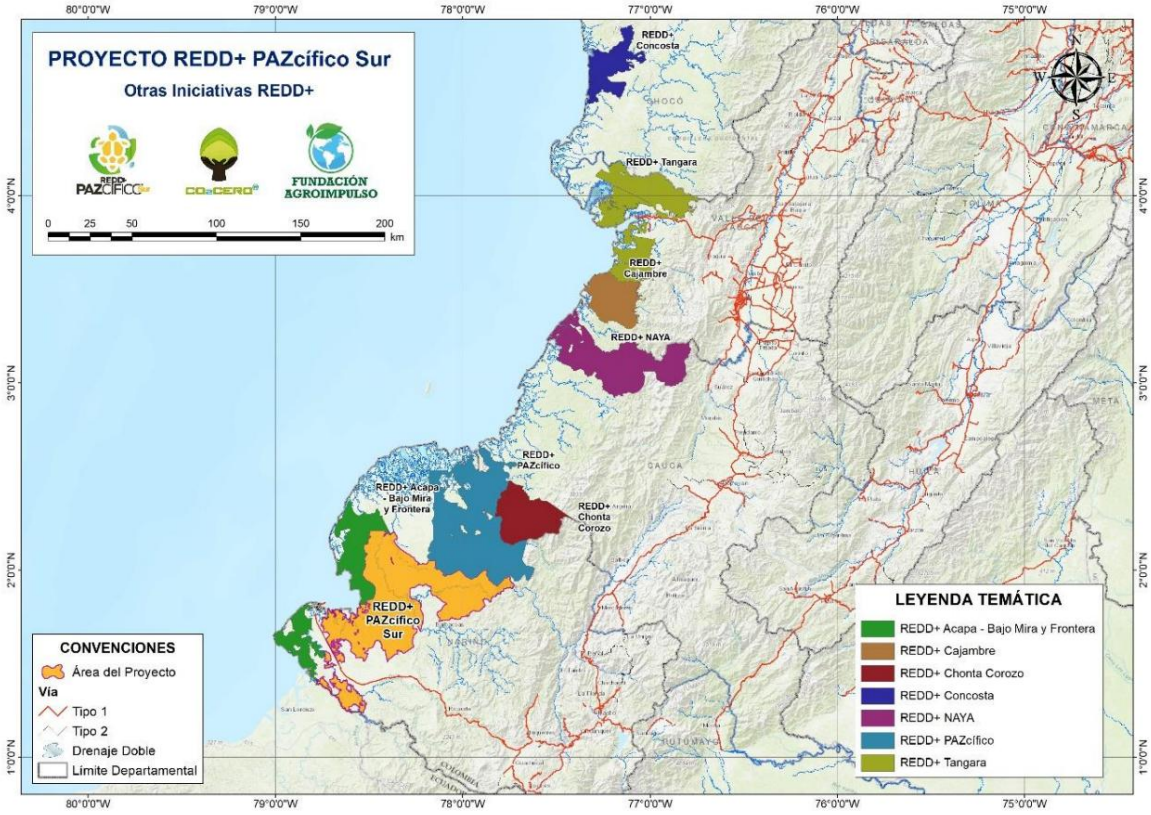


Figure 15 GHG mitigation initiatives adjacent to the PAZcífico Sur REDD+ project.
Source: (CO2CERO SAS, 2022)

Regarding the demonstration of additionality suggested by the certification program, it is determined that the project is additional since its resources arise solely from the commercialization of avoided GHG emissions due to deforestation and degradation, which is determined at the contractual level in 1_Agreements \ *01_Technical Associate Contract\01_Contrato_Agroimpulso_CO2CEROSAS.pdf\Paragraph Clause Six\Means of payment,* is ratified in the cash flow analysis (See *11_Annexes and complementary\Annex Projection of Costs of REDD+ activities.xlsx)* and is demonstrated in the document *2_Co benefits\Benefit distribution_V2,* explaining how these benefits are distributed among the actors involved in the initiative. Likewise, the initiative to reduce emissions from deforestation and degradation, as well as its project limits, are not part of compliance with mandatory standards or regulations, nor are they part of an environmental compensation scheme (See Figure 14).

23. Analysis of deforestation and degradation factors

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Below, the process for the identification and consolidation of information related to the factors and causes of deforestation and forest degradation at the territorial level is described.

2.3.1. Methodology in the analysis of deforestation and degradation factors

The activities to analyze the factors and causes of deforestation and degradation were carried out in two moments, which are described below:

2.3.1.1. Previous review of deforestation and degradation factors

To carry out the analysis of deforestation and degradation factors, a review of previous secondary information of a regional and municipal nature was developed, which allowed identifying the existence of possible factors, their status and manifestation in the territory. This information was compiled through bibliographic sources such as indexed scientific journals, university studies and regional public and private entities, subsequently the information obtained was adjusted to local conditions, by approaching community councils, through a series of workshops to analyze the factors of deforestation and degradation from primary information sources, highlighting that in each one the direct causes and description of each identified factor were established.

2.3.1.2. Workshop analysis of deforestation and degradation factors

The analysis of deforestation and degradation factors at the local level was carried out under the methodology of participatory diagnosis and participatory action research, taking into account that the population has the most accurate knowledge about their territory and the situations that they have expressed about it. an orientation is carried out on the factors of deforestation and degradation, the importance of its analysis and the representativeness of the results generated. Additionally, the community's interaction with the project ratifies transparency and full participation, relevant axes within compliance with the social and environmental safeguards of the REDD+ project. The deforestation factors analysis workshop and degradation was developed with the activities described below:

2.3.1.2.1. Formation of work team

In order to establish the necessary information to transmit and cover the workshop to analyze deforestation and degradation factors, the management team personnel in charge of its execution are trained. The roles played in the execution of the workshop

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They are described in Table 34, in order to generate in an organized manner a logical order in the transfer of information and obtaining results.

Table 34. Roles and responsibilities workshop analysis of deforestation and degradation factors

Role	Responsibilities
Workshop driver	Opening to the space for diagnosis and analysis of deforestation and degradation factors. Generate team cohesion and describe the work plan and methodology. Control time, guaranteeing order in the execution of activities. Organize the socialization of the results and guide the finding of conclusions according to the different phases carried out in the workshop.
Workbench facilitator	Support the working groups to achieve the correct identification of factors and causes of deforestation and degradation. Guide those involved in the execution of the methodology so that affinity is generated with the activities carried out.
Workshop Secretary	Take attendance from participants Deliver materials to each table facilitator Support with additional requirements for the execution of the workshop

Source: (CO2CERO SAS. 2022)

2.3.1.2.2. Workshop presentation

Once the roles and responsibilities of the participants have been established, we proceed to begin activities for the identification of the causes and factors of deforestation and degradation within the limits of the PAZcífico Sur REDD+ project. The workshop was developed in three (3) moments, distributed as follows:

The ***first*** corresponds to the introduction of concepts related to the analysis of causes and factors of deforestation and degradation, such as the driver of deforestation and degradation, main and underlying causes of the events and finally actors of deforestation and degradation. ; Additionally, the use of the participatory diagnosis tool is justified to find these concepts within the dynamics of the territory.

A ***second*** moment allows the intervention of the entire community in general, regarding their considerations on the factors of deforestation and degradation, as well as the causes and actors that carry them out, based on their experiences within the territory, as well as on the development of their own economic activities, which establishes a first approximation to the territorial dynamics and the community perception of them. In this space, social cartographies are consolidated, on which they are located and

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They demarcate deforestation and degradation events according to the distribution of community members.

The ***third*** moment groups people according to their community role, taking the criteria of women, older adults and younger people; In this differentiated way, the aim is to recognize the effects that each person perceives from their perspective and the implications of the activities that each one carries out. At the same time, it is possible to highlight the importance of each of the roles in the implementation of actions for the conservation and protection of natural resources, as well as the scope of each one within the execution of the REDD+ project.

2.3.1.2.3. Socialization of results

Once the activities have been carried out to identify the causes and factors of deforestation and degradation, spaces for socializing the results are generated, according to the findings obtained by each focus group, as well as the initial conclusions generated by the technical team. In this phase, the results of the three moments are consolidated, with which the land uses, the main activities and the actors involved are ratified, in the generation of deforestation and degradation in the community councils and therefore in the limits of the project.

2.3.1.3. Identification of deforestation and degradation factors

According to the secondary information collected, through bibliographic sources such as IDEAM, Government of Nariño and Municipal Mayors, it is established that the factors of deforestation and degradation at the national level are the expansion of the agricultural frontier, the illicit extraction of minerals, expansion of infrastructure and wood extraction; while the underlying causes are related to technological and economic factors such as lack of employment alternatives, difficulties in marketing, control over mobilization of elements of biodiversity and availability of resources. Also included are political and institutional factors such as sectoral and territorial policies, institutional absence and armed conflict (UN REDD, 2018). For the department of Nariño, it is found that the causes of deforestation are mainly crops for illicit use, expansion of the agricultural border and illegal logging.

In the context of the REDD+ PAZcífico Sur project, it is determined that the main causes of deforestation and degradation are illegal mining, illegal logging of wood, illicit crops and subsistence agriculture, as seen in Table 35.

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Table 35. Deforestation and degradation factors identified.

Deforestation and degradation factor	Direct Cause	Description
Illegal logging	Illegal wood extraction for commercialization	The illegal use of wood generates processes of deforestation and degradation within the territory, depending on the scale of the extraction, mainly for the marketing phases in illegal markets, only important species are extracted, degrading the population, while the demand for wood for different purposes does not generate specifications, generating deforestation phenomena. Also, it is linked to the use of wood for cultural and social purposes, guaranteeing adequate infrastructure for housing and tools.
Illegal minery	Illicit extraction of materials for sale	It is constituted as one of the main activities for the subsistence of the community councils, manifesting itself in an artisanal and illegal way; focusing primarily on obtaining gold. Additionally, within the territory there are applications and assignments of mining titles, which allow us to infer that the humid areas have the presence of precious minerals.
Illicit crops	Expansion of crops coca	The municipalities of influence of the community councils have presented historical records with armed actors who harvest illicit crops, especially coca (Erythroxylum *coca)* for the leaf harvest. In turn, families have been linked to the planting and production of coca leaves, which has been configured as an effective alternative to obtain resources and guarantee employment, but at the same time it has generated the loss of areas and natural resources, mainly forests. which, at the same time, generates effects on biodiversity due to crop fumigation and eradication programs.

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Deforestation and degradation factor	Direct Cause	Description
Subsistence agriculture of	Expansion of the agricultural frontier	Agriculture is found in small plots in the form of family-run agricultural units, with crops of banana, sugar cane, cassava and rice. Population growth has led to an expansion of crop areas and some family crops, increasing the degradation of some sectors, and in some cases generating points of deforestation.

Source: (CO2CERO SAS. 2022)

2.3.1.3.1. Illegal logging

The Pacific region showed increases in deforestation in 2019, going from 7,454 hectares in 2018 to 14,120 hectares in 2019, accounting for 9% of the national total.
The areas that presented the highest were the municipalities of Rio Sucio, Río Atrato (Department of Chocó) and the limits between the departments of Nariño and Cauca, in the southwest of the country (IDEAM, 2020). When carrying out the deforestation analysis for the region between the years 2019 to 2020, a reduction is evident, with 12,261 hectares being deforested, contributing 7.1% of the total national deforestation for that year. Therefore, according to the Green Growth Potential Assessment report, deforestation in Nariño is positioned as a critical indicator for the department.
This is particularly worrying because forests provide important services ecosystems including water filtration, soil support, air purification and carbon capture (GGGI, 2019). At the departmental level, Nariño has been among the ten with the highest deforestation between 2017 and 2018, with losses of 5,048 ha and 2,833 ha respectively, and their deforestation rate has been higher than that of Latin America. This has implied a participation of the department in 2.3% of the total deforestation of Colombia in 2018, with deforestation sources concentrated mainly in the Pacific zone, in the municipalities of El Tambo and Tumaco (GGGI, 2019). .

2.3.1.3.2. Illegal minery

The economic activities of the Alto Mira y Frontera Community Council have been affected by the presence and increase of areas dedicated to illegal mining,
mainly in an artisanal way and with insufficient inputs to reduce negative impacts at an environmental and social level. As for the municipalities of Roberto Payán, Bar-bacoas and El Charco, this activity represents an important economic support for the

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community, providing the gold required in the daily distribution of the area and employing significant numbers of inhabitants in the activity.

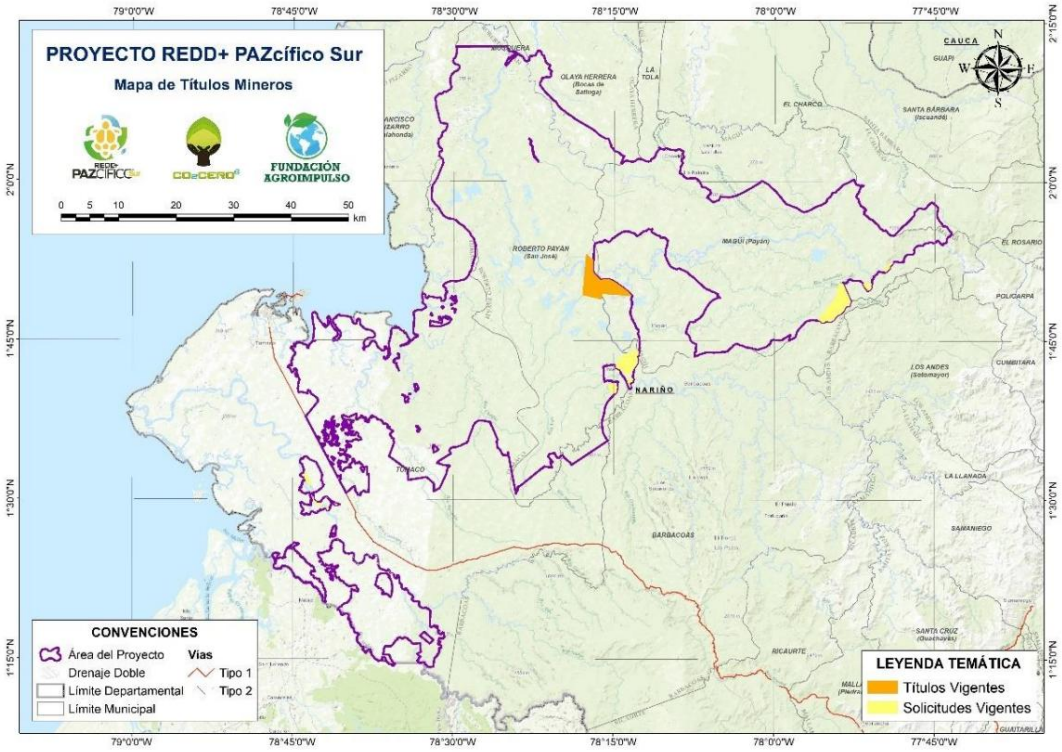


Illustration 7 Mining titles requested and assigned within the PAZcífico Sur REDD+ project limit.8

Its expansion can cause effects on the forest areas surrounding the riverbanks, in the same way, the extraction of wood for infrastructure degrades nearby forests.
It is considered a high-risk activity, generating negative impacts on the ecosystem, conflicts over land use and the presence of armed groups, the latter because many cases of violence are reported in the area due to disputes between These, seeking control of illegal mining activities, generating massive displacement of populations, alteration of roads and high exposure when crossing conflict zones during a river journey of more than 6 hours to reach Magüi Payán.

[8] Created from Geoactivism (sf). Available at: https://geoactivismo.org/descarga-la-geoinformacion-minera-de-colombia/#:~:text=El%20shapefile%20de%20los%20t%C3%ADtulos,el%20servicio%20WFS %20of%20CMC.

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2.3.1.3.3. Illicit crops

The municipalities in the project area and where the community councils are located have presented historical records of the presence of armed actors who harvest illicit crops, highlighting that it is part of an activity external to local communities. However, the absence of economic alternatives and employment opportunities has forced many community members to become involved in this activity from an early age. According to (El Espectador, 2021), the Telembí triangle (Barbacoas, Roberto and Magüí Payán) is a key site for armed groups due to its geographical location, the presence of a large number of rivers (Río Patía and Río Telembí), increasing the mobility of these by community councils that are members of the initiative; additionally, it has access to the Pacific Ocean where the drug trafficking routes end.

For the Alto Mira y Frontera Community Council, the most important economic activities in the area are based on the agricultural and fishing sector, activities that have been affected by the presence and proliferation of crops for illicit use and illegal mining. The loss of the agricultural vocation is evident, with illicit crops being the main source of sustenance and maintenance, which can generate food and nutritional insecurity when the crop eradication and substitution processes are fully carried out.

(OCHA, 2017). According to the monitoring report of the United Nations Office Against Crime Drugs and Crime (UNODC-2017), the department of Nariño and the municipality of Tumaco are the territories most affected by coca crops in the country, concentrating 29% (42,627 hectares) and 16% (23,148 hectares) respectively; In Tumaco, the population centers where this problem is concentrated are La Balsa, Llorente, Guayacana and Restrepo.

2.3.1.3.4. subsistence farming

According to the Municipal Development Plan (2020-2023) (Alcaldía Distrital de Tumaco, 2020), which takes into account the Municipal Agricultural Evaluations (2019) for San Andrés de Tumaco, the main agricultural crops by harvested area, in Their order is: ca-cao, oil palm, coconut and banana. Based on the above, it can be inferred that permanent crops persist in the area and that they predominate, by crop group: other permanent crops, oilseeds, fruit trees, tubers and bananas; Regarding the physical state of agricultural production, much of it is presented as dry grain (cocoa), crude oil (oil palm), fresh fruits and tubers (coconut and banana respectively). Furthermore, in the territory of the Unión Community Council of the Rosario River, within the agricultural activity they cultivate a wide range of species, among which cocoa, plantain, coconut, chon-taduro, banana, cassava, various fruit trees and oil palm.

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With respect to the municipalities in the project area, it is found that the inhabitants, for the most part, depend on artisanal agriculture, especially Olaya Herrera and Roberto Pa-yán, where bread crops such as those described above stand out.

2.3.1.4. Underlying causes

The approach carried out by UN REDD (2018) allowed us to establish the underlying and indirect causes of deforestation in the Pacific region, these are consolidated in Table 39.

underlying cause	Description
Armed conflict	There is imposition of ideals and political approaches unrelated to the internal regulation of black peoples; Also, displacements, deaths and weakening of community organizations are generated. The establishment of illicit crops, illegal mining and extortion is encouraged.
Absence of authority	There is no support from the state in the evaluation of favorable commercial alternatives in accordance with the needs of the community councils, which leads to stagnation of the economic development of the population.
Market demand and high cost of products	The increase in prices of products such as gold has led to its large-scale proliferation, without determining the impacts and effects generated on natural resources. Additionally, the state does not create barriers that regulate the actions of national and international companies, which carry out this activity illegally.
Violation of ancestral rights	The social, cultural and political construction on which black communities exist, based on identity, territory, development and unity, is not taken into account. Government structures and external economic activities surpass these values and act without respect for community value.
Marketing difficulty	Economic activities within the region are scarce, added to the concentration of the population in their performance, this leads to an oversupply in market terms, an overexploitation in terms of resources and an undervaluation of the effort printed in each production.
Extractivist economy	Harmful models are used in environmental and social terms, attacking the existence of natural resources and their conservation, as well as the structures of governance and territorial protection, evading prior consultation and approval of the community, in addition, intervene in cultural practices.
Lack of transportation routes	The communities do not have access roads in good condition, so they resort mainly to river mobility, having limited access caused by clashes between

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underlying cause	Description
	armed groups that are in constant conflict for control of sea lanes for the mobilization of products derived from mining and illicit crops.
Basic community needs	Black communities must satisfy their needs through the generation of different economic activities, among which is the establishment of small-scale crops mainly of cocoa, banana, oil palm, cassava, etc. three others.
Difficulty of access to other materials	River transport and the lack of roads restrict the mobilization of other materials, other than wood, for their implementation in the improvement of housing, cultural practices, etc., increasing the overexploitation of wood forest products and generating deterioration. at the ecosystem level.

Source: CO2CERO SAS (2022) adapted from (UN REDD, 2018).

2.3.2. Result of deforestation and degradation factors at the community level

After the compilation of secondary information, where the possible factors of deforestation and degradation at the regional level are identified, these results are ratified through information from primary sources where, through field workshops, members of the different Community Councils. It is important to clarify that the Patía Grande Helping Hands Community Council does not have the results of the workshop due to the public order situation that currently exists. The consolidated results by Community Council are found in *11_Annexes and complementary/ 05_Resulta-dos_DriversDef_Deg.*

Table 36. Deforestation workshops carried out in the community councils of the REDD+ PAZcífico Sur project.

community council	Place	Fech a
Union of the Chagüí River	Tumaco	November 19-22, 2021
Alto Mira and Frontera		August 03-07, 2021
Caunapí River Union		July 26-30, 2021
Rosario River Union		June 30-July 4, 2021
I remember our Ancestors Mexican River		January 29, 2022
Imbilpí del Carmen		April 21, 2022
Salted Plank		April 23, 2022
Sweet Plank		April 23, 2022
Gualajo River		September 17, 2021
Union of Isagualpi Basins	Roberto Payan	August 27-29, 2021
Telembí integration		August 24-25, 2021
Farmers of Patía Grande		August 22-23, 2021

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community council	Place	Fech a
Catangueros		August 20, 2021
Progress		August 31, 2021
Union Patía Viejo	Magui Payan	September 20-23, 2021
Friendship		February 1, 2022

Source: Agroimpulso Foundation. (2022)

According to the information obtained in the deforestation and degradation analysis workshops (See Illustration 8), the community expresses its perception of deforestation and degradation events, either because they are generators of them (actors of deforestation -tion) or because they are indirectly benefited or harmed by deforestation and/or degradation events (Underlying causes). Additionally, they determine a series of indirect factors that favor the manifestation of drivers, agents and causes of deforestation degradation.

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Illustration 8 Workshops for analysis of deforestation and degradation factors carried out in the different community councils of the PAZcífico Sur REDD+ Project.
Source: Agroimpulso Foundation. (2022)

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The consolidation of the results related to deforestation and degradation identified by the community councils in the spaces of socialization of knowledge and related experiences, are consolidated according to the resulting factor.

2.3.2.1. Illegal logging

It manifests itself as selective logging, being applied only to some species within the evaluated area, generating degradation processes. Within the deforestation and degradation factors, determined for the community councils present in the REDD+ PAZcífico Sur project, it is defined that the use of illegal commercial wood occurs on specific species, as follows:

- **Farmers of the Patía Grande, Catangueros, El Progreso, Integration of Telembí and Unión Patía Viejo:** Chachajo, the Guayacán, mistero tula Puerta, the oak, the sande, the cuangare, the jigua, the chanul, the chaquiro, the rubber, the sajo, the peine mono, the caimito, the otabo, the zande, the heron and the cedar.
- **Alto Mira and Frontera:** Chalviande, Chillalde, Sande, sajo, arrayán, oak, Cuangare, Tara, Chanul, Cedro and Balsa.
- **Imbilpí del Carmen and Remembrance of Our Ancestors of the Mexican River:** Cuangare, Sande, Caimitillo, Peinemono, Chalviande, Chanul, Chaquiro, Goma, Anime, Chal-viande, Machare and Tulapueta Caimitillo.
- **The Friendship:** Peinemone, flea, male, jigua, pandala, Machare, guayacan, chonta, flea, rubber, recreation, dry and yamunde.
- **Las Varas Rescue, Union of the Chagüí River and Rosario River:** Cuangare, sande, popa, chanul, chachajo, cedar, chaquiro, el tángate, el chanul, el marcelo, el mangle, el pandalo, el sajo, el guayacán, el pñuelo , the cedar, the jigua, the dormilon and the nato.
- **Gualajo River:** Chaquiro, the tángate, the chanul, the marcelo, the mangle, the pandalo, the sajo, the guayacán, the puñuelo, the cedar, the jigua, the dormilón and the nato.
- **Sweet Plank and Salted Plank:** Cuangare, Sande, Caimitillo, Peinemono, Chalviande, Chanul, Chaquiro, Goma, Anime, Chalviande, Machare and Tulapueta Caimitillo.
- **Union of Isagualpí River Basins:** Flea, flea, jigua, pandala, flea, gua-yacan, chonta, flea, rubber, secretion, chaquiro and yamunde.

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Table 37. Results of the workshop analysis of illegal logging in the community councils of the PAZcífico Sur REDD+ Project.

Community Council	Place of intervention	Actors	Manifestation year party	state
Patía farmers Big	Boca De Chimbuza, Chimbuza, Lemons, Pumalde, Remolino; Rio,pathy, Patía El Old, Telembi, Yalte Lagoons, Whirlpool, Yuri, Chimbuza, Lemons, Guava-cane, Gualte	Community in general	1974	Asset
High Look and Border	Return to El Mero, Campo Alegre, La Capi-lla, El Hormiguero.	Community in general	1984	active in increase
Catangueros Panga, Guacuco, Middle Beach, Ne-Pumbi. rete,	Piri, Lagoons: Nerete, Trapiche, Turn The Grandfather, Pinden, Tapingo, The Long.	Community in general	1972	Asset
The Progress Duck, Size, Papi Country, Papi Mouths, Cedar, Trinity,	Union. Lagoon: Yalte, Swirl, Yuri, Chimbuza, Lemons, Guayacana, Gualte, Patia	Community in general	1970	Asset
Imbilpí of the Carmen	Imbilpí	Motorcycle owners rras	1970	Decreasing assets
Telembí integration	San Jose, Santa Helena, The Mine, Dry Stick, Gorgon, Chilvi, Piscuande, Mouths Of The Telembí, Pasalpi, Guabal, Gorgon 1, Beautiful Hills And Gorgon 2. Rivers: Patía, Telembí And Gual Pipí. Lagoons: Santa Cruz, Mojon, Paunapi, Prirambi, Ambi-lla, Paculda, Sandepi. Broken: Santa Cruz, Mojon, Paunapi, Prirambi, Ambi-lla, Paculda, Sandepi, Broken, Fourth, Pigapo, Hope, Zapote, New Mine, Turtle, El Ancho, Gualangua	Community in general	1970	Asset
The Friendship Communities of Aurora and the Beach;	Rivers, Magüi, Cuembi, Quebradas De Mexican, Rubber, La Honda, Yara-culbi, Junta Del Medio, Basket Pieda, La Perla, Guañambi, San Bernardo, Umbeldi	Community in general	1970	Asset
A memory of Our An- baskets of Mexican River	Santa Rosa, Bellavista, San José Del Gua-yabo, Return	Motorcycle owners rras	1970	active in decrease
Patía Union Old	Communities of La Loma, La Victoria, Las Brizas, La Union, La Isla, Las Lajas,	Community in general	1972	Asset

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Community Council	Place of intervention	Actors	Manifestation year	state
	Bolivar, Cascarillo, El Rosario, El Pinde, Naranjito, El Pasto, Nuevo Jardin, Zapo-tal, Yarumal, Loma Grande, El Carmen; Quebrada La Sucia, La Turbia, Quebrada La Despensa, Santa Catalina, La Junta, Tortugana, La Prieta.			
Rescue The Powers	Avocado, Sweet Pineapple, Salty Pineapple, St. Paul, Oaks, Cacagual, The Bank, St. Vincent, St. Anthony, Piñalito, Chapilar, Tambillo, Nerete, Resurrection, Cumilin-chal, Trapiche Ravine	Motorcycle owners rras	1970	Decreasing assets
Gualajo River Rivers: Gualajo, Rosario, Trujillo And Esteros: Gualajo, Patiita		Motorcycle owners rras	1973	active in decrease
Imbilpí Sweet Plank		Motorcycle owners rras	Without information tion	active in decrease
Sa-side Plank	Imbilpí	Motorcycle owners rras	1970	Decreasing assets
binding of River Basins Isagualpí	Rio Saunde, Rio Gualpi, Rio Ispi and Rio Piri Community and general		1970	Asset
Union of Chagüí River	River: Chagui, Lagoon: Albino, El Paso, Pangul, Chimbuza, Broken: Guigra, Honda, Guayabo And Vampiral. Chajal Estuary	Motorcycle owners rras	1970	Decreasing assets
Rosario River Gorges: Guayacán and Chontillal, Tan-gareal, Martinique, Francisquito, Herra-dura, Pambil, Las Peñas, La Chola, Las Dos Peñas, San Martín		Motorcycle owners rras	1970	Decreasing assets

Source: Agroimpulso Foundation. (2022)

2.3.2.2. **subsistence agriculture**

It is a generator of deforestation processes when it shows representative areas, mainly in plantain, rice and coconut crops. Also, its activity as a degrader of the forest is evident when they are smaller areas that constitute family agricultural units. The identification of this deforestation factor was given by the acceptance of traditional practices carried out by the community, where fertile lands are used under natural areas or forests, improving the productivity of these crops.

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In the case where agriculture constitutes a relevant factor in terms of food security and family sovereignty, an absence of optimization and adequate management practices in agricultural areas is identified, which involves activities focused on the environment. -improvement of production tools and materials, strengthening and design of production chains and use of non-timber forest products (NTFP), reducing the expansion in forest areas and natural covers other than forest.

Table **38.** *Subsistence economy analysis workshop results in the community councils of the PAZcífico Sur REDD+ Project.*

Community Council	Place of intervention	Actors	Manifestation year	state
Farmers of the Patia Big	Chimbuza, Lemons, La Unión, Pumalde, Swirl, Maque	Community in general	1978	Decreasing assets
High Look and Border	Chimbuzal, Pital Capital, Imbili Looks Palm, Imbili The Hill, Imbili The Vine, Imbili Guavo, Imbili Road, Tulm, Beach, Tulm, Honeycomb, Pambilar, The Curtain, Turn of Candlesticks, Achontal, San Juan, Pinuel, Candlesticks , August 16, Alcuan, Old Houses, Whale, Playon, Customs, The Coconut, The Maria, San Lorenzo, High Board, The Honda, The Raft, Tiesteria, Pañambi, The Breezes, Banana Forest, go See, High Pumbi , Restrepo, San Francisco, Sounder, Trash, Curay, Dry Stick, Capital River Look. Broken Chimbuzal, Pital Pi-ragua, Guisa, Look, Mataje, broken: Cuespi, Imbili, Tulmo, Sapotal, San Juan, Honda, Curay, Chimbusa, Ñambi,	Community in general	1972	Active in au-ment
Catangueros panga, guacuco, middle beach, ne-body,pumbi. Lagoons: piri, nerete, trapi-che, turn the grandfather, pinden, tapingo, the long.		Community in general	1970	Decreasing assets
Progress	Duck, Size, Papi Country, Papi Mouths, Cedar, Trinity, Union, Patia River	Community in general	1970	active in decrease
Imbilpí of the Carmen	Imbilpí	Community in general	1972	Asset
Telembí integration	San José, Santa Elena, La Mina, Palo Seco, Gorgona, Chilví, Piscuande, Bocas del Telembí, Pasalpí, Guabal, Gorgona 1, Lomas Lindas and Gorgona 2	Community in general	1972	active in decrease

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Community Council	Place of intervention	Actors	Manifestation year	state
La Amistad Communities of Aurora and La Playa;	Rivers, Magüi, Cuembi, Mexican ravines, El Caucho, La Honda, Yaraculbi, middle joint, Canasto de Pieda, La Perla, Guañambi, San Bernardo, Um-beldi	Community in general	1975	Decreasing assets
A memory of Our Ancestors of Mexican River	Santa Rosa, Bellavista, San José del Guayabo, Return	Community in general	1972	Asset
Patía Union Old	Loma, La Victoria, Las Brizas, La Union, The Island, Las Lajas, Bolivar, Cascarillo, El Rosario, El Pinde, Naranjito, El Pasto, New Garden, Zapotal, Yarumal, Loma Grande, El Carmen; Quebrada La Sucia, La Turbia, Quebrada La Despensa, Santa Catalina, La Junta, Tortugana, La Brown	Community in general	1970	Decreasing assets
Rescue The Powers	Isla Grande, San Francisco, El Llano, Long tour, La Quinta, Chapilar, Am-bupi, Coriente Grande, Iscuande, Truji-llo, Santa Maria, el Salto and Peña de los Santos.	Community in general	1973	active in decrease
Gualajo Guabal River, Barra Colorado, Point del	Mango, Guachiré, Salto, San Agustín	Community in general	1970	Decreasing assets
Imbilpí Sweet Plank		Community in general	No information	Asset
Sa-side Plank	Imbilpí	Community in general	1972	Asset
binding of River Basins Isagualpí:	Saunde River, Gualpi River, Ispi River and Piri River. communityof: walking, breezes, limo-nal, cuaiman, mermaid, indun, the sling, stonecutters, conquest, rock, poop-gual, guacuco, black, water, long turn, sande, chontaduro, asbuilde, piri breezes, piri union, piri delicacies, piri pa-raiso, foamy.	Community in general	1982	active in decrease
River Union Chagüí	No information	Community in general	1970	Decreasing assets
Rosario River	Isla Grande, San Francisco, El Llano, Long tour, La Quinta, Chapilar, Am-bupi, Coriente Grande, Iscuande,	Community in general	1980	Decreasing assets

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Community Council	Place of intervention	Actors	Manifestation year	state
	Trujillo, Santa Maria, El Salto and Peña de los Santos.			

Source: Agroimpulso Foundation. (2022)

2.3.2.3. Establishment of crops for illicit use

This factor is associated with deforestation within the project limits. The establishment of coca crops is one of the factors with the greatest impact at the socioeconomic level, given the level of conflict due to the illegal possession of the territory that involves its entry; Additionally, it generates important effects in the establishment area, requiring areas devoid of vegetation, synthetic inputs for the soil, in addition to the effects generated by the spraying of glyphosate for its eradication as a government initiative (See Table 40); Residual factors are evident in all natural resources, where the soil has a loss of physicochemical properties, productivity, and death of micro-biota, water reduces its availability and quality, and there are no fauna associations due to its monoculture nature. , decreasing the biodiversity of the area.

Table 39. Results of the analysis workshop on the establishment of crops for illicit use in the community councils of the PAZcífico Sur REDD+ Project.

Community Council	Place of intervention	Actors	Manifestation year	state
Farmers of the Patía Grande	Chimbuza, Lemons, La Unión, Pu-malde, Remolino, Maque	Community in general	1984	Declining asset
Alto Mira and Frontera	Guisa, Look, Mataje, Broken: Cuespi, Imbili, Tulmo, Sapotal, St. John, Honda, Curay, Chimbusa, Ñambi	Community in general	1995	Active in Au-ment
Catangueros	Panga, Guacuco, Middle Beach, Nerete,pumbi. Lagoons: Piri, Ne-rete, Trapiche, Turn The Grandfather, Pinden, Tapingo, The Long.	Community in general	1985	Active in dis-minution
Progress	Duck, Size, Papi Country, Papi Mouths, Cedar, Trinity, Union, Rio Patia	Community in general	1980	Declining asset
Imbilpí del Car-men	Imbilpí	Community in general	1980	Active in au-ment
Integration of Te-lembí	San José, Santa Elena, La Mina, Palo Seco, Gorgona, Chilví, Pis-cuande, Bocas Del Telembí, Pa-salpí, Guabal, Gorgona 1, Lomas Lindas And Gorgon 2	Community in general	1982	Declining asset

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Community Council	Place of intervention	Actors	Manifestation year	state
Friendship	Communities of Aurora and Beach; Rios, Magüi, Cuembi, Quebradas de Mejicano, El Caucho, La Honda, Yaraculbi, Middle Board, Stone Basket, The Pearl, Guaña-mbi, St. Bernard, Umbeldi,	Community in general	1995	Active in au-ment
A memory of Our Ancestors of the Meji River cano	Santa Rosa, Bellavista, San José Del Guayabo, Return	Community in general	1983	Active in au-ment
Unión Patía Viejo Loma,	La Victoria, Las Brizas, La Union, La Isla, Las Lajas, Bolivar, Cascarillo, El Rosario, El Pinde, Na-ranjito, El Pasto, Nuevo Jardin, Za-potal, Yarumal, Loma Grande, El Carmen; Quebrada La Sucia, La Turbia, Quebrada La Despensa, Santa Catalina, La Junta, Tortu-gana, La Prieta	Community in general	1980	Declining asset
Rescue The Sticks	Avocado, Sweet Pineapple, Sa-sided Pineapple, St. Paul, Oaks, Cacagual, The Bank, St. Vincent, St. Anthony, Piñalito, Chapilar, Tambillo, Ne-rete, Resurrection, Cumilinchal, Trapiche Broken.	Community in general	1982	Active in au-ment
Gualajo River	Rivers: Gualajo, Rosario, Trujillo and Esteros: Gualajo, Patiita	Community in general	1983	Active in au-ment
Sweet Plank	Imbilpí	Community in general	No information	Active in au-ment
Salted Plank	Imbilpí	Community in general	1984	Active in au-ment
Union of Basins Isagualpí River	Andan, Breezes, Limonal, Cuaiman, Mermaid, Indun, The Sling, Stonemen, The Conquest, Rock, Cacagual, Guacuco, Black, Yacun, Long Turn, Sande, Chontaduro, As-builde, Piri Breezes, Piri Union, Piri Delights, Piri Paradise, Foam.	Community in general	1995	Active in au-ment
River Union Chagüí	River: Chagui, Lagoon: Albino, El Paso, Pangul, Chimbuza, Breakers: Guigra, Snake, Guayabo And Vampiral. Chajal Estuary	Community in general	1980	Active in au-ment

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Community Council	Place of intervention	Actors	Manifestation year	state
Rosario River	Guayacan And Chontillal Gorge, Tangareal, Martinique, Francisquito, Horseshoe, Pambil, The Rocks, The Chola, The Two Rocks, San Martin	Community in general	1985	Active in au-ment

Source: Agroimpulso Foundation. (2022)

2.3.2.3.1. Glyphosate spraying

Next, historical information is compiled on aerial and terrestrial spraying with glyphosate, an effect derived from the establishment of illicit crops in the area. This crop eradication policy was presented around the areas of the Farmer Community Councils. of the Patía Grande, Alto Mira and Frontera, Catangueros, El Progreso, Imbilpí del Carmen, Integration of Telembí, La Amistad, Remembrance of Our Ancestors of the Mexican River, Unión Patía Viejo, Rescate Las Varas, Río Gualajo, Tablón Dulce, Tablón Salado, Union of Isagualpí River Basins, Union of the Chagüí River and Rosario River, from 1984 to 2008. This activity generates degradation of the ecosystem, through the contamination of soil and water, as described in the article by (Gónzalez and Fuentes, 2022), because commercial formulas do not only contain glyphosate, but also petroleum-based molecules, such as POEA (polyoxyethyleneamine) and other contaminants. Subsequently, upon application, the degradation of glyphosate is generated, generating AMPA (aminomethylphosphonic acid), which is more toxic and persistent in the environment than glyphosate (Cassigneul et al. 2015, Grandcoin et al. 2017). Also, this control practice can affect soil microorganisms by eliminating plants with which they interact or by acting directly on the physiology and metabolism of microorganisms (Gónzalez and Fuentes, 2022).

Table 40. Results of the glyphosate spray analysis workshop in the community councils of the PAZcífico Sur REDD+ Project.

Community Council	Place of intervention	Actors	Manifestation year	state
Farmers of the Patía Grande	Chimbuza, Lemons, La Unión, Pu-malde, Remolino, Maque	Government	2000, 2003, 2008	Blocked by sentence
Alto Mira and Frontera	Guisa, Look, Mataje, Broken: Cuespi, Imbili, Tulmo, Sapotal, San Juan, Honda, Curay, Chimbusa, Ñambi,	Government	2003, 2005,2008	Suspended
Catangueros	Panga, Guacuco, Middle Beach, Nerete,pumbi. Lagoons: Piri, Ne-rete, Trapiche, Turn The Grandfather, Pinden, Tapingo, The Long.	Government	2000, 2003, 2008	Suspended

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Community Council	Place of intervention	Actors	Manifestation year	state
Progress	Duck, Tamaje, Papi Las Paimas, Papi Mouths, Cedar, Trinity, Union, Rio Patia	Government	1984	Blocked by sentence
Imbilpí del Car-men	Imbilpí	Government	2003, 2005,2008	Suspended
Integration of Te-lembí	San José, Santa Elena, La Mina, Palo Seco, Gorgona, Chilví, Pis-cuande, Bocas Del Telembí, Pa-salpí, Guabal, Gorgona 1, Lomas Lindas and Gorgona 2	Government	2000, 2003, 2008	Suspended due to legal action
Friendship	Aurora And Beach Communities; Rivers, Magüi, Cuembi, Mexican Que-brads, Rubber, Honda, Yaraculbi, Middle Board, Stone Basket, Pearl, Guaña-mbi, San Bernardo, Umbeldi.	Government	2000, 2003, 2008	suspended by legal mandate
A memory of Our Ancestors of the Meji River cano	Santa Rosa, Bellavista, San José Del Guayabo, Return	Community in general	2003, 2005,2008	Suspended
Union Patía Viejo Loma,	La Victoria, Las Brizas, La Union, La Isla, Las Lajas, Bolivar, Cascarillo, El Rosario, El Pinde, Na-ranjito, El Pasto, Nuevo Jardin, Za-potal, Yarumal, Loma Grande, El Carmen; Quebrada La Sucia, La Turbia, Quebrada La Despensa, Santa Catalina, La Junta, Tortu-gana, La Prieta	Government	1984	Suspended by legal mandate
Rescate Las Varas	Aguacate, Piñal Dulce, Piñal Sa-lado, San Pablo, Robles, Cacagual, The Bank, San Vicente, San Antonio, Piñalito, Chapilar, Tambillo, Ne-rete, Resurrection, Cumilinchal, Trapiche Gorge	Government	2003, 2005,2008	Suspended
Gualajo River	Rivers: Gualajo, Rosario, Trujillo and Esteros: Gualajo, Patiita	Government	2003, 2005,2008	Suspended
Sweet Plank	Imbilpí	Government	2003, 2005,2008	Suspended
Salted Plank	Imbilpí	Government	2003, 2005,2008	Suspended

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Community Council	Place of intervention	Actors	Manifestation year	state
Union of Basins Isagualpí River	Rio Saunde, Rio Gualpi, Rio Ispi and Rio Piri.	Government	2000	Suspended by legal mandate
River Union Chagüí	River: Chagui, Laguna: Albino, El Step, Pangul, Chimbuza, Breakers: Guigra, Sling, Guayabo And Vampire. Chajal Estuary	Government	2003, 2005,2008	Suspended
Rosario River	Guayacan And Chontillal Gorge, Tangareal, Martinique, Francisquito, Horseshoe, Pambil, The Rocks, The Chola, The Two Rocks, San Martin, The Horseshoe, The Sling, Juan Alonso, Chapilar, Guayabillo, Pam-bilar, Murderer, The Hill, Carate, Old Mother, The Banana, Chume, Ambupi, Guadual, Tangareal, Pan-cho Roan. Horseshoe, The Sling, Juan Alonso, Chappilar, Guayabillo, Pambilar, Murderer, The Hill, Carate, Old Mother, The Banana, Chume, Am-bupi, Guadual, Tangareal, Pancho Ruano.	Government	2003, 2005,2008	Suspended

Source: Agroimpulso Foundation. (2022)

2.3.2.4. Illegal minery

This deforestation factor involves deforestation and degradation processes, which are associated with the removal of cover in the area involved for the execution of the activity, in some cases alleys and edges are generated for material mobility, while other times Only roads are generated for personnel transit, which influences the impact on forest cover. There are health effects due to loss of water quality, use of harmful chemical reagents and reduction in wildlife populations.

used by the local community for their subsistence; In environmental terms, soils lose their quality for cultivation, vapor emissions contaminate the air and alterations occur in ecosystem connectivity, affecting the development of faunal populations. Furthermore, it is found that in the Farmers Community Councils of Patía Grande and Catangueros, this factor is influenced by the constant traffic of heavy machinery and the use of chemicals used in Gold mining and for the Alto Mira y Frontera Community Council, it is generated by the exploitation of materials such as sand and gravel and, the

associated road infrastructure.

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Table **41.** *Mining analysis workshop results in the community councils of the PAZcí-fico Sur REDD+ Project.*

Community Council	Place of intervention	Actors	Manifestation year	state
Farmers of the Patía Grande	Chimbuza, Lemons, The union, Pu-malde, Remolino, Maque	Armed groups	2000	active in increase
Alto Mira and Fron-that	Guisa, Look, Mataje, creek: Cuespi, Imbili, Tulmo, Sapotal, San Juan, Honda, Curay, Chimbusa, Ñambi,	Companies Cons-tractors	1960	active in Increase
Catangueros	panga, guacuco, middle beach, nerete,pumbi. Lagoons: piri, ne-rete, trapiche, turn the grandfather, pinden, tapingo, the long.	Armed groups	2000	active in increase
Progress	Duck, Size, Papi Country, Papi Mouths, Cedar, Trinity, Union, Patia River	Illegal minery	1980	Asset
Integration of Te-lembí	San José, Santa Elena, La Mina, Palo Seco, Gorgona, Chilví, Pis-cuande, Bocas del Telembí, Pasalpí, Guabal, Gorgona 1, Lomas Lindas and Gorgona 2	Armed groups	2000	active in increase
Unión Patía Viejo Loma,	La Victoria, Las Brizas, La Union, La Isla, las Lajas, Bolivar, Cascarillo, El Rosario, El Pinde, Na-ranjito, El Pasto, Nuevo Jardin, Za-potal, Yarumal, Loma Grande, El Carmen; Quebrada La Sucia, La Turbia, Quebrada La Despensa, Santa Catalina, La Junta, Tortu-gana, La Prieta	armed groups	1980	Asset

Source: Agroimpulso Foundation. (2022)

2.3.2.5. Use of Tannins and construction of shrimp ponds

This is a factor of deforestation of the mangroves (Rojo, Concha, Blanco, Comedero, Pi-ñuelo, Nato and Jeli), identified by the communities of the Alto Mira and Frontera Community Councils, Imbilpí del Carmen, Rescate Las Varas, Tablón Dulce , Salted plank, Union of the Río Chagüí and Río Rosario for the extraction and use of tannins for commercial purposes due to the multiple uses they present for the pharmaceutical and leather industries; In addition, there is the construction of shrimp “pools”, which are a important local economic source, since they allow the intensive cultivation of these crustaceans, however for their establishment a strategic location is required that

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allows the circulation of fresh and brackish water, the area where the mangroves are located, so they generate effects on the entire ecosystem, due to the alteration of the existing landscape.

Table **42.** *Results of the analysis workshop on the use of tannins and construction of shrimp "pools" in the community councils of the PAZcífico Sur REDD+ Project.*

Community Council	Place of intervention	Actors	Manifestation year	state
Alto Mira and Frontera	Bass, Pusbi, Estero Pusbi	Community in general	1940 - 1980	Decrease
Imbilpí del Car-men	Imbilpí	wood industries, food industries, licit crops, oil and mining activities, sawing res	1940	Asset
Rescue Las Varas Bahia	Tumaco, Estero Tambillo, Nerete and Cu-milinchal, Piñal Sa-lado, Piñal Dulce, San Pablo, Piñalito, Caca-gual.	Wood industries (sawmills), food (shrimp and fishing), licit crops, oil activities (crude spills), mining (retro waste, sawmills (mangrove cutters)	1940	Asset
Sweet Plank	Imbilpí	wood industries, food industries, licit crops, oil and mining activities, sawing res	1940	Asset
salty plank	Imbilpí	wood industries, food industries, licit crops, oil and mining activities, sawing res	1940	Asset
River Union Chagüí	Bocana Chagui, Estero Colorado and Chajal	wood industries, food industries, licit crops, oil and mining activities, sawing res	1940	Asset
Rosario River	Estero el Piñal, Hondo, Trapiche, Lizard, tambourine, Trujillo, cucupi, Firm, Pilvi Estuary, Ira's, Iraguita, Street	General community	1940	Asset

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Community Council	Place of intervention	Actors	Manifestation year	state
	Honda, Water Blood, White Water			

Source: Agroimpulso Foundation. (2022)

2.3.2.6. Establishment of oil palm crops

It is found that the establishment and expansion of oil palm crops for commercial purposes

(To see



Illustration 9), in the Alto Mira y Frontera Community Council (See Table 43), generates deforestation of natural forests, presenting a focal location in this community Council, according to the results obtained in the workshops; However, it has been reported in other Community Councils, according to the secondary information collected.

Table **43.** *Results of the oil palm crop analysis workshop in the community councils of the PAZcífico Sur REDD+ Project.*

Community Council	Place of intervention	Actors	Manifestation year party	state
Alto Mira and Fron- that	Mira and Mataje Basin	Community in general, oil companies	1987	Active in au- ment

Source: Agroimpulso Foundation. (2022)

Due to the aforementioned, the review of the suitability shapefile for commercial oil palm cultivation of the UPRA (2017) was carried out, finding that in the project area a higher percentage has a zoning of no suitability or low suitability. of the soil for the establishment of these crops, being defined as a factor with low risk of leaks, however, it is not ruled out because in the municipality of Tumaco

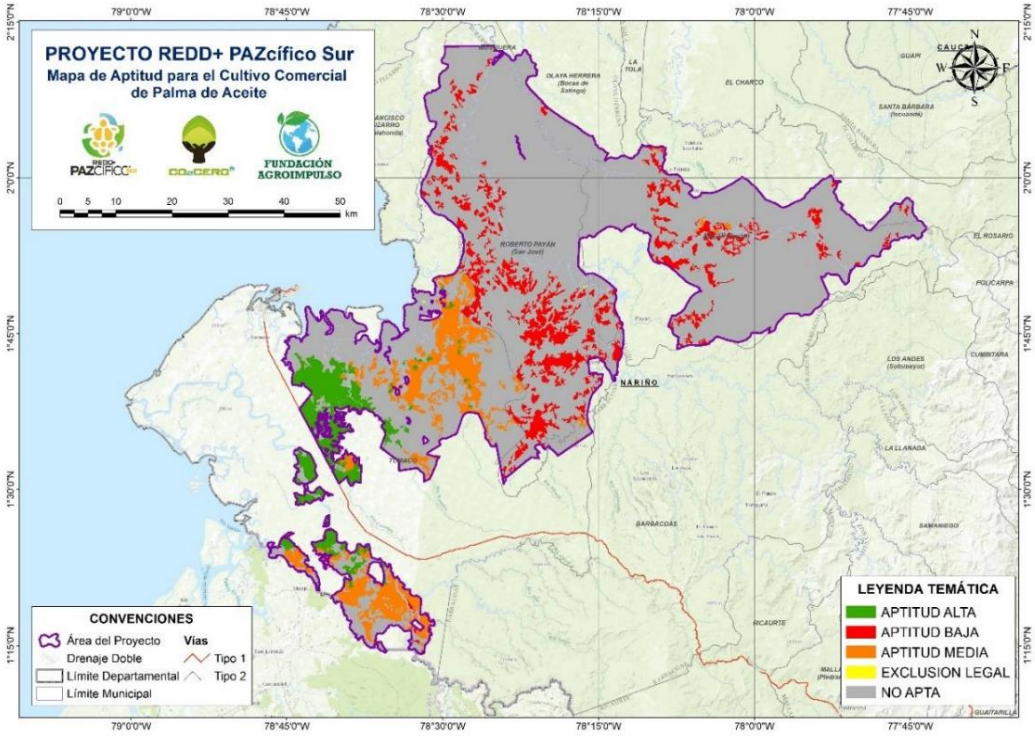
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There is an area of 19,312.67 ha with a high suitability and 28,718.25 ha with a medium suitability (Figure 16).



Illustration 9. Deforestation and degradation by companies and the local community to establish oil palm crops.

Source: Agroimpulso Foundation. (2022)



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Figure 16. Suitability for commercial oil palm cultivation in the project area.

Source: CO2CERO SAS, (2022)9 .

2.3.2.7. Oil spills

In the Alto Mira y Frontera Community Council, a factor associated with the oil sector is identified, where degradation of the mangroves is generated due to the pollution caused by oil spills and its derivatives, after the activity is generated, in the ecosystem-theme First, it generates the death of the most sensitive organisms such as mollusks, crustaceans, fish and seedlings; followed by the death of mature mangrove trees during the first six months.

Table **44.** *Subsistence economy analysis workshop results in the community councils of the PAZcífico Sur REDD+ Project.*

Community Council	Location of intervention Actors		Manifestation year	state
Alto Mira and Fron-that	Bass, Pusbi, Estero Pusbi	Oil companies-ras	1975	Permanent

Source: Agroimpulso Foundation. (2022)



Figure 17. Mangrove degradation in the Alto Mira y Frontera Community Council.

Source: Agroimpulso Foundation (2022)

2.4. Baseline scenario

Article 41 of resolution 1447 of 2018 evidences the establishment of baselines for REDD+ Projects, where the project owner must establish its baseline from the most updated NREF that has been formally submitted by Colombia and evaluated by the UNFCCC. , and that includes the geographic area of the project, as well as REDD+ activities, periods and carbon deposits in which the initiative is intended to be implemented.

[9] Created from SIPRA (sf). Available at: https://sipra.upra.gov.co/nacional

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The determination of the baseline with adequate parameters and variables in accordance with the requirements of the second paragraph of Article 41, can be verified in the reference scenario proposed for the REDD+ PAZcífico Sur project, observing the use of data as an area of the community councils, stable forest under cartographic and spatial analysis, reference region, potential leak area and methodological carbon analysis approved by the NREF, which were taken into account and corroborated through information gathering in the field, carrying out a methodological reconstruction based on the guidelines of IDEAM and the Ministry of the Environment.

> Regarding Paragraph 1 of this article, *"The owner of the REDD+ Project that has validated its baseline prior to the issuance of this Resolution, must adjust and validate its baseline based on the most updated NREF."*

The adjustment of the baseline effectively consists of the methodological reconstruction of the most updated Reference Level (NREF) developed by the environmental entities in charge at the national level and applicable to the project, while covering the geographic area where it is developed. the same. This NREF was built and proposed by the Ministry of Environment and Sustainable Development and IDEAM in December 2019 and has been applied in accordance with its technical and methodological parameters to this initiative, in order to align with current regulatory requirements.

2.4.1. Reference region

The reference scenario or reference region allows identifying estimates of deforestation and degradation activities that could occur in the project area, in the absence of the GHG mitigation initiative. Presenting a similarity with the project area in access, deforestation agents, forest type, land tenure and post-deforestation land uses.

The determination of the reference region was carried out taking into account the guidelines proposed by the methodology "M/UT-REDD+ V 1.2 Methodology for the execution of REDD+ projects consistent with national reference levels." with the presence of the actors and drivers of deforestation and degradation who can access the project area and it is of interest to do so, together with the land ownership figures that are similar to those of the project area and the exclusion of areas with access restricted of the actors of deforestation and degradation.

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The delimitation of the reference region was carried out by combining different geospatial data that generate the similarity of conditions present in the project area, using information on slopes, precipitation, microbasins and temperature, generating similarity with the climatic conditions and geographical. Along with this, it was considered that the reference region will include part of the project area, that the agents and drivers of deforestation and degradation identified and analyzed in the reference region can access the project area and be of interest to them. means of information from interviews and socializations in the field, presence of roads and bodies of water.

Each exposed characteristic was compared between the project area and the reference region, finding that the reference region meets the necessary similarities, thus obtaining a total area of 882,219.62 hectares, as shown in the

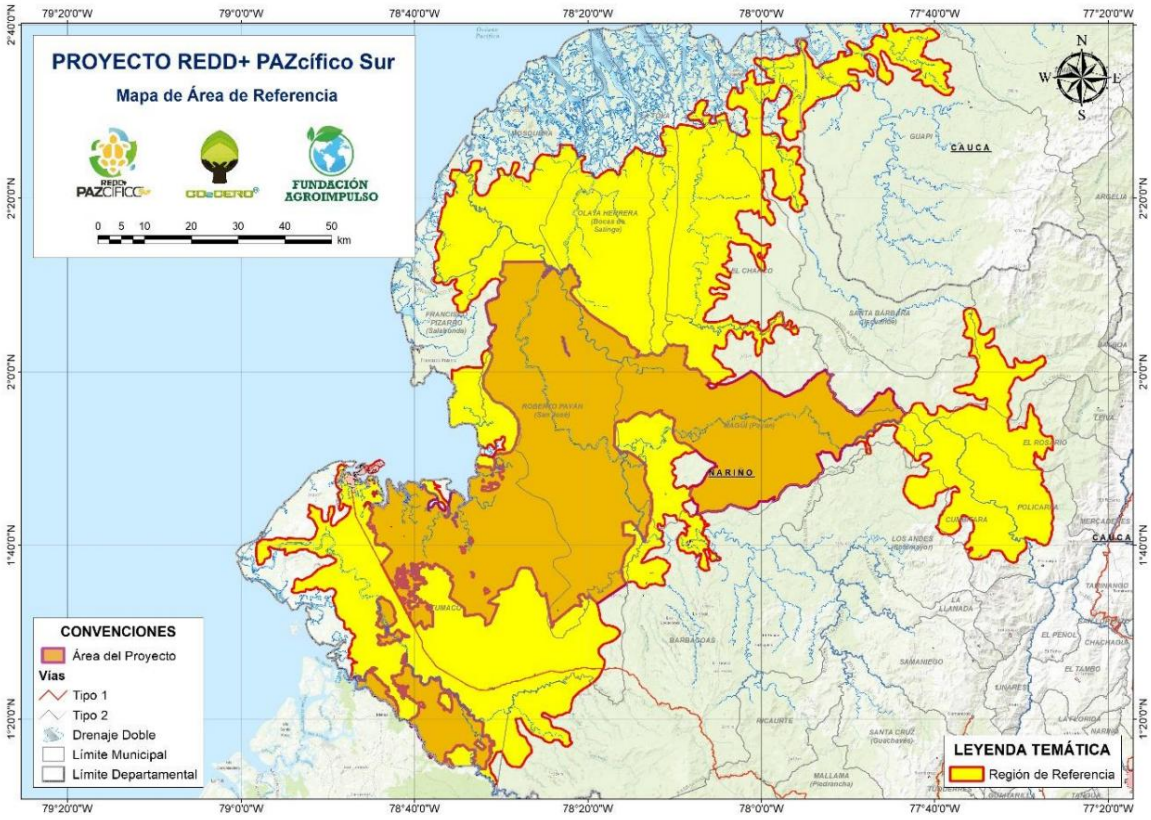


Figure *18.*

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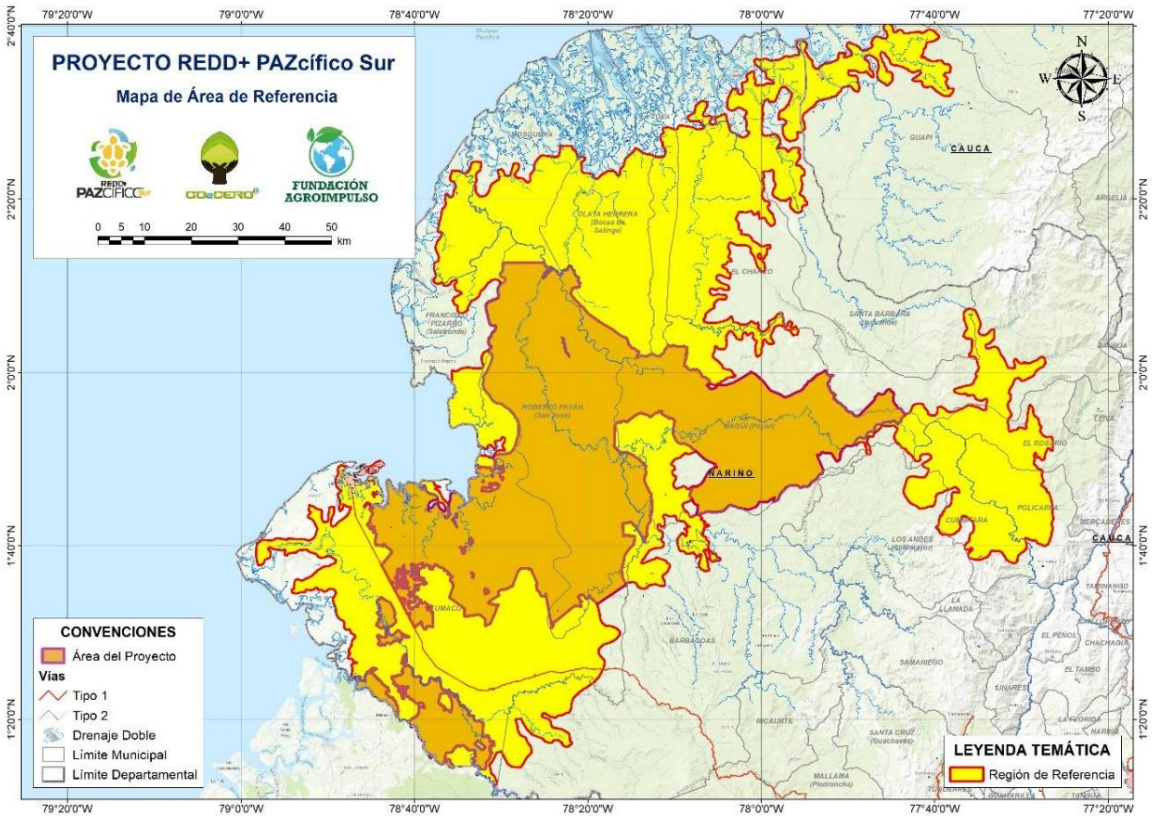


Figure 18 Map of the Reference Region
Source: (CO2CERO SAS, 2022).

The reference region is delimited, according to the IDEAM Hydrographic Zoning shapefile (2013), by the Mira, Patía and Tapaje-Dagua hydrographic zones, which underlie the hydrographic subzones of the Guapi, Iscuandé, and Tapaje rivers. , Patia Medio, Patia Bajo, Rosario, Telembí, Mira and Tola. In these areas, climatological, hydrological, geological and geomorphological characteristics similar to those presented in the project area are observed, with warm super humid predominating in its climate according to the Caldas-Lang classification, followed by warm humid; As for its landscape, alluvial plain areas, followed by foothills, hills and marine plain; Regarding coverage, a higher percentage of surface area is in tall dense forest, followed by a mosaic of crops, pastures and natural spaces, then secondary vegetation, fragmented forest with secondary vegetation and a mosaic of crops and natural spaces; The predominant soils are: *Flu-vaquentic Endoaquepts, Typic Humaquepts; Alic Hapludands, Acrudoxic Hapludands, Misce-laneo de ashes; Humic Dystrudepts; Oxic Dystrudepts, Typic Dystrudepts, Acrudoxic*

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Hapludands, Typic Endoaquents; Typic Hydraquents, Hydric Haplohemists, Typic Fluva-quents y Typic Dystrudepts, Lithic Dystrudepts, Lithic Udorthents.

Due to the aforementioned, it is established that the actors and drivers of deforestation and degradation of the reference region can access the project area, causing a risk of non-permanence of the initiative, due to main economic activities in these municipalities such as crops. illicit activities, subsistence agriculture and illegal mining.

2.5. Project scenario

The project will monitor changes in the carbon stocks of above-ground and underground biomass, dead wood and leaf litter, and the organic carbon of the stable forest floor within the political limits of the 18 community councils, in two time periods that include ten years before until the start of the project, and at the start of the project until the validity of the initiative. Monitoring of the Potential Leakage Area will also be carried out to determine the incidence of displacement of deforestation and degradation activities. Table 31 presents the time limits and the chronological plan related to the PAZcífico Sur REDD+ project.

For their part, the REDD+ activities or actions generated by community councils, which generate a reduction in emissions from deforestation and degradation, are presented in section 1.8 Technologies, products and services of the PMCC.

2.5.1. Intervention areas

Table 45 presents the areas of intervention involved in the REDD+ PAZ-Cífico Sur project, according to the delimitations made in its design and structuring.

Table 45. Intervention area involved in the PAZcífico Sur REDD+ project.

Type of intervention area	Area (ha)
Total project area 371,747.58	
Stable forest area of the project (2017) 335,845.67	
Project stable forest area (2021) EN RM 334,804.40	
Total area of the Reference Region 882,219.62	
Stable forest area of the reference region (2007) 737,209.69	
Stable forest area of the reference region (2017) 706.11.27	
Potential Leak Area (Leak Belt) 35,401.27	
Stable forest area of potential leakage area (2017) 26,605.30	
Stable forest area of potential leakage area (2021) 26,437.15	
Leak Management Area	
Stable forest area of the escape management area (2017)	

Source: (CO2CERO SAS, 2022)

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The total area of the project is structured by 18 community councils that are part of the project, legalized in the National Land Agency, the stable forest areas come from the model established in the eligibility analysis, the reference region together with the Potential Area of Leakage comes from the analysis carried out by CO2CERO SAS and the leak management area corresponds to areas with activities within the reference region; The geographic information of the project is presented in the MAGNA-Sirgas reference system at the Single Origin in accordance with the provisions of the Agustín Codazzi Geographic Institute in its Resolution 471 of 2020. For the quantification of the GHG emissions reductions due to the deforestation and degradation, the areas taken into account correspond to those that present stable forest for the defined reference period.

Taking into account the eligible area of the project, Table 46 describes the eligible area of the project discriminated by community council associated with the project, along with a coordinate of the midpoint of each council.

Table 46. Eligible area by community council

Community Council	Eligible Area (ha)	Latitude	Length
Patia Grande farmers	28,507.76	1° 57' 4.626" N	78° 25' 51.085" W
High view and border	18,126.62	1° 21' 30.895" N	78° 38' 15.381" W
Catangueros	18,562.46	1° 50' 38.206" N 2°	78° 20' 38.240" W
Progress	26,304.25	6' 39.870" N	78° 27' 0.618" W
Imbilpí del Carmen	2,625.19	1° 42' 59.738" N	78° 32' 13.548" W
Telembi Integration	13,266.19	1° 45' 59.138" N	78° 15' 59.861" W
Friendship	18,282.17	1° 47' 0.142" N 1°	78° 1' 12.059" W
Helping hands	63,904.27	54' 16.513" N	77° 58' 57.463" W
Mexican	12,979.06	1° 39' 1.782" N	78° 32' 55.311" W
old patio	39,881.99	2° 1' 11.939" N 1°	78° 16' 37.144" W
Rescue the rods	11,986.86	43' 16.200" N	78° 41' 30.960" W
Gualajo River	2,341.57	1° 41' 36.792" N	78° 36' 15.151" W
sweet plank	1.0 38.79	1° 43' 49.363" N	78° 30' 53.736" W
salty plank	2,819.46	1° 45' 37.669" N	78° 31' 33.415" W
Isagualpi basin union	33,418.48	1° 38' 48.735" N	78° 21' 0.986" W
Chagui River Junction	25,405.30	1° 44' 2.807" N	78° 27' 45.332" W
Union of the Rosario River	9,739.26	1° 37' 22.612" N	78° 35' 32.066" W
Union on the Cauna River	7,616.44	1° 35' 43.805" N	78° 40' 32.867" W

Source: (CO2CERO SAS, 2022)

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2.6. GHG emission sources

Regarding the emission sources, they are considered in Table 47, which are in accordance with those considered in the M/UT-REDD+ methodology V 1.2 and the Cercarbono Protocol for the voluntary carbon certification of Cercarbono V 4.1.

Table 47. Emission Sources considered for the PAZcífico Sur REDD+ Project

Activity	Baseline Scenario Leaks			Project scenario					
	CO2	CH4	N2O	CO2	CH4	N2O CO2 CH4 N2O			
Avoidance of emissions from deforestation	Yeah	No	No	Yeah	No	No	No no		No
Avoidance of emissions from deforestation	Yeah	No	No	Yeah	No	No	No no		No

Source: (CO2CERO SAS, 2022)

In this way, in the baseline scenario and project scenario, carbon dioxide emissions from fuel use, associated with deforestation and degradation actions, will be considered; These will be included, as long as they are identified as significant, contributing more than 5% of total emissions; in accordance with what is stipulated by the protocol. Emissions due to CH4 and N2O will not be presented because in the project area there is no evidence of activities with the use of fertilizers or nitrogenous bacteria, or large-scale anaerobic decomposition of organic matter.

On the other hand, emissions produced by fires of anthropogenic and natural origin
They will come hand in hand with what is established in the activities of Monitoring the impacts of natural disturbances and other catastrophic events.

2.7. Methodological deviations

The project does not generate methodological deviations from what is established in Cercarbono's M/UT-REDD+ V 1.2 methodology.

2.8. Eligibility

Eligibility determines the areas that are suitable to be included in the PAZcí-fico Sur REDD+ project, complying with the premise that the project area has “areas in which the forest category corresponds at least ten (10) years before and at the beginning of the project (Also defined as stable forest)” as stipulated by the methodology.

The definition of forest will correspond to the characteristics and parameters determined in the definition proposed by the SMByC and the definition of Cercabono as a minimum area of

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forest, tree height and level of canopy cover, 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 m at the time of identification, and a minimum area of 1.0 ha. Tree covers of commercial forest plantations, palm crops, and trees planted for agricultural production are excluded. To comply with this, the extraction of the area corresponding to permanent bodies of water, crops and urban areas was carried out, according to reliable national geographic information.

The identification of forest cover was carried out through Landsat Forest – Non-Forest images from different Geographic Information Systems (GIS) platforms, due to the fact that the information from the IDEAM of the SMByC was not considered due to the high presence of areas without information and the appearance of cloudiness, this quantifies deforestation and degradation for the reference period (Baseline 2007 - 2017), also reveals the process of deforestation and historical degradation, and the monitoring periods. bullfighting throughout the implementation of the REDD+ project actions.

Table 48. Eligible project areas

Class	2007 baseline scenario	Project scenario 2017
Forest (ha)	344,915.12	335,845.67
No Forest (ha)	26,832.46	35,901.91
Total general (ha)	**371,747.58**	**371.747,58**

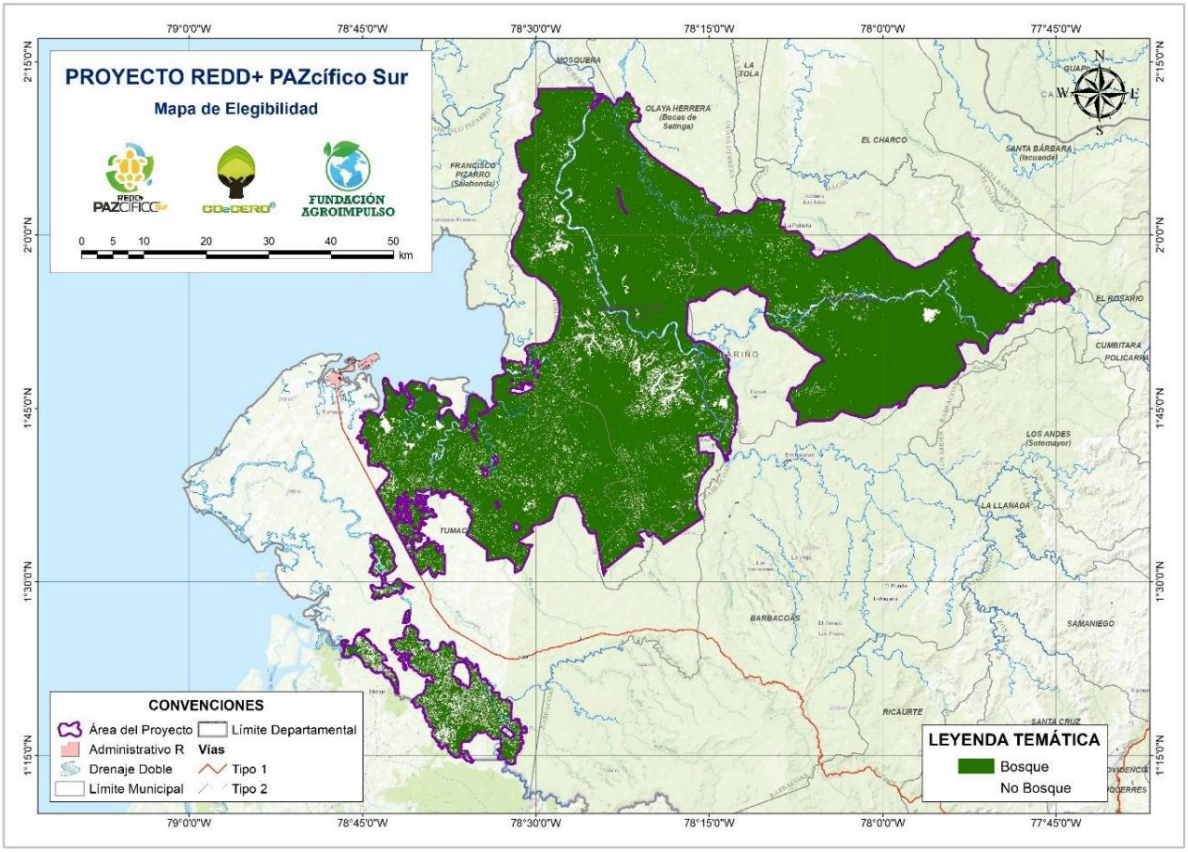
Source: (CO2CERO SAS, 2022)

Those areas that have gone from the category of forest to non-forest will be called deforested areas, those that change from non-forest to forest are regenerated areas and those that are conserved in the non-forest category are non-forest areas, these categories are not considered eligible. .

335,845.67 hectares of stable forest are identified between the start date (2017) and 10 years before the start date (2007), corresponding to the eligible areas of the project, as presented in Figure 19.

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Figure 19. Project eligibility map



Source: (CO2CERO SAS, 2022)

2.9. Carbon reservoirs

The reservoirs considered for the REDD+ PAZcífico Sur project are described in the Table 49.

Table 49. Reservoirs considered for the PAZcífico Sur REDD+ Project

Reservoir	Baseline Scenario	project	Justification
Aerial Biomass (BA)	And	And	It is the main sink since it represents the changes in the carbon stock in the forest cover of the project area. Covers tree and non-tree woody biomass.
Underground biomass (BS)	And	And	The sink is included since it is a component for the calculation of the Emission Factor according to the methodological reconstruction of the National NREF.

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Reservoir	Baseline scenario	Scenario of project	Justification
Dead wood (MM)	And	And	According to the methodology, this sink is taken into consideration, subject to conservation by the project actions.
Leaf litter (HJ)	And	And	According to the methodology, this sink is taken into consideration, subject to conservation by the project actions.
Wood products	No	No	Wood extraction is limited to occasional domestic use; this reservoir is not representative for the project, because sustainable forest management activity is not present.
Organic Carbon Soil (COS)	And	And	The sink is included since it is a component for the calculation of the Emission Factor according to the methodological reconstruction of the National NREF

Source: (CO2CERO SAS, 2022)

The reservoirs included are measured directly or indirectly, for application in the baseline scenario and with the project; considered as significant that contain carbon in the forest area and, therefore, are likely to generate emissions reductions in the project scenario. The selected reservoirs will be quantified for both the degradation and deforestation activity of the project.

2.10. Emission factor

In order to determine the current state of the forest cover associated with the project that allows determining the emission factor for the baseline and the performance of the implementation of REDD+ activities, a methodological reconstruction of the Colombian NREF was carried out with in order to estimate the emission factor for the project, achieving a value consistent with the principles of the IPCC (See 2.10.3 Determination of the Emission Factor). This Field sampling is carried out to compile data on the structure and composition of the forest.

2.10.1. Selection of the number of representative plots

The number of plots was based on what is indicated by the Protocol for the national and subnational estimation of biomass-carbon in Colombia by Yepes et al. , (2011) using Annex 3 which represents the number of plots required to obtain a value error of less than 10%, for a non-seasonal tropical humid forest.

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Taking into account the values of the plots with an area of 0.0625 ha and 0.25 ha, the search is carried out for the number of plots in which both sizes meet the required sampling error. Additionally, in order to improve the collection and availability of data in the field, a sampling area of 0.1 ha (100 m x 10 m) was defined.

From this it is evident that, from the 39 plots inventoried within the limits of the project, the required sampling error is considered met, obtaining a value for sampling of 9.24% as evidenced in AUDITORIA_VV_2022\3_Carbono \ *FE REDD+ PAZ-CIFICO SUR.xlsx\"Sampling error" tab.*

2.10.2. Field sampling methodology

39 sampling points (plots) were carried out on the project area (including surrounding areas) to measure the different stages present in the delimited forest area (saplings, latizals and trunks); Each plot covers an area of 0.1 hectares, arranged in a rectangular shape of 100 x 10 meters. The location of the plots is presented in two stages, the first consists of generating them randomly in the ArcGIS ® Software from the creation of random points, prioritizing the proximity to water bodies that favor movement and data collection. in those areas that are difficult to access, and the second stage is taking into account the community's field criteria mainly due to public order factors, verifying that the plots are within the forest area and guaranteeing that at least one plot will be presented. within the most representative forest covers (See Figure 20), corresponding to what was carried out in the NREF under a simple random sampling scheme.

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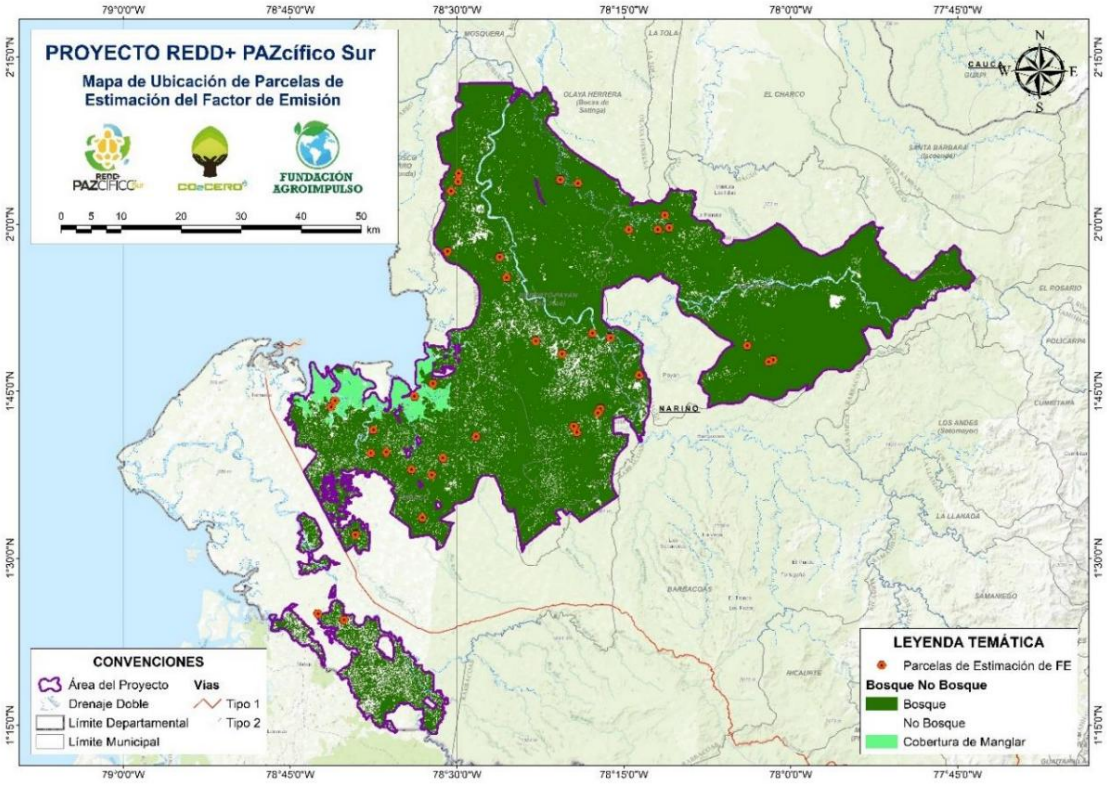


Figure 20. Location Map of Sampling Plots

Source: (CO2CERO SAS, 2022)

In these, all the species belonging to each forest cover were identified based on their respective scientific name and family. Subsequently, measurements were made corresponding to the variables diameter at breast height (DBH) and total height of all the stem and latiza individuals. For the saplings, the number of individuals present was counted.

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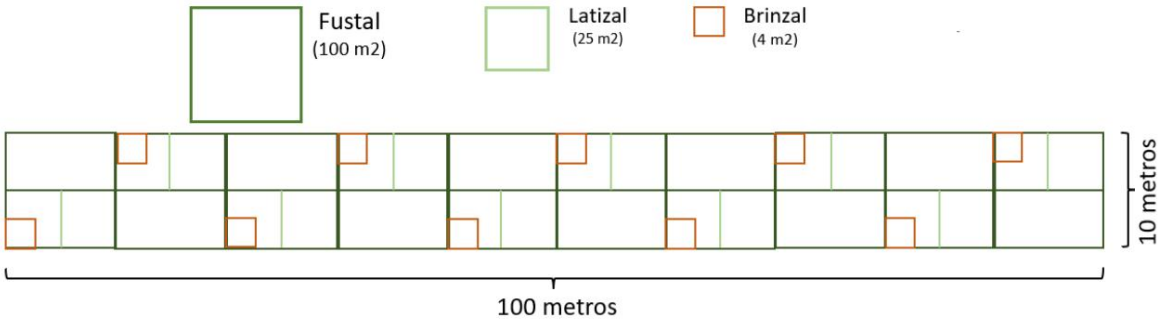


Figure 21. Scheme of plots established in the field.
Source: (CO2CERO SAS, 2022)

In the case of the stems, measurements were made of the individuals present within the plot, their numbering and measurement was carried out by subdividing the width of the plot every 10 meters. In the case of the latizals, measurements were made of the individuals present in subplots of 5 x 5 meters, within each subdivision of the stems measurement; Within these subplots, 2x2 meter subplots were installed where the saplings were evaluated. (see *AUDITORIA_VV_2022\12_Monitoring report\01_In-forestry inventory\Report_Final_REED+Pazcifico Sur.pdf).*

1. Use of the Global *Wood* Density Database to provide each identified species with a value corresponding to this attribute. To complete each of the species reported in the forest inventory in the attribute, the following substeps were carried out taking into account the availability of information:

    a) If there is information within the database pertaining to the species, this value is used.
    b) If there is no specific information for the species in question, an average is made of the values corresponding to the same botanical genus reported in the forest inventory and if the genus is not found, an average is applied. with all genera belonging to the same botanical family reported.

    c) Finally, if a corresponding value is not found for the botanical family in question, the value of 0.64 reported by Álvarez *et al is used.* (2012) for the biome in which the REDD+ PAZcífico project is located.

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Note: The deviation obtained from the densities of each of the species recorded in the inventory (See Illustration 10) agree with the confidence limits presented in the study by Álvarez et al. (2012) for the corresponding life zone (Tropical humid forest), which demonstrates the validity of the procedures implemented for the assignment of densities.

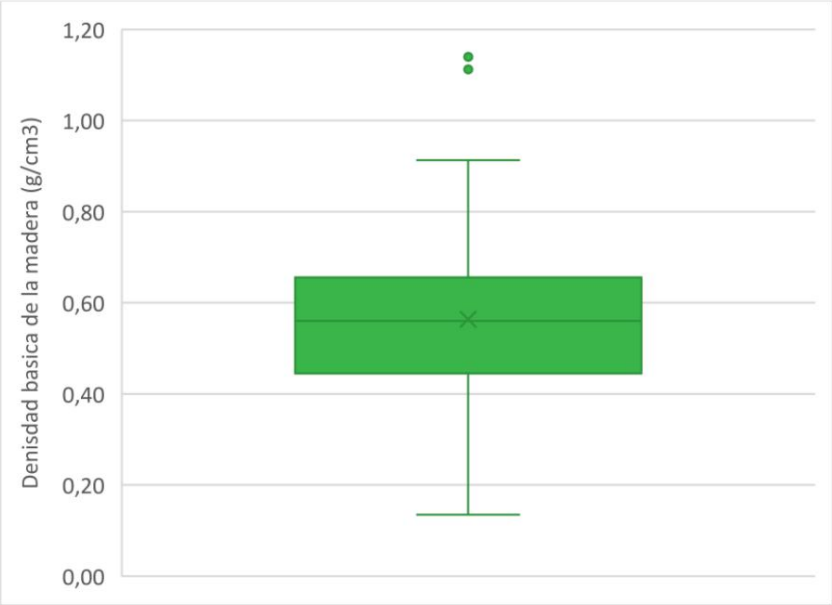


Illustration 10. Boxplox Wood Densities
Source: (CO2CERO SAS, 2022)

2. Application of the formulas determined by NREF for the calculation of Aerial Biomass (AGB), Underground Biomass (BRG), Soil Organic Carbon for 20 years (COS20years-i) and finally the corresponding Emission Factor .

2.10.3. Determination of the Emission Factor

The adjustment to the emission factors was consulted and approved by the RENARE Administration, Subdirectorate of Environmental Studies and Institute of Hydrology, Meteorology and Environmental Studies – IDEAM (See 5_Metodologias\ *2_NREF\Consulta adjustment FE_RENARE.msg).* From the procedure explained above, the results of Table 50 are evident.

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Table 50. Results obtained for the Emission Factor

Variable	Unit	Value
AGB	(tC/ha)	245,52
BRG	(tC/ha)	55,09
BT	(tC/ha)	300,61
Carbon Fraction	%	47
CBF	(tC/ha)	141,28
CBFeq	(tCO2e/ha)	518,04
COS20años-i	(tC/ha)	4,6
COSeq	(tCO2e/ha)	16,87
COSMM & LI	(tCO2e/ha)	8,46
Emission Factor	(tCO2e/ha)	543,37

Source: (CO2CERO SAS, 2022)

The above is presented in the file *AUDITORIA_VV_2022\3_Carbono\ FE REDD+ PAZCI-FICO SUR.xlsx,* it is considered necessary to point out that the above values correspond to the stem and latizal individuals, which meet the DAP characteristics indicated in the NREF and Chave *et al.,* (2014).

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3. Calculation of GHG emissions and GHG emissions reductions

The next chapter presents the quantification of emissions and their corresponding reduction by the REDD+ project.

3.1. Quantification of GHG emissions in the baseline scenario

Below is the quantification of the GHG emissions reductions present within the REDD+ PAZcífico Sur project. It should be noted that the non-permanence risk value (buffer) corresponds to that determined by the execution of the Tool to estimate the carbon reserve in climate change mitigation initiatives in the land use sector (in this case 12.5%) of emissions reductions, in accordance with what is described in the Cercarbono V 4.1 certification program.

The quantification of the emissions generated in the project area, in the absence of this, is considered as the baseline scenario, in this way the quantification of the emissions generated by deforestation and degradation activities is established.

3.1.1. Deforestation

Based on the emission factor obtained for the project (see 2.10 Emission factor), the baseline was calculated, thus obtaining a total of 13,384,485 tCO2e for all the years within the project area (see Table 51).

Table 51. Emissions in the Baseline scenario

Year	Emission factor (tCO2e/ha)	ECO2defLBt,f (tCO2e)	
		Yearly	Accumulated
2017	453,18	684.990	684.990
2018	453,18	817.199	1.502.189
2019	453,18	855.916	2.358.105
2020	453,18	889.382	3.247.487
2021	453,18	916.556	4.164.043
2022	453,18	936.783	5.100.826
2023	453,18	607.587	5.708.413
2024	453,18	605.101	6.313.514
2025	453,18	602.625	6.916.139
2026	453,18	600.160	7.516.299
2027	453,18	597.704	8.114.003
2028	453,18	595.259	8.709.262
2029	453,18	592.823	9.302.085
2030	453,18	590.398	9.892.483
2031	453,18	587.982	10.480.465

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Year	Emission factor (tCO2e/ha)	ECO2defLBt,f (tCO2e)	
		Yearly	Accumulated
2032	453,18	585.576	11.066.041
2033	453,18	583.180	11.649.221
2034	453,18	580.794	12.230.015
2035	453,18	578.418	12.808.433
2036	453,18	576.052	13.384.485
TOTAL	·	**13.384.485**	

Source: (CO2CERO SAS, 2022)

Where:

- *ECO2defLBt,f (tCO2e):* CO2e emissions from deforestation in the line scenario base.

3.1.2. Degradation

Based on the Emission Factor (see 2.10 Emission Factor), the baseline was calculated for the primary (core to patch) and secondary (drilled to patch) degradation areas according to the fragmentation analysis (Ramírez et al. , 2018), taking into account the loss values for each degradation class proposed by Ramírez *et al.* (2018) for area biomass and Armenteras *et al.* (2016) for underground biomass, in order not to overestimate the carbon contents of the areas corresponding to the degradation class; for the values of dead wood and soil organic carbon they were consistent with those of deforestation (see Table 52); In this way, the value corresponding to the emission factor that will be considered in the entire quantification of emissions reductions due to degradation is obtained (See 3_Carbono\Carbono_Degrada-cion_REDDPAZcificoSur_V1).

Table 52 Equivalent carbon content by type of degradation

Type of degradation	Average difference		Emission factor (tCO2e/ha)
	Biomass area (t/ha)	Underground biomass (t/ha)	
Primary	228,79 40,94 170,21 32,89		422,56
Secondary			318,90

Source: (CO2CERO SAS, 2022)

The estimation of the areas belonging to primary and secondary degradation was carried out using the *Landscap Fragmentation* Tool available for the ArcGIS® software. This tool determines the extension in hectares corresponding to each type of fragmentation and subsequently identifies the rate of change or transition that occurs.

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presented among them according to the type of degradation (see Table 53). In order to obtain greater accuracy in the quantification of the degraded areas, the modeling of an intermediate year of the reference period (2012) was carried out, which allowed us to show that the transition between class of the degraded areas during the passage of the years during the reference period will be presented appropriately.
For the correct use of the *Landscap Fragmentation* Tool , the region was divided of reference in three, performing the modeling for each of the parts in the tool, and subsequently uniting the results obtained into a single result for the entire reference region.

Table 53 Fragmentation analysis degradation data for baseline

Annual area type (ha)	Period 2007 to 2017		Degraded area
	Degradation type	Area (ha)	
Reference region	Primary	516.70	51,67
	Secondary	1,689.90	168,99
Potential Leakage Area	Primary	49.32	4,93
	Secondary	176.64	17,66

Source: (CO2CERO SAS, 2022)

In this way, a total of 1,514,480 tCO2e emissions are obtained for all the years of the project in the baseline scenario (see Table 54).

Table 54 Carbon stocks due to degradation in the baseline

Year	ECO2de-gLB.t.dp	ECO2degLB.t.ds	ECO2degLB	
	Annual	Annual	Annual	Accumulated
2017	21,833	53,891	75,725	75.725
2018	21,833	53,891	75,725	151.449
2019	21.833	53.891	75.725	227.174
2020	21.833	53.891	75.725	302.898
2021	21.833	53.891	75.725	378.623
2022	21.833	53.891	75.725	454.348
2023	21.833	53.891	75.725	530.072
2024	21.833	53.891	75.725	605.797
2025	21.833	53.891	75.725	681.521
2026	21.833	53.891	75.725	757.246
2027	21.833	53.891	75.725	832.970
2028	21.833	53.891	75.725	908.695
2029	21.833	53.891	75.725	984.420
2030	21.833	53.891	75.725	1.060.144

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Year	ECO2de-gLB.t.dp	ECO2degLB.t.ds	ECO2degLB	
	Annual	Annual	Annual	Accumulated
2031	21,833	53,891	75,725	1.135.869
2032	21,833	53,891	75,725	1.211.593
2033	21.833	53.891	75.725	1.287.318
2034	21.833	53.891	75.725	1.363.043
2035	21.833	53.891	75.725	1.438.767
2036	21.833	53.891	75.725	1.514.492
TOTAL 436.668		**1.077.823**	**1.514.492**	

Source: (CO2CERO SAS, 2022)

Where:

- *ECO2degLB,t,dp:* CO2e emissions due to primary degradation in the baseline
- *ECO2degLB,t,ds:* CO2e emissions due to secondary degradation in the baseline
- *ECO2degLB:* Total CO2e emissions due to degradation in the line scenario base.

3.2. Quantification of emissions, GHG removals and reductions (avoidance, displacement or destruction) of emissions GHG in the project scenario

This subchapter presents the avoided emissions determined for the PAZcífico Sur REDD+ project.

3.2.1. Ex-ante Avoided Emissions

The reduction of emissions generated by the project in the Ex-Ante scenario is quantified, estimated that would be presented by the implementation of the project, by the actions to mitigate deforestation and degradation.

3.2.1.1. Deforestation

Next, the quantification of the reduction of emissions generated by the project in the Ex-Ante scenario, projected and obtained from the implementation of the project, by the deforestation and degradation mitigation actions, is presented.

To estimate Ex-ante emissions reductions in the project area, a projection was carried out in which a value of 35% reduction in GHG emissions was implemented during the project implementation period. This value was obtained from the

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monitoring of forest cover during the initial six (6) years of the project. The estimated Ex-ante emissions for the project area are presented in Table 55.

Table 55. Ex-ante emissions reduction of the project due to deforestation

Year	ECO2PtX		EfdefM		MEAdef		Buffer	REDD+	
	Yearly	Now	Yearly	Now	Yearly	Now	Annual Now	Yearly	Now
2.017	227.499	227.499	49.332	49.332	479.427	479.427	59.880	59.880	419.547	419.547
2.018	227.159	454.658	49.130	98.462	611.886	1.091.313	76.425	136.305	535.462	955.009
2.019	226.818	681.476	48.929	147.391	650.854	1.742.167	81.292	217.597	569.563	1.524.572
2.020	226.479	907.955	48.729	196.120	684.570	2.426.737	85.503	303.099	599.068	2.123.640
2.021	226.140	1.134.095	48.529	244.649	711.995	3.138.732	88.928	392.028	623.067	2.746.707
2.022	225.801	1.359.896	48.331	292.980	732.472	3.871.204	91.486	483.513	640.987	3.387.694
2.023	225.463	1.585.359	48.133	341.113	403.526	4.274.730	50.400	533.914	353.126	3.740.820
2.024	225.125	1.810.484	47.936	389.049	401.291	4.676.021	50.121	584.035	351.170	4.091.990
2.025	224.788	2.035.272	47.740	436.789	399.065	5.075.086	49.843	633.878	349.222	4.441.212
2.026	224.452	2.259.724	47.544	484.333	396.849	5.471.935	49.566	683.445	347.283	4.788.495
2.027	224.116	2.483.840	47.350	531.683	394.642	5.866.577	49.291	732.735	345.352	5.133.847
2.028	223.780	2.707.620	47.156	578.839	392.447	6.259.024	49.017	781.752	343.431	5.477.278
2.029	223.445	2.931.065	46.963	625.802	390.260	6.649.284	48.743	830.496	341.517	5.818.795
2.030	223.110	3.154.175	46.771	672.573	388.085	7.037.369	48.472	878.967	339.614	6.158.409
2.031	222.776	3.376.951	46.580	719.153	385.918	7.423.287	48.201	927.169	337.717	6.496.126
2.032	222.443	3.599.394	46.389	765.542	383.760	7.807.047	47.932	975.100	335.829	6.831.955
2.033	222.110	3.821.504	46.199	811.741	381.613	8.188.660	47.663	1.022.764	333.950	7.165.905
2.034	221.777	4.043.281	46.010	857.751	379.476	8.568.136	47.397	1.070.160	332.080	7.497.985
2.035	221.445	4.264.726	45.822	903.573	377.348	8.945.484	47.131	1.117.291	330.218	7.828.203
2.036	221.114	4.485.840	45.635	949.208	375.230	9.320.714	46.866	1.164.157	328.364	8.156.567
TOTAL	**4.485.840**		**949.208**		**9.320.714**		**1.164.157**	**8.156.567**	

Source: (CO2CERO SAS, 2022)

Where:

- *ECO2Ptx:* CO2e emissions from deforestation within the project limit for the ex ante scenario.
- *EfdefM:* CO2e emissions from deforestation in the leakage belt
- *MEAdef:* Reduction of total CO2e emissions due to deforestation in the scenario from before.
- *Buffer:* Reserve for risk of non-permanence for the ex ante deforestation emissions reduction scenario.

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• *REDD+:* Reduction of net CO2e emissions due to deforestation in the ex scenario

in view of.

3.2.1.2. Degradation

To estimate the Ex-Ante emissions reduction due to degradation, a projection of the decrease was made due to the activities given by the project, in accordance with the determination of the transition area for each type of degradation from 2017 to 2022, both for the project area and for the Potential Leakage Area, as shown in Table 56 (See 3_Carbono\Carbono_Degradacion_REDDPAZcificoSur_V4).

Table 56 Fragmentation analysis degradation data for the Ex-Ante scenario

Annual area type (ha)	Period 2017 to 2022		Degraded area
	Degradation type	Area (ha)	
Project area	Primary	6.88	1,15
	Secondary	81.98	13,66
Potential Leakage Area	Primary	0.54	0,09
	Secondary	75.29	12,55

Source: (CO2CERO SAS, 2022)

In this way, the Ex-ante emissions reduction of the project was obtained for the degradation activities, which takes into account the net emissions generated by the project estimated by the implementation of the project as shown in Table 57.

Table 57 Ex-ante emissions reduction of the project due to degradation

Año	ECO2PtX		EfdegM		MEAdeg		Buffer		REDD+	
	Annually	Now	Annually	Now	Annually	Now	Annually	Now	Annually	Now
2017	4.842	4.842	7.717	7.717	70.882	70.882	7.889	7.889	62.992	62.992
2018	4.842	9.684	7.717	15.434	70.882	141.764	7.889	15.779	62.992	125.984
2019	4.842	14.526	7.717	23.151	70.882	212.646	7.889	23.668	62.992	188.976
2020	4.842	19.368	7.717	30.868	70.882	283.528	7.889	31.557	62.992	251.968
2021	4.842	24.210	7.717	38.585	70.882	354.410	7.889	39.447	62.992	314.960
2022	4.842	29.052	7.717	46.302	70.882	425.292	7.889	47.336	62.992	377.952
2023	4.842	33.894	7.717	54.019	70.882	496.174	7.889	55.225	62.992	440.944

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Año	ECO2PtX		EfdegM		MEAdeg	Buffer		REDD+	
	Annually	Now	Annually	Now	Annually	Now	Annually	Now	
2024	4.842	38.736	7.717	61.736	70.882	567.056	7.889	63.114	62.992	503.936
2025	4.842	43.578	7.717	69.453	70.882	637.938	7.889	71.004	62.992	566.928
2026	4.842	48.420	7.717	77.170	70.882	708.820	7.889	78.893	62.992	629.920
2027	4.842	53.262	7.717	84.887	70.882	779.702	7.889	86.782	62.992	692.912
2028	4.842	58.104	7.717	92.604	70.882	850.584	7.889	94.672	62.992	755.904
2029	4.842	62.946	7.717	100.321	70.882	921.466	7.889	102.561	62.992	818.896
2030	4.842	67.788	7.717	108.038	70.882	992.348	7.889	110.450	62.992	881.888
2031	4.842	72.630	7.717	115.755	70.882	1.063.230	7.889	118.340	62.992	944.880
2032	4.842	77.472	7.717	123.472	70.882	1.134.112	7.889	126.229	62.992	1.007.872
2033	4.842	82.314	7.717	131.189	70.882	1.204.994	7.889	134.118	62.992	1.070.864
2034	4.842	87.156	7.717	138.906	70.882	1.275.876	7.889	142.008	62.992	1.133.856
2035	4.842	91.998	7.717	146.623	70.882	1.346.758	7.889	149.897	62.992	1.196.848
2036	4.842	96.840	7.717	154.340	70.882	1.417.640	7.889	157.786	62.992	1.259.840
TO-OF	**96.840**		**154.340**		**1.417.640**		**157.786**		**1.259.840**	

Source: (CO2CERO SAS, 2022)

Where:

- *ECO2PtX:* CO2e emissions due to degradation within the project limit for the ex ante scenario.
- *EfdegM:* CO2e emissions due to degradation in the leak belt
- *MEAdeg:* Reduction of total CO2e emissions due to degradation in the scenario from before.
- *Buffer:* Reserve for risk of non-permanence for the scenario of emissions reduction due to ex ante degradation.
- *REDD+:* Reduction of net CO2e emissions due to degradation in the ex scenario in view of.

3.3. Leaks

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Taking into account the leakage belt identified for the project area, annual monitoring of the deforested and degraded areas that occurred during the monitoring period (2017-2022) was carried out. To calculate the Ex-Ante avoided emissions due to deforestation and degradation, the deforested areas are projected taking into account the rate of deforestation and degradation respectively identified in the baseline scenario.
during the reference period and the forest cover of the project start year (2017), assuming a linear trend during the 20 years of the project. These values will be shown in the quantification tables as *EfdefM* for deforestation activity and *EfdegM* for degradation activity.

3.4. Reductions (avoidances, displacements or destructions) of net GHG emissions

Taking into account the deposits selected in the project (Deforestation and Degradation), which were explained previously, a total of 9,416,407 tCO2e is obtained for the project for all the years within the project area (see Table 58).
(Ver *3_Carbono\Carbono_Total_REDDPAZcificoSur_V4).*

Table 58. Ex-ante emissions reduction of the project

Year	ECO2PtX		EfdefM + EfdegM		MEAdef + MEAdeg		Buffer		REDD+	
	Yearly	Now	Yearly	Now	Yearly	Now	Annia	Now	Annia	Now
2017	232.341	232.341	57.049	57.049	550.309	550.309	67.770	67.770	482.539	482.539
2018	232.001	464.342	56.847	113.896	682.768	1.233.077	84.314	152.084	598.454	1.080.993
2019	231.660	696.002	56.646	170.542	721.736	1.954.813	89.181	241.265	632.555	1.713.548
2020	231.321	927.323	56.446	226.988	755.452	2.710.265	93.3	334.657	662	2.375.608

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Year	ECO2PtX		EfdefM + EfdegM		MEAdef + MEAdeg		Buffer	REDD+		
	Yearly	Now	Yearly	Now	Yearly	Now	Annual	Now	Annual	Now
							92		0606	
2021	230.982	1.158.305	56.246	283.234	782.877	3.493.142	96.817	431.474	686.059	3.061.667
2022	230.643	1.388.948	56.048	339.282	803.354	4.296.496	99.375	530.849	703.979	3.765.646
2023	230.305	1.619.253	55.850	395.132	474.408	4.770.904	58.290	589.139	416.118	4.181.764
2024	229.967	1.849.220	55.653	450.785	472.173	5.243.077	58.011	647.149	414.626	4.595.926
2025	229.630	2.078.850	55.457	506.242	469.947	5.713.024	57.733	704.882	412.990	5.008.140
2026	229.294	2.308.144	55.261	561.503	467.731	6.180.755	57.456	762.338	410.275	5.418.415
2027	228.958	2.537.102	55.067	616.570	465.524	6.646.279	57.180	819.518	408.344	5.826.759
2028	228.622	2.765.724	54.873	671.443	463.329	7.109.608	56.906	876.424	406.458	6.233.182

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Year	ECO2PtX		EfdefM + EfdegM		MEAdef + MEAdeg		Buffer		REDD+	
	Yearly	Now	Yearly	Now	Yearly	Now	Annual	Now	Annual	Now
2029	228.287	2.994.011	54.680	726.123	461.142	7.570.750	56.633	933.057	404.509	6.637.691
2030	227.952	3.221.963	54.488	780.611	458.967	8.029.717	56.361	989.418	402.606	7.040.297
2031	227.618	3.449.581	54.297	834.908	456.800	8.486.517	56.090	1.045.508	400.709	7.441.006
2032	227.285	3.676.866	54.106	889.014	454.642	8.941.159	55.821	1.101.329	398.821	7.839.827
2033	226.952	3.903.818	53.916	942.930	452.495	9.393.654	55.553	1.156.882	396.942	8.236.769
2034	226.619	4.130.437	53.727	996.657	450.358	9.844.012	55.286	1.212.168	395.072	8.631.841
2035	226.287	4.356.724	53.539	1.050.196	448.230	10.292.242	55.020	1.267.188	393.210	9.025.051
2036	225.956	4.582.680	53.352	1.103.548	446.112	10.738.354	54.756	1.321.943	391.356	9.416.407

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Year	ECO2PtX		EfdefM + EfdegM		MEAdef + MEAdeg		Buffer		REDD+	
	Yearly	Now	Yearly	Now	Yearly	Now	Annual	Now	Annual	Now
TOTAL	4.582.680		1.103.548		10.738.354		1.321.943		9.416.407	

Source: (CO2CERO SAS, 2022)

Where:

- *ECO2PtX:* CO2e emissions from deforestation and degradation for the scenario ex ante project.
- *EfdegM* + *EfdegM:* CO2e emissions from deforestation and degradation in the belt leak rum.
- *MEAdef* + *MEAdeg:* Reduction of total CO2e emissions due to deforestation and degradation in the ex ante scenario.
- *Buffer:* Reserve for risk of non-permanence for the scenario of reducing emissions due to deforestation and ex ante degradation.
- *REDD+:* Reduction of net CO2e emissions due to deforestation and degradation in the ex ante scenario

3.4.1. Ex-post emissions avoided

From the data monitored year by year and the quantification of Forest changes in the project area, it is obtained for the years of project activity by calculating the emissions avoided by deforestation, which can be seen in section 6 of the Project Report. Monitoring (See 12_Monitoring report\03_Monitoring report\PAZcifico Sur Monitoring Report.docx).

To estimate the reduction of Ex-Post emissions due to degradation, the determination of the annual decrease for the given activities of the project was carried out, in accordance with the determination of the transition area for each type of degradation, with annual periods that include the years of the initiative, evaluated for both the project area and the Potential Leakage Area. The emission reduction given in the Potential Leakage Area occurred when the degraded area was greater than that given without the project, understanding that, if there is a real positive increase since the beginning of the initiative, for those that were of lower value , which can be seen in section 5.3.3 of the Monitoring Report (See 12_Monitoring Report\03_Monitoring Report\PAZcifico Sur Monitoring Report.docx).

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Taking into account the deposits selected in the project (Deforestation, Deforestation in mangrove ecosystems and Degradation), which were explained previously, the total emissions avoided during the project implementation period are obtained, with the reduction due to the risk of non-permanence (buffer). Which can be seen in the Monitoring Report section (See 12_Monitoring Report\03_Monitoring Report\PAZcifico Sur Monitoring Report.docx).

3.4.1.1. Deforestation in mangrove ecosystem

Mangrove ecosystems have high carbon capture rates due to the large proportion of roots and underground biomass reported in these covers. Additionally, these ecosystems have a greater degree of vulnerability to impacts due to the interaction they have with the terrestrial and aquatic environment (Silveira & Hernández, 2017).
Likewise, there is a great difference between the carbon stocks that occur in purely terrestrial soils because the soils of coastal systems have chemical properties that increase their carbon capture and that, contradictorily, if not managed appropriately they could become a source of significant GHG emissions. Taking into account the above, and assuming that in the project area

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present 11,386.68 hectares covered by mangrove for the year 2017, as seen in the

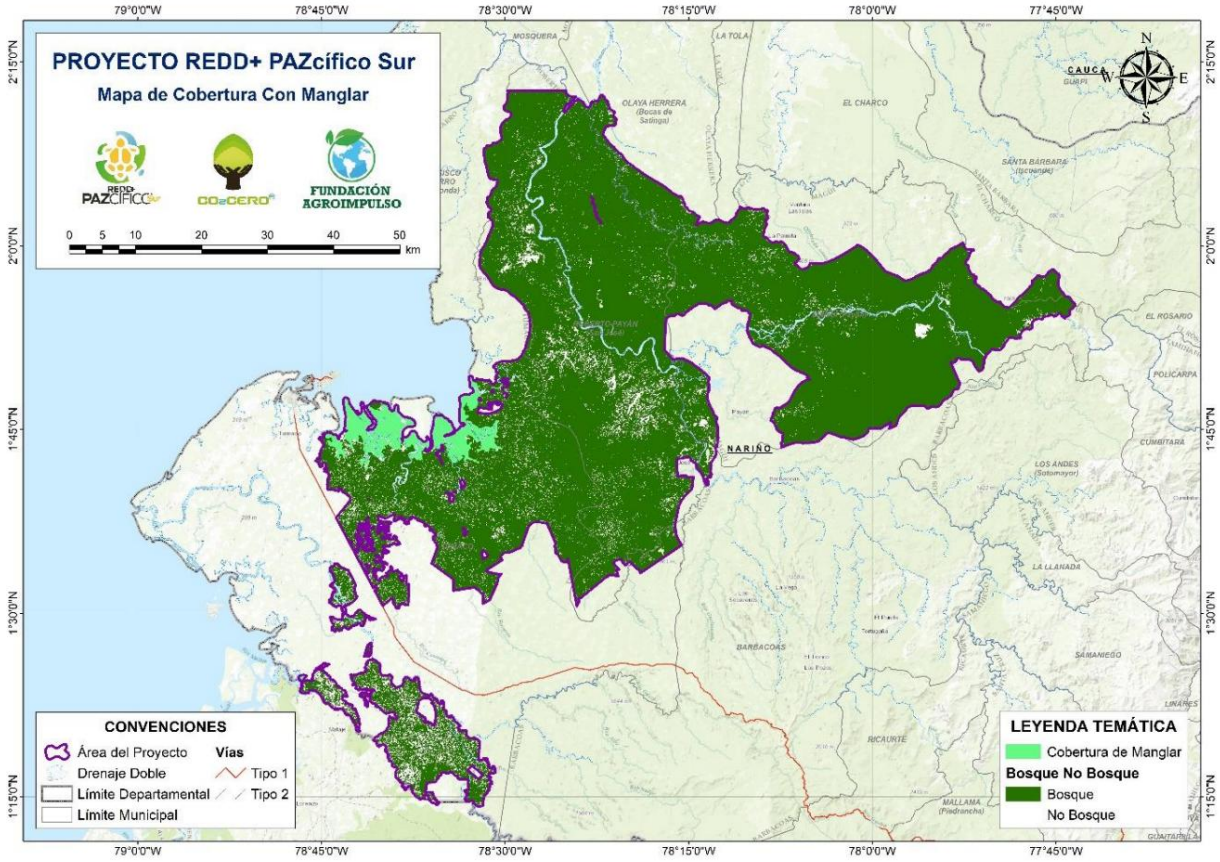


Figure 5, which present vulnerability due to multiple impacts (see 2.3.2), which is why it is essential to evaluate the project's capacity to reduce said emissions identified in the baseline.

To quantify the existing soil biomass in mangrove ecosystems, the value reported by the IPPC10 was taken as a reference, where a value of 471 tC/ha is established for organic soils covered with mangroves, widely supported by primary information sources such as Adame. *et al.,* (2012); Breithaupt *et al.,* (2012); Chmura *et al.,* (2003); Donato *et al.,* (2011); Kauffman *et al.,* (2011); Osborne *et al.,* (2011); Vegas-Vilarrúbia *et al.,* (2010) and adopted by the Intergovernmental Panel on Climate Change (IPCC), for the use of this value on soil organic carbon in mangrove ecosystems.

[10] https://www.ipcc-nggip.iges.or.jp/public/wetlands/pdf/Wetlands_separate_files/WS_Chp4_Coastal_Wetlands.pdf

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It is important to clarify that the release of carbon contained in the soil of an area covered by mangroves when deforested is total year by year and not partial as in the soil organic carbon reported in other coverages, because the IPCC (2013) describes that an immediate default value of zero (0) tC/ha is obtained in the soil after carrying out activities that affect the maintenance of these covers. To delimit the areas corresponding to mangrove within the project, the layers provided by IDEAM (2017) and the Hansen *et al.* model were used. (2010), Hansen *et al.* (2013) for the delimitation of deforested areas within this reservoir.

From the values presented above and those obtained in the reference area for the baseline, the expected loss in mangrove cover was estimated during the years of verification within the project area. The actual losses of said cover were monitored from the implementation of the project and the reduced emissions from deforestation in the mangrove ecosystem in the project were quantified, which can be seen in the monitoring report (See 12_Monitoring report\03_Monitoring report\PAZcifico Sur Monitoring Report.docx) .

3.5. Monitoring plan

The following chapter presents the elements and parameters monitored in the REDD+ PAZcífico Sur project. More information can be found in *12_Monitoring Report\03_Monitoring Report\PAZcifico Sur Monitoring Report.docx*

3.6. Monitoring of emissions, GHG removals or GHG reductions in the project scenario

Below are the data and parameters available in the validation and verification for their corresponding monitoring.

3.6.1. Data and parameters available in validation

Within the subchapter, the variables related to the validation process of the initiative are presented, taking into account that its execution horizon is 20 years. These are presented as general, that is, parameters that evaluate the generality of the project, related to deforestation, those that measure the actions under this effect and degradation those corresponding to the partial effects on forest cover; All these parameters will be compiled in the audit folders according to the certifications given, thus obtaining information management and data conservation.

3.6.1.1. General

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Data / Parameter	Forest Map – Non-Forest of the reference region and leakage area 2007 – 2017
Unit of measurement	Hectares
Description	Location map of the forest at the beginning of the reference period in the reference region and leakage area
Origin of information	IDEAM from Landsat images, Hansen *et al.* (2010), Hansen *et al.* (2013)
Justification of the choice of information or description of the procedures applied	Geoprocessing carried out on the country's official information published by IDEAM
Purpose of information	Determine the forest cover within the reference area and the potential leakage area of the project
Monitoring frequency	Permanent, revalidated every time the project is verified (triennial), maximum every 5 years.
Comments	

Data / Parameter	Forest – No Forest map of the project area and potential and leakage management area 2017 – final pe-riod verified
Unit of measurement	Hectares
Description	Location map of the forest at the beginning of the monitoring period in the project area and Potential Leakage Area
Origin of information	IDEAM from Landsat images, Hansen *et al.* (2010), Hansen *et al.* (2013)
Justification of the choice of information or dis-description of the procedures applied	Geoprocessing carried out on the country's official information published by IDEAM
Monitoring frequency	Every time the project is verified (triennial), maximum every 5 years.
Purpose of information	Determine the forest cover within the reference area and the potential leakage area of the project
Comments	

Data / Parameter	Carbon Fraction
Unit of measurement	%
Description	Default value for carbon fraction in biomass
Origin of information	Valores de literatura *(IPCC 2003. Good practice guidance for land use, land-use change and for-estry)*
Value applied	0,47

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Justification of the choice of information or description of the procedures applied	Globally Accepted Literature Defaults
Monitoring frequency	Permanent, revalidated every time the project is verified (triennial), maximum every 5 years
Purpose of information	Constant used to calculate the carbon equivalent (tCO2e)
Comments	If more recent and appropriate information for the project is presented in subsequent verifications, it will be applied in a subsequent baseline period.

Data / Parameter	C/CO2 molecular ratio
Unit of measurement	dimensionless
Description	Default value for carbon fraction in biomass
Origin of information	Literature values (IPCC 2006. *Guidelines for National Greenhouse Gas Inventories Volume 4 AFOLU)*
Value applied	44/12
Justification of the choice of information or dis-description of the procedures applied	Default values from globally accepted literature
Monitoring frequency	Permanent, revalidated every time the project is verified (triennial), maximum every 5 years
Purpose of information	Constant used to calculate the carbon equivalent (tCO2e)
Comments	IPCC standard value

Data / Parameter	
Unit of measurement	tC/ha
Description	Dead wood, detritus and leaf litter in degradation and deforestation scenario, for the baseline and monitoring scenario
Origin of information	Value of literature (IPCC 2006. Guidelines for National Greenhouse Gas Inventories Volume 4 AFOLU, Table 4.4)
Value applied	2%
Justification of the choice of information or description of the procedures applied	Values from globally accepted literature for the life zone.
Monitoring frequency	Permanent, revalidated that the project is verified (triennial), maximum every 5 years.
Purpose of information	Quantify the carbon stored in each reservoir to determine the emissions avoided by the project.
Comments	IPCC standard value

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Data / Parameter	
Unit of measurement	dimensionless
Description	Soil organic carbon in degradation and deforestation scenario, for the baseline and monitoring scenario
Origin of information	Literature values (IDEAM & MINAMBIENTE, 2019). Reference Proposal for emissions from deforestation in Colombia for payment for REDD+ results under the UNFCCC)
Value applied	92 tC/ha
Justification of the choice of information or description of the procedures applied	Values from nationally accepted literature, from field inventories
Monitoring frequency	Permanent, revalidated every time the project is verified (triennial), maximum every 5 years.
Purpose of information	Quantify the carbon stored in each reservoir to determine the emissions avoided by the project.
Comments	Value for the Pacific biome

3.6.1.2. Deforestation

Data / Parameter	$= \left(\frac{1}{2} \times \frac{2}{1}\right) \times 100$
Unit of measurement	Hectares
Description	Puyravaud formula (2003) for calculating the deforestation rate in the baseline
Origin of information	Result of the application of the formula with the historical deforestation data of the project
Justification of the choice of information or description of the procedures applied	Results of the analysis of section 6.7.1 of the M/UT-REDD+ 1.2 CERCARBONO methodology
Monitoring frequency	Permanent, revalidated every time the project is verified (triennial), maximum every 5 years.
Purpose of information	Determine the deforestation rate in the project's baseline scenario
Comments	

Data / Parameter	$_{,y}$
Unit of measurement	Hectares

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Description	Annual deforested area in the baseline scenario for the project area and the potential and leakage management area
Origin of information	Geoprocessing based on the Hansen *et al.* model. (2010), Hansen *et al.* (2013)
Justification of the choice of information or description of the procedures applied	Results of the analysis of section 6.7.1 of the M/UT-REDD+ 1.2 CERCARBONO methodology
Monitoring frequency	Permanent, revalidated every time the project is verified (triennial), maximum every 5 years.
Purpose of information	Determine the project baseline scenario
Comments	

Data / Parameter	
Unit of measurement	tCO2e/ha
Description	Emission factor of the forests present in the project area.
Origin of information	Monitoring in the project area
Justification of the choice of information or description of the procedures applied	The source of the information is local to the project, following the IPCC guidelines (Tier 3), which is considered the most accurate method to reduce project uncertainty.
Monitoring frequency	
Purpose of information	Determine Baseline emissions, as well as emissions reduced by the project.
Comments	

Data / Parameter	
Unit of measurement	tCO2e
Description	Underground biomass emission factor
Origin of information	Plots established in the project area with information processing in accordance with MINAMBIENTE & IDEAM, 2019.
Justification of the choice of information or description of the procedures applied	Determination of section 6.9.1 of the M/UT-REDD+ methodology 1.2 CERCARBON.
Monitoring frequency	Permanent, revalidated every time the project is verified (triennial), maximum every 5 years
Purpose of information	Determine emissions in the line scenario base and during the monitored period
Comments	

Data / Parameter	
Unit of measurement	tCO2e

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Description	Organic carbon emission factor for the project area
Origin of information	Literature values (MINAMBIENTE & IDEAM, 2019. Reference proposal for emissions from deforestation in Colombia for payment for REDD+ results under the UNFCCC)
Justification of the choice of information or dis-description of the procedures applied	Values from nationally accepted literature, which come from field inventories
Monitoring frequency	Permanent, revalidated every time the project is verified (triennial), maximum every 5 years
Purpose of information	Constant used to calculate the carbon equivalent (tCO2e)
Comments	Value for the Pacific biome

Data / Parameter	2
Unit of measurement	tCO2e
Description	Annual emission due to deforestation in the scenario without project in the baseline
Origin of information	Processing of spatial information and emission factor.
Justification of the choice of information or description of the procedures applied	Results of the analysis of section 6.9.1. of the M/UT-REDD+ 1.2 CERCARBONO methodology
Monitoring frequency	Permanent, revalidated every time the project is verified (triennial), maximum every 5 years.
Purpose of information	Determine the project baseline
Comments	

Data / Parameter	2
Unit of measurement	tCO2e
Description	Annual emissions from avoided deforestation in the scenario with project (Ex-Ante)
Origin of information	Processing of spatial information and emission factor.
Justification of the choice of information or description of the procedures applied	Results of the analysis of section 7.9.1 of the M/UT-REDD+ 1.2 CERCARBONO methodology
Monitoring frequency	Permanent, revalidated every time the project is verified (triennial), maximum every 5 years.
Purpose of information	Determine the project baseline
Comments	

Data / Parameter	2
Unit of measurement	tCO2e

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Description	Annual emission from deforestation in the baseline scenario in the Potential Leakage Area area
Origin of information	Processing of spatial information and emission factor.
Justification of the choice of information or description of the procedures applied	Results of the analysis of section 6.9.1 of the M/UT-REDD+01 CERCARBONO methodology
Monitoring frequency	Permanent, revalidated every time the project is verified (triennial), maximum every 5 years.
Purpose of information	Determine the project baseline
Comments	

Data / Parameter	
Unit of measurement	tCO2e
Description	Emissions from deforestation avoided due to the implementation of the project Processing of spatial
Origin of information	information and the emission factor.
Justification of the choice of information or description of the procedures applied	Results of the analysis of section 8.1 of the M/UT-REDD+ 1.2 CERCARBONO methodology
Monitoring frequency	Every time the project is verified (triennial), maximum every 5 years.
Purpose of information	Identify emissions reduced by avoided deforestation in the project area
Comments	

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3.6.1.3. Degradation

Data / Parameter	
Unit of measurement	Hectares
Description	Annual area degraded in a primary and secondary manner in the baseline scenario, for the reference region and potential and management area of Fu-gas
Origin of information	Geoprocessing of spatial information with *Landscap Fragmentation Tool* in Non-Forest Forest
Justification of the choice of information or description of the procedures applied	Results of the analysis of section 6.9.2 of the M/UT-REDD+ 1.2 CERCARBONO methodology
Monitoring frequency	Permanent, revalidated every time the project is verified (triennial), maximum every 5 years.
Purpose of information	Determine the project baseline
Comments	

Data / Parameter	
Unit of measurement	tCO2e
Description	Emission factor for aerial biomass and dead wood for the primary and secondary degradation area
Origin of information	Plots established in the project area with information processing according to Armenteras *et al.* (2016).
Justification of the choice of information or dis-description of the procedures applied	Result of the interpretation of biomass reduction ranges in degradation states and the analysis of section 6.4.2 of the M/UT-REDD+ 1.2 CERCARBONO methodology.
Monitoring frequency	Permanent, revalidated every time the project is verified (triennial), maximum every 5 years
Purpose of information	Determine emissions in the line scenario base and monitored period
Comments	

Data / Parameter	
Unit of measurement	tCO2e

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Description	Emission factor of underground biomass for the primary and secondary degradation area
Origin of information	Plots established in the project area with information processing according to Ramírez *et al.* (2018) & Armenteras *et al.* (2016).
Justification of the choice of information or dis-description of the procedures applied	Result of the interpretation of biomass reduction ranges in degradation states and the analysis of section 6.4.2 of the M/ UT-REDD+ 1.2 CERCARBONO methodology.
Monitoring frequency	Permanent, revalidated every time the project is verified (triennial), maximum every 5 years
Purpose of information	Determine emissions in the line scenario base and in the monitored period
Comments	

Data / Parameter	
Unit of measurement	tCO2e
Description	Organic carbon emission factor for primary and secondary degradation area
Origin of information	Literature values (MINAMBIENTE & IDEAM, 2019. Reference proposal for emissions from deforestation in Colombia for payment for REDD+ results under the UNFCCC)
Justification of the choice of information or description of the procedures applied	Values from nationally accepted literature, which come from field inventories
Monitoring frequency	Permanent, revalidated every time the project is verified (triennial), maximum every 5 years
Purpose of information	Constant used to calculate the carbon equivalent (tCO2e)
Comments	Value for the Pacific biome

Data / Parameter	2
Unit of measurement	tCO2e
Description	Annual emission due to degradation in the scenario without baseline project
Origin of information	Processing of spatial information and emission factor.
Justification of the choice of information or description of the procedures applied	Results of the analysis of section 6.9.2. of the M/UT-REDD+ 1.2 CERCARBONO methodology
Monitoring frequency	Permanent, revalidated every time the project is verified (triennial), maximum every 5 years.
Purpose of information	Determine the project baseline
Comments	

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Data / Parameter	2
Unit of measurement	tCO2e
Description	Annual degradation emissions in the scenario with project, ExAnte
Origin of information	Processing of spatial information and emission factor.
Justification of the choice of information or description of the procedures applied	Results of the analysis of section 7.9.2 of the M/UT-REDD+ 1.2 CERCARBONO methodology
Monitoring frequency	Permanent, revalidated every time the project is verified (triennial), maximum every 5 years.
Purpose of information	Determine the project baseline
Comments	

Data / Parameter	2
Unit of measurement	tCO2e
Description	Annual emission degradation in the baseline scenario of the Potential Leakage Area
Origin of information	Processing of spatial information and emission factor.
Justification of the choice of information or description of the procedures applied	Results of the analysis of section 7.10 of the M/UT-REDD+01 CERCARBONO methodology
Monitoring frequency	Permanent, revalidated every time the project is verified (triennial), maximum every 5 years.
Purpose of information	Determine the project baseline
Comments	

Data / Parameter	
Unit of measurement	tCO2e
Description	Emissions due to degradation avoided by the implementation of the project in the ExPost scenario Processing of spatial
Origin of information	information and the emission factor.
Justification of the choice of information or description of the procedures applied	Results of the analysis of section 6.10.2., 7.9.2. and 8.10 of the M/UT-REDD+ 1.2 CERCAR-BONO methodology
Monitoring frequency	Every time the project is verified (triennial), maximum every 5 years.
Purpose of information	Identify the actual emissions of the project from the start date
Comments	

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3.6.2. Monitored data and parameters

The data and objective monitoring parameters for the initiative are presented below.

3.6.2.1. General

This subchapter presents the parameters associated with monitoring the initiative in its general aspects.

Data / Parameter	Deforested and degraded area period 2017 - final year verified
Unit of measurement	Hectares
Description	Total project area according to the geographic information (GIS) of the formulation.
Origin of information	Review of forest limits in the project area, vehicle routes and coverage control points
Monitoring methods	Global Positioning System (GPS)
Monitoring frequency	Every time the project is verified (triennial), maximum every 5 years.
Monitoring Frequency	At the beginning of project socialization, during monitoring visits, during validation and each verification
Purpose of information	Monitor project limits

3.6.2.2. Deforestation

This subchapter presents the parameters related to monitoring deforestation associated with the limit defined for the initiative.

Data / Parameter	,ÿ
Unit of measurement	Hectares
Description	Annual deforested area in the scenario with project, for project area.
Origin of information	Geoprocessing of satellite images (Forest - Non-Forest)
Monitoring methods	Results of the analysis of section 13.6.1 of the M/UT-REDD+ 1.2 CERCARBONO methodology
Monitoring frequency	Every time the project is verified (triennial), maximum every 5 years.
Purpose of information	Determine the scenario monitored with the project

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Comments	

Data / Parameter	2
Unit of measurement	tCO2e
Description	Annual emission due to deforestation in the scenario with the project.
Origin of information	Processing of spatial information and emission factor.
Monitoring methods	Results of the analysis of section 13.6.1 of the M/UT-REDD+ 1.2 CERCARBONO methodology
Monitoring frequency	Every time the project is verified (triennial), maximum every 5 years.
Purpose of information	Identify the actual emissions of the project annually
Comments	

Data / Parameter	
Unit	tCO2e
Description	Emissions from deforestation avoided due to the implementation of the project.
Origin of information	Processing of spatial information and emission factor.
Monitoring methods	Results of the analysis of section 13.6.1 of the M/UT-REDD+ 1.2 CERCARBONO methodology
Monitoring frequency	Every time the project is verified (triennial), maximum every 5 years.
Purpose of information	Identify the emissions reductions generated by the project
Comments	

3.6.2.3. Degradation

This subchapter presents the parameters related to monitoring the degradation associated with the limit defined for the initiative.

Data / Parameter	
Unit of measurement	Hectares
Description	Annual area degraded in a primary and secondary manner in the scenario with project, for project area and potential and leak management area, Ex-Post

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Origin of information	Geoprocessing of spatial information with *Landscap Fragmentation Tool* from Forest No Forest
Monitoring methods	Results of the analysis of section 13.6.2 of the M/UT-REDD+ 1.2 CERCARBONO methodology
Monitoring frequency	Every time the project is verified (triennial), maximum every 5 years.
Purpose of information	Determine the scenario monitored with the project
Comments	

Data / Parameter	
Unit of measurement	tCO2e
Description	Annual emission in the Potential Leak Area during the monitoring period
Origin of information	Processing of spatial information and emission factor.
Monitoring methods	Results of the analysis of section 13.6.2 of the M/UT-REDD+ 1.2 CERCARBONO methodology
Monitoring frequency	Every time the project is verified (triennial), maximum every 5 years.
Purpose of information	Identify the actual emissions of the project from the start date
Comments	

Data / Parameter	2
Unit of measurement	tCO2e
Description	Annual emission due to degradation in the scenario with project, Ex-Post
Origin of information	Processing of spatial information and emission factor.
Monitoring methods	Results of the analysis of section 13.6.2 of the M/UT-REDD+ 1.2 CERCARBONO methodology
Monitoring frequency	Every time the project is verified (triennial), maximum every 5 years.
Purpose of information	Identify the actual emissions of the project from the start date
Comments	

Data / Parameter	
Unit	tCO2e
Description	Emissions from degradation avoided due to the implementation of the project in the Ex-Post scenario

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Origin of information	Processing of spatial information and emission factor.
Monitoring methods	Results of the analysis of section 13.6.2 of the M/UT-REDD+ 1.2 CERCARBONO methodology
Monitoring frequency	Every time the project is verified (triennial), maximum every 5 years.
Purpose of information	Identify effective project mitigations from the start date
Comments	

3.6.2.4. Leak management area

This subchapter presents the parameters associated with monitoring the leak management area related to the project limit defined for the initiative.

Data / Parameter	Area involved in leak management
Unit	Hectares
Description	Areas with activities
Origin of information	Local or official information sources from the CAR's with jurisdiction in the area.
Monitoring methods	Geoprocessing according to local or official information
Monitoring frequency	Every time the project is verified (triennial), maximum every 5 years.
Purpose of information	Identify effective fuc- tion control activities gas.
Comments	

Data / Parameter	Units established for restoration
Unit	Number
Description	Mangrove plots under permanent monitoring
Origin of information	Local or official CAR information sources with jurisdiction in the area.
Monitoring methods	Geoprocessing according to local or official information and local data collection
Monitoring frequency	Each time the project is verified (triennial), maximum every 5 years.
Purpose of information	Identify effective fuc- tion control activities gas.
Comments	

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4. Legal and documentary aspects

This chapter presents the legal, regulatory and documentary aspects related to the PAZcífico Sur REDD+ project.

4.1. Legal requirements

In accordance with the current regulations that govern initiatives to reduce emissions from deforestation and forest degradation, the main laws, statutes and relevant local, regional and national regulatory frameworks that cover the project are described below. .

4.1.1. Land law and use

The right and use of the land in the project is governed by the provisions of Law 70 of 1993, which, according to Article **1 ,** aims to recognize the black communities that have been occupying vacant lands in rural riverside areas. of the rivers of the Pacific Basin, in accordance with their traditional production practices, the right to collective property; based on the following four principles: recognition and protection of ethnic and cultural diversity and the right to equality of all cultures that make up Colombian nationality, respect for the integrality and dignity of the cultural life of black communities, participation of black communities and their organizations without detriment to their autonomy, in the decisions that affect them and in those of the entire Nation on an equal footing, in accordance with the law and the protection of the environment, taking into account the relationships established by black communities with nature. -rality.

Land ownership is described in the *Land Tenure chapter,* which is in accordance with the regulations that regulate the assignment of land to these community councils. The REDD+ PAZcífico Sur project links the community councils of Farmers of Patía Grande, Alto Mira y Frontera, Catangueros, El Progreso, Imbilpí del Carmen, Integration of Telembí, Friendship, Helping Hands of Patía Grande, The Memory of Our Ancestors of the Mexican River , Unión Patía Viejo, Rescate las varas, Río Gualajo, Sweet Plank, Salt Plank, Union of Isagualpi basins, Union of the Chagüí River, Unión Río Rosario and Unión Río Caunapi, which fully comply with article 5 of the law 70 of 1993, which is defined as follows:

> ***"ARTICLE 5°.*** *To receive the allocable lands as collective property, each community will form a Community Council as a form of internal administration, whose requirements will be determined by the regulations issued by the National Government.*

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> *In addition to those provided for in the regulations, the functions of the Community Councils are: to delimit and assign areas within the awarded lands; ensure the conservation and protection of collective property rights, the preservation of cultural identity, the use and conservation of natural resources; "choose the legal representative of the respective community as a legal entity, and act as friendly mediators in internal conflicts that are feasible for conciliation."*

In accordance with the approval of INCORA, it is found that all community councils have the necessary normative regulations to obtain the titling of the territory, which can be evidenced by each of the resolutions.

4.1.2. REDD+ in the Colombian National context

Colombia is involved in the agreement of the Amazon Cooperation Treaty Organization, established in Law 74 of 1979, which promotes the integrated development of the Amazon basin, to improve the quality of life of its inhabitants and the conservation and rational use of its resources.

In addition, there is the National Development Plan 2010-2014, which seeks to implement the National Climate Change Policy, creating the National Climate Change System. By 2014, the country is involved and adheres to what is described in the New York Declaration on Forests, which seeks to reduce the loss of natural forests by half by 2020, and concentrate efforts to achieve the goal of net deforestation. zero by 2030 globally.

The sustainable development objectives (SDG), in accordance with what is described in Law 1753 of 2015, in its compliance with SDG 13, which is based on the adoption of urgent measures to combat climate change, where the control of deforestation is a priority, Colombia, in accordance with Presidential Directive No. 10 of 2018, established the mechanisms for compliance with the orders issued in the ruling to control deforestation in the Amazon, and in turn, Directive No. 004 of 2019 of the Attorney General's Office that established the provisions to effectively intervene in the drivers of deforestation and impact on the natural resources that make up the heritage of the Amazon (National Planning Department. 2020).

Additionally, in 2015, Colombia with the governments of Germany, Norway and the United Kingdom United with the objective of contributing to the reduction of GHG due to deforestation in the country and

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also reduce global emissions, it subscribed to two mechanisms for payment of results framed in the REDD+ initiative, which are the Amazon/REM Vision Program at the subnational level and the Joint Declaration of Intent (DCI) at the national level. The latter was renewed in 2019 within the framework of the COP 25 Climate Summit in recognition of the significant reduction in emissions due to deforestation in the Amazon in the period 2013-2016.

Colombia is a member country of the World Bank and since 2013 it has been part of the UN-REDD+ system, which is a United Nations alliance with the objective of reducing emissions due to deforestation and forest degradation in developing countries. development, providing support to the REDD+ processes of each country, promoting the meaningful and informed participation of all relevant actors, including indigenous peoples and other communities that depend on forests, at the national and international level. In addition, since 2020 the country formally became a member of the OECD (Organization for Economic Cooperation and Development), which aims to achieve higher levels of equity, entrepreneurship and productivity, pillars of the 2018 National Development Plan. -2022.

4.1.3. Decrees and Laws

Table 59 presents the regulatory and legislative instruments related to the PAZcífico Sur REDD+ project.

Table 59. Regulatory and legislative instruments applicable to the PAZcífico Sur REDD+ project.

Legislation	Description
Decree 2372 of 2010	The National System of Protected Areas, the management categories that make it up and the general procedures related to it are regulated. By defining the zoning of protected areas and the categorization of them, you agree with the type of use established in the IUCN.
Law 1454 of 2011	By which organic regulations on territorial planning are issued and other provisions are modified.
Decree Law 3573 of 2011	That creates the National Environmental License Agency.
Decree 2041 of 2014	By which Title VIII of Law 99 of 1993 on environmental licenses is regulated.
Decree 1076 of 2015	Single Regulatory Decree on the Environment and Sustainable Development. To demonstrate that the project complies with the environmental restriction zones described in this decree of the Ministry of Environment and Sustainable Development (See Figure, on special protection areas such as RUNAP or National Forest Reserves).

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Legislation	Description
Decree 1397 of 2016 of the Ministry of Environment and Sustainable Development	By which the conditions are established for the assembly, installation and operation of areas of the national territory for the temporary location of members of armed organizations outside the law within the framework of a peace process.
Decree 870 of 2017	of the Ministry of Environment and Sustainable Development "By which guidelines are established for payment for environmental services."
Decree 893 of 2017	"By which Development Programs with a Territorial Approach are created: PDET" Which creates the PDET as an instrument of rural planning and management.
Decree 926 of 2017	Belonging to the Ministry of Finance and Public Credit that determines modifications with respect to matters related to the national Carbon tax.
Resolution 1447 of 2018	From the Ministry of Environment and Sustainable Development "By which the monitoring, reporting and verification system of mitigation actions at the national level referred to in article 175 of Law 1753 of 2015 is regulated, and other provisions are issued"
Resolution 831 of 2020	From the Ministry of Environment and Sustainable Development, which modifies Resolution 1447 of 2018 and other determinations are made. It is modified regarding issues of the OVV, RENARE and methodological issues concerning carbon credit projects.
CONPES 4021 of 2021	The so-called National Policy for the control of Deforestation and Sustainable Forest Management provides guidelines to substantially counteract deforestation and promote the sustainable management of forests. Proposes deforestation goals for the year 2030.

Source: (CO2CERO SAS, 2022)

Taking into account the multiple legislative context that involves the REDD+ initiative and projects, the current regulations at the national, regional and local level are presented as annexes, in folder 9_Environmental legislation .

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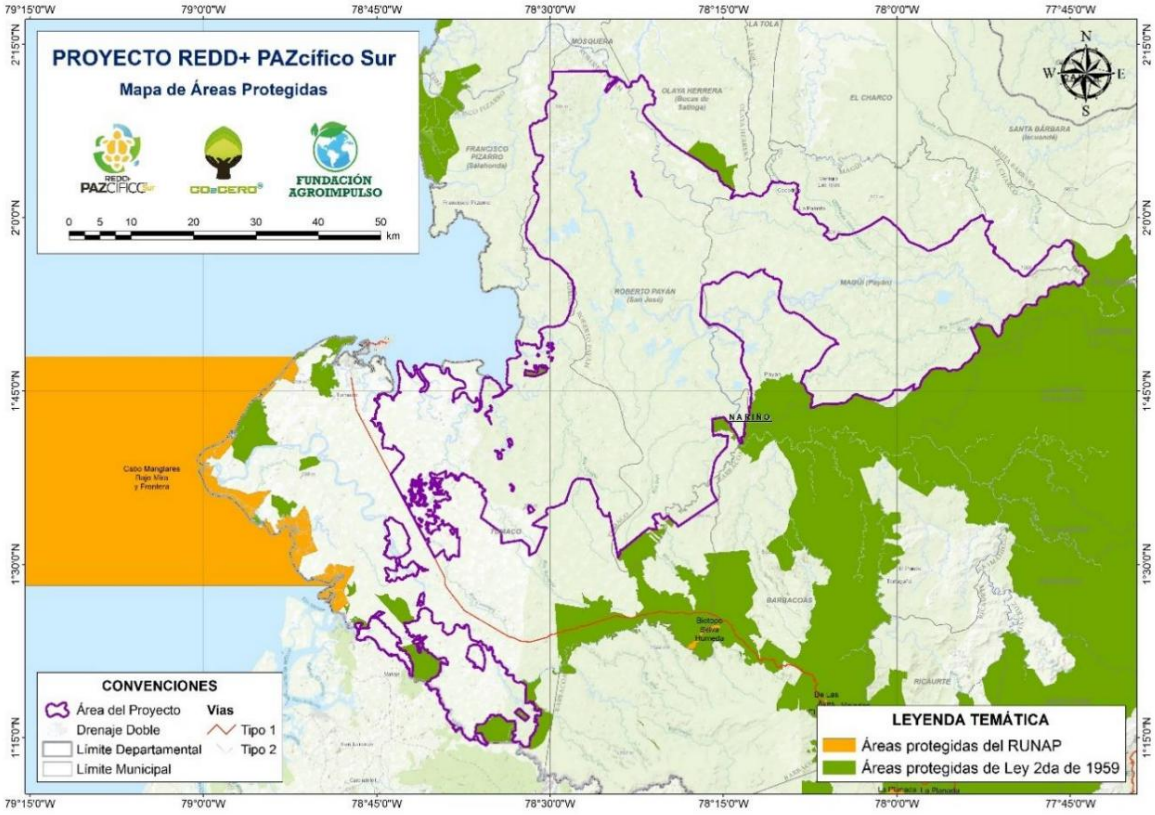


Figure 22. Map of environmental restriction zones.
Source: (CO2CERO SAS, 2022)11

4.1.4. Resolution 1447 of 2018

Next, the applicability of resolution 1447 of 2018 is established *"By which the monitoring, reporting and verification system of mitigation actions at the national level referred to in article 175 of Law 1753 of 2015 is regulated, and dictate other provisions."*

4.1.4.1. Project relevance

To verify the relevance of the REDD+ Pazcífico Sur project, it is found that the applicability is given in Section 2. *REDD+ Projects,* **Article 39,** on *the Use of Methodologies for the formulation and implementation of REDD+ Projects,* which determines the

[11] Created from ANLA (sf).

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characteristics of the appropriate methodologies for estimating avoided emissions in REDD+ initiatives; finding that the owner of the REDD+ project must use methodologies that meet the following characteristics:

1) Follow the guidelines dictated by the UNFCCC related to REDD+

In the context of the United Nations Framework Convention against climate change, it is established that the five (5) main activities of REDD+ are deforestation and forest degradation, conservation and increase of forest carbon stocks. ques and the sustainable management of these, covering the principles of reducing emissions, increasing capture rates and maintaining existing forest carbon reserves.

Due to the aforementioned, the objective of the project is established based on the reduction of emissions from deforestation, adding activities that allow the recognition of local communities, reducing pressures on forests and generating greater benefits in the socioeconomic and cultural components. In addition, the presence of forest cover in its highest percentage of tropical humid forest is taken into account and therefore it seeks to guide the conduct of community councils around the impacts they may have on the ecosystem, guaranteeing community participation to sustainable forest management, focusing the project on equity, sustainability and well-being of all actors involved in the initiative.

According to the particularities of each nation, to access payment for results of reduction of GHG emissions associated with deforestation, REDD+ projects must encompass four (4) essential design elements within their implementation:

A. **National Strategy or Action Plan:**

The Government is developing the National REDD+ Strategy (ENREDD+) that seeks to reduce CO2 emissions produced by deforestation and forest degradation and, in turn, conserve and improve the services provided by forests and the development of the communities they provide. they inhabit them or depend on them. In addition, it is involved in the design of the National Low Carbon Development Strategy, as part of the execution of the ENREDD+, the National Plan for Adaptation to Climate Change and a financial strategy to face disasters associated with climate change. matic.

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The REDD+ PAZcífico Sur project encompasses in its development the guidelines proposed by these strategies, which are linked to the basic principles of REDD+ proposed by the UNFCCC.

B. Forest surveillance and monitoring system:

There is the Forest and Carbon Monitoring System (SMByC), of the IDEAM, which allows knowing the changes in the surface and carbon content of the country's forests. This system complies with the provisions of the relevant decisions of the United Nations Framework Convention against Climate Change and the Intergovernmental Panel on Climate Change, through monitoring the surface covered by natural forest, the change on the surface covered by natural forest and carbon.

C. National reference level for removals or emissions:

The Forest and Carbon Monitoring System (SMByC) makes it possible to identify and establish national reference levels, a fundamental basis for defining international commitments to reduce emissions from deforestation and forest degradation (REDD+). .
Colombia presented its second reference level for forest emissions (NREF) before the UNFCCC, on a national scale, whose period covers the period from 2018 to 2022. The proposal is currently under technical evaluation and aims to generate the baseline to measure the performance of the implementation of the activities indicated in decision 1 of COP 16 regarding the Cancun agreements.
The REDD+ PAZcífico Sur project developed its estimates and projections of avoided GHG emissions based on the methodological reconstruction of this proposal that presents the updated NREF for Colombia.

D. **Safeguards Information System:**

It is found that the country has carried out participatory processes and dialogues with local communities that are part of the implementation of REDD+ projects, in accordance with the progress in the interpretation of the Cancun Safeguards and the commitments acquired at COP 16; thus publishing the second summary of the Social and Environmental Safeguards for REDD+ in Colombia that places emphasis on the National Safeguards System (SNS), in order to ensure that the actions to be developed in the territories are carried out correctly, reducing the risks social and environmental, ensuring respect for the rights of the communities.

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In this way, in Colombia, the seven (7) REDD+ safeguards of Cancún have been translated into 15 elements that must be applied to all REDD+ Policies, Actions and Measures that are implemented at the national, regional and local level, including the free, prior and informed consent (FPIC), respect for traditional knowledge, fair and equitable distribution of benefits, territorial rights, among others; on which the REDD+ PAZcífico Sur project is based.

2) Have a mechanism to manage the risk of leaks from GHG emissions reductions.

Leak risk management is carried out to prevent project activities from displacing other activities that generate emissions to other areas, creating the potential Leak area, in order to integrate conservation, restoration and community development activities in this area. The project has determined this mechanism through areas of Leakage Potential, based on a spatial diagnosis, analysis of deforestation factors, mobility and areas of special ecosystem importance surrounding the project, which determines its spatial distribution.

3) Have a mechanism to manage the risk of non-permanence of the ductions of GHG emissions and removals.

Taking into account cartographic sources obtained from official and academic entities such as the Ministry of Environment, IDEAM, IGAC and SIAC, in addition to having its own data regarding land coverage in the limits of the project that were the basis For the preparation of the projections of avoided GHG emissions and adjusted in accordance with the methodological reconstruction proposed for the reference level of forest emissions due to deforestation for this project, it is found that the error of the data obtained is estimated to have a uncertainty associated with the result caused by the dispersion of values.

In turn, the reference level uses the logistic function to propose the parameter of net emissions per natural region with the lowest uncertainty, which is complemented by the quantitative analysis of the mean square error and average percentage of absolute error. Additionally, in order to reduce the effect of events outside the project limits and the possible manifestation thereof, affecting the reduction of GHG emissions and reduction of projected emissions, the project developer under the characteristics of the certification program establishes a percentage deduction on the entire

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avoided GHG emissions quantified for the project, complying with the non-permanence risk management requirement and corresponding with the conservatism it requires.

4) Have a mechanism for managing uncertainty in the quantification of baseline and mitigation results

Based on **Article 40** of resolution 1447 of 2018, referring to the *maximum GHG mitigation potential for REDD+ projects, object of national accounting,* it is found that the methodological reconstruction in the project area through the consistent use of the variables of the reference level (NREF), reduces uncertainty. In addition, as of January 2020, the projects will comply with the most updated NREF.

Article **41 ,** *referring to the establishment of baselines for REDD+ projects,* defines that the owner of the REDD+ project will establish its baseline based on the most updated NREF that has been formally submitted by Colombia and evaluated by the UNFCCC. This condition is met through the projection of the deforestation dynamics in the project area and its corresponding reference region, based on the methodological reconstruction of the reference level proposal established for Colombia, where its consistency with the information is taken into account. provided by the SMByC, the definition of forest, emission factors by type of forest and methods for estimating emissions and projection over time (See 2.12 Project Eligibility). This analysis is developed more broadly in 2.13.4.2 Determination of the baseline scenario.

In accordance with **Article 42.** *Establishment of mitigation goals for REDD+ projects,* it is found that GHG mitigation goals must be established oriented to the Comprehensive Strategy for Control of Deforestation and Forest Control. The project makes a projection of its mitigation goals through an ex ante scenario, starting its projection in 2015, and assuming adequate behavior of the actors involved in reducing deforestation and degradation dynamics.
Article **43.** *Criteria for additionality in REDD+ Projects,* allows demonstrating the appropriate alternative for the net reduction of GHG emissions, which would not have occurred in the absence of the initiative and also allows us to know the differentiating factors that make the REDD+ project PEACE South Pacific. This analysis is presented in detail in 2.2 Additionality.

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4.2. PMCC Documentation

The REDD+ PAZcífico Sur project is structured so that it is possible to identify the supporting information for each of the different phases, understanding that the design of a carbon project involves the consolidation of a project idea to be socialized and agreed with The interested parties subsequently establish contracts to consolidate the initiative from transparency and legality with all the actors involved. Subsequently, the factors and methods that constitute the design of the PMCC are determined, at the same time, the variables to be monitored are evident, justifying the process to fulfill the objectives and the actions manifested in the territory to achieve them. All these processes are framed in transparency and consistency, both technical

as socio-environmental, for which all the documents that allow identifying the related sources and the means to support the PMCC are consolidated.

Folder *13_Information Management* establishes the necessary procedures to manage the documentation related to the initiative, the classification of information within the project folders and the contents involved in each of them. Additionally, each phase generates quality reviews based on the parameters established by the certification program, within which is the present document template to generate the appropriate results for the PMCC (See 8 Information Management). . In a complementary and mandatory manner, the project provides an evaluation process by a validation and verification body (OVV), which guarantees the quality of the information and is confronted with the requirements of the certification program and the program in version 4.1. used for this project; As a result of this process, validation and verification statements are obtained, along with conformity assessment reports.

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5. Safeguards

The following chapter describes the Cancún safeguards in accordance with the decisions of the UNFCCC, in addition, the co-benefits expressed as positive results generated by the PAZcífico Sur REDD+ Project on the social, environmental, economic and political context of the community councils are described. present.

Compliance with safeguards is based on community participation and consent processes, under the guidance of the Cancún safeguards determined in decision 1 of COP 16.

5.1. Effective participation

The participation of communities in the processes and activities that involve decision-making at the territorial level is essential to guarantee transparency, legitimacy and a sense of belonging in the development of the PAZcífico Sur REDD+ Project. Below, the spaces for participation, structures of administration and traceability of these during the structuring of the project.

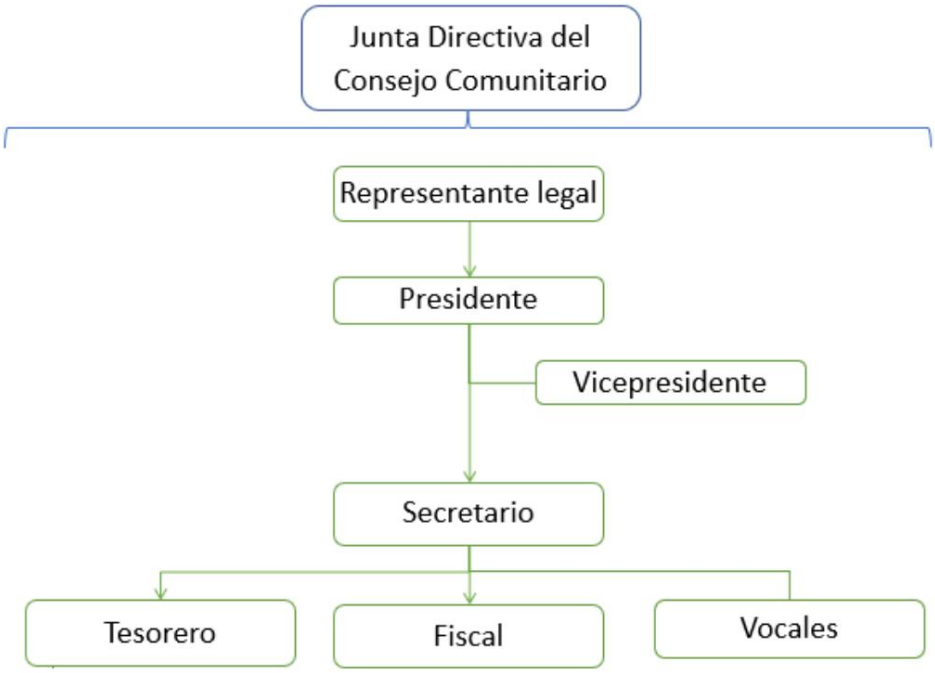


Illustration. Administrative structure of community councils.
Source: (Moreno, 2016)

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In territorial terms, the administrative structure of the community councils is established at hierarchical levels, where decisions are approved at each of the levels. At the head of this, is the legal representative as the greatest authority for the final decision on the consulted processes, followed by the president and his respective vice-presidency, where the decisions are studied and refined by the secretary and the treasurer's perceptions, prosecutor and members. Each of the roles present in the administrative structure have been selected in a democratic manner and guaranteeing the participation of the majority of the inhabitants, from their different roles within the community (Illustration 11).

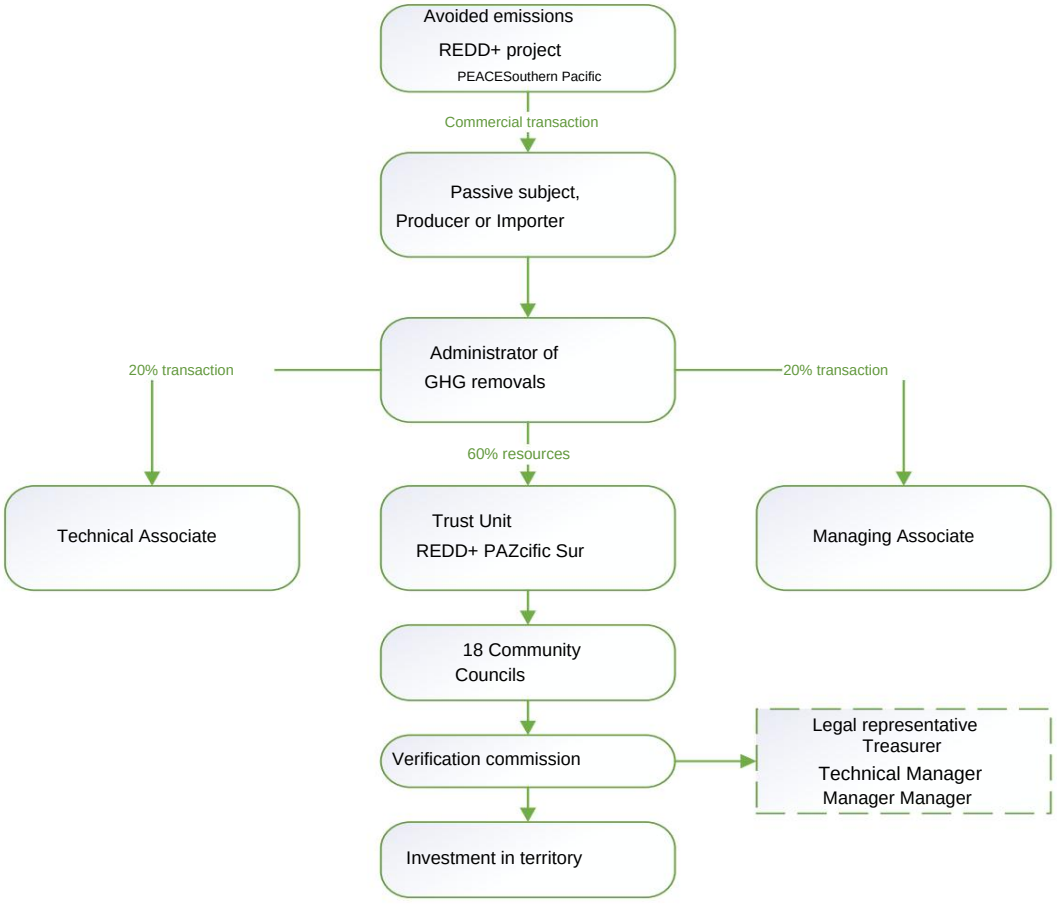


Illustration 11. Management of monetary resources in the REDD+ Pazcífico Sur project.

Source: (CO2CERO SAS, 2022)

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At the project level, the management of monetary resources involves a mixed structure, where there are internal and external actors to the different community councils, who are involved in the transactions carried out on the resources resulting from the sale of avoided emissions within the council. community, while the verification commission applies processes of validation and approval of the investments to be made by the community (Illustration 11). The decisions regarding the REDD+ initiative were made in person and guaranteeing the greatest participation. Support for assistance in these spaces is found in 11_Annexes *and complementary,* evidencing traceability to the consensus processes carried out.

The Agroimpulso Foundation has acquired the commitment to be the effective means of communication between parties external to the community council involved in the development of the initiative and its inhabitants; Within these communications and ratifying the ownership of the initiative by the community councils, they have the possibility of requesting at any time and in accordance with their needs, spaces for explanation and accountability, the latter being mandatory, a minimum of once a year. The elements required in the effective participation process of the certification program are described in *2_Cobeneficios/ REDD+ Benefit Distribution Annex PAZcífico Sur_V2.docx,* likewise, the consents and agreements signed by the community councils within their unanimous decision on participation in REDD+ projects, is found in *1_Agreements/ 02_Community Contract* and *11_Annexes and complementary/ 01_Calls/ 01_Consents.* Additionally, a PQRS mechanism is in the development phase through forms that will be delivered in person to a representative designated by each of the Community Councils, so that all people have access to it. Also, a virtual channel is being established through the email PQRS.REDD@co2cero.co, which will be managed directly by the company CO2cero SAS. Finally, it must be taken into account that these mechanisms must complete the development phase and subsequently be disseminated and approved through the participation and consensus of the entire community, before starting their implementation process.

5.2. AFOLU Specific Safeguards

The safeguards for this project have been described in accordance with the guidelines of decision 1 of COP 16, where the Cancún safeguards and the elements that support them are defined. The applicability of each one is determined based on the internal and external resources involved in the project, taking into account that institutional aspects are involved that largely depend on the government as an agent unrelated to the project.

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project, while social, cultural, environmental and territorial practices are mainly executed and controlled at the project level.

Safeguards Cancun	Safeguard elements	Applicability
A. In accordance with national forestry programs and agreements international	1. Correspondence with National legislation	• New York Declaration • Sustainable Development Goals (SDG) • Cancun Agreement • Paris Agreement • Convention for the Protection of the World Heritage dial, Cultural y Natural • Law 70 of 1993 • Comprehensive strategy to control Deforestation and Forest Management • National Plan for Adaptation to Climate Change • Convention on Biological Diversity (CBD) • International Convention on Endangered Species of Wild Fauna and Flora (CITES) • Law 1819 of 2016
B. Transparency and effectiveness of governance structures forestry	2. Transparency and Access to Information	In accordance with the responsibility established in the Agreement between Fundación Agroimpulso and the Community Councils, clause nine, the Fundación Agroimpulso as Managing Associate, must deliver the management and execution reports of the initiative, in quality and quantity in accordance with what is requested by the council. community, in addition, conclude the necessary agreements for its development with the community. Additionally, the company CO2CERO SAS is authorized to share everything related to the project document.
	3. Surrender Accounts	The management of monetary resources in the REDD+ PAZ-Cífico Sur project will be socialized by the Verification Commission, which is composed of the Legal Representative of the Community Councils, Treasurer, a person in charge of CO2CERO SAS and a person in charge of the Agroimpulso Foundation. , with which supports and related billing are evidenced. Finding that the information related to investments is public for the members of the community councils.
	4. Recognition of the structures of Forest governance	The community Councils are clearly assigned under the resolutions present in folder 1_Agreements, with a differentiated administrative structure (Illustration 23) through which the management of natural resources is carried out, understanding that these favor the development of some economic activities. Furthermore, Governance and participation is proposed as a line of investment, where

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Safeguards Cancun	Safeguard elements	Applicability
		They establish REDD+ activities such as Community Management and Governance, Consolidation of Community Participation Roundtables, and Citizen Control and Oversight.
	5. Strengthening capacities	They are strengthened through the REDD+ activities presented in the strategic line Government and society that is described in *2_Cobenefits/ REDD+ Activities PAZcífico Sur_V2,* which are training in leadership and good administrative practices and training in management of pre-suppositions. This strategic line focuses on the construction of society, based on principles such as equity, autonomy and participation, which will be strengthened through governance. The project designs strategies that guarantee compliance with these principles and favor the flow of information and decision-making, achieving transparent social models, capable of self-recognition and defense in different government spaces at regional and national scales. . Additionally, there is the REDD+ activity of the strategic line Sustainable economic growth, which seeks to strengthen productive capacities in accordance with community skills in traditional activities such as agriculture, fishing and use of resources in a sustainable manner.
C. Respect for knowledge traditional and rights of communities	6. Free, Prior and Informed Consent (FPIC)	For the REDD+ PAZcífico Sur project, socialization meetings are held by community council, where the largest percentage of people in the population must be involved, or evidence of the power of legal representatives to give a concept or make decisions on behalf of everyone . There, different activities are carried out where the objectives of the initiative are presented and a consensus must be obtained on the execution of the project. Furthermore, in the different phases the concept of the community must be taken into account, both in the distribution of benefits, as well as in the REDD+ activities to be developed, in the validation and verification of the initiative and in the socialization of the results. In folder *11_Annexes and complementary,* there are the support supports from the local community in the different spaces associated with the project, which include date, place of development and signature of the participants. Also I know

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Safeguards Cancun	Safeguard elements	Applicability
		They find the commitments of the community councils and the managing and technical associates.
	7. Respect for Traditional Knowledge	The REDD+ activities have been designed based on the traditional economic practices of the community councils, recognizing the importance of supporting the strengthening of traditional practices around the sustainable management of the forest, recognizing the work that they have historically carried out. with the flora and fauna of its territory and the development of its main economic activities such as fishing and agriculture.
	8. Distribution of benefits I will fail	In 2_Cobeneficios\Annex of Distribution of REDD+ benefits PAZcífico Sur_V2.docx, it is observed that the objective is to ratify the scope and responsibilities of each party, and the equitable distribution of resources is made visible, reducing phenomena such as corruption, diversion of resources and hoarding , achieving optimization of the benefits obtained. This is achieved through the agreements obtained with the community councils, where the investment lines and the general participation percentage are defined. The REDD+ PAZcífico Sur project agrees to grant 60% of the net emissions avoided within the project to the community councils, which are determined through a fiduciary figure and the remaining 40% will be distributed among the managing partner and technical.
	9. Territorial Rights	In all phases of the project, traditional knowledge systems and the visions of the territory of ethnic and local peoples and communities are recognized, respected and promoted, since internal regulations and the organizational structure of the community councils, generating spaces for dialogue and agreement in the design of the initiative.
D. Full and effective participation	10. Participation	The participation of communities in the processes and activities that involve decision-making at the territorial level is essential to guarantee transparency, legitimacy and a sense of belonging in the development of the PAZcífico Sur REDD+ Project, as evidenced in section 5.1 Participation . *effective tion,* which establishes the spaces for participation, administration structures and traceability of the same during the structuring of the project. To achieve the fair and equitable distribution of benefits, meetings and approaches are held with community councils, achieving full and effective participation of all actors involved in the initiative. in folder

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Safeguards Cancun	Safeguard elements	Applicability
		11_Annexes and complementary, there are assistance supports in the different spaces applied to the community in relation to the REDD+ project.
E. Conservation and benefits	11. Conservation of Forests and their biodiversity	Through the information obtained from different academic and own sources, it is possible to compile and analyze based on the types of ecosystems present in the project area, the characteristic coverage of the area and its floristic and faunal component, in order to identify the richness of Pacific species and their conservation status, in order to guide activities towards the sustainable use and conservation of natural resources. In addition, there are REDD+ activities focused on forest restoration, fauna management and conservation plan, monitoring of forest cover, training in vegetation monitoring, in Sustainable Forest Management and in Forest Conservation Strategies. Fauna and Flora.
	12. Provision of Environmental Goods and Services	A direct relationship is found between the benefits provided by ecosystems and community councils, observing a special interest in the conservation of ecosystem services as a source of supply, support, regulation and cultural services, on which people and that serve as a basis for the design of the initiative, in terms of the implementation of connectivity actions of forest fragments, sustainable production of timber and non-timber forest products, and water resource management.
F. Prevent reversal risks	13. Ordering Environmental and Territorial	Finally, the initiative ratifies the defense of territorial limits in order to generate recognition and appropriation of these, and the responsibility involved in possessing natural resources within its jurisdiction, giving way to the design of surveillance, control and defense strategies. thereof. Starting from a prospective model where the concept of planning is consolidated as a relevant tool within the territory, it will be possible to identify what, where and when, necessary to improve the quality of life of the population, directing them to a committed population. with its present and the well-being of future generations.
	14. Sec- Planning torial	An analysis of the regulatory, administrative and socioeconomic context allows the development of activities within the project that are aligned with the needs of different frames of reference. Thus finding the Environmental Legal Matrix, which describes the required context, at the international, national and local level.

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Safeguards Cancun	Safeguard elements	Applicability
G. Avoid displacement of emissions	15. Forest Control and Surveillance to avoid displacement interchangeably emissions	Through the analysis of the project area, the limits and potential areas of leakage are established, where it is proposed to carry out monitoring, control and surveillance of the actions that generate deforestation in order to prevent, manage and control the displacement of emissions caused by economic activities. Additionally, the reference region in which there may be a displacement of deforestation and degradation factors is established and these are identified through secondary and primary information.

Source: (CO2CERO SAS, 2022)

6. Consultation with interested parties

The REDD+ PAZcífico Sur project guarantees, in accordance with the Cancún safeguards, the flow of information, respect for culture and free, prior and informed consent.
In this way, the processes and activities used to achieve the consultation and approval processes within the territory are described below.

6.1. Project idea

The initial consolidation of the REDD+ project idea arose between the managing and technical partners (Fundación Agroimpulso and CO2CERO SAS) as a result of an analysis of the regulatory, legal and technical framework, which was necessary to guarantee that the project would provide benefits to the community. , would reduce GHG emissions and would be permanent for a minimum period of thirty (30) years. Guaranteeing a responsible and committed workflow, these two parties establish a temporary association contract (See *1_Agreements\01_Technical associate contract\Contrato_Agroimpulso_CO2CEROSAS.pdf),* where they commit according to their abilities to contribute to compliance and achievement of the objectives of the REDD+ initiative within the national territory, specifically the Pacific sector, involving eighteen (18) community councils.

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ILLUSTRATION 12 CONTRACTUAL COMMITMENT BETWEEN THE ASSOCIATED PARTIES FOR THE DEVELOPMENT OF PAZCI-FICO SUR (CO2CERO SAS AND AGROIMPULSO FOUNDATION).

Within this phase of communication between partners, the participation percentages related to management and technical application, payment mechanisms, transfer of benefits, general project objectives and certification program based on analysis of alternatives are defined. From this figure, the first direct communication channel of the project begins to be created, where the Agroimpulso Foundation generates a direct relationship with the community or whoever represents them to collect the necessary information on the design and structuring of The initiative, at the same time, this channel extends to the technical developer, consolidating it in a manner consistent with the certification program. The information channels designed in this phase are direct contact with a field visit, telephone calls and intermediation through workers from the Foundation and/or CO2CERO SAS.

6.2. First socialization

Once the essential elements of structuring the project and the possible benefits generated by the initiative have been consolidated, approaches are made to the communities in order to provide a framework of reference on the REDD+ initiatives, the influence on the mitigation of climate change , the conservation and improvement of living conditions
of community members, through nature-based solutions and payments for results. This first socialization aims to transfer to the community the project idea previously conceived by the managing and technical associate, evidencing the evaluation.

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of the project environment and viability after the monetary and non-monetary benefits of its execution have been perceived, additionally, demonstrating how the commitment to the territory continues and will be strengthened based on the project objectives.



ILLUSTRATION 13 SOCIALIZATIONS CARRIED OUT IN COMMUNITY COUNCIL OF PAZCÍFICO SUR.

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For this phase, personnel from the Agroimpulso Foundation were deployed to the territories, guaranteeing the greatest volume of participation in each community, granting it the representative character, in order to generate an internal discussion that could take place in later stages of the visit. the approval of the initiative within the territory, in the understanding of autonomy and respect for tradition in the decision-making of each community.

This development process as presented in TABLE **60** (See *11_Annexes and complementary\01_Calls\02_Socialization)*

TABLE 60 EXECUTION SCHEDULE OF PAZCÍFICO SUR SOCIALIZATIONS

Nº	Community Council	Minute date	Place
1	Farmers of Patía Grande	22/08/2021	Chimbuza Lagoon (Tumaco, Na-riño
		22/08/2021	Pumalde, Yacht, Remolino (Roberto Payan, Nariño)
		23/08/2021	Lemons (Roberto Payan, Nariño)
		23/08/2021	Chimbuza and Maque (Roberto Payan, Nariño)
		4/09/2021	Chimbuza Mouths
		29/01/2022	Vereda: The return (Tumaco-Nariño)
2	Alto Mira and Frontera	4/08/2021	Candelilla
		3/08/2021	Zone I Imbilpí Highway (Tumaco-Na-riño)
		6/08/2021	Zone III-Vereda El Bombo Unión Victoria (Tumaco-Nariño)
		7/08/2021	Zone V-Vereda Restrepo (Tumaco-Nariño)
3	Catangueros	20/08/2021	Trails: Pumbi las Lajas, Medio and Nerete Beach (Roberto Payan-Narino)
		21/08/2021	Panga, Guacuco, and Piri Lagoon (Roberto Payan, Nariño)
4	Progress	7/09/2021	Trails: Tamage, Pato, Papi la palma, Boca de papi, Papi la playa, Papi trinidad, Gallinazo, El cedro, Cáde, and Fatima (Roberto Payan, Nariño)
5	Imbilpí del Carmen	21/04/2022	Tumaco, Nariño

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Nº	Community Council	Minute date	Place
6	Telembí integration	24/08/2021	Trails: Palsapi, Chilbi Dorado, and La-guna de Parambi (Roberto Payan, Nariño)
		24/08/2021	Sidewalks: San Antonio Bocas de Tele- above, Piscaunde Roberto Payan, Nariño)
		25/08/2021	Trails: Gorgonal N°1, Gorgonal N°2, Palo Seco and Guabal (Roberto Payan, Nariño)
		25/08/2021	Trails: Loma linda and Mina la espe- bunk (Roberto Payan, Nariño)
		5/09/2021	San Antonio Boca del Telembi
7	Friendship	1/02/2022	Vereda: La Aurora (Magui Papayan- Nariño)
9	Mexican	29/01/2022	Return path (Tumaco-Nariño)
12	From the Gualajo River	17/09/2021	Paths: San Agustin, Barrio Colo-rado, Punta del Mango Guachire and Guabal (Tumaco, Nariño)
13	Sweet Plank	23/04/2022	Sidewalk: Sweet plank (Nariño)
14	Salted Plank	23/04/2022	Vereda: Pueblo Nuevo Tumaco (Na-riño)
16	Chagui River Union	19/11/2021	Town: Salisvi (Tumaco)
		20/11/2021	Pavement: Cuarazanga (Kidney Tobacco)
		21/11/2021	Sidewalk: The Mermaid (Tumaco Nariño)
		22/21/2021	Side: Las Mercedes (Tumaco Na-riño)
17	Union of the Rosario River	30/06/2021	Trujillo village (Tumaco Nariño)
		30/06/2021	Side: La quinta-candelo (Tumaco Nariño)
		1/07/2021	Vereda: Iscuande, Isla Grande, (Tu-maco Nariño)
		1/07/2021	Vereda: Santa Maria, Boscas de cua-napi (Tumaco Nariño)
		2/07/2021	Sidewalk: El coco, chapinar (Tumaco Nariño)
		2/07/2021	Path: Vuelta Larga (Tumaco Na-riño)
		2/07/2021	Town: San Francisco (Tumaco Na-riño)

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Nº	Community Council	Minute date	Place
		3/07/2021	Vereda:Ambipi (Tumaco Nariño)
		3/07/2021	Trail: Large current (Tumaco Nariño)
		4/07/2021	Trails: Peña de los Santos, cho-rrera (Tumaco Nariño)
18	Union at Cauna River	26/07/2021	Vereda El Retoño (Tumaco Nariño)
		26/07/2021	Vereda: New creation (Tumaco Na-riño)
		26/07/2021	Sidewalk: Two ravines (Tumaco Na-riño)
		27/07/2021	Sidewalk: Rest (Tumaco Na-riño)
		27/07/2021	Side: Alto Villa Rica (Tumaco Na-riño)
		27/07/2021	Zapotal (Tumaco Nariño)
		27/07/2021	Vereda: Bajo villa rica, and Lomerio (Tu-maco, Nariño)
		30/07/2021	Paths: Long Return and departure from the clevel (Tumaco Nariño)
		30/07/2021	Trails: La Brava, Cordura and Vuelta de los Villa Real (Tumaco Nariño)

SOURCE: AGROIMPULSO FOUNDATION (2022).

6.3. Establishment of agreements

Once this period has been granted for the communities to adapt to the REDD+ project model and be able to deliberate the possibility of establishing it within their territory, the approach is carried out to ratify the concepts related to the initiative, outline the development possibilities that will be generated and know the community's decision. The agreement is a contractual model that commits the communities to the project and the associated developers, with the managing partner being the guarantor of the process. This figure will ratify joint work, supported by technical, social teams and biodiversity experts, whose results depend mostly from the performance of communities in the execution of alternative and sustainable activities capable of reducing emissions from deforestation and degradation.

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ILLUSTRATION 14 CONSENT ASSEMBLY HELD IN THE REDD+ COMMUNITY COUNCIL SOUTH PACIFIC .

Additionally, it must present the mechanisms for the distribution of benefits, responsibilities and commitments of the parties, guaranteeing compliance with principles such as equality, equity and inclusion; In this same way, it is confirmed that the ownership of the reduced GHG emissions belongs to all community councils

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involved. The agreements for each of the community councils were developed at the times and places in Table 61.

Table 61. Date of signing of project management, presentation and execution agreement by Community Council.

N.°	Community Council	Legal representative	Location	Agreement date
1	Farmers of Patía Grande	Luis Herney Arroyo Prado	Roberto Payán	April 23, 2022
2	High view and border	Ricaurte Ocampo	Tumaco	October 20, 2021
3	Catangueros	Victor Alfonso Ordoñez Ortiz	Roberto Payán	May 28, 2021
4	Progress	Alexander Novarino Quiñones Castillo	Tumaco	May 29, 2021
5	Imbilpí del Carmen	Jose Mauro Dajome	Tumaco	April 22, 2022
6	Telembí integration	Pablo Elias Angulo Quiñones	Tumaco	May 29, 2021
7	Friendship	Daniel Cabezas Rodriguez	Tumaco	May 29, 2021
8	Helping hands from Patía Grande	Danilo Bienvenido Torres An-mess	Tumaco	May 29, 2021
9	The memory of our ancestors of the Mexican River	Evulo Baltasar Molano Castillo	Tumaco	January 29, 2022
10	Union Patía old	Edwin Ricardo Quiñonez Teno-rio	Tumaco	May 29, 2021
11	Rescue the sticks	Tito Stupid Grove	Tumaco	July 17, 2021
12	Gualajo River	Ivis Marina Arboleda Montaño	Tumaco	September 19, 2021
13	sweet plank	Jazmani Arboleda Preciado	Tumaco	April 23, 2022
14	salty plank	Dina Marcela Riascos Tello	Tumaco	April 23, 2022
15	Union of Isa-gualpi basins	Jaber Alirio Chillambo Preciado	Tumaco	May 29, 2021
16	Union of the Chagüí River	Olver Cordoba Guerrero	Tumaco	November 28, 2021
17	Rosario River Union	Irma Rosa Mosquera Mosquera	Tumaco	July 18, 2021
18	Union at Cauna River	Jain Jonifer Leather Valencia	Tumaco	August 14, 2021

Source: Agroimpulso Foundation (2022).

6.4. Analysis of deforestation and forest degradation factors

Understanding the importance of linking the communities in the design and structuring of the initiative, as well as in the definition of the specific objectives, according to the needs of each of them, the first territorial diagnosis is carried out in which they are identified. the economic, social and cultural activities that generate deforestation and forest degradation, their underlying causes and the effects on their well-being. With this input, the first process of acquiring direct information is consolidated to integrate the project document with a source of direct information, to the

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At the same time, it provides the developer with elements that help him establish action plans and specific implementation activities to reduce deforestation and forest degradation.



ILLUSTRATION 15 WORKSHOPS FOR IDENTIFICATION OF DEFORESTATION AND DEGRADATION FACTORS IN CONSEQUENTIAL REDD+ COMMUNITY JOBS PAZCÍFICO SUR.

The activity was developed in each of the community councils, through a participatory mechanism, where the communities formed focus groups according to their experience in the territory and their main economic activities. The applied methodology is described in 2.3 Analysis of deforestation and degradation factors.

As a result, the main causes and factors of deforestation are obtained, described based on its temporality, actor, frequency and current manifestation, together with

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a prospective analysis, which indicates where community interests and possible project activities are directed (See *11_Annexes and supplements\04_Resulta-dos_DriversDef_Deg).*

6.5. Socialization to environmental authorities

Environmental authorities are a fundamental external actor for the execution of the activity, taking into account the compatibility that their planning and territorial management instruments must have with the initiative, in order to unify objectives and design REDD+ activities consistent with the government objectives and regulatory entities. The socialization for environmental authorities is informative in nature and aims to make known the generalities of the project (objectives, area of influence, possible benefits obtained and project activities), in the same way, establish a new communication channel between you are with the actors directly involved in

the project, in order to create a favorable context from the different areas that involve the initiative (legal, regulatory, social, cultural and economic).



ILLUSTRATION 16 SOCIALIZATION TO ENVIRONMENTAL AUTHORITIES PRESENT IN THE LIMITS OF THE PROJECT.

The process took place on August 19, 2022, the meeting was led by the Agroimpulso Foundation and identified among those attending the legal representatives of the community councils, the managing partner of the initiative and municipal entities such as the mayor of the municipalities, governorate of Nariño, Rural Development Agency (ADR) and environmental authorities such as the Regional Autonomous Corporation of Nariño (See Auditoria_VV_1_2022\11_Annexes and complementary\01_Convocato-rias\02_Socialización\Socialización_AmbientalesAuthorities.pdf).

6.6. Initial productive characterization

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Strengthening the inputs that allow the precise design of the project activities and their investment axes based on the community requirements and the general objectives of these initiatives demarcated at an international level, a second field approach is carried out in all the community councils, with which information related to its socioeconomic dynamics is acquired, recognizing the current state of quality of life in basic aspects such as population, infrastructure, education and health, while identifying the usual economic dynamics within the territory. , in order to analyze focal points for improvement in terms of community growth, employment, inclusion and favoring development.

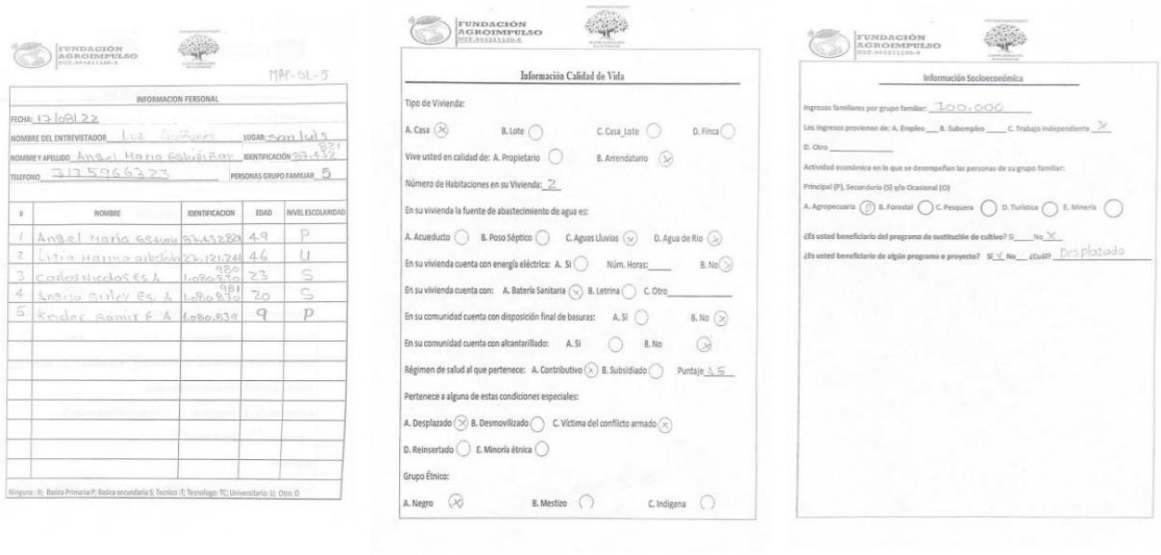


ILLUSTRATION 17 EXAMPLE MEETING FORMAT FOR SOCIOECONOMIC CHARACTERIZATION OF THE TERRITORY-RIO.

The activity was developed covering as much of the population and area as possible, conducting surveys with questions regarding inhabitants, living conditions, economic activities, sources of income and general state of life. This initiative starts from the community as a method of self-recognition and will be executed gradually, waiting for its culmination in upcoming phases of verification of the initiative (See Illustration 17). It should be taken into account that some community councils had communication difficulties due to disturbances in public order and mobility restrictions, which made it difficult to collect information on site.

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7. Co-benefits and contributions to the United Nations Sustainable Development Goals

The next chapter presents the contributions of the project in terms of co-benefits and sustainable development objectives.

7.1. Co-benefits

According to what is established in the certification program, co-benefits are the results derived from the implementation of activities related to the REDD+ PAZcífico Sur project, which positively influence the social, environmental, economic or political contexts; These have been presented with respect to the REDD+ activities to be developed in the PAZcífico Sur REDD+ project.

In *2_Cobeneficios\Monitoreo_CobeneficiosPAZcífico Sur.xlsx,* the expected cobenefits and the variable to be monitored are shown. Additionally, a description of the identified groups is made, highlighting that REDD+ activities seek to encompass multiple co-benefits so that the community and additional beneficiaries identify the value of the actions carried out at the territorial level.

Investment line- Co-benefits	Capacity building	Equity and inclusion	Improving community well-being	Territorial appropriation	Protection of territorial boundaries	Protection and restoration of ecosystems	Sustainable use of resources nature sauce THE	government finance and governance
Capacity building	x	x	x		x		X	x
Governance and participation	x	X	x	x	x			x
Ecosystem management	x	X	x		x	X	X	
Biodiversity monitoring	x		x		x	X	X	X
Environmental knowledge THE	x	X	X			X	X	X
Territory and limits	x	X	X	X	X			X

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Investment line- Co-benefits	Strengthening of capabilities	Equity and inclusion	Improved well-being of the community dad	Territorial appropriation	Boundary protection territorial	Protection and restoration of ecosystems	Sustainable use of resources nature sauce THE	government finance and governance
Population and socio-economic dynamics		x	x	x	x			
Sustainable production	x	x	x	x		x	x	x
Alternate uses- you from the forest what	x	x	x	x		x	x	
Strengthening productive capacities	x	x	x	x			x	

Table 62. Influence of the investment lines of the PAZcífico Sur REDD+ project on the identified co-benefit groups.

Source: (CO2CERO SAS, 2022)

7.1.1. Capacity building

Capacity development aims to facilitate and encourage processes of transformation or change, through which individuals, organizations and societies develop their abilities, both individually and collectively, to perform functions, solve problems, and establish and achieve their own goals (Hough , 2006). With this co-benefit

An improvement in technical capacity and strengthening of participation mechanisms at the territorial level is sought, in order to allow the communities of the community councils to deepen the management and care of the forest, the recognition of mechanisms to manage and protect biodiversity, and strengthen their capacities on REDD+, Sustainable Forest Management and Forest Restoration, on the latter the project involves content related to low-impact exploitation, silvicultural techniques for forest management and protection measures against external agents such as natural disasters, forest fires and pests.

The REDD+ PAZcífico Sur project has proposed spaces for strengthening capacities in the following strategic axes: Government and society, environment and biodiversity and sustainable economic growth; through the development of activities focused on leadership and good administrative practices, budget management, vegetation monitoring, sustainable forest management, fauna and flora conservation strategies, GAP and integrated pest management. These contents are taught globally for the community,

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taking into account the importance of including women, young people and older adults, in the transfer of information linked to REDD+ initiatives and sustainable development, due to the experience and perspective that the different roles within the community have in this regard, as well as as the impact generated by their participation in its execution.

7.1.2. Equity and inclusion

Equity is incorporated as part of social efforts and appears as a crucial issue for sustainable development, conservation and sustainable use of forests and REDD+. Through the gender category, according to (Ayala et al., 2016), the uses that women and men make of resources can be explained, due to the differentiated roles, activities and responsibilities that society assigns to them according to their sex (INMUJERES, 2008).

From this perspective, the study of the environment and sustainable development incorporates into the analysis the issue of social relations and the power system in which women are inserted, the relationship that women and men have in their family nucleus, and the patterns in the division of region and decision-making within domestic units, since this determines the access, use, ownership and control of environmental resources (Rodríguez et al., 2010).

This complex approach, in the REDD+ PAZcífico Sur project, is reflected during the development of the workshops, socializations and meetings held with the community councils. Additionally, REDD+ activities are established that allow the analysis of community participation, differentiated by age and gender in different participation spaces and in terms of their current housing status, such as: Consolidation of community participation tables, training in vegetation monitoring, training in Sustainable Forest Management, training in Fauna and Flora Conservation strategies, evaluation of the state of basic services (Infrastructure, health, food and education), training in GAP, in Integrated Pest Management and Improvement of tools and production materials

7.1.3. Improving community well-being

Improving the well-being of the community begins with the fulfillment of basic needs, which is essential to achieve self-management objectives from the short to the long term. Starting from a prospective model where the concept of planning is consolidated as a relevant tool within the territory, it will be possible to identify what, where and when, necessary to improve the quality of life of the population, guiding them to a population committed to their present and the well-being of generations

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future, through the evaluation of the state of basic services (Infrastructure, health, food and education), defense of territorial limits and population analysis and community risk factors.

Taking into account that the economy plays a transversal axis in development processes and good living, the design of economic alternatives that allow the community to strengthen, self-recognize and develop optimally, are essential to mitigate deforestation and forest degradation actions. , and resolve underlying causes of these phenomena, in addition, strengthening community skills in traditional activities such as agriculture, fishing and sustainable use of resources. The aforementioned will be developed through the execution of the REDD+ activities established in all strategic axes, since these are proposed with the objective that the community obtains monetary and non-monetary benefits, which benefit its well-being.

7.1.4. Territorial appropriation and protection of territorial limits

The increase in the value of forests and the expected benefits of REDD+ programs will undoubtedly generate more conflicts over the definition of boundaries between communities, or between local landowners and forest owners (IWGIA, 2010). Furthermore, the armed conflict in the country has left an enormous mark on the Colombian landscapes and ecosystems, which are another victim of the war, having to endure attacks on oil pipelines, fumigation of illicit crops with glyphosate, pollution and deforestation of the forests due to illegal mining, expansion of the agricultural frontier among other problems (Carillo, 2017).

Natural resources being a fundamental source of wealth, sustainability and subsistence, it is special for communities to create actions that conserve and protect them, in the same way, that makes it possible to increase their sense of belonging, recognizing the work that they have historically carried out. with the flora and fauna of its territory. This, through the management of ecosystems, monitoring of biodiversity, environmental knowledge, territory and limits and population and socioeconomic dynamics; through the implementation of REDD+ activities in community councils where it seeks to strengthen spaces for participation, training and decision-making and defines the importance of
their territory and the activities they carry out there, generating a territorial appropriation that allows the conservation of their culture, their biodiversity and a community development that can be perceived through the improvement of well-being. The project consolidates the defense of territorial limits as the necessary action plan to reduce the effects of external agents that contribute to deforestation and forest degradation in the country, within this

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activity, roles and strategies are designed coupled with the mobilization, protection and control of the territory from actions that threaten the integrity of ecosystems.

In addition, compliance with the Cancun Safeguards is taken into account, because the right and potential that local communities have to carry out sustainable management activities of forest resources is recognized and respected, recognizing that only with their full and Effectively, in this and other initiatives, it will be possible to conserve the forests and jungles, the environmental services and the enormous biological diversity of the country
(CONAFOR, 2014).

7.1.5. Protection and restoration of ecosystems

In the PAZcífico Sur REDD+ project area, there are strategic forest systems, such as natural forests, secondary forests and vegetation *(See 1.7.7 Ecosystems).*
In addition, the mangrove ecosystem is presented, which is highly productive because it provides numerous environmental goods and services to humanity (Atkinson et al., 2016; Valderrama et al, 2020), playing a vital role in the protection of coastal areas. in the face of erosion, storms and sea level rise associated with climate change (Rao et al.; Valderrama, et al, 2015). The carbon reserve is one of the most important environmental services offered by mangroves, since it contributes to minimizing the effects of climate change (Kauffman et al., 2013).

However, it is established that these areas present a high vulnerability due to multiple impacts, such as illicit crops, which is one of the major factors generating deforestation and degradation and, consequently, greater carbon emissions (see

Analysis of deforestation and degradation factors); Therefore, according to (Carillo, 2017), it is necessary to provide continuous training to the communities involved in the project, in order to generate a culture that is protective and knowledgeable about the ecosystem benefits that nature provides us. These potential benefits include promoting biodiversity conservation and ensuring the provision of ecosystem services (water regulation, timber production, erosion control and the supply of forest products). non-timber). Taking into account that the value of ecosystem resources and services must be maintained to meet the basic needs of the communities in the project area; In addition, the habitat of viable, abundant natural populations and their diversity must be maintained and threats to endemic, threatened and endangered species according to the IUCN red list *(See Vegetation)* must be reduced.

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Framed in these principles, the need to strengthen the community's capacities with theoretical and practical elements associated with management of forest covers and conservation of its ecological structure is determined, for which the project designs training that involves within the topic sustainable forestry use, silvicultural treatments, forest fire mitigation activities and integrated pest management in both subsistence crops and forest plantations. According to (Ministry of Environment, 2011), forest fires generate impacts on biodiversity, an increase in GHG emissions, water availability given the effects on the hydrological cycle after combustion and effects on the availability of nutrients. ground; This information is also transferred to the community councils, indicating the impact generated on their livelihoods and subsistence due to the implementation of negative activities such as burning.

7.1.6. Sustainable use of natural resources

Food security constitutes a fundamental axis within the healthy development of rural communities, the continuous provision of food and consumer goods is a fundamental part of their well-being and survival. The maximization of productive benefits can be achieved if the effects of degradation and deforestation on family production areas are reduced; To achieve effective restoration, it is important to combine community, technical and financial efforts, which ensure the viability of the activity and guarantee positive results in the future (Durrel, 2018).

One of the alternatives identified by the community to reduce the degradation of forest cover, without affecting the balance of its economic activities, has been the design and improvement of the productive chains carried out within the territory with common products from its market as an intervention. of new products. The community councils have worked on the management of actions and resources necessary to design sustainable production chains appropriate to internal needs, identifying potential opportunities for marketing, export, and improving product quality.

7.1.7. Governance and governability

Governance and governability are framed in the definition for REDD+ projects as political approaches and positive incentives for issues related to reducing emissions from deforestation and degradation (Petkova, 2011), as there is interference from multiple actors in the generation of these. scenarios, it is necessary to strengthen those groups in charge of leading the management and administration of the

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natural resources that allow it. The design of strategies for the conservation and protection of natural resources is framed in the need to isolate the territory from land uses harmful to the community good, such as illicit crops, livestock, illegal mining, extensive agriculture and infrastructure. big scale; However, to intervene in these protection spaces, an adequate political and government position is required, which establishes tools such as dialogue, autonomy and deliberation, the necessary arguments to launch actions on site, recognizing the importance of maintaining -have the territory intact and be oblivious to the entry of minority interest groups.

The community councils are willing to establish figures of authority and government within their territories in order to validate their traditions and institutions, before external agents of a public and private nature that can intervene positively or negatively in the territory. To this end, processes have been established to strengthen capacities in leadership and good administrative practices, budget management and community management and governance, at the territorial level, in order to generate awareness and consistency with the territorial rights conferred on the community councils.

7.2. Sustainable Development Goals (SDGs)

The sustainable development goals constitute the global goals for the eradication of poverty, protection of the planet and ensuring the well-being of humanity, within a maximum period of 7 years to demonstrate tangible results in 2030. Sustainability constitutes a fundamental axis in the implementation of actions that are transversal to the three pillars of these objectives, within which equity is proposed in social, environmental and economic terms, based on the identification of community needs. As an alternative appropriate to the national context, the needs of rural communities and the fulfillment of some of the SDGs, the REDD+ PAZcífico Sur initiative is proposed, highlighting conservation, community development and a sense of community as fundamental axes of its achievement. territorial belonging.

The activities designed for the PAZcífico Sur REDD+ Project contribute to the achievement of some sustainable development objectives, guaranteeing the quality and permanence of the population, which are complementary to the social, environmental and economic co-benefits created (See Co-benefits and folder 2_Co-benefits) . In accordance with the Land Use Sector of the project, contributions are generated that contribute to the fulfillment of 6 of the 15 objectives agreed upon by the UN. The objectives of Table 63 are associated with the REDD+ activities established for the REDD+ PAZcífico Sur project, linked to conservation and preservation actions of the project's forest, generating social benefits,

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economic and environmental with greater community impact, as well as sustainable production chains and the aforementioned capacity building.

In the folder 2_Cobeneficios\01_SDG Compliance, the development objective is presented sustainable, the SDG indicator, the indicator goal, the type of Activity, the contribution of the PMCC, the evidence and the causal relationship, based on the CERCARBONO Tool for SDG Report.

Table 63. REDD+ activities associated with compliance with the SDGs.

SDG 1 End of poverty: The productive projects developed with the REDD+ project seek to satisfy the internal demand for work, access to income and replacement of ineffective traditional productive activities. Also, management alternatives are proposed that generate new spaces for socio-economic development.
Activity 3.1. Evaluation of the state of basic services (infrastructure, health, food and education). Activity 4.1. Design of sustainable production chains Activity 4.3. Use of Non-Timber Forest Products (NTFP)
SDG 2 Zero Hunger: The REDD+ PAZcífico Sur project has designed sustainable production chains with the products that make up the communities' diets, in turn it has designed chains that maximize the benefits resulting from work, giving access to the purchase of food. Additionally, it proposes financial resource management alternatives to leverage new ventures with local products and sustainable agricultural activities.
Activity 4.1. Design of sustainable production chains Activity 4.2. Strengthening existing production chains Activity 4.3. Use of Non-Timber Forest Products (NTFP)
SDG 4 Quality education: Within the objectives of the initiative, the importance of strengthening the technical, economic and environmental capacities of communities is created, for which spaces for training, learning and knowledge transfer are created at the community level from actors external to the community as a mobilization of knowledge in an intercommunity manner.
Activity 1.1 Training in leadership and good administrative practices Activity 1.2 Training in budget management Activity 2.5 Training in vegetation monitoring Activity 2.6 Training in Sustainable Forest Management Activity 2.7 Training in Fauna and Flora Conservation Strategies Activity 4.4 GAP Training Activity 4.5 Training in Integrated Pest Management
SDG 5 Gender equality: The activities take into account the manifestation of women as a contribution to the social and economic development of communities, the processes carried out seek the involvement of women in different roles, ratifying their participation at multiple scales. . Both men and women are involved equally in the training processes, strengthening their capacities.
Activity 1.1. Training in leadership and good administrative practices Activity 1.2. Budget management training Activity 1.4. Consolidation of community participation tables

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Activity 2.4. Forest cover monitoring Activity 2.5. Training in vegetation monitoring Activity 2.6. Training in Sustainable Forest Management Activity 2.7. Training in Fauna and Flora Conservation Strategies Activity 4.4. GAP training Activity 4.5. Training in Integrated Pest Management Activity 4.6. Improvement of production tools and materials
SDG 6 Clean water and sanitation: The project has created some production chains based on the needs of drinking water within the different community councils, potentials have been identified according to the most used water sources and the populations most associated with them. The project also seeks to generate employment and centralize the availability of water at the territorial level.
Activity 3.1. Evaluation of the state of basic services (infrastructure, health, food and education) Activity 4.1. Design of sustainable production chains Activity 4.6. Improvement of production tools and materials
SDG 8 Decent work and economic growth: All activities seek to involve employment, equity and generation of benefits, directly creating a vision of development at the community level. Sustainable production chains and existing economic activities aim to be improved through the evaluation of their productivity, processes and goals achieved, strengthening and projecting their behavior for the future.
Activity 2.1. Commercial reforestation Activity 2.4. Forest cover monitoring Activity 4.1. Design of sustainable production chains Activity 4.2. Strengthening existing production chains Activity 4.3. Use of Non-Timber Forest Products (NTFP)
SDG 13 Climate Action: Processes to increase, conserve and improve existing carbon reservoirs have been generated, which favors carbon capture, the generation of microclimates and habitats for sensitive species, and the mitigation of adverse effects or phenomena. natural resources associated with tides and humid areas
Activity 2.1. Commercial reforestation Activity 2.2. Forest restoration Activity 2.3. Fauna management and conservation plan Activity 2.4. Forest cover monitoring Activity 2.5. Training in vegetation monitoring Activity 2.6. Training in Sustainable Forest Management Activity 2.7. Training in Fauna and Flora Conservation Strategies
SDG 15 Life of terrestrial ecosystems: The establishment of important, threatened and endangered species at the territorial level is encouraged, in the same way the ecosystems necessary to guarantee the permanence of associated animal species are verified.
Activity 2.2. Forest restoration Activity 2.3. Fauna management and conservation plan Activity 2.4. Forest cover monitoring Activity 2.5. Training in vegetation monitoring Activity 2.6. Training in Sustainable Forest Management Activity 2.7. Training in Fauna and Flora Conservation Strategies

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Activity 4.1. Design of sustainable production chains Activity 4.5. Training in Integrated Pest Management

Source: (CO2CERO SAS, 2022)

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8. Information management

The REDD+ PAZcífico Sur project manages its information under the guidelines established by the project developer and its corresponding information management and data management processes. In folder *13_Information Management,* the procedures for information management in Forest Carbon Projects, quality review and information management in REDD+ projects are presented, additionally, the Annex . *REDD_V3 documentary characterization* shows the structure of the folders that the project contains for its evaluation with its corresponding content. For each of the products and deliverables generated for this initiative, a quality review process has been provided, which depends on the sources that provide the information. In any case, the generator of said information filters its records to transfer appropriate information to the project requirement, for the current case, the Agroimpulso Foundation acquires primary information, coming from direct work with the communities and strategic actors at the territorial level. This information goes to a quality review by the technical associate, who performs verifications on the veracity, transparency and quality of the information generated, which will integrate the project document, monitoring report and complementary to its structuring.

All inputs obtained by external entities for the consolidation of the project document will be reviewed and verified under the quality parameters defined by the organization, as well as those determined by the certification programs, methodologies and validation-verification organizations. Finally, the products to be granted to the validation and verification body will be supervised by the project developer and the other project partners if required, their contents are compared against the certification program and the methodological rubrics, reducing the level of uncertainty. dumbre and improving consistency with it.

The information processed and generated for the projection and quantification of avoided GHG emissions in its baseline scenario, ex ante and ex post, has been managed within a level of uncertainty corresponding to the ISO 14064-2, 14064- 3 and 14065:2020, equivalent to 95% or higher; Likewise, the materiality threshold involved in the different calculations is 1% in accordance with the determination of the certification program, for PMCCs that generate 100 thousand tCO2e or greater annual average

(See *3_Carbono\FE REDD+ PAZCIFICO SUR.xlsx\Sampling error and 6_Project document\2_Bibliography\IDEAM_Protocol for national and subnational carbon estimation in Colombia.pdf), currently, the* REDD+ PAZcífico Sur project handles an error of

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sampling of 9.24%, once evaluated on the information collected in the forest inventory.

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10. Template reference and history

Type of PMCC to which it applies		This template applies to PMCC in the land use sector.
Version	**Date**	**Comments or changes**
1.0	22.12.2021	Initial version.

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11. Document history (PDD)

Version	Date	Comments or changes
1.0	01.04.2022	Initial version of the document.
2.0	18.10.2022	Version granted to the OVV
3.0	28.10.2022	Post-audit adjusted version

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Project validation and verification report REDD+ PAZcific Sur

PMCC Name	REDD+ PAZcífico Sur Project
Client	FARMERS OF PATIA GRANDE HIGH MIRA AND BORDER CATANGUEROS GUALAJO RIVER PROGRESS TELEMBI INTEGRATION FRIENDSHIP HELPING HANDS MEXICAN OLD PATIA RESCUE THE RODS ISAGUALPI BASIN UNION CHAGUI RIVER UNION UNION OF THE ROSARIO RIVER UNION RIVER CAUNA SWEET BOARD SALTY PLANK IMBILPI DEL CARMEN CO2Cero S.A.S Agroimpulso Foundation

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PMCC ID	114
Report ID	63716
Verification Ordinal	Validation and First verification
Audit criteria	CERCARBONO protocol for voluntary carbon certification V4.1 Tool for demonstrating additionality of climate change mitigation initiatives Cercarbono carbon reserve tool cercarbono tool to report contributions to ODS Resolution 1447 of the Ministry of Environment and Sustainable Development. Official Gazette of Colombia, Bogotá, Colombia, August 1, 2018. Resolution 0831 of the Ministry of Environment and Sustainable Development. Official Gazette of Colombia, Bogotá, Colombia, September 30, 2020. NTC-ISO 14064-3; 2020 “Greenhouse gases. Part 3: specification with guidance, for the validation and verification of greenhouse gas claims” NTC-ISO 14065; 2022 “Greenhouse Gases. Requirements for Organizations that carry out the validation and Verification of Greenhouse Gases, for use in accreditation or other forms of recognition”
Methodology	M/UT-REDD+ V 1.2 methodology for implementation of REDD+ projects consistent with national reference levels
PMCC Duration	01/01/2017 to 12/31/2036 (20 years)
Validated and verified area or processes	371,747.58 ha of total project area 335,845.67 ha of eligible project area

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Validated accreditation period		01/01/2017 to 12/31/2036 (20 years)
Verification period		01/01/2017 al 10/09/2022
Validation	Total removals of GHG generated in the accredited period	
	Net GHG removals generated in the credited period	
	Total reductions of emissions GHG generated in the credited period	10,738,354 total tCO2e generated in the crediting period.
	Net reductions of emissions GHG generated in the credited period	9,416,407 net tCO2e generated in the crediting period.
check	Total GHG removals generated in the verified period	
	Net removals of GHG generated in the verified period	
	Total reductions of emissions GHG generated in the verified period	3,984,445 tCO2e total generated in the verified monitoring period.
	Net emissions reductions GHG generated in the verified period	3,486,788 net tCO2e generated in the verified monitoring period.
Date of preparation of the validation and verification report		31/01/2023
Document prepared by		ICONTEC
Contact information		Colombian Institute of Technical Standards and Certification (ICONTEC) Carrera 37 No. 52-95 Bogotá - Colombia Telephone: +60 1 607 88 88. Extension 1381/1384 cliente@icontec.org

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Approved by	 Martha Ivon Broker Rodriguez-Valid-ation and Verification Manager
Work made by	Laura Maria García Murillo- Lead Auditor.

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Acronyms and acronyms

Insert the abbreviations and acronyms used in the report in alphabetical order.

GEI Greenhouse gases
NDC Nationally Determined Contributions
PDD Project Description Document
PMCC Climate Change Mitigation Program or Project
ODS Sustainable Development Goals
OVV Validation and Verification Body

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1. Introduction

1.1 Objective

Giving scope to what is established in the reference, which constitutes the requirements for the audit, its objectives are the following:

- Assess the likelihood that implementation of the planned GHG mitigation project will result in the increase in removals or reduction in GHG emissions claimed by the project proponent.

- Validate compliance with the regulatory requirements and those established by the program and the reference in order to determine the viability of the implementation of the GHG mitigation project.

- Verify compliance in the implementation of the mitigation project activities, including those associated with the methodology selected for the project.

- Evaluate and verify compliance with the principles of the monitoring, verification and reporting system necessary to comply with current legislation.

- Provide an independent third-party opinion that has evaluated the implementation and reduction/removal of GHG emissions of this project registered under CERCARBONO.

- Evaluate and verify compliance with the principles of the monitoring, verification and reporting system necessary to comply with current legislation.

- Provide confidence to different stakeholders in the quality of the project and its ability to achieve certified GHG reductions/removals.

1.2 Legal status of the OVV

The legal nature and Corporate Purpose of the COLOMBIAN INSTITUTE OF TECHNICAL STANDARDS AND ICONTEC CERTIFICATION, or ICONTEC or ICONTEC INTERNATIONAL, are defined in its Statutes. In the case of Colombia, ICONTEC is a private, non-profit legal entity, organized under Colombian laws, within the framework of the Civil Code and the Commercial Code as applicable and other pertinent provisions.

At the international level, subordinate companies are private, for-profit entities, organized under the laws and other relevant provisions that are applicable in the country in which they have been incorporated.

ICONTEC has its main headquarters in Bogotá DC and has the following Regional offices in Colombia: Center and South East, with main office in Bogotá DC; South West, with

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main office in Santiago de Cali; Caribe, with main office in Barranquilla; Antioquia, Chocó and Eje Cafetero, with main office in Medellín; and Oriente, with main office in Bucaramanga.

For international operations, ICONTEC has the International Commercial Management, in the city of Bogotá DC and with subsidiary offices located in Mexico, Guatemala, El Salvador, Honduras, Ecuador, Peru, Bolivia, Chile and commercial representations in Nicaragua, Costa Rica, Panama and the Dominican Republic.

The organizational structure of ICONTEC is established in the ORGANIZATIONAL CHARTER, it has a governing body, the Board of Directors, which appoints the Executive Director who ensures compliance with the statutes of the Institute, the regulations and the resolutions of the General Assembly of Affiliates and the Board of Directors. To fulfill these purposes, the Executive Director fulfills the functions indicated in the statutes and has the heads of Planning and Innovation, Organizational Management, Internal Control and the Technical Directorate, Standardization Directorate, Human Development Directorate, Directorate of Operations, Colombian and international Commercial Management, Administrative and Financial Management and Corporate Relations Management.

ICONTEC is a Designated Operational Entity (DOE), which has been accredited by the CDM Executive Board (code CDM-E-0024) to provide validation and verification services in GHG mitigation projects in the following sectors:

Alcance sectorial	Área Técnica
1. Industrias de la Energía (Fuentes renovables / no renovables	1.1 Generación de Energía térmica 1.2 Renovable
2. Distribución de la Energía	2.1 Distribución de Energía
3. Demanda de Energía	3.1 Demanda de Energía
7. Transporte	7.1 Transporte
13. Manejo y disposición de Desechos	13.1 Residuos sólidos y Aguas residuales 13.2 Manejo de residuos animales
14. Forestación y Reforestación	14.1 Forestación y Reforestación

Likewise, it has accreditation with ONAC (code 19-GEI-001) under the ISO 14065:2013 standard for the provision of validation and verification services for greenhouse gas (GHG) mitigation projects of the CERCARBONO Program in the following sectors:

- Afforestation and reforestation
- Energy industries (renewable / non-renewable sources)
- Energy demand
- Transport

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- Waste management and disposal

1.3 Impartiality of the OVV

In order to ensure impartiality, confidentiality, independence and management of conflict of interest that is required to act and make decisions in an objective, autonomous, suitable and reliable manner, ICONTEC has established a policy in these areas for the development of their activities. This policy considers all aspects of relations with interested parties, covering all activities not only associated with the provision of services, but also those of an operational and commercial nature. The policy can be consulted at the following email address: https://www.icontec.org/wp-con-tent/uploads/2019/12/POGE009POLTICADEIMPARCIALIDADCONFIDENCIALIDADINDEPEN-DENCIAYMANEJODELCONFLICTODEINTERESESVS00.pdf

Ethics is the fundamental basis of action and generation of trust for all ICONTEC services, and is based on developing all activities within parameters of honest, consistent, suitable, responsible and upright conduct and behavior. The Code of Ethics seeks to materialize the philosophy of ICONTEC, by establishing guiding criteria for actions based on the highest principles and values of all its members and interested parties. This Code is applied by all ICONTEC collaborators, bound by an employment contract, whether fixed-term or indefinite; for provision of services (contractors and subcontractors); and all those who, without a contractual relationship, have some type of relationship with ICONTEC, under any modality (members of the Board of Directors and other collegiate bodies). Contractors and subcontractors are considered to be those natural or legal persons who at any time provide their services to ICON-TEC or on its behalf.

As a mechanism to safeguard impartiality, the ICONTEC Board of Directors established an Impartiality Committee as an advisory body to address issues related to Impartiality Risk Management. This initiative responds to the interest of this collegiate body to ensure trust and transparency in the provision of validation and verification services. In the formation of the Committee, the participation of external and independent people is taken into account, who attend ad honorem and on their own behalf or on behalf of an entity associated with the interest groups related to the services provided by the institution.

ICONTEC has a procedure to identify, analyze, evaluate, treat, monitor and document risks related to impartiality and potential conflicts of interest in the provision of validation and verification services. When threats to impartiality are identified, ICONTEC documents and manages control activities to eliminate or minimize such threats.

To ensure that there is no conflict of interest to participate in conformity assessment activities, ICONTEC does not assign professionals who declare they have a conflict.

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of interest with the project participants, familiarity, affinity or consulting activities related to the services. If an ICONTEC professional has been part of such activities, this professional cannot provide services to said organization for at least two years following the completion of the activity. Before each GHG mitigation project validation and verification service, professionals must declare their possible conflicts of interest using the impartiality declaration format F-GV-119 IMPARTIALITY STATEMENT CDM-14065. As evidence of the validator's declaration / verifier of this PMCC that there is no conflict of interest.

1.4 Responsibilities covered by the OVV

ICONTEC is responsible and retains authority for its decisions concerning its validation and verification opinions, its certification statements of greenhouse gas mitigation projects or the declaration of its reductions/removals and its opinions on the GHG inventories. ICONTEC does not subcontract the decisions, opinions and statements of the conformity assessment.

ICONTEC evaluates the risks resulting from its validation and verification activities and has made adequate provisions to cover the legal responsibilities resulting from its operations in each of its fields of activity and geographical areas in which it operates.

In this sense, ICONTEC has taken out the contractual and extra-contractual civil liability insurance policy identified LRCG-74392504-1 with the insurer Zurich Colombia Se-guros SA in force until December 31, 2023 for an amount of up to COP $3,000,000,000. Likewise, it has a civil liability insurance policy for errors and omissions with the same insurer, policy EOFF-74371531-1 valid until December 31, 2023 with coverage up to USD $5,000,000.

1.5 Scope and spatial and temporal limits

Explain the scope of the validation and verification process, how it is carried out and the spatial and temporal limits covered.

The scope of the Project validation and verification audit was:

1. Validate the project activities, the monitoring plan, the GHG sources, sinks and/or deposits, the accreditation period, the baseline, the applied methodologies.

2. Verify the reductions and/or removals of GHG emissions, the implementation of the activities and their reported impact for the monitoring period between 01/01/2017 to 09/10/2022.

The PAZcífico Sur project is an initiative developed in eighteen (18) community councils in the department of Nariño, with the support of Fundación Agroimpulso and CO2CERO SAS, whose objective is the reduction of emissions due to deforestation and degradation

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forestry in 371,748 hectares over a period of twenty (20) years, through conservation, improvement and increase of carbon reservoir activities.

The project has a duration of twenty (20) years and began its implementation on 01/01/2017, where it is expected to reduce the emission of 9,416,407 tCO2e, that is, 470,820 tCO2e/year.

ICONTEC carries out its audits in accordance with its code of ethics, regulations and internal procedures to carry out validation and verification audits of GHG mitigation initiatives that in turn are consistent with the requirements established in the program. of corresponding GHG. Likewise, ICONTEC focuses on the identification of risks regarding the generation of GHG reductions/ removals, as well as their verification and mitigation during its audits.

Within the scope of the audit, the validation and verification of the following information was carried out:

(a) the limits of the GHG project and its baseline scenarios: They were 100% verified using the GIS database and in the site visit, with some observation points in the limits of some community councils. ICONTEC verified through GEO-DATABASE that the project boundaries are correctly determined and meet the eligibility requirements.

(b) physical infrastructure, activities, technologies and processes of the organization or GHG project: The evaluation carried out by the audit team was carried out in chapter 3.1 of this document.

GHG sources, sinks and/or reservoirs, where the project reservoirs are:

Reservoir	Scenario of base line	Scenario of project	Justification
Aerial Biomass (BA)	And	And	It is the main sink since it represents the changes in the carbon stock in the forest cover of the area of the project. Covers tree and non-tree woody biomass.
Underground biomass (BS)	And	And	The sink is included since it is a component for the calculation of the Emission Factor according to the methodological reconstruction of the National NREF.
dead wood (MM)	And	And	According to the methodology, this sink is taken into consideration, subject to conservation by the project actions.

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Leaf litter (HJ)	And	And	According to the methodology, this sink is taken into consideration, subject to conservation by the project actions.
Wood products-bles	No	No	Wood extraction is limited to occasional domestic use, this reservoir is not representative for the project, because sustainable forest management activity is not presented.
Soil Organic Carbon (SOC)	And	And	The sink is included since it is a component for the calculation of the Emission Factor according to the methodological reconstruction of the National NREF

The evaluation carried out by the audit team is found in more detail in chapter 3.2.7 of this document.

(a) types of GHG, for this project only CO2 was identified.
(b) Indicators related to the SDGs, the evaluation of these indicators is carried out in section 8 of this report.
(c) The monitoring plan and/or monitoring report: was evaluated in chapter 3 of this report.

Validation and verification is not intended to provide consulting services to the person responsible or owner of the GHG mitigation initiative. However, requests for clarification or requests for corrective action or requests for future action established in the verification exercise may have provided clarifications on the requirements to improve project implementation.

1.6 Term of commitment

The Agroimpulso foundation and CO2Cero SAS hired ICONTEC, as an accredited and authorized third party, to carry out the Validation (01/01/2017 to 12/31/2036) and the first Verification (01/01/2017 to 10/10). 09/2022) of the Reduction of Greenhouse Gas (GHG) emissions from the REDD+ PAZcifico Sur project under the criteria of the CERCAR-BONO program; whose results are included in this report.

1.7 Level of assurance and materiality

The sources of information used were considered reliable, these are:

- Validation and verification reports
- Monitoring report

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- Interviews with the different actors in the implementation of the GHG mitigation initiative
- Documentary review of primary sources
- Documentary review of secondary sources of information for confirmation.

Through the audit process, ICONTEC ensures that the GHG Mitigation Project complies with the REDD+ Methodology for the execution of REDD+ projects consistent with the reference levels presented by the UNFCCC. Version 1.2 of 07/02/2022, the CERCARBONO tool for demonstrating the additionality of climate change mitigation initiatives. Version 2.0.1 of 08/05/2022, the CERCARBONO guidelines to estimate the carbon reserve in climate change mitigation initiatives in the land use sector. Version 1.2 from 08/10/2022, the CERCARBONO tool to report contributions from climate change mitigation initiatives to the Sustainable Development Goals. Version 1.3 of 08/15/2022, in accordance with the rules and principles established in the NTC-ISO 14064-3 standard; 2020 “Greenhouse gases. Part 3: specification with guidance, for the validation and verification of claims on greenhouse gases.”

The NTC-ISO 14064-3 Standard; 2020 “Greenhouse gases. Part 3: specification with guidance for the validation and verification of greenhouse gas claims”, details the principles and requirements for the verification of GHG inventories and projects. Describes the process and planning for GHG-related validation and verification, and specifies the procedures for evaluating the organization's or project's GHG statements. Likewise, it determines whether the criteria established to estimate the variables for estimating the volume and biomass of forest covers satisfactorily comply with the reference and the methodology.

According to the provisions of the verification procedure, the assurance of data and information must comply with a reasonable level of confidence and in accordance with the provisions of article 44 of Resolution No. 1447 of August 1, 2018 of the Ministry of Environment and Sustainable Development and CERCARBONO Protocol, the level of assurance used in the audit of the REDD+ PAZcífico Sur project was not less than 95% and the maximum material discrepancy of the data accepted was ±5%, for which which was considered the project information, its annexes, included areas and calculations.

All versions of the verification report before being sent to the client are subject to an independent internal technical review to confirm that all verification activities have been completed in accordance with ICONTEC procedures.

The technical review was carried out by a technical review team qualified in accordance with the ICONTEC qualification scheme to provide validation and verification services for GHG mitigation initiatives.

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2 Validation and verification process

2.1 Validation and verification plan

The validation and verification audit corresponds to an objective evaluation of the reduction of emissions that occur as a result of the activities, carried out during the evaluation period and in accordance with the requirements established by ICONTEC, for validation and verification of Mitigation Projects.

The probability that the implementation of the planned GHG project will produce the GHG removals declared by the person responsible for the project will be evaluated, considering the following:

Validation consists of the following three phases:

i. Compliance with applicable validation criteria, including the principles and requirements of relevant GHG standards or programs within the scope of validation.

ii. The establishment, justification and documentation of the GHG mitigation project.

iii. The relevance of the planned controls of the GHG project.

Verification consists of the following three phases:

i. Documentary review of the design document of the registered project, of the report of monitoring and the registered monitoring plan

ii. Interviews with those responsible for the implementation of the GHG mitigation initiative, as well as those responsible for drafting the GHG mitigation initiative documents submitted for verification.

iii. Solution to the detected findings and the issuance of a report and final verification opinion.

It is the responsibility of ICONTEC to establish an independent opinion on the verification of GHG removal from the GHG mitigation initiative and approve a baseline scenario for the monitoring period.

ICONTEC uses a risk-based approach focusing on understanding the risks associated with reporting GHG removal data and the controls established to mitigate them. ICONTEC's verification process includes testing based on evaluations of all evidence relevant to the quantities and claims of GHG emissions reductions from the GHG mitigation initiative and calculations of such reductions for the reporting period.

Through sampling, ICONTEC verified the ability to comply with the legal or regulatory requirements applicable to the GHG mitigation project established through

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its identification, planning its compliance, implementation and verification by the Organization of its compliance. ICONTEC as a validation and verification body trust that the information provided by the project developer is reliable and traceable.

The validator/verifier will execute a validation and verification process plan in order to identify the types of potential material errors, their probability of occurrence and to select the procedures for collecting evidence or evidence, analysis tests and/or estimates. ; evaluations, calculations, sampling, consultations or other tests or evidence that it considers relevant for its evaluation and conclusions.

The audit was carried out partially remotely, where an on-site visit, meetings and interviews were carried out in person and others remotely with some important actors in the region.

The verification process included the following objective independent activities:

- Select a verification team
- Conduct an internal review of Conflicts of Interest (NCI)
- Hold an initial meeting with the Project Developer to present to the teams as shown in Annex 2 of this document (Audit Plan).
- Review the Objectives and processes of the verification, the requirements of CERCARBONO and for the confirmation of the service agenda and its notification.
- Review the Monitoring Report with the requirements of Protocol V4.1
- Develop a verification plan and a sampling plan,
- Conduct a risk-based review to ensure that the project meets the monitoring requirements of the CERCARBONO rules, as well as the conditions of applicability of the methodology.
- Review the documents associated with the monitoring period for which the emissions reductions were issued.
- Carry out the site visit.
- Review the accuracy of emissions reduction projections for the crediting period and emissions reductions for the monitoring period.
- Send findings and non-conformities, requests for additional documentation and requests for clarification using the findings form (Annex 1).
- Conduct an internal review
- Issue the verification report
- Hold the closing meeting

2.2 Evaluation criteria

The evaluation criteria of the process of this verification are based on the requirements set forth in the CERCARBONO Protocol for the voluntary certification of carbon V4.1 in accordance with the provisions of the standards: NTC-ISO 14064-3; 2020 “Greenhouse gases. Part 3: specification with guidance, for validation and

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verification of greenhouse gas declarations" and NTC-ISO 14065; 2022 "Greenhouse Gases. Requirements for Organizations that carry out the validation and Verification of Greenhouse Gases, for use in accreditation or other forms of recognition.

The audit was carried out through on-site evaluation, with a combination of documentary review, interviews, communication with the project proponents, with the different service providers, with the technical team evaluating the conformity of the project. Findings described in section 13.1 of this report were issued to ensure compliance with the relevant requirements for this process.

In accordance with the above, the verification process was carried out based on the following aspects:

• The assurance of the principles defined in the reference

• Monitoring and scope of forestry activities

• The methodology for calculating Greenhouse Gas (GHG) emissions, verifying that there are no inconsistencies in the use of formulas or inconsistencies between the factors used, with recommended methods and guidelines.

• Compliance with the monitoring plan presented in the validation process, as well as data collection activities, quality control management and authority and responsibility for the development of the plan.

• Identification of the project's environmental legal requirements and their compliance.

• The appropriate procedures to guarantee the quality of the information and documentary control of the project.

ICONTEC, together with the proponent, determined the sampling plan that was carried out for this verification. The spreadsheets in the folder were verified. 3_Car-bono /304 to 309/, along with the field visit to identify the eligible areas and establish the project.

The criteria are:

a. CERCARBONO protocol for voluntary carbon certification V4.1.

b. M/UT-REDD+ V 1.2 methodology for implementation of REDD+ projects consistent with national reference levels.

c. Tools:

Tool for demonstrating additionality of mitigation initiatives climate change.

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- CERCARBONO carbon reserve tool.

- CERCARBONO tool to report contributions to SDGs.

d. ISO standards:

- NTC-ISO 14064-3; 2020 “Greenhouse gases. Part 3: specification with guidance, for the validation and verification of greenhouse gas claims”

- NTC-ISO 14065; 2022 “Greenhouse Gases. Requirements for Organizations that carry out the validation and Verification of Greenhouse Gases, for use in accreditation or other forms of recognition”

It is. Legal framework:

- Resolution 1447 of the Ministry of Environment and Sustainable Development. Official diary of Colombia, Bogotá, Colombia, August 1, 2018.

- Resolution 0831 of the Ministry of Environment and Sustainable Development. Official diary of Colombia, Bogotá, Colombia, September 30, 2020.

2.3 Evidence collection plan

The review of the documentary information with which the sampling plan was developed and prepared was carried out from 09/27/2022 to 10/02/2022 (6 days), where some preliminary meetings were held with CO2Cero, to prepare the risk analysis, the logistics of the on-site departure, the planning of the different activities to be carried out in the municipalities of

Barbacoas, El Charco, Roberto Payán, Magüí Payán, San Andrés de Tumaco and Olaya Herrera, the review and verification of calculations, the review of financial information and the meetings after the field visit. The following table lists all the documentation reviewed during the audit:

now-mere	Filename
1	1_Acuerdos.zip
2	Contract_Agroimpulso_CO2CEROSAS.pdf
3	Others_Agroimpulso_CO2CEROSAS_V2.pdf
4	OtroSi_Agroimpulso_CO2CERO SAS.pdf
5	10_Old_Union_Covenant.pdf
6	11_Agreement_Rescate Las Varas.pdf
7	12_Convenio_Rio Gualajo.pdf
8	13_Convenio_Tablon dulce.pdf
9	14_Covenant_Saltboard.pdf
10	15_Union_Agreement in Isagual Basin.pdf
11	16_Chagui_River_Union_Convention.pdf
12	17_Rosary_River_Convention.pdf
13	18_Convention_River_Caunapi.pdf
14	1_Agreement_Farmers of Patia Grande.pdf

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15	2_Convenio_Alto Mira y Frontera.pdf
16	3_Convenio_Catangueros.pdf
17	4_Convenio_El Progreso.pdf
18	5_Convenio_Imbilpi del Carmen.pdf
19	6_Agreement_Integration of Telembí.pdf
20	7_Agreement_Friendship.pdf
21	8_Agreement_Friendly Hands.pdf
22	9_Mexican River Agreement.pdf
23	02_Contrato_AltoMirayFrontera.pdf
24	03_Contrato_Catangueros.pdf
25	04_Contrato_ElProgreso.pdf
26	06_Contrato_Telembí.pdf
27	07_Contrato_LaAmistad.pdf
28	09_Contrato_Mejicano.pdf
29	10_Contrato_PatiaViejo.pdf
30	11_Contrato_RescateLasVaras.pdf
31	12_Contrato_RioGualajo.pdf
32	15_Contrato_CuencasdeIsagualpi.pdf
33	17_Contrato_RioRosario.pdf
34	18_Contrato_RioCaunapi.pdf
35	01_Posesion_AgricultoresPatiaGrande.pdf
36	02_Posesion_AltoMirayFrontera.pdf
37	03_Posesion_Catangueros.pdf
38	04_Posesion_ElProgreso.pdf
39	05_Posesion_ImbilpDelCarmen.pdf
40	06_Posesion_IntegracionTelembi.pdf
41	07_Posesion_LaAmistad.pdf
42	08_Posesion_ManosAmigas.pdf
43	09_Posesion_RioMejicano.pdf
44	10_Posesion_UnionPatiaViejo.pdf
45	11_Posesion_RescateLasVaras.pdf
46	12_Posesion_RioGualajo.pdf
47	13_Posesion_TablonDulce.pdf
48	14_Posesion_TablonSalado.pdf
49	15_Posesion_UnionCuencadeIsagualpi.pdf
50	16_Posesion_RioChagui.pdf
51	17_Posesion_RioRosario.pdf
52	18_Posesion_RioCaunapi.pdf
53	01_RUT_Farmers of Patia Grande.pdf
54	02_RUT_Alto Mira y Frontera.pdf
55	03_cédula_Catangueros.pdf
56	04_RUT_Progress.pdf
57	05_RUT_Imbilpi del Carmen.pdf
58	06_RUT_IntegraciondeTelembi.pdf
59	08_RUT_ManosAmigasPatiaGrande.pdf
60	09_RUT_RioMejicano.pdf
61	10_RUT_Union Patia Viejo.pdf
62	11_RUT_Rescate Las Varas.pdf
63	12_RUT_Rio Gualajo.pdf
64	13_RUT_TablonDulce.pdf

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65	14_RUT_Tablon Salado.pdf
66	15_RUT_Isagualpi Basin.pdf 67
	16_RUT_UnionRioChagui.pdf 68
	17_RUT_Rio Rosario.pdf 69
	18_RUT_Caunapi.pdf 70
	01_Res1123_AgricultoresPatíaGrande.pdf 71
	02_Res0525_AltoMirayFrontera.pdf 72
	03_Res2202_Catangueros.pdf 73
	04_Res0448_ElProgreso.pdf 74
	05_Res2544_ImbilpídelCarmen.pdf 75
	06_Res0491_Telembí.pdf 76
	04_Taller_FactoresDeforestacion_PAZcíficoSur.xlsx 77
	1_Consentimiento_Farmers of Patia Grande.pdf 78
	01_Consentimiento_Farmers of Patia Grande.pdf 79
	03_Consentimiento_Catangueros.pdf 80
	04_Consentimiento_El Progreso.pdf 81
	06_Consent_Integration of Telembí.pdf 82
	07_Consentimiento_Friendship.pdf 83
	10_Consentimiento_Patia Viejo.pdf 84
	10_Consentimiento_Unión Patia Viejo.pdf 85
	11_Consentimiento_Rescate Las Varas.pdf 86
	17_Consentimiento_Rio Rosario.pdf 87
	18_Consentimiento_Río Caunapi.pdf 88
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	Consent_Catanguero.pdf 90
	CompiledData_EcologicSAS.xlsx 91
	REDD+ Report Pazcifico_V2.pdf 92
	Monitoring plan recommendations.pptx 93 Forest
	Inventory_Report_2022.pdf 94 WhatsApp
	Image 2022-10-27 at 4.14.42 PM (1).jpeg 95 WhatsApp
	Image 2022-10-27 at 4.14.42 PM (2).jpeg 96 WhatsApp
	Image 2022-10-27 at 4.14.42 PM (3).jpeg 97 WhatsApp
	Image 2022-10-27 at 4.14.42 PM (4).jpeg 98 WhatsApp
	Image 2022-10-27 at 4.14.42 PM.jpeg 99 WhatsApp
	Image 2022-10-27 at 4.20.51 PM (12).jpeg 100 WhatsApp
	Image 2022-10-27 at 6.46.30 PM (1).jpeg 101 WhatsApp
	Image 2022-10-27 at 6.46.30 PM.jpeg 102 WhatsApp
	Image 2022-10-27 at 4.16.42 PM (4).jpeg 103 WhatsApp
	Image 2022-10-27 at 4.16.42 PM (5).jpeg 104 WhatsApp
	Image 2022-10-27 at 4.16.42 PM (6).jpeg 105 WhatsApp
	Image 2022-10-27 at 4.16.42 PM (7).jpeg 106 WhatsApp
	Image 2022-10-27 at 4.19.30 PM (2).jpeg 107 WhatsApp
	Image 2022-10-27 at 4.19.30 PM (3).jpeg 108 WhatsApp
	Image 2022-10-27 at 4.19.30 PM (4).jpeg 109 WhatsApp
	Image 2022-10-27 at 4.19.30 PM (5).jpeg 110 WhatsApp
	Image 2022-10-27 at 4.19.30 PM (6).jpeg 111 WhatsApp
	Image 2022-10-27 at 4.19.30 PM (1).jpeg 112 WhatsApp
	Image 2022-10-27 at 4.19.30 PM.jpeg 113 WhatsApp
	Image 2022-10-27 at 4.50.40 PM (1).jpeg 114 WhatsApp
	Image 2022-10-27 at 4.50.40 PM (2).jpeg

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115	WhatsApp Image 2022-10-27 at 4.50.40 PM (3).jpeg
116	WhatsApp Image 2022-10-27 at 4.50.40 PM.jpeg
117	WhatsApp Image 2022-10-27 at 4.16.42 PM (9).jpeg
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129	WhatsApp Image 2022-10-27 at 4.52.30 PM (2).jpeg
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131	WhatsApp Image 2022-10-27 at 4.52.30 PM (4).jpeg
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146	WhatsApp Image 2022-10-27 at 4.54.40 PM (3).jpeg
147	WhatsApp Image 2022-10-27 at 4.54.40 PM (4).jpeg
148	WhatsApp Image 2022-10-27 at 4.54.40 PM (5).jpeg
149	WhatsApp Image 2022-10-27 at 4.54.40 PM.jpeg
150	WhatsApp Image 2022-10-27 at 4.55.24 PM (1).jpeg
151	WhatsApp Image 2022-10-27 at 4.55.24 PM (2).jpeg
152	WhatsApp Image 2022-10-27 at 4.55.24 PM (3).jpeg
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399	AProy_2016_Frag.tfw
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402	Cercarbono_HerramientaAdicionalidad_V2.0.1.pdf
403	Cercarbono_Lineamientos de Cercarbono para estimar la reserva de carbono V1.2.pdf
404	Cercarbono_MetodologiaREDD_V1.2.pdf
405	Cercarbono_Protocolo_V 4.1.pdf
406	2022.08.10 - Cercarbono's Carbon Buffer Tool V1.2.xlsm
407	2022.08.10 - Cercarbono's Carbon Buffer Tool V1.2.zip
408	2022.08.10 - Cercarbono's Guidelines to Estimate the Carbon Buffer V1.2.pdf
409	2022.08.10 - Herramienta reserva de carbono de Cercarbono V1.2.xlsm
410	2022.08.10 - Herramienta reserva de carbono de Cercarbono V1.2.zip
411	Cercarbono's Protocol V 4.1.pdf
412	Cercarbonos-Carbon-Buffer-Tool-V1.2 (1).zip
413	Cercarbono_MetodologiaREDD_V1.pdf
414	Cercarbono_Protocolo_V3.1.pdf

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449	Galindo, G., Palacios, S., Bernal, N., Otero, J., & Betancourth, J. (2009)..pdf 450
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The evaluation of land tenure was carried out at 100% /70 to 75/, comparing the monitoring report /178/ and the annexes provided by the project developer, documents that were downloaded in their entirety and found in the platform of

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developer. Through sampling, ICONTEC verified the ability to comply with the legal or regulatory requirements applicable to the GHG mitigation project established through its identification, planning its compliance, implementation and verification by the Organization of its compliance. ICONTEC as a Validation and verification body trust that the information provided by the project developer is reliable and traceable.

2.4 Visits to the PMCC site or area

For this project and due to the particularities of the region where the present project is developed, it was necessary to make several modifications to the initial audit plan that was planned, due to the security issue of the sector, where the dates were established. in Annex 2 of this document corresponding to the project Audit Plan, and it can be seen that the site visit was carried out between 10/03/2022 and 10/10/2022; The activities carried out on the dates and times established from the beginning of the audit approved by the client will be observed.

During the field audit that began with the field tours, these meetings began with the interviews on 10/03/2022 and the following tours were carried out:

Date in-trevista	Issues	Participants	Interview location
03/10/2022	- Presentation of attendees (recordings) - Project history - Knowledge of REDD+ project - Environmental and social safeguards - Prior consultation - Consent free and informed prior - Conservation - Climate change mitigation projects - Importance of the mangrove - Agricultural projects	Representatives of the Tablón Salado Community Council, the Tablón Dulce Community Council, Imbilpi Community Council Carmen, with the presence of legal representatives, members, community leaders, presidents, prosecutors and vice-presidents 3 community councils in total 21 people in total	Imbilpi del carmen
04/10/2022		Representatives of the Rescate las Varas community council, Tu-maco, members, prosecutors, presidents of local boards, community representatives and soreros 2 community councils 30 people in total	Saint Anthony
04/10/2022		Representatives of the co-council Municipal river Rosario,	Rosario River

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Interview date	Issues	Participants	Interview location
	- Passive and active restoration projects of ñato and mangrove and reforestation - Bans on illegal logging, illegal fishing - Dates of socialization of the project with the different annuities actors (2017 start) - Training received - Other companies projects with REDD+ in the territory - Contract with the parts - Distribution of benefits - Project owners (18 community councils) - Character activities High - Assembly dates - Plots and moni- bullfighting - Carbon credits - Trust	legal representative, farmers, leaders 1 community council 10 people in total	
05/10/2022		Representatives of the Río Caunapi Community Council, El Descanso, legal representative, board delegate, technical team, environmental coordinator, technical unit, leaders, members, spokespersons, prosecutor, liaison director 2 community councils 2 communities 28 people in total	In the Counapi
05/10/2022		Representatives of the Alto Mira y Frontera Community Council, Mayorca Community Council, Community, secretary, directors, substitute secretary, vice-presidents, members and governing board, legal representative, presidents. 2 community councils 23 people in total	Government House- With- community sect Alto mira and Fron- that.
06/10/2022		Representatives of the Mejicano River Community Council, Gualajo River Community Council, farmers, vice president, prosecutor, community, members, presidents, legal representative, and treasurers. therefore. 2 community councils 30 people in total	Beautiful View – Two Rivers- cano
07/10/2022		Representatives of the Chagui River community council, community, president, vocal, secretary and prosecutor 1 community council 16 people in total	Chagui and San Pedro

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Interview date	Issues	Participants	Interview location
08/10/2022		Community council representatives helping hands and ma-gui, community and legal representative 2 community councils 12 people in total	Barbecue
08/10/2022		Representatives: Progress community council, integration community council, Catanguero community council, basin union community council, telembi integration community council, farmers community council, legal representatives, president, secretary, treasurer, li -deres, members, communities, coordinators 6 community tips 17 people in total	Roberto Pa-yan
09/10/2022		Agroimpulso 4 people in total	Tumaco

These interviews were carried out with different actors, including community councils, government entities and the technical part of the project that fulfill some of the activities that were carried out during the verification period, within and with the community councils.

In addition to the interviews, 4 plots were visited in the field, where plot 7 was visited on 10/5/2022, plot 14 on 10/7/2022, plot 19 on 10/9/2022 and plot 10. on 10/06/2022, as shown on the map, the routes that were taken within the project area and the trips to the different communities. Throughout the audit, interviews were carried out with different project actors, contemplating the role that each one plays, control points were carried out within the project area, which can also be seen on the map, and its limits were reviewed, They visited the activities that traditionally occur within the community such as cocoa crops, mangrove and nato restoration and reforestation projects, some limits of the project were verified that, due to distance issues between the community councils, were not It is possible to carry out an on-site visit to 100% of the territory due to security issues and difficult access. Activities that have been carried out with mothers who are heads of household were reviewed, such as

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handicrafts; and control points were made on coverage and deforestation points presented within the satellite images for the project verification period.

The audit was carried out in accordance with ISO 14064-2: 2019 and 14064-3: 2019. Interviews with project proponents, service providers and third parties were used as evidence collection methods to identify aspects positives and negatives of the project and its execution. Likewise, verification of existing documentation and on-site verification, execution of activities and control of land coverage (Corine Land Cover) were carried out.

Among the negative aspects evidenced during the audit, there are the burnings that are carried out in the grasslands, due to culture or for the establishment of temporary crops close to urban centers, within the project area, drivers that are identified within the monitoring report and in the project document.

The on-site visit allowed the audit to verify that the procedures, calculations and methodologies used to obtain the data were relevant and consistent. Likewise, it is confirmed that the majority of the milestones to be evaluated are in accordance with the document presented and that they comply with the requirements of the reference.

There are some shortcomings that are generated between the technical part and the residents, which we intend to continue solving thanks to the constant communication that is being exercised between the Agroimpulso foundation, CO2Cero and the community councils and the work with the leaders of the different sectors, which will facilitate communication between the parties, which will allow the identification and acceleration of the processes that must be presented to guarantee the environmental and social safeguards of the project.

The verification of the project activities was carried out by carrying out a sampling plan, taking into account displacements and ground conditions as seen in the following illustrations.

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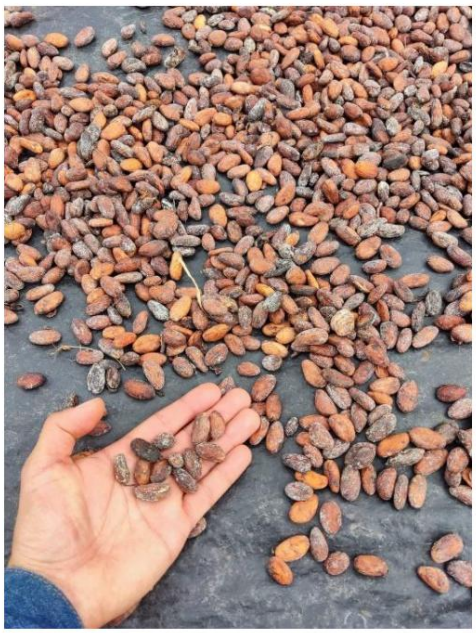








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Interviews were used to collect evidence, this work was carried out remotely and in person, linking all those involved in the formulation of the project and the execution of activities that revolve around forestry projects and avoiding deforestation processes in the areas. eligible. Likewise, with the analysis of the existing documentation and the agreement of the sites to be verified in the field, agreed in the audit plan, it can be seen in more detail in Annex 2.

A total of 192 people were interviewed who are listed in ANNEX 3 of this document, and who are part of the 18 councils.

Great conclusions were obtained from the interviews. Although it is true that we have been working with the leaders of the 18 community councils, it is necessary to improve the communication that exists, which is why SAF 2 was generated, to improve communication and guarantee safeguards. environmental and social guards. On the other hand, the conservation of forests and the identification of those drives are understood as subsistence agriculture, illicit crops, production forestry, mining and displacement due to illegal activities of the sectors that still conserve the forest, especially those that are close to rivers and the extraction of wood, without any type of control.

The majority of the people who were interviewed recognized the work that the different companies have been doing in the territory, and above all the work of the leaders to understand the importance of this, the community recognizes the strategic components, but they do not have enough appropriation of the activities that will be derived from these, the communication that exists between the community councils needs greater reinforcement, which is why SAF 2 is carried out and the participation of all the actors that are part of the project such as the Agroimpulso foundation and CO2Cero.

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2.5 Applications required by the OVV

The findings detected by ICONTEC 34 findings (SAC 25, SA 7 and SAF 2) were presented to the person responsible for the project and were resolved through communications or meetings between the different parties.

ANNEX 1 of this validation and verification report describes the findings found, the responses provided by the person responsible and by the owner of the GHG mitigation initiative, the means of verification of said responses, references to any any source consulted in the monitoring report or its supporting documents and the conclusion of their status.

There were 3 opportunities for improvement that can be found in ANNEX 1 of this document but that are broadly aimed at the methodology implemented for the establishment and measurement of forest inventory data, where it is important to take into account Note that, for this type of work, which has a high logistical and operational cost, and which generates accumulated validation of significant volumes of biomass and consequently carbon, it is justifiable to invest in equipment with a higher degree of precision as well as a more detailed monitoring of the data generated. The equipment used is technically supportable, however, the call for attention is the use of higher precision equipment, certification of use and the search for a higher degree of reliability in the information generated.

The second, regarding communication, being that it is vital for this type of projects, where it is necessary to identify what are the appropriate measures to guarantee that the information reaches the greatest number of people possible belonging to the community and that it is not left behind. the information in the local councils.

The third related to the randomness of the plots, since they tend to be located within the limits of the project, taking into account the safety of the personnel who go to the field and the actors who are located in the most wooded areas, however, this generates a bias in the estimates that must continue to be minimized.

ICONTEC satisfactorily closes a finding only if the person responsible or owner of the GHG mitigation initiative modifies or rectifies the PDD, monitoring report, or provides additional information or evidence that the responses comply with the identified finding.

2.6 Information, management and data control system

ICONTEC carried out the evaluation of the client's GHG information management system, as well as the respective procedures of the project activity itself. This in order to reach a conclusion about their reliability. For this, the guidelines established by CERCARBONO were followed.

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The topics addressed when evaluating the evidence of the validation and retroactive verification process analyzed:

- Whether the evidence is of sufficient quantity and adequate quality;
- Professional judgment about the reliability of evidence; and
- The source and nature of the evidence (external, internal, oral, documented)

The audit team evaluated the information and data control system and considers it reliable, therefore it is concluded that the internal control system complies with the requirements of the reference and ensures with its procedures the organization, administration, handling and management of the project documentation.

All processes and storage of Project information are located in the cloud of the developer's platform. At the time of validation and first verification, the Project appears in EcoRegistry in the validation phase; where the validation and verification evidence reviewed by the OVV will subsequently be kept, as well as the validation and verification report, along with its respective declaration.

The project has a specific procedure for the data quality management and assurance system that can be found in document /209 to 212/ of this report, where the description of the management and monitoring procedures is found. , the control they must carry out and the records of the activities carried out to guarantee the quality of the information.

Those responsible for this documentation will be the project coordination, geographic information systems technicians, socio-environmental technicians, community members and external consultants, all detailed in the document mentioned above. This same document details the petition, Complaint and Claim systems established for the project, where community safeguards are guaranteed, and guarantees that any user can present their PQR to any member of the REDD+ Project Coordinating Committee. .

2.7 Audit team

Complete names)	Role(s) or responsibility(s)	Type of activity(s) developed*
Laura Garcia	Lead auditor	Document review Site visit Validation and verification report

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Juan Pablo Henao	Companion	**Validation and verification report**
Victor Nieto	Technical reviewer	**Technical review**

*Specify who is in charge of reviewing information; *on-site,* remote or mixed visit ; technical review or preparation of this report.

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3 Validation and verification results

3.1 Components of the PMCC

3.1.1 Information of the PMCC holder

Complete names)	**Farmers of the Patía Grande / Alto Mira y Frontera / Catan-gueros / Gualajo River / Progress / Telembi Integration / Friendship / Helping hands / Mexican / Old Patía / Rescue the rods / Union of the Isagualpi basins / Union of the Chagui River / Rosario River Union / Caunapi River Union / Sweet plank / Salted plank / Imbilpí del Carmen**
Name of institution (if applicable)	Community councils
Roles or responsibilities	Proponents of the project and responsible for the execution of activities in the field, monitoring and reporting of activities to reduce deforestation. They exercise forest carbon rights and legal ownership of the territory.
ID	Farmers of Patía Grande 840000397-6 High view and border 840000219-3 Catangueros 840000035-6 Progress 840000630-8 Imbilpí del Carmen 840000450-9 Telembí integration 840000349-2 Friendship 840000584-7 Helping hands from Patía Grande 900121749-1 The memory of our ancestors of the Mexican River 900324346-9 Union Patía old 840000342-1 Rescue the rods 840000360-4 Gualajo River 840000646-5
Location	Nariño: Barbacoas, El Charco, Roberto Payán, Magüí Payán, San Andrés de Tumaco and Olaya Herrera
Phones)	+ 57 1 320 254 8295
Email	gerencia@agroimpulso.org

3.1.2 Information from other institutional participants of the PMCC

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Full name(s) Francis Cornejo	
Name of the institution (if applicable)	Agroimpulso Foundation
Roles or responsibilities	ASSOCIATE PROJECT MANAGER, facilitates communication between the project proponent and the entities involved in the development of the initiative. Guides and supports the development of REDD+ activities and the investments that derive from the implementation of the initiative. Manage information from community councils to structure the project.
ID	901211139-9
Location	Cali Valle del Cauca)
Phones)	
Email	gerencia@agroimpulso.org

Full name(s) Mauricio Rodríguez Castro	
Name of the institution (if applicable)	CO2CERO SAS
Roles o responsibilities	PROJECT TECHNICAL ASSOCIATE, structures the technical inputs necessary to achieve the objectives of the initiative. Manages the services and products of entities external to the initiative to achieve project certification. Accompanies field activities, diagnoses and technical surveys that contribute to the correct achievement of the initiative.
ID	901245493-8
Location	Cra. 45a #104 B 16 Bogotá, Colombia
Phones)	+601 604 72 79
Email	info@co2cero.co

3.1.3 Description of the PMCC

The REDD+ PAZcífico Sur project is an initiative developed in eighteen (18) community councils in the department of Nariño, with the support of Fundación Agroimpulso and CO2CERO SAS, whose objective is the reduction of emissions due to deforestation and forest degradation in 371,748 hectares during a period of twenty (20) years, through of conservation, improvement and increase activities in carbon stocks.

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The support for achieving these objectives will be the strengthening of the fundamental axes of development of a community, which are improved from a socioeconomic, cultural and environmental perspective, directed at activities that improve the technical capabilities of workers, They empower all social groups within the community and generate a sense of ownership over the natural resources of their property.

REDD+ PAZcífico Sur projects the reduction of 9,416,407 tCO2e during its credit period, with an annual average of 470,820 tCO2e. Reduced emissions within the project boundary are calculated taking into account the release of CO2e in the carbon pools of aboveground biomass, belowground biomass, dead wood, litter, and soil organic carbon; The emission factor used for the project is differentiating for deforestation and degradation activities. The types of GHG taken into account for the project are shown below:

Tipo de GEI	Activity that generates, removes or reduces it
CO2	Gas emitted by the elimination of aerial biomass resulting from deforestation processes within forest areas (forest extraction and biomass burning).
CO2	Gas emitted by the elimination of aerial biomass resulting from degradation processes within forest areas (fragmentation and selective wood extraction).

3.1.4 Sectoral scope and type of PMCC

Sector: Land use

Forest lands: Corresponds to PMCC activities that remove GHG or avoid GHG emissions from sources in forested areas.

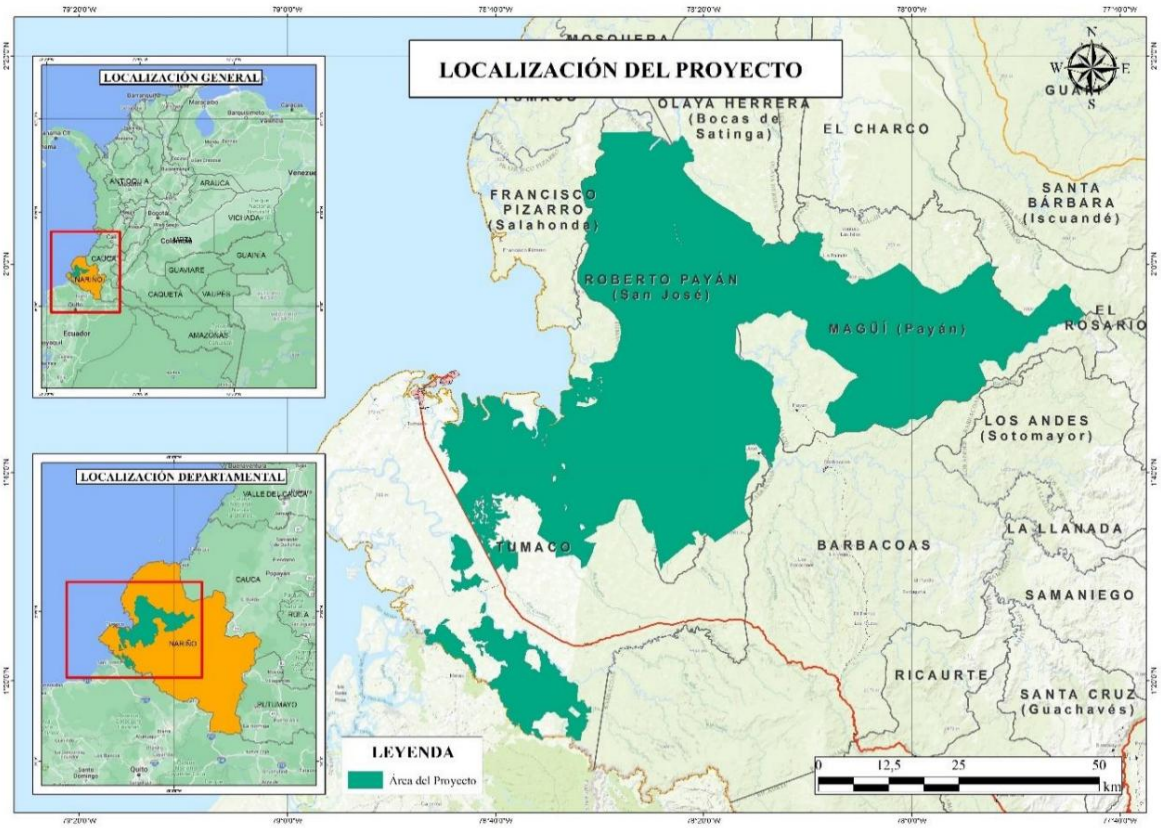
Scope: PMCC Type 1: those that remove or reduce 10,000 or more tons of CO2e, on average per year.

Project Activity: The project includes the reduction of emissions due to deforestation as a REDD+ activity. Subsequently, the relevance of developing activities to reduce emissions due to forest degradation, increase carbon reserves and sustainable forest management within the framework of the project will be evaluated.

3.1.5 Location and boundaries of the PMCC

The PAZcífico Sur REDD+ project is located in the southwest of the country in the department of Nariño, in a total of six (6) municipalities that correspond to Barbacoas, El Charco, Roberto Payán, Magüí Payán, San Andrés de Tumaco and Olaya Herrera. Its geographical location is established at the following coordinates: North 2°12'41.9508" N; South 1°14'13.5708" N, East 77°43'26.8968" W and West 78°46'51.3876" W.

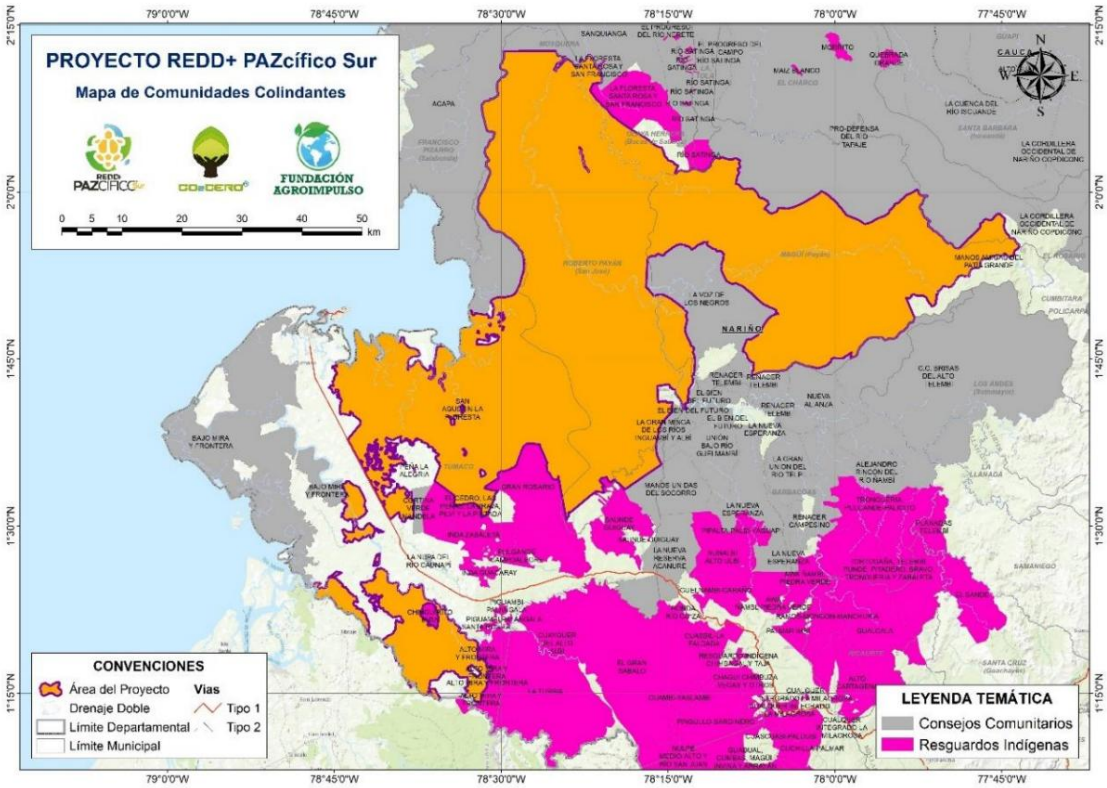
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Taken from the project PDD

The project area borders to the north with the Sanquianga National Natural Park; to the west with protection areas (Type A) of the Pacific Forest Reserve established in Law 2 of 1959 and the Cabo Manglares Bajo Mira and Frontera National Integrated Management District; to the South, with the Tumaco Peasant Reserve Zone, protection areas (Type A) of the Pacific Forest Reserve established in Law 2 of 1959; and to the east, protection areas (Type A) of the Pacific Forest Reserve established in Law 2 of 1959.

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Taken from the project PDD

3.1.6 Total area or processes of the PMCC

The total area of the project is 371,747.58 hectares, distributed in eighteen (18) community councils of the department of Nariño with a period of twenty (20) years, in which conservation, improvement and increase activities will be developed. of carbon reservoirs.

The areas to be validated are the same areas to be verified, therefore, the area does not have any modification that affects the carbon quantification.

3.1.7 Ownership or right to use the area or process

The project proponents are the 18 community councils, owners of the areas designated for the implementation of the project. This information is detailed in the PDD in chapter 1.6, table 3. However, it is clear that the audit team, has reviewed the documentation presented by the developer, and which is evidenced in documents /12 to 27/ through the respective resolutions.

3.1.8 Characteristics and conditions prior to the start of the PMCC

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The social, cultural, economic, physical and political organization background in the Project area is broadly described in chapter 1.7 of the PDD. This includes the main economic activities and forms of resource exploitation that could impact the trend of deforestation and degradation in the project area, as well as the socioeconomic circumstances of the land use change agents and their drivers.

3.1.9 PMCC technologies, products and services

The project proponents who have the property rights to the land as mentioned above, together with their strategic allies, have designed the strategy to mitigate the action of the drivers of deforestation directly through 10 lines of investment and 21 activities, in the same way, work in parallel on different interventions in the territory, offering economic resources to enhance processes developed, in progress or to be implemented and attract greater investment in the territory to benefit the communities, both for public and private entities.

3.1.10 Evaluation of the chronological plan

Limit	Period
Start date	The start date corresponds to the moment in which 10 community councils updated their internal regulations. Where through autonomous decision-making spaces, the representatives and leaders of the communities agreed to reach such agreements for the conservation of the areas and with a view to guaranteeing the sustainable use and management of natural resources.
Historical period	01/01/2007 al 12/31/2016
Projection period	01/01/2017 al 12/31/2036
Project lifespan	30 years
Project duration	20 years
Verification times	3 to 5 years

3.2 Methodological elements

3.2.1 Selected methodology

The methodology selected for the project was:

M/UT-REDD+ V 1.2 methodology for implementation of REDD+ projects consistent with national reference levels.

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In accordance with the “CERCARBONO Protocol for voluntary carbon certification V4.1”, the methodology is applicable for this project, to complement said methodology, the project makes use of the following tools:

- Tool for demonstrating additionality of mitigation initiatives climate change
- CERCARBONO carbon reserve tool
- CERCARBONO tool to report contributions to SDGs

3.2.2 Additionality

In accordance with resolution 1447 of 2018, it meets the requirements and is considered to generate additionality. In addition, to the above, the OVV verified compliance with the CERCARBONO tool “Cercarbono tool for demonstrating the additionality of climate change mitigation initiatives” where the review of the project was carried out with compliance of the current legal framework applicable to the project /455 to 457/, where it is evident that it is consistent with the laws and regulations in force, making it clear that this project does not derive from compliance with a defined regulation, nor is it part of any environmental compensation, and that voluntarily contributes to a community initiative to protect its forests and its territory as a strategy to access financing opportunities that can benefit the territory in general.

The verification of the project was carried out on the RENARE platform, where the initiative is registered on the RENARE platform through file E1-2022-14573 of 05/02/2022, however, the platform is currently out of service. Therefore, support can only be evidenced by the request made by the developer and the confirmation of the filing via email.

The project activities included in the additionality criteria are the removal of GHG emissions, through plant photosynthesis, removing CO2 from the atmosphere and storing it in the form of biomass in different reservoirs, and the avoidance of emissions. GHG emissions through activities that prevent the release of GHG emissions into the atmosphere.

Complying with the additionality demonstration diagram according to the final use of carbon credits, the project carried out a barrier analysis where it is explicit in chapter 2.2. of the PDD, resulting in the implementation of this project being able to overcome the barriers presented within the analysis, and presenting additionality, which is complemented by the financial analysis /208/, reaching the break-even point from the third year of implementation of the project considering the investments to be made to achieve the REDD+ strategy.

3.2.3 No double accounting

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The project is not partially or fully registered in other climate change mitigation standards or certification programs; nor is it in possible overlap with other climate change mitigation initiatives, in compliance with the CERCARBONO Certification Program and its guidelines.

The project has not made any migration from other standards or certification programs, according to the reviews, interviews and evidence obtained by ICONTEC.

3.2.4 Baseline scenario

The determination of the baseline was based on the use of information sources with academic and research recognition such as the high-resolution global maps of forest cover change by Hansen et al. (2013), which precisely guarantee the phenomena of deforestation and land cover change, in order to size an adequate forest area reduction rate, which is used to project the future dynamics of change in land use due to deforestation and/or forest degradation.
Additionally, when applying the methodological reconstruction of the most updated reference level (NREF), the reduction of the intrinsic error obtained for these parameters is involved through field sampling and data quality verification, determining growth models appropriate to forest conditions, this being an accepted means of managing uncertainty within the design of the NREF proposal.

Likewise, for the definition of mitigation results, the methodological reconstruction is based on the data proposed in the NREF, so that it is adjusted and verified with the management of uncertainty proposed by IDEAM and the Ministry of the Environment. Finally, the program under which the REDD+ initiative is proposed has a categorization of information according to the origin of its information, where greater uncertainty generates greater deductions on the reductions of avoided GHG emissions, calculated within the project limits.

3.2.5 Project scenario

The project establishes different activities, allowing the needs of the communities present to be met and mitigating degradation and deforestation through these actions, allowing the reduction of emissions in the project area. The spatial and temporal limits are described in chapters 3.1.5 of this report.

The estimated annual emissions for the projection period were made based on actual deforestation data in the project area in the year 2007 until 2016 (in
In 2007, a total of 344,915.12 hectares of forest were found and in 2017, 335,845.67 hectares of forest remained). The audit team analyzed the satellite images to determine if the forest cover values in the project area and that were used to perform the calculations, through a multi-temporal analysis, projecting the forest loss in the baseline scenario

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3.2.6 GHG emission sources

CERCARBONO's REDD+ methodology indicates that the emission sources for the avoided deforestation segment are CO2 emitted by the burning or elimination of biomass due to deforestation. The same methodology indicates that the optional exclusion of CH4 and N2o emissions from these same processes is conservative and, therefore, were not considered by this project. The GHG emission sources included or excluded from the project limits for REDD+ activities in the baseline scenario and in the scenario with project and leaks are:

Activity	Baseline scenario			Project scenario			Leaks		
	CO2	CH4	N2O	CO2	CH4	N2O CO2 CH4 N2O			
Avoidance of emissions from deforestation	Yeah	No	No	Yeah	No	No	No no		No
Avoidance of emissions from deforestation	Yeah	No	No	Yeah	No	No	No no		No

ICONTEC verified that CO2 emissions were considered in the corresponding segments and sources and that the others were discarded.

3.2.7 Carbon reservoirs

The reservoirs included in the estimate of the reduction of net emissions from REDD+ activities in the baseline scenario AND scenario with project were the following for forest degradation and deforestation:

Reservoir	Baseline scenario	Scenario of project	Justification
Aerial Biomass (BA)	And	And	It is the main sink since it represents the changes in the carbon stock in the forest cover of the project area. Covers tree and non-tree woody biomass.
Underground biomass (BS)	And	And	The sink is included since it is a component for the calculation of the Emission Factor according to the methodological reconstruction of the National NREF.
Dead wood (MM)	And	And	According to the methodology, this sink is taken into consideration, subject to conservation by the project actions.
Leaf litter (HJ)	And	And	According to the methodology, this sink is taken into consideration, subject to conservation by the project actions.
Wood products	No	No	Wood extraction is limited to occasional domestic use; this reservoir is not representative for the project, because sustainable forest management activity is not present.

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Organic Carbon Soil (COS)	And	And	The sink is included since it is a component for the calculation of the Emission Factor according to the methodological reconstruction of the National NREF

Cercarbono's REDD+ methodology indicates that the relevant reservoirs are those mentioned above, the values of soil carbon and underground biomass were obtained from the document “Reference Level Proposal for Forest Emissions from Deforestation in Colombia for Payment by Results of REDD+ under the UNFCCC (NREF)” for the Pacific biome, and in terms of aerial biomass, the project's own data was taken, where ICONTEC endorses the value obtained in the adjustment of the emission factor to carry out the calculations corresponding to carbon quantification. The audit team reviewed the respective NREF data and verified that the data entered in the spreadsheet were correct for the carbon content in the considered reservoirs.

3.2.8 Deviations in the implementation of the PMCC with respect to the Project Description Document

The project does not generate deviations in the implementation with respect to what is established in the M/UT-REDD+ V 1.2 methodology of CERCARBONO and in the CERCARBONO Protocol for voluntary carbon certification V4.1.

3.2.9 Methodological deviations

The project does not generate methodological deviations from what is established in the M/UT-REDD+ V 1.2 methodology of CERCARBONO.

3.2.10 Accreditation period

The project has an accreditation period of 20 years, which differs from the useful life of 30 years, as indicated in the project document.

3.2.11 Quantification of GHG emissions and removals in the baseline scenario

For the quantification of emissions and reductions of GHG emissions in the project scenario, the same data mentioned above were taken for the calculation of the baseline, being:

Deforestation:

(BA = 423.11 tC/ha; BS = 94.93/20 = 4.75 tC/ha; COS = 16.87 tC/ha).

Mangle:

Mangrove soil content = 471.00 tC/ha; COS = 811.69 tC/ha

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The estimate of emissions from annual deforestation in the baseline scenario:

$$^{2} = \ddot{y}\,(\quad + \quad + \quad)$$

Result:

Project

$$^{2} = 684.990\ ^{2}$$

Mangle

$$^{2} = 21.936\ ^{2}$$

Leaks

$$^{2} = 49.332\ ^{2}$$

The estimate of accumulated emissions from deforestation in the baseline scenario:

$$^{2} = \ddot{y}\,\ddot{y}\,2 \quad {}_{=1\,=1}$$

Result:

Project

$$^{2} = 13.384.485\ ^{2}$$

Mangle

$$^{2} = 422.069\ ^{2}$$

Leaks

$$^{2} = 949.208\ ^{2}$$

Degradation:

BA degdp= 228.79 tC/ha; BA degds= 170.21 tC/ha; BS degdp= 40.94 tC/ha; BS degdp= 32.89 tC/ha; COS = 92 tC/ha).

The estimate of accumulated emissions due to degradation in the baseline scenario:

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$$^{2} = \ddot{y}\ \ddot{y}\ ^{2}_{=1\ =1}$$

Base line:

$$^{2} = 1.514.491,70\ ^{2}$$

Leakage belt:

$$^{2} = 154.337,73\ ^{2}$$

Project scenario:

$$^{2} = 96.836,02\ ^{2}$$

3.2.12 Quantification of GHG emissions and removals or reductions of GHG emissions in the project scenario

The project considered the following emission sources, which are in accordance with the chosen methodology and the protocol to which the project is applying for voluntary carbon certification:

Activity	Baseline scenario			Project scenario			Leaks	
	CO2	CH4	N2O	CO2	CH4	N2O	CO2	CH4 N2O
Emission avoidance nes due to deforestation	Yeah	No	No	Yeah	No	No	No	no no
Emission avoidance nes due to deforestation	Yeah	No	No	Yeah	No	No	No	no no

The sinks included in the estimate of the reduction of net emissions from REDD+ activities in the baseline scenario, scenario with project and leaks were the following for forest degradation and deforestation:

Sink	Including	Justification
Air Biomass (Arboreal Vegetation)	And	It is the main sink since it represents the changes in the carbon stock in the forest cover of the project area.
Underground biomass	And	The sink is included since it is a component for the calculation of the Emission Factor according to the methodological reconstruction of the National NREF
dead wood	And	According to the methodology, this sink is taken into consideration.
Leaf litter	And	According to the methodology, this sink is taken into consideration.
Wood products	No	Wood extraction is limited to occasional domestic use, this reservoir is not representative

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		for the project and will be reflected in the deforestation and degradation values monitored since the start date of the project.
Organic Carbon Floor	And	The sink is included since it is a component for the calculation of the Emission Factor according to the methodological reconstruction of the National NREF

Cercarbono's REDD+ methodology indicates that the relevant reservoirs are those mentioned above, the values of soil carbon and underground biomass were obtained from the document “Reference Level Proposal for Forest Emissions from Deforestation in Colombia for Payment by Results of REDD+ under the UNFCCC (NREF)” for the Pacific biome, and in terms of aerial biomass, the project's own data was taken, where ICONTEC endorses the value obtained in the adjustment of the emission factor to carry out the calculations corresponding to carbon quantification. The audit team reviewed the respective NREF data and verified that the data entered in the spreadsheet were correct for the carbon content in the considered reservoirs.

In compliance with the REDD+ methodology indicated in this document, the review of all input data, project parameters, formulas, calculations, conversions, resulting uncertainties and output data was carried out to guarantee coherence with the criteria established in the chapter 2.2 and the Cercarbono methodology. The project proponent, together with the developer, followed the recommendations established by the IPCC for greenhouse gas inventories and took their own data from the forest inventory through the establishment of 39 plots of 100 m by 10 m, equivalent to 0.1 ha of rectangular shape, located at random through random points in the different coverages that occur within the project area and with a sampling error of 9.24%.

The audit group reproduces the calculations of selected samples to guarantee the precision of the results. The project proponent provided spreadsheets, formulas and other evidence necessary for review, which can be found in documents /304/ Carbono_Deforestacion_REDDPAZcifico Sur_V4.xlsx, /305/ Carbono_Degrada-cion_REDDPAZcificoSur_V4.xlsx, /306/ Carbono_Didifferentiado_OVV_REDDPAZcifico-Sur_V3.xlsx , /307/ Carbono_Total_REDDPAZcificoSur_V4.xlsx, /308/ Deforesta-cion_REDDPAZcificoSur_V3.xlsx and /309/ FE REDD+ PAZCIFICO SUR - V2.xlsx. All references for analysis methods or default values have been verified with the appropriate source.

- **Definition of the reference area to project the rate of deforestation and degradation. forest dation**

The delimitation of the reference area was carried out through cartographic analysis, considering the Cercarbono methodology, taking into account the biophysical and social characteristics, landscape and mobilization factors, excluding indigenous reservations, areas of the

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National System of National Natural Parks, among others. In the Reference area, no planning areas with current permits for the use of forest resources were recorded.

With the spatial limits defined, the analysis is carried out using remote sensors to determine the change in forest – non-forest coverage within the reference region, resulting in the total coverage value.

- **Calculation of deforestation rate**

To determine the deforestation rate, we start from the previous result, in the period of 10 years, in accordance with what is established in the Cercarbono methodology.

The calculation of the deforestation rate was done using the Puyravaud equation (2003):

$$= \left(\frac{1}{2} \times \frac{2}{1} \right) \times 100$$

Where:

A1: Forest areas in the first year of the deforestation period analyzed in ha.

A2: Forest areas in the last year of the deforestation period analyzed in ha.

X1: Initial year of the analysis period

X2: Final year of the analysis period

TFD: Fixed annual deforestation rate

For this project, a deforestation rate in the reference region of 0.4091% was obtained.

3.2.13 Leaks

Within the project there are the following areas with respect to leaks:

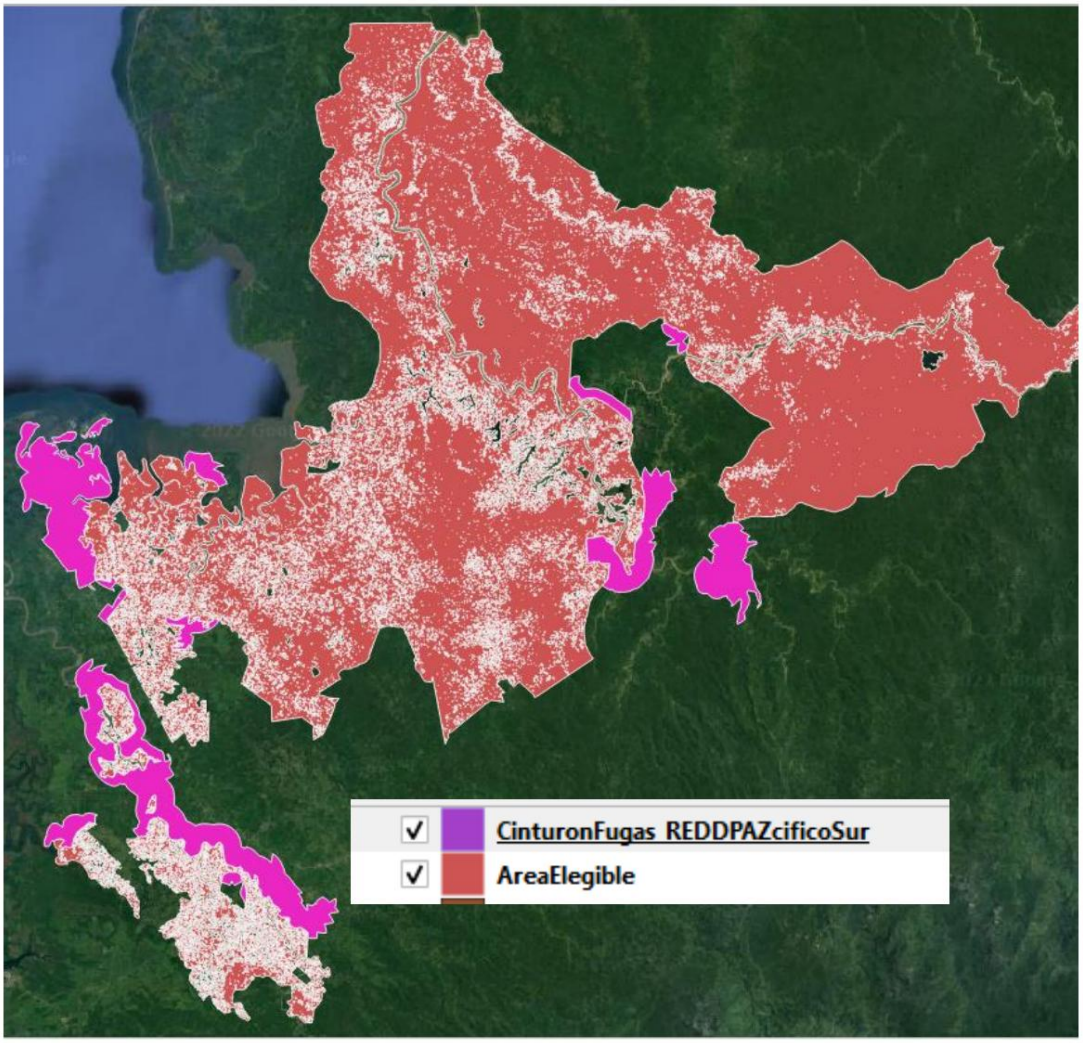
Type of intervention area	**Area (ha)**
Potential Leakage Area (Leakage Belt) Stable	35.401,27
forest area of the potential leakage area (2017) Stable forest	26.605,30
area of the potential leakage area (2021)	26.437,15

The leak belt was based on the deforestation drivers identified in a participatory and joint manner with the community and bibliography in this regard that is demonstrated in the workshops carried out by the different parties mainly and the area adjacent to the project limits in which tentatively there could be displacement of the deforestation and degradation activities found before the project within the limits of the

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project, areas that were corroborated through project mapping, with a total of 35,401.27 ha. The stable forest areas of the potential escape area were also identified for the years 2017 and 2021, being 26,605.30 and 26,437.15 respectively.

The area of the leak belt is as shown below:



For the baseline, degradation was calculated as follows:

$$^{2} = \ddot{y}\,\ddot{y}\,2 \quad {}_{=1\,=1}$$

Estimation of accumulated emissions in the leak belt due to forest degradation in all strata of the segment's baseline scenario		
T	Total project duration	20

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Estimation of accumulated emissions in the leak belt due to forest degradation in all strata of the segment's baseline scenario		
TEdegLB	Total number of strata in the segment's baseline scenario.	2
AdegLBFdp	Segment baseline scenario **primary degradation** stratum area , ha	4,93
AdegLBFds	Segment baseline scenario **secondary degradation** stratum area , ha	17,66
ECO2de-gLBF,t,dp	Degradation emissions in each year t and each **primary degradation** stratum of the segment's baseline scenario, tCO2ha	2.083,93
ECO2de-gLBF,t,ds	Degradation emissions in each year t and each **secondary degradation** stratum of the segment's baseline scenario, tCO2ha	5.632,96
ECO2de-gLBF,t,TO-OF THE	Emissions due to degradation in each year and each strata segment baseline scenario degradation , tCO2ha	7.716,89
ECO2degLBF	Cumulative emissions due to degradation in all **degradation** strata of the segment's baseline scenario, tCO2ha	154.337,73

For deforestation, the calculation was carried out with the following formula

$$^{2} = \ddot{y}\ \ddot{y}\ 2$$
$$=1\ =1$$

No.	Year	Year AdefLBt,f	CN %	Ade-fLBt,f BRAIN-TADA	Badeff	Mmdeff	FEdeff	FEBsdeff	FECosdeff	ECO2defLBcf,t
1	2017	108,85	10,00%	119,74	423,11	8,46	431,57	4,75	16,87	49.332
2	2018	108,41	31,77%	142,85	423,11	8,46	431,57	4,75	16,87	49.130
3	2019	107,97	38,58%	149,62	423,11	8,46	431,57	4,75	16,87	48.929
4	2020	107,52	44,59%	155,47	423,11	8,46	431,57	4,75	16,87	48.729
5	2021	107,08	49,62%	160,22	423,11	8,46	431,57	4,75	16,87	48.529
6	2022	106,65	53,55%	163,75	423,11	8,46	431,57	4,75	16,87	48.331
7	2023	106,21	0,00%	106,21	423,11	8,46	431,57	4,75	16,87	48.133
8	2024	105,77	0,00%	105,77	423,11	8,46	431,57	4,75	16,87	47.936
9	2025	105,34	0,00%	105,34	423,11	8,46	431,57	4,75	16,87	47.740
10	2026	104,91	0,00%	104,91	423,11	8,46	431,57	4,75	16,87	47.544
11	2027	104,48	0,00%	104,48	423,11	8,46	431,57	4,75	16,87	47.350
12	2028	104,05	0,00%	104,05	423,11	8,46	431,57	4,75	16,87	47.156
13	2029	103,63	0,00%	103,63	423,11	8,46	431,57	4,75	16,87	46.963
14	2030	103,20	0,00%	103,20	423,11	8,46	431,57	4,75	16,87	46.771

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No.	Year	Year AdefLBt,f		CN %	Ade-fLBt,f BRAIN-TADA	Badeff	Mmdeff	FEdeff	FEBsdeff	FECosdeff	ECO2defLBcf,t
15	2031	102,78	0,00%	102,78	423,11	8,46	431,57	4,75	16,87	46.580	
16	2032	102,36	0,00%	102,36	423,11	8,46	431,57	4,75	16,87	46.389	
17	2033	101,94	0,00%	101,94	423,11	8,46	431,57	4,75	16,87	46.199	
18	2034	101,53	0,00%	101,53	423,11	8,46	431,57	4,75	16,87	46.010	
19	2035	101,11	0,00%	101,11	423,11	8,46	431,57	4,75	16,87	45.822	
20	2036	100,70	0,00%	100,70	423,11	8,46	431,57	4,75	16,87	45.635	
Total										**949.208**	

For Expost the results of the deforestation project are:

Year	Bos-que_ha	Ade-fLBt,h	Ade-fEt,h	Areas Avoided (ha)	Ba-defh	Mmdefh	Fe-defh	FEBs-defh	FECos-defh	Ede-fMt
2017	26.606,30	119,74	202,65	-82,91	423,11	8,46	431,57	4,75	16,87	37.572
2018	26.572,55	142,85	33,76	109,10	423,11	8,46	431,57	4,75	16,87	0
2019	26.542,93	149,62	29,62	119,99	423,11	8,46	431,57	4,75	16,87	0
2020	26.502,40	155,47	40,52	114,95	423,11	8,46	431,57	4,75	16,87	0
2021	26.437,81	160,22	64,60	95,62	423,11	8,46	431,57	4,75	16,87	0
2022	26.371,30	163,75	66,50	97,25	423,11	8,46	431,57	4,75	16,87	0

And by degradation

Year	AdegLBFdp,t	AdegLBFds,t	AdegFdp,t	AdegFds,t	Areas Avoided dp (ha)	Areas Avoided ds (ha)	Edg-Mdp,t	Edg-Mds,t	Wait M,t
2017	4,93	17,66	0,27	10,59	4,66	7,07	0	0	0
2018	4,93	17,66	0,00	70,40	4,93	-52,74	0	16.818	16.818
2019	4,93	17,66	0,00	0,90	4,93	16,76	0	0	0
2020	4,93	17,66	0,00	1,09	4,93	16,58	0	0	0
2021	4,93	17,66	0,27	1,18	4,66	16,49	0	0	0
2022	4,93	17,66	0,18	13,94	4,75	3,73	0	0	0
To-of	**29,59**	**105,98**	**0,72**	**98,10**	**28,87**	**7,89**	**0,00**	**16.818**	**16.818**

3.2.14 Net GHG removals or net reductions in GHG emissions

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For the **Ex Ante** scenario , the quantification of GHG emissions and reductions in the project scenario, the same data mentioned above were taken for the calculation of the baseline:

Deforestation:

(BA = 423,11 tC/ha; BS = 94,93/20 = 4,75 tC/ha; COS = 16,87 tC/ha; Mm= 2%).

Mangle:

Mangrove soil content = 471.00 tC/ha; COS = 811.69 tC/ha

The estimate of emissions from accumulated deforestation in the project scenario:

$$_2 = \ddot{y}\,(\quad + \quad + \quad)$$

$$_2 = 4.485.840\ _2$$

With the results obtained in the previous chapter 3.2.11 of this report, regarding deforestation, the Exante emissions reduction of the project due to deforestation is carried out where:

$$= \ddot{y}\ _2 \quad _{=1} \qquad \ddot{y}\ \ddot{y}\ _2 \quad _{=1}$$

$$= 949.208\ _2$$

$$= \ddot{y}\ _{=1}$$

$$= 8.156.567\ _2$$

Year	ECO2PtX		EfdefM		MEAdef		Buffer		REDD+	
	Yearly	Now	Annual	Now	Yearly	Now	Yearly	Now	Yearly	Now
2.017	227.499	227.499	49.332	49.332	479.427	479.427	59.880	59.880	419.547	419.547
2.018	227.159	454.658	49.130	98.462	611.886	1.091.313	76.425	136.305	535.462	955.009
2.019	226.818	681.476	48.929	147.391	650.854	1.742.167	81.292	217.597	569.563	1.524.572
2.020	226.479	907.955	48.729	196.120	684.570	2.426.737	85.503	303.099	599.068	2.123.640
2.021	226.140	1.134.095	48.529	244.649	711.995	3.138.732	88.928	392.028	623.067	2.746.707
2.022	225.801	1.359.896	48.331	292.980	732.472	3.871.204	91.486	483.513	640.987	3.387.694
2.023	225.463	1.585.359	48.133	341.113	403.526	4.274.730	50.400	533.914	353.126	3.740.820

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Year	ECO2PtX		EfdefM	MEAdef		Buffer		REDD+	
	Yearly	Now	Annual Now	Yearly	Now	Yearly	Now	Yearly	Now
2.024	225.125	1.810.484	47.936 389.049 401.291		4.676.021	50.121	584.035	351.170	4.091.990
2.025	224.788	2.035.272	47.740 436.789	399.065	5.075.086	49.843	633.878	349.222	4.441.212
2.026	224.452	2.259.724	47.544 484.333	396.849	5.471.935	49.566	683.445	347.283	4.788.495
2.027	224.116	2.483.840	47.350 531.683	394.642	5.866.577	49.291	732.735	345.352	5.133.847
2.028	223.780	2.707.620	47.156 578.839	392.447	6.259.024	49.017	781.752	343.431	5.477.278
2.029	223.445	2.931.065	46.963 625.802	390.260	6.649.284	48.743	830.496	341.517	5.818.795
2.030	223.110	3.154.175	46.771 672.573	388.085	7.037.369	48.472	878.967	339.614	6.158.409
2.031	222.776	3.376.951	46.580 719.153	385.918	7.423.287	48.201	927.169	337.717	6.496.126
2.032	222.443	3.599.394	46.389 765.542	383.760	7.807.047	47.932	975.100	335.829	6.831.955
2.033	222.110	3.821.504	46.199 811.741	381.613	8.188.660	47.663	1.022.764	333.950	7.165.905
2.034	221.777	4.043.281	46.010 857.751	379.476	8.568.136	47.397	1.070.160	332.080	7.497.985
2.035	221.445	4.264.726	45.822 903.573	377.348	8.945.484	47.131	1.117.291	330.218	7.828.203
2.036	221.114	4.485.840	45.635 949.208	375.230	9.320.714	46.866	1.164.157	328.364	8.156.567
TOTAL	**4.485.840**		**949.208**	**9.320.714**		**1.164.157**		**8.156.567**	

Degradation:

BA degdp= 228.79 tC/ha; BA degds= 170.21 tC/ha; BS degdp= 40.94 tC/ha; BS degdp= 32.89 tC/ha; COS = 92 tC/ha).

$$= \ddot{y}\ 2_{=1} \qquad \ddot{y}\ \ddot{y}\ 2_{=1}$$

$$= 1.259.840_{2}$$

Year	ECO2PtX		EfdegM		MEAdeg		Buffer		REDD+	
	Annually	Now	Annually	Now	Annually	Now	Annual	Now	Annual	Now
2017	4.842	4.842	7.717	7.717	70.882	70.882	7.889	7.889	62.992	62.992
2018	4.842	9.684	7.717	15.434	70.882	141.764	7.889	15.779	62.992	125.984
2019	4.842	14.526	7.717	23.151	70.882	212.646	7.889	23.668	62.992	188.976
2020	4.842	19.368	7.717	30.868	70.882	283.528	7.889	31.557	62.992	251.968
2021	4.842	24.210	7.717	38.585	70.882	354.410	7.889	39.447	62.992	314.960
2022	4.842	29.052	7.717	46.302	70.882	425.292	7.889	47.336	62.992	377.952
2023	4.842	33.894	7.717	54.019	70.882	496.174	7.889	55.225	62.992	440.944
2024	4.842	38.736	7.717	61.736	70.882	567.056	7.889	63.114	62.992	503.936
2025	4.842	43.578	7.717	69.453	70.882	637.938	7.889	71.004	62.992	566.928
2026	4.842	48.420	7.717	77.170	70.882	708.820	7.889	78.893	62.992	629.920
2027	4.842	53.262	7.717	84.887	70.882	779.702	7.889	86.782	62.992	692.912

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Year	ECO2PtX		EfdegM		MEAdeg		Buffer		REDD+
	Annually	Now	Annually	Now	Annually		Now	Annual	Now
2028	4.842	58.104	7.717	92.604	70.882	850.584	7.889	94.672	62.992	755.904
2029	4.842	62.946	7.717	100.321	70.882	921.466	7.889	102.561	62.992	818.896
2030	4.842	67.788	7.717	108.038	70.882	992.348	7.889	110.450	62.992	881.888
2031	4.842	72.630	7.717	115.755	70.882	1.063.230	7.889	118.340	62.992	944.880
2032	4.842	77.472	7.717	123.472	70.882	1.134.112	7.889	126.229	62.992	1.007.872
2033	4.842	82.314	7.717	131.189	70.882	1.204.994	7.889	134.118	62.992	1.070.864
2034	4.842	87.156	7.717	138.906	70.882	1.275.876	7.889	142.008	62.992	1.133.856
2035	4.842	91.998	7.717	146.623	70.882	1.346.758	7.889	149.897	62.992	1.196.848
2036	4.842	96.840	7.717	154.340	70.882	1.417.640	7.889	157.786	62.992	1.259.840
TOTAL	**96.840**		**154.340**		**1.417.640**		**157.786**		**1.259.840**

ICONTEC reproduced the calculations and obtained the results presented by the project proponent, and therefore considers that they are correctly represented in the spreadsheets provided. The formulas used comply with the monitoring plan and what is reflected in the PDD, the methodology and the default values used are appropriate. For all of the above, the net amount of GHG emissions reduction estimated ex ante is considered accurate and realistic.

ICONTEC verified the parameters available in the validation and the documentary references presented, through the review, reproduction and crosscheck of the evidence provided by the project proponent. The audit team verified that the values of the parameters used are appropriate and are used correctly in the different equations.
All parameters were used conservatively.

The audit team verified the list of parameters used in chapters 3.2, 3.3 and 3.4, of the PDD in the ex ante estimate is complete and consistent and is valid. No inconsistencies were found between the PDD information, the annexes and the spreadsheets.

ICONTEC considers that the estimates are consistent with the emission factors and activity data available, and are correct, credible and consistent. The quantification complies with what is expressed in the PDD, the calculations provided and the selected methodology.

Deforestation

For total deforestation, 26,371.30 ha were established for the year 2022 and 26,606.30 ha for the year 2017, with an average annual loss of 39.16 ha, and a total loss of 235 ha.

$$^{2} \quad = 5.231.100 \quad ^{2}$$

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2 = 1.568.205 2

= 37.572 2

= 3.625.323 2

= 452.803 2

+= 3.172.517 2

No. Año	Año	ECO2de-fLBTx Yearly	ECO2defTX Yearly Now Yearly		EfdefM I	EfdefM At them	MEAdef Yearly Now Yearly		Buffer I	Buffer Now Yearly	REDD+ Now	REDD+ Yearly
1	2017	706.926	414.083	37.57	2	37.57 2	255.271	255.271	31.88 3	31.883	223.38 7	223.388
2	2018	839.045	125.206	539.289	0	37.57 2	713.839	969.110	89.15 8	121.042	624.680	848.069
3	2019	877.672	131.400	670.689	0	37.57 2	746.272	1.715.382	93.209	214.251	653.062	1.501.132
4	2020	911.049	245.560	916.249	0	37.57 2	665.489	2.380.871	83.120	297.371	582.369	2.083.502
5	2021	938.135	409.789	1.326.038	0	37.57 2	528.346	2.909.217	65.990	363.361	462.355	2.545.858
6	2022	958.273	242.167	1.568.205	0	37.57 2	716.106	3.625.323	89.442	452.803	626.664	3.172.523
TOTAL 5.231.100			1.568.205		37.572		3.625.323		452.803		3.172.517	

For the mangrove ecosystem, a total of 11,350 ha was established for the year 2022 and 11,383 ha for the year 2017, with a lost annual area of 5.48 ha. Average and a total of 33 hectares, as mentioned above, the data for this ecosystem are Mangrove soil content = 471.00 tC/ha; COS = 811.69 tC/ha.

Missing:

2 = 130.274 2

2 = 18.567 2

= 0 2

= 111.707 2

= 13.952 2

+= 97.751 2

No.	Anus year	ECO2de-fLBTx Annually	ECO2defTX Annually Now	EfdefM Annually	EfdefM Now Annually	MEAdef Annually Now	Buffer Annually Now	REDD+ Annually Now
1	2017	21.936	3.070 3.070	0	0	18.866 18.866	2.356 2.356	16.509 16.510
2	2018	21.846	1.380 4.450	0	0	20.466 39.332	2.556 4.913	17.909 34.420

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No. Anus year	ECO2de-fLBTx	ECO2defTX		EfdefM		MEAdef		Buffer		REDD+
	Annually	Annually	Now	Annually	Now	Annually	Now	Annually	Now	
3 2019	21.756	730	5.180	0	0	21.026	60.358	2.626	7.539	18.399	52.820	
4 2020	21.667	256	5.436	0	0	21.411	81.769	2.674	10.213	18.736	71.557	
5 2021	21.579	2.432	7.868	0	0	19.147	100.916	2.391	12.604	16.755	88.313	
6 2022	21.490	10.699	18.567	0	0	10.791	111.707	1.348	13.952	9.443	97.757	
TOTAL	**130.274**	**18.567**		**0**	**0**	**111.707**		**13.952**		**97.751**	

The reduction of Expost emissions of the project due to degradation during the monitored period is 314,265 tCO2e reduced within the project area:

Year	ECO2de-gLBTx	ECO2degTX		EfdegM		MEAdeg		Buffer		REDD+	
	Yearly	Annual	Now	Annual	Now	Annual	Now	Annual	Now		
2017	75.724	28.314	28.314	0	0	47.410	47.410	5.922	5.922	41.488	41.488	
2018	75.724	77,0	28.391	16.819	16.819	58.828	106.238	7.348	13.269	51.480	92.968	
2019	75.724	25.525	53.916	0		16.819	50.199	156.437	6.270	19.539	43.929	136.897
2020	75.724	4.367	58.283	0		16.819	71.357	227.794	8.912	28.451	62.444	199.341
2021	75.724	11.771	70.054	0		16.819	63.953	291.747	7.988	36.439	55.965	255.306
2022	75.724	8.349	78.403	0		16.819	67.375	359.122	8.415	44.854	58.959	314.265
TOTAL	454.344	**78.403**		**16.819**		**359.122**		**44.854**		**314.265**	

3.2.15 Reassessment of the baseline scenario

It does not apply since it is the validation and first verification of the project.

3.2.16 Natural disturbances and other catastrophic events

In the present verification period (6 years), natural disturbances were found mainly due to fires where a total of 114.12 hectares of loss of coverage were identified from 2017 to 2021, where the areas lost by year are presented below.

Year	Area (ha)	Area (%)
2017	38.08	33,37%
2018	8.28	7,25%
2019	11.78	10,33%
2020	29,83	26,14%
2021	26,14	22,91%

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Year	Area (ha)	Area (%)
Total	114.12	100,00%

Within the project area, several areas were found susceptible to flooding thanks to the mangrove ecosystem that presents periodic flooding as reported by the developer in the monitoring report. These were identified during the site visit, however, they did not present any damage that alter what was initially identified in the project document.

At the site, and due to the particularities of the area, wars were also identified. This information can be found in detail within the project document on the social, cultural and economic aspects of the community, where the risks were also identified. associated with the public order that occurs within the territory, during the site visit several of these factors were identified, however, during the interviews it was possible to identify that it is actors external to the community councils who are within these conflicts and Within the lines of action, these factors are the main objectives to be implemented together with the communities.

3.2.17 Non-permanence

The project carried out an evaluation applying the Cercarbono Tool to estimate the carbon reserve in climate change mitigation initiatives in the land use sector, where the audit team made several findings that can be seen in ANNEX 1 of this document, and they are SA5, SAC6 and SAC 7, where through a greater amount of evidence the project proponent managed to mitigate the risks identified during this verification.

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4 Legal and documentary aspects

4.1 Legal requirements

The REDD+ PAZcífico Sur project complies with resolution 1447 of 2018, since it has the requirement of registration on the National Registry of GHG Emissions Reduction platform (RENARE), where every holder of a GHG mitigation initiative in the national territory that intends to qualify for results-based payments or compensation and/or demonstrate compliance with national climate change goals established under the UNFCCC.

Likewise, the project complies with resolution 0831 of 2020, where "it is considered important to include that all methodologies developed by GHG certification programs or carbon standards, or national entities, have mechanisms to save and demonstrate the methodological consistency of the baselines of the sectoral projects with the emission factors, activity data, GHG emissions projection variables and the other parameters used for the construction of the national GHG inventory and the national reference scenario. in order to guarantee the application of the principles of the MRV System of mitigation actions at the national level."

Norm or law	Type (legal, environmental, other)	Applicability/Compliance (full or partial)	Justification
Resolution 1447 of 2018	Legal	Total	The initiative is registered on the platform RE-NASTY
Resolution 0831 of 2020	Legal	Total	The verification process is carried out based on the requirements of resolution 0831 of 2020.

4.2 Link with NDCs

The objective of the National Climate Change Policy (PNCC) is to incorporate climate change management into public and private decisions, to advance on a climate-resilient and low-carbon development path that reduces the risks of climate change and allows you to take advantage of the opportunities that it generates, due to the above and with the main objective of the REDD+ project, they cover the objective communicated within the national policy in Colombia.

4.3 PMCC documentation

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All documents are found in chapter 2.3 of this report and references used within chapter 14 of this report.

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5 Consultation with interested parties

The REDD+ PAZcífico Sur project guarantees, in accordance with the Cancún safeguards, the flow of information, respect for culture and free, prior and informed consent.

Guaranteeing a responsible and committed workflow, these two parties establish a temporary association contract (See *1_Agreements\01_Technical Associate Contract\Contrato_Agroimpulso_CO2CEROSAS.pdf),* where they commit according to their abilities to contribute to compliance and achievement of the objectives of the REDD+ initiative within the national territory, specifically the Pacific sector, involving eighteen (18) community councils. Likewise, the first direct communication channel of the project begins to be created, where the Agroimpulso Foundation generates a direct relationship with the community or whoever represents them to collect the necessary information for the design and structuring of the initiative. At the same time, this channel extends to the technical developer, consolidating it in a manner consistent with the certification program. The information channels designed in this phase are direct contact with a field visit, telephone calls and intermediation through workers from the Foundation and/or CO2CERO SAS.

Through the Agroimpulso foundation, socializations were carried out in the communities, in order to transmit the idea of what the project aims to achieve, thus showing the frames of reference on the REDD+ initiatives, the conservation and improvement of the conditions. tions of community life through nature-based solutions and results-based payments. After the adaptation of the communities to the REDD+ project model, the agreement is established, which is a contractual model that commits the communities to the project and the associated developers, guaranteeing joint work, principles such as equality, equity and inclusion; Furthermore, supported by technical, social and biodiversity expert teams. Likewise, a direct channel was opened where anyone can leave their PQRs (Requests, Complaints and Claims) and this is done through the representatives of the REDD+ committee, the email PQRS.REDD@co2cero.co , to provide traceability to any concern that any person and/or actor has, in addition to the channels that the Agroimpulso Foundation has.

Environmental authorities are also taken into account, which are a fundamental external actor for the execution of the activity, in order to unify objectives and design REDD+ activities consistent with the objectives of government and regulatory entities. In addition, a communication channel between them and the actors involved in the project.
The socialization that occurs with environmental authorities is informative in nature.

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6 Safeguards

Compliance with safeguards is based on community participation and consent processes, under the guidance of the Cancún safeguards determined in decision 1 of COP 16.

In accordance with the transparency and effectiveness of the forest governance structures, the Agroimpulso Foundation, as Managing Associate, must deliver the management and execution reports of the initiative, in quality and quantity in accordance with what is requested by the community council, In addition, conclude the necessary agreements for its development with the community. In addition, the management of the project's monetary resources will be socialized by the verification commission, to guarantee that the investments are of a public nature for the members of the community councils; Likewise, governance and participation is proposed as a line of investment, where REDD+ activities such as Community Management and Governance, Consolidation of community participation tables and Citizen Control and Oversight are established. Also, strategic lines are established focused on: a) the construction of society, based on principles such as equity, autonomy and participation; b) sustainable economic growth, which seeks to strengthen productive capacities in accordance with community skills in traditional activities such as agriculture, fishing and use of resources in a sustainable manner.

Regarding the rights of the communities, socialization meetings are held by the community council, where the objectives of the initiative are presented and consensus is obtained on the execution of the project (benefits, activities to be developed). Likewise, the REDD+ PAZcífico Sur project agrees to grant 60% of the net emissions avoided within the project to the community councils, which are determined through a fiduciary figure and the remaining 40% will be distributed between the managing and technical associate. . Furthermore, in consideration of respect for traditional knowledge, the project activities have been designed based on the traditional economic practices of the community councils, recognizing the importance of supporting the strengthening of traditional practices in around the sustainable management of the forest, recognizing the work that they have historically carried out with the flora and fauna of their territory and the development of their main economic activities such as fishing and agriculture.

Regarding conservation, there are activities focused on forest restoration, fauna management and conservation plan, monitoring of forest cover, training in vegetation monitoring, in Sustainable Forest Management and in Wildlife Conservation Strategies and Flora. And regarding the provision of environmental goods and services, a direct relationship is evident between the benefits provided by ecosystems and community councils, where connectivity actions of forest fragments, sustainable production of timber and non-timber forest products and management of the forest are implemented. hidric resource.

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In relation to sectoral planning, there is the environmental legal matrix, which describes the required context at the international, national and local level. And regarding forest control and surveillance to avoid the displacement of emissions, the limits and potential areas of leakage are established, where it is proposed to carry out monitoring, control and surveillance of the actions that generate deforestation in order to prevent, manage and control the displacement of emissions caused by economic activities.

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7 Risks, uncertainty and non-permanence

The non-permanence risks of the project are distributed into 3 categories: management risks, context risks and natural risks.

The main project management risks are: a) the duration of the project, which has a useful life of 20 years; b) the opportunity cost, since in the project area there are other land uses permitted by the local authorities, in charge of local territorial planning through the Municipal Development Plans where the community councils are located.

Regarding the contextual risks of the project, the main ones are: a) conflicts related to land tenure, where the number of project participants is greater than ten (18 community councils), where between 80 – 100 % has public deeds, however so far there have been no disputes over land ownership; b) conflicts in the country, which is classified with an intensity of 3 (violent crisis); in addition, the world bank's governance index is between -1.25 and 0; c) social conflicts, since within the project area or in surrounding areas within a 20 km radius (whose livelihood depends directly on resources from the project area) it is expected to be greater than 50%.

Regarding natural risks, the main ones of the project are: a) forest fires, where it is evident that in the last 3 years more than 20 hectares have been affected within the project area and/or in a radius of 20 km from the project area.

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8 Contributions to the United Nations Sustainable Development Goals

The project adequately reports the Cobenefits and contributions to the Objectives of Sustainable Development of the United Nations, through the “Cercarbono Tool to report contributions of climate change mitigation initiatives to the Sustainable Development Goals.” Sustainable Development”, which shows the development of the following objectives:

1, end of poverty
- 2, zero hunger
- 3, health and well-being
- 5, gender equality
- 6, clean water and sanitation
- 8, decent work and economic growth
- 11, sustainable cities and communities
- 13, climate action
- 15, life of terrestrial ecosystems

For SDG 2, training was carried out for 109 men and 92 women in productive characterization and information collection for the diagnosis of the social and productive status of the community. In addition, training related to practical veins was carried out.
agricultural.

Regarding SDG 4, capacity-building activities were carried out, such as: conflict resolution and teamwork, budget management, vegetation monitoring, fauna and flora conservation strategies and productive characterization.

Regarding SDG 5, the participation of women (45% of total attendees) is evident in the training given by the project: leadership and good administrative practices, productive characterization, vegetation monitoring and identification of deforestation and degradation factors. .

For SDG 13, through activities to reduce deforestation and degradation such as sustainable management of natural resources, restoration and reforestation of degraded ecosystems, and generation of sustainable production alternatives other than timber use of the forest, the project reduced 3,715,075 tCO2e during the verification period from 01/01/2017 to 09/10/2022.

In consideration of SDG 15, 11 hectares were planted, mainly mangrove.

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9 Grouped project

The PAZcífico Sur REDD+ project is not a grouped project.

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10 PMCC monitoring plan

The validation/verification team verified that the parameters contemplated in the monitoring plan (mentioned in chapter 3.6.1.1 of the PDD) are adequate with respect to Cercarbono's REDD+ Methodology. This is because they allow you to adequately monitor activity data in the project area and reliably perform ex post emissions calculations in future reporting periods, as well as update any relevant baseline data when this is necessary (triennial, maximum every 5 years).

Furthermore, the monitoring plan indicates that the sources and procedures that will be used will be the same to make the projections of the project and baseline scenarios, so the validation/ verification team considers that the calculations of the monitoring reports will be methodologically consistent with the projections described in the PDD.

The following parameters were evaluated:

Parameter	Description
AdefEt,h	Area effectively deforested in year t and stratum h of the deforestation segment.
ECO2defETx	Emissions from deforestation that have actually occurred in all strata of the deforestation segment up to the time of Tx monitoring.
MTdef	Emissions from deforestation avoided due to the implementation of the project.
	Annual area degraded in primary and secondary way in the scenario with project, for project area and potential and leakage management area, ExPost
ECO2defLBTx	Emissions from deforestation in all strata up to the Tx monitoring moment of the baseline scenario of the deforestation segment.
EfdefMt	Emissions from deforestation leaks actually occurred in each year t in the potential leak area.
	Annual emission in the Potential Leak Area during the monitoring period
MEATx	Annual effective mitigation achieved by the project during reporting period x.
ECO2degEtx	Annual emission due to degradation in the scenario with project, Ex-Post
MEAdefTx	Effective annual emissions mitigation during the reporting period x of the deforestation segment.
MTdeg	Emissions from degradation avoided due to the implementation of the project in the Ex-Post scenario

The results of which were already resolved in the previous chapters of all the parameters established by the project, including the general ones, deforestation and degradation.

ICONTEC was in charge of reviewing the results and the veracity of the information by cross-checking the documents provided.

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10.1 Responsible for PMCC monitoring

The proponents of the project are the communities of eighteen (18) community councils of the municipalities of Barbacoas, El Charco, Roberto Payán, Magüi Payán, San Andrés de Tumaco and Olaya Herrera in the department of Nariño, with the support of Fundación Agroim-pulso and CO2CERO SAS.

The Agroimpulso Foundation is the managing partner of the project, which facilitates communication between the project proponent and the entities involved in the development of the initiative. Also, it guides and supports the development of REDD+ activities and the investments that derive from the implementation of the initiative and manages the information from the community councils to structure the project.

CO2CERO SAS, is the technical partner of the project, structures the technical inputs necessary to achieve the objectives of the initiative. In addition, it manages the services and products of entities external to the initiative to achieve project certification and accompanies field activities, diagnoses and technical surveys that contribute to the correct achievement of the initiative.

10.2 PMCC monitoring development

The methodology applied for this project was the “REDD+ Methodology for the execution of REDD+ projects consistent with the reference levels presented by Colombia to the UNFCCC Version 1.2”. This methodology is the one developed by Cercarbono for REDD+ projects in Colombia, and includes all the elements required in the “Protocol for voluntary Carbon certification of CERCARBONO Version 4.1” and Resolution 1447 of 2018 of the Ministry of the Environment and Sustainable Development from Colombia. The project complies with the conditions of applicability of the methodologies as follows:

i) The project is framed in the reduction of GHG emissions through the development of REDD+ activities

ii) The project is carried out in areas that meet the national definition of stable forest, which are:

a. Minimum area of 1 hectare
b. Minimum height of 5 meters
c. 30% canopy cover
d. 10 years of permanence as a stable forest

iii) The analysis of data, agents and causes of forest decline attributable to deforestation and degradation activities.

iv) The baseline and project scenario is consistent with the methodology developed for the national levels, reservoirs, selected sources and deforestation and degradation activities.

in) The quantification of GHG emissions or removals in the scenario with project and leaks are consistent with the methodology developed by the levels.

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national reserves, reservoirs, selected sources and deforestation and degradation activities.

we) The monitoring of GHG emissions, removals or reductions in the project scenario consistent with the sources of data and information used in the projection, including their suitability, integrity, precision and reliability.

vii) The mandatory deposits and emission sources to be considered within the project are evaluated in accordance with the provisions of the methodology.

viii) The project promotes the protection, care and consolidation of governance and culture, through the Cancún safeguards.

Furthermore, the project meets the location conditions (physiography, hydrology, soils, etc.) and the threat of deforestation and degradation characterized by a historical trend of the last decade and patterns in terms of agents, drivers and underlying causes. -tes of deforestation and degradation.

The reduction of emissions generated by the project in the monitoring period was quantified annually during the years of project implementation to date. It should be noted that the non-permanence risk value (buffer) corresponds to that determined by the execution of the Tool to estimate the carbon reserve in climate change mitigation initiatives in the land use sector (in this case 12, 5%) of emissions reductions, in accordance with what is described in resolution 1447 of 2018.

Given the difference in morphology, physical and chemical properties, and the high capture rate that the soils of mangrove ecosystems represent, a differentiation of this is then carried out within the deforestation results obtained in relation to the other covers. identified forests.

Mangrove ecosystems have high carbon capture rates due to the large proportion of roots and underground biomass reported in these covers. Additionally, these ecosystems have a greater degree of vulnerability to impacts due to the interaction they have with the terrestrial and aquatic environment (Silveira & Hernández, 2017).

Likewise, there is a great difference between the carbon stocks that occur in purely terrestrial soils because the soils of coastal systems have chemical properties that increase their carbon capture and that, contradictorily, if not managed appropriately, they could become a source of important GHG emissions. Taking into account the above, and assuming that the mangrove area has a total of 12,125.45 ha, corresponding to 3.26%, it is therefore essential to evaluate the capacity of the project to reduce said emissions identified in the baseline.

For the quantification of the existing soil biomass in mangrove ecosystems, a value of 471 is established. took as reference the value reported by the IPPC tC/ha for organic .
soils covered with mangroves widely supported by sources of

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primary information such as Adame et al., (2012); Breithaupt et al., (2012); Chmura et al., (2003); Donato et al., (2011); Kauffman et al., (2011); Osborne et al., (2011); Vegas-Vilarrú-bia et al., (2010) and adopted by the Intergovernmental Panel on Climate Change (IPCC), for the use of this value on soil organic carbon in mangrove ecosystems.

It is important to clarify that the release of carbon contained in the soil of an area covered by mangroves when deforested is total year by year and not partial as in the soil organic carbon reported in other coverages, because the IPCC (2013) describes that an immediate default value of zero (0) tC/ha is obtained in the soil after carrying out activities that affect the maintenance of these covers. To delimit the areas corresponding to mangrove within the project, the layers provided by IDEAM (2017) and the Hansen et al. model were used. (2010), Hansen et al. (2013) for the delimitation of deforested areas within this reservoir.

The following parameters were evaluated:

Parameter	Description
AdefEt,h	Area effectively deforested in year t and stratum h of the deforestation segment.
ECO2defETx	Emissions from deforestation that have actually occurred in all strata of the deforestation segment up to the time of Tx monitoring.
MTdef	Emissions from deforestation avoided due to the implementation of the project.
	Annual area degraded in primary and secondary way in the scenario with project, for project area and potential and leakage management area, ExPost
ECO2defLBTx	Emissions from deforestation in all strata up to the Tx monitoring moment of the baseline scenario of the deforestation segment.
EfdefMt	Emissions from deforestation leaks actually occurred in each year t in the potential leak area.
	Annual emission in the Potential Leak Area during the monitoring period
MEATx	Annual effective mitigation achieved by the project during reporting period x.
ECO2degEtx	Annual emission due to degradation in the scenario with project, Ex-Post
MEAdefTx	Effective annual emissions mitigation during the reporting period x of the deforestation segment.
MTdeg	Emissions from degradation avoided due to the implementation of the project in the Ex-Post scenario

In relation to the above, the project complies with the parameters established in the monitoring report and develops each of the components of the Monitoring Plan in a reliable and conservative manner.

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11 Information management

Document review is the corroboration of information to validate and verify that the project documentation – project design document and monitoring report – meets all requirements. These requirements are supported as attachments in thematic folders contained with spreadsheets. , documentation scanners, information support reports, etc. All of the above, in order to give the process relevance, transparency and reliability, taking into account that said information has a confidentiality agreement by the ICONTEC audit team.

In accordance with the information presented by the project owner, the following table presents the level of assurance achieved during the audit, according to the information that determines the quantification of GHG emissions, such as the eligible area of the project, the calculations to estimate the reduction of emissions, parameters that determine biomass, among others.

Remote determiner-tion	Document	Source of information	Assurance level
Area	Property information	Legality in land ownership	100%
Area	Eligible area of the property project	Eligibility Analysis -SIG	100%
Area	Site visit	Visit project area and plantations	100%
Biomass	Estimation of reduction tions	Spreadsheet	100%

The project proponent establishes within the PDD a risk analysis of non-permanence of the project, in compliance with resolution 1447 of 2018, and in accordance with the CERCARBONO protocol, it was considered that 12.5% of the credits generated by the project will be allocated to the reserve, as a guarantee of the possibility of non-permanence and the uncertainty in the quantification of the removals and/or emissions avoided. The audit team verifies that this percentage is being applied correctly when calculating the reduction of avoided emissions in the spreadsheets presented.

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12 Assessment of the status of the PMCC

The following table discriminates the risks and treatments that can occur within the audit process in its different phases and that can translate into errors in the estimation of the carbon calculation; This evaluation was considered to define the audit sampling plan following the indications of PE-PS-013 Specific validation and verification procedure for GHG mitigation projects:

No.	Risks that may generate errors, omissions and potential distortions	Risk assessment Level risky	Justification	Risk control system in the validation and/or verification plan and/or in the sampling plan hang
Control risks:				
1.	Human errors in the quantification of the emissions ductions. Inaccuracy: double Con- stability, significant manual transfer of key data, and inappropriate use of factors emission res.	Medium	Monitoring data related to tioned with emission factors are discharge ged from traceable and official sources	100% of the data indicated in the spreadsheet is cross-checked with the information available in the database and the information provided by the organization.
2	Lack of full coverage of data. Exclusion of significant sources, incorrectly defined limits specifically, leakage effects.	Medium	Unknown ment of the methodology requirements related to the applicability of this.	It is ensured that all data from the verification period were considered within the limits. defined objectives of the project.
3.	Inconsistency: lack of documentation of the methodological changes in the reduction calculation tion of emissions or re- GHG motions with re- lation to those used in the previous years.	Medium	Unknown ment of the requirements of the quantification methodology and/ or the requirements of the certification program.	Changes are reviewed within the sampling plan. presented that affect the quan- tification of removals or reduction GHG emissions emissions
4.	Inconsistency: Lack of documentation supporting the controls and traceability that is carried out the activities in the previous years	Medium	Unknown ment of the methodology and/or certification program requirements	Within the documentary review, field visits and interviews are reviewed and in case of request, evidence is requested that support the traceability of the information training.
Inherent Risk:				

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No.	Risks that may generate errors, omissions and potential distortions	Risk assessment Level of risk	Justification	Risk control system in the validation and/or verification plan and/or in the sampling plan
5.	Reliance on a technological platform designed for data capture, which can lead to omissions and errors in the transfer. raw or unprocessed data process to the Excel spreadsheet duction or removal of emissions.	Medium	Failures in the con- quality troll of the transfer data due to an unclear QA/ QC procedure.	The project proponent demonstrates how to quantify cation of the data, taking and capturing, and the auditor verifies through interviews with the project proponent and the project developer, to verify compliance with the different procedures hang
6.	Facts discovered after verification	High	Changes of project that may affect the declaration from Check- GHG tion.	Through the field visit, the status of project implementation is ensured.
Detection Risk				
7.	Calibration delays tion of the equipment measurement or monitoring related to the quantification of remo- tions or reductions of GEI.	Medium	Not counted with registration of the frequency of calibration of the teams established to carry out the measures conditions in the monitoring	The project proponent must establish a procedure in which a recording control of the calibration frequency of the measuring equipment is carried out to guarantee its precision and accuracy.
8.	Insufficient information that demonstrates the possession of the rights of land use in which the activity is developed forestry.	Medium	Not counted with the entire of the documents ments of te- nence of time updated rra regarding the ownership of the same.	The project proponent must present all the updated documentation that accredits them as holders of the use of the land and/or establish and demonstrate the management that has been carried out before the corresponding entities for the update and presentation of the documentation. legal cation that accredits them as holders of the use of the land where forestry activity is carried out.

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Through the different rounds of findings and the respective clarifications, the proponent made the pertinent modifications and clarifications corresponding to the audit team, to generate a stable level of confidence.

Considering all the elements collected during the strategic analysis of the project, as well as the evaluation that has been carried out throughout the course of this and the on-site audit, ICONTEC determines that:

- Analysis procedures remain representative
- The evidence and evidence collected are appropriate and sufficient to generate a conclusion of the validation and verification process.

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13 Conclusion of validation and verification

13.1 Resolution of findings

The audit team sent CO2CERO SAS and the Agroimpulso foundation, through different emails, a total of five rounds of findings, which are represented in ANNEX 1 of this report.

This document contains all the findings from both the validation part and the verification part. In turn, the findings are divided into Corrective Action Requests (SAC), Clarification Requests (SA) and Future Action Requests (SAF).

A total of 34 findings were formulated for the document. All requirements were met by the proponent. 2 SAF were reported in the findings document.

13.2 Support and information relationship

All relevant project information, such as the following documents:

a) Terms of engagement;

b) Verification/validation plan;

c) Evidence or evidence collection plan;

d) Collection of evidence or evidence;

e) Requests for clarification, erroneous statements and resulting disagreements of the verification/validation and the conclusions reached;

f) Communication with client regarding material misstatements;

g) The conclusions reached and the opinions of the verifier/validator.

It is stored on the internal server used by CO2CERO at the following link: https://grupoempresarialecologic-my.sharepoint.com/personal/sig_co2cero_co/_la-youts/15/onedrive.aspx?ga=1&id=%2Fpersonal%2Fsig%5Fco2cero%5Fco%2FDocuments%2FCarbono%2F2%5FREDD%2F1%5FProyectos%20en%20development%2F03%5FREDD%2B%20P

Once the validation and verification process is completed, all the information detailed above will be stored on the EcoRegistry platform, to which CO2CERO has access by having the project registration.

13.3 Validation and verification opinion

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ICONTEC has validated and verified the “REDD+ PAZcífico Sur” project and it complies with the Cercarbono CVCC 4.1 Voluntary Carbon Certification Protocol and the M/UT-REDD+ V 1.2 methodology.

The validation and verification process was carried out based on all the criteria of the CVCC Guide.4.1. The findings of this report show that the project, as described in the project documentation, is in line with all applicable criteria for validation and verification.

Validation and verification consisted of the following three phases:

1. A documentary review of the project design, the monitoring plan and the ex ante and ex post estimate of GHG emissions reduction;

2. On-site audit with interviews and documentary review of testimonies;

3. The resolution of pending issues and the issuance of the final validation and verification report and opinion. During the validation and verification process, corrective actions and clarifications were requested; all were successfully closed as indicated in Annex 1 of this report.

The review of the Project Description documentation and additional documents related to the ex ante and ex post estimation methodology, and monitoring; and the subsequent background investigation, follow-up interviews, and review of the parties' comments have provided ICONTEC with sufficient evidence to validate compliance with the established criteria.

In detail, the conclusions can be summarized as follows:

- The project is in line with all the criteria of the CVCC.4.1 Protocol and the Cercarbono REDD+ Methodology V1.2.
- The additionality of the project is sufficiently justified in the PDD.
- The Monitoring Plan is transparent and adequate.
- The ex ante analysis of the project's GHG emissions reductions has been carried out in a concrete, precise, transparent and conservative manner, estimating a total of 10,738,354 tCO2e, which with discounts for risk of non-permanence results in 9,416 . 407 tCO2e for an emissions reduction accreditation period of 20 years (01/01/2017 to 12/31/2036).

- The ex post analysis of the project's GHG emissions reductions has been carried out in a concrete, precise, transparent and conservative manner, estimating a total of 3,984,445 tCO2e, with a reserve of 12.5% that corresponds to 497,657 tCO2e that They result in 3,486,788 tCO2e for an emissions verification period of 6 years (01/01/2017 to 09/10/2022)

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ICONTEC considers that the different parties responsible for the project monitor and report their GHG mitigation actions in accordance with the principles of the MRV system and the accounting rules established in Resolution 1447 of 2018 and that the results of The quantification of emissions reductions are verifiable within the framework of ISO 14064-3: 2019.

The audit team can issue a positive verification opinion for the reduction of verified GHG emissions of 3,984,445 tCO2e, with a reserve of 12.5% where the individual reserve of 7.5% and the collective reserve of 5% are calculated, which corresponds to 497,657 tCO2e. Therefore, the project proponent requests **3,486,788** tCO2e in GHG emissions reduction, where the project intends to market a total of 2,903,205 tCO2e in the carbon tax and 583,583 tCO2e for the voluntary market . And a validation opinion, estimated at a total of 10,738,354 tCO2e, which with discounts for risk of non-permanence results in 9,416,407 tCO2e for an emissions reduction accreditation period of 20 years.

ICONTEC has verified with a reasonable level of assurance that this reduction in GHG emissions has been achieved in accordance with the Cercar-bono protocol and methodology.

The ICONTEC audit team wrote this validation and verification report, carried out in accordance with the protocol for Cercarbono's voluntary Certification, CVCC 4.1.

Year	Baseline emissions from deforestation and degradation (tCO2e)	Emissions from deforestation and degradation in the project area (tCO2e)	Emissions from deforestation and degradation in the leak belt (tCO2e)	Reductions in total emissions from deforestation and degradation (tCO2e)	Buffer	CARBONCER	
	ECO2defLBTx +ECO2degLBTx	ECO2PtX	EfdefM + EfdegM	MEAdef + MEA deg		REDD+	
	Yearly	Yearly	Yearly	Yearly	Yearly	Yearly	Now
2017	782.650	442.397	37.572	302.681	37.805	264.876	264.876
2018	914.769	125.283	16.819	772.667	96.506	676.161	941.037
2019	953.396	156.925	0	796.471	99.479	696.992	1.638.029
2020	986.773	249.927	0	736.846	92.032	644.814	2.282.843
2021	1.013.859	421.560	0	592.299	73.978	518.321	2.801.164
2022	1.033.997	250.516	0	783.481	97.857	685.624	3.486.788
TO-OF	**5.685.444**	**1.646.608**	**54.391**	**3.984.445**	**497.657**	**3.486.788**	

13.4 Facts discovered after validation and verification

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Until the date of issuance of this report, the audit team obtained adequate and sufficient evidence to be able to issue the verification and validation opinion described in Section 7.3 and 7.4. However, if after the date of issuance of this document facts or new information are discovered that may materially affect this validation or verification opinion, the validation/ verification team will take appropriate measures, including communication of the matter, as soon as possible to the owner of the GHG-PRR, as well as to the parties involved.

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14 References

All the documents consulted for this validation and verification are found in chapter 2.3 of this report. In addition to this information, the following documents were consulted:

1. REDD+ methodology for the execution of REDD+ projects consistent with the reference levels presented by Colombia to the UNFCCC v4.1

2. Protocol for Voluntary Carbon Certification of Cercarbono, CVCC 2.1

3. Project Description Document (PDD)- REDD+ PAZcífico Sur

4. Resolution 1447 of the Ministry of Environment and Sustainable Development. Official Gazette of Colombia, Bogotá, Colombia, August 1, 2018

5. ISO 14064-3: 2019 “Greenhouse gases - Part 3: Specification with guidance for the validation and verification of greenhouse gas claims

6. ISO 14065: 2013 Greenhouse Gases – Requirements for bodies carrying out greenhouse gas validation and verification, for use in accreditation or other forms of recognition

7. Comprehensive development of the Pacific basin, IIAP

8. Protocol for the national and subnational estimation of biomass-carbon in Colombia. Yepes et al. 2011

9. Proposal for a Reference Level of Forest Emissions from deforestation in Colombia for payment for REDD+ results under the UNFCCC (NREF). IDEAM, 2019

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15 History of the document (Validation and verification report with board)

Provide the complete history of the Joint Validation and Verification Report, with the correct and updated versions and edition dates, and include a brief description of the changes made from the previous version. It is appreciated that changes made after the initial version are made with a different font color (blue is suggested), as this facilitates the review and approval processes.

Version	Date	Comments or changes
1.0	03/14/2023	Initial version.
2.0	03/21/2023	Final Report with RT Corrections
3.0	04/10/2023	Final Report with corrections Organization

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16 History of the squad

Version	Date	Comments or changes
1.0	30.10.2019	Initial version.
2.0	01.08.2022	New template for the joint validation and verification process that applies to PMCC in the land use sector.

17 ANNEX 1: Findings

The following table explains how ICONTEC has treated the Corrective Action Request - SAC, Clarification Request - SA or Future Action Request - SAF, describing how the PP has modified the design of the GHG mitigation initiative, corrected the DDP, the monitoring report or provided additional explanations or evidence that satisfied ICONTEC's requests.

This table also explains the issues related to the findings, the responses provided by the owner of the GHG mitigation initiative, the means of validation/verification of such responses and their documentary references, as well as the changes that they require. They submitted to the DDP or monitoring report or its attached documents:

SAC No.	01	**Requirement No.**	Plantilla PDD- Sector UT V2.0.1 1.2	**Date:** 10-12-2022
Description of the SAC				
Contact information for the project owners or other participants (foundation) cannot be found. Include all requested information.				
Project Developer Response				**Date:** 10-31-2022
Information related to identification and contact for the initiative holders is attached, as well as for associated roles such as technical associate and manager.				
Documentation submitted by the project developer				
Audit_VV_1_2022\6_Project Document\1_Project Document\PDD PAZcific South_V2.docx\1.2. Information from the PMCC holder (P. 7.)				
Evaluation of the audit team				**Date:** 11-20-2022
The requested changes were made. Closed SAC				

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SAC No.	02	Requirement No.	Plantilla PDD- Sector UT V2.0.1 1.3	Date: 10-12-2022

Description of the SAC

The project objective must include at least:
- The main activity
- The location of the implementation or process area
- Period of execution of project actions

Project Developer Response — **Date:** 10-31-2022

The project objective is adjusted, including the main activity related to emissions reduction, the location and execution period for the general objective and specific objectives are presented.

Documentation submitted by the project developer

Audit_VV_1_2022\6_Project Document\1_Project Document\PDD PAZcific South_V2.docx\1.4 Objective of PMCC. (P. 9.).

Evaluation of the audit team — **Date:** 11-20-2022

The requested modifications were made within the document.

Closed SAC

SAC No.	03	Requirement No.	Plantilla PDD- Sector UT V2.0.1 1.4	Date: 10-12-2022

Description of the SAC

The action execution period must have start and end dates.

Project Developer Response — **Date:** 10-31-2022

The execution periods are defined for the REDD+ activities in implementation of the REDD+ PAZcífico Sur project during the accreditation period of the initiative, within this their duration and frequency are determined, taking into account that most of the activities aim for self-management. at the end of the project cycle.

Documentation submitted by the project developer

Audit_VV_1_2022\2_Cobeneficios\02_REDD Activities\REDD+ Activities PAZcífico Sur_V3.xlsx\Execution period.

Evaluation of the audit team — **Date:** 11-20-2022

The requested modifications were made within the document.

Closed SAC

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SAC No.	04	Requirement No.	Cercarbon Protocol V4.1 4	Date: 10-12-2022

Description of the SAC

According to the Cercarbono protocol, the sectorial scope does not correspond to 4.2.9, the type does, but the description is not in accordance with the protocol. The project activity is not described.

Project Developer Response	Closes: DD-MM-YYYY

The adjustment of the sectoral scope, general and specific activity is carried out in accordance with the Cercarbono Protocol subchapter 4.1 PMCC activities and 4.2 Sectoral scopes.

Documentation submitted by the project developer

Audit_VV_1_2022\6_Project Document\1_Project Document\PDD PAZcific South_V2.docx\1.5.1 Sectoral scope and type of PMCC (P.10).

Evaluation of the audit team	Date: 11-20-2022

The requested modifications were made within the document.

Closed SAC

SAC No.	05	Requirement No.	Plantilla PDD- Sector UT V2.0.1	Date: 10-12-2022

Description of the SAC

The numbering of the Project Document is incorrect in several parts. Modify the style according to the hierarchy of the titles (ex. 1.6 becomes 1.1.1.1)

Project Developer Response	Date: 10-31-2022

The entire numbering of the project document is adjusted, corresponding to the hierarchy granted for each of the titles. The numbering has been modified with respect to the initial template, adding section 1.3 Information from other institutional participants.

Documentation submitted by the project developer

Audit_VV_1_2022\6_Project Document\1_Project Document\PDD PAZcific South_V2.docx

Evaluation of the audit team	Date: 11-20-2022

The requested modifications were made within the document.

Closed SAC

SAC No.	06	Requirement No.	REDD Methodology V1.2 2.1	Date: 10-12-2022

Description of the SAC

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To identify possible overlaps within the project area, it is necessary to identify the areas that demonstrate the protection areas mentioned within the project document, Ley 2da and the Sanquianga PNN, giving clarity and certainty of the location of these (mapping and exits). graphs).	
Project Developer Response	**Date:** 10-31-2022
Figure 13 of the PDD presents the cartographic output of protected areas evidencing that there are no transfers with protected areas under Act 2 of 1959, nor any area of the Single National Register of Protected Areas (RUNAP).	
Documentation submitted by the project developer	
Audit_VV_1_2022\6_Project Document\1_Project Document\PDD PAZcific South_V2.docx\2.2.1 Criteria for additionality according to methodology\Figure 13. Map of protected and conservation areas. (P.70)	
Evaluation of the audit team	**Date:** 11-21-2022
The requested modifications were made within the document. Closed SAC	

SAC No.	07	**Requirement No.**	Plantilla PDD- Sector UT V2.0.1 1.4.2.3	**Date:** 10-12-2022
Description of the SAC				
Within the DP, the information corresponding to section 1.4.2.3 of the Cercarbono PDD template is not identified.				
Response from the project developer Section				**Date:** 10-31-2022
1.5.2.3 is added. Total area of the PMCC, equivalent to the required number. It is not completely the same as the original numbering, since subchapter 1.3 Information from other institutional participants of the PMCC has been added.				
Documentation submitted by the project developer				
Audit_VV_1_2022\6_Project Document\1_Project Document\PDD PAZcific South_V2.docx\1.5.2.3. Total area of the PMCC (P. 14.).				
Evaluation of the audit team				**Date:** 11-21-2022
The requested modifications were made within the document. Closed SAC				

SAC No.	08	**Requirement No.**	Plantilla PDD- Sector UT V2.0.1	**Date:** 10-12-2022
Description of the SAC				

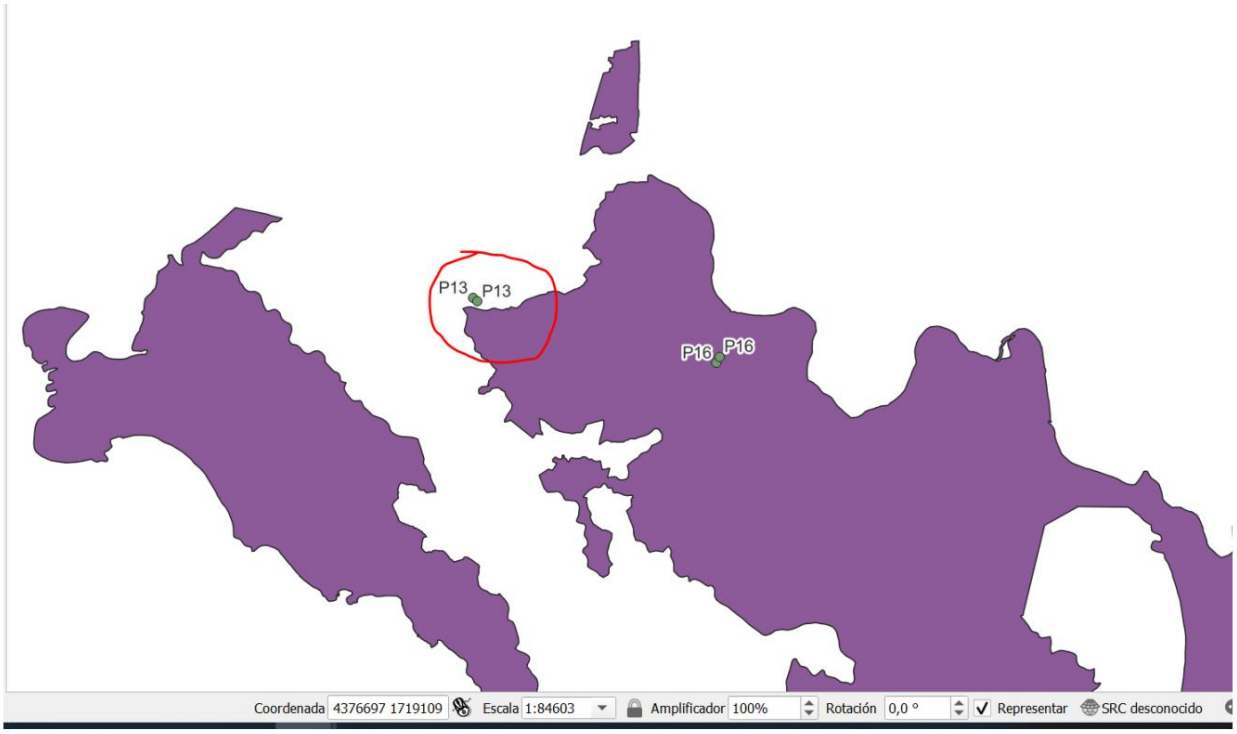
Machine Translated by Google

Within a table, identify the coordinates of the 18 community councils within the project limits chapter.
Project Developer Response **Date:** 10-31-2022
The table is added with the geographical coordinates of the eighteen (18) community councils according to the spatial information processed under the CTM12 coordinate system. Likewise, they are presented in section 2.5.1 Areas of intervention
Documentation submitted by the project developer
Audit_VV_1_2022\6_Project document\1_Project document\PDD PAZcific South_V2.docx\ 1.5.2.1.Spatial boundaries\Table 2 Geographic coordinates community councils REDD+ PAZcific South project (P. 12.). Audit_VV_1_2022\6_Project document\1_Project document\PDD PAZcific South_V2.docx\ 1.5.2.1.Spatial boundaries\Table 46. Area eligible by community council (P. 108.).
Evaluation of the audit team **Date:** 11-21-2022
The requested modifications were made within the document. Closed SAC

SAC No.	09	**Requirement No.**	REDD Methodology V1.2	**e:** 10-12-2022
Description of the SAC				

Machine Translated by Google

Within the cartography provided and during the documentary review, it is identified that plot P13, as shown in the image, is not within the project area, said plot could not be corroborated in the field, as it is part of the red zones of the project, so its correction is requested, and if necessary, the modification of the corresponding calculations and the pertinent documents.



Project Developer Response	**Date:** 10-31-2022

Machine Translated by Google

Complying with the principles of reliability, consistency and conservatism, which imply that the biomass emission factor parameter is developed with information from forest inventories representative of the forest strata of the project, which makes it suitable for its incorporation in the estimates of baseline scenarios that carry out a methodological reconstruction of the Reference Level of Forest Emissions of Colombia.

In this way, it is identified that the plot -P13- is consistent in terms of structure and composition of the forest, with respect to the type of forest identified within the project area, evidenced in the Inventory Database carried out (Auditoria_VV_1_2022\12_Monitoring report \01_Forest Inventory\DatosCompilados_EcologicSAS.xlsx), where the plots that have the same forest cover are presented, thus achieving the representativeness of the plot with the project coverage, for their agreement and inclusion for the definition of the emission factor (Section 6.4 of the M/UT-REDD+ Methodology V 1.2 of CERCARBONO).

Furthermore, since the emission factor is an important parameter for the identification of the baseline scenario, and with the understanding that this is determined from the analysis of the reference area, it is concluded that the plot -P13- is within It is less than 150 meters from the limit of the project area, guaranteeing that the information collected within it is consistent with the other results obtained and that it integrates the areas that are part of the project design.

Documentation submitted by the project developer

- Audit_VV_1_2022\3_Carbono\FE REDD+ PAZCIFICO SUR.xlsx
- Audit_VV_1_2022\12_Monitoring report\01_Forest inventory\Photographic material Evidence

audit team	**Date:** 11-21-2022

Taking into account the developer's response, the information on plot 16, which is located within the eligible area of the project, is reviewed to corroborate the information on the similarity of species and coverage in question and a relationship of mosaic ecosystems of crops with natural spaces with a distance of 4 km in a straight line between plot 16 and plot 13, and a similarity in species of approximately 60%, taking into account the particularity of the project and the circumstances that were evident in the field by themes of security and what was exposed during the different tours, the location of the plot outside the project area, but within the reference area, is accepted.

SAC Closed.

SAC No.	10	**Requirement No.**	REDD Methodology V1.2 4.2	**Date:** 10-12-2022

Description of the SAC

Machine Translated by Google

Cercarbono's methodology indicates that, for the project to be eligible, it must meet the following conditions:

- The areas where it is developed must be forest or be areas of forestry suitability for the establishment of restoration processes. The definition of forest must be aligned with that established in the international context and that adapted in the national context where the PMCC is implemented.

Starting from the above and understanding the definition of forest *"Land occupied mainly by trees that may contain shrubs, palms, guaduas, grasses and lianas, in which tree cover predominates with a minimum canopy density of 30%, a height minimum canopy (in situ) of 5 meters at the time of identification, and a minimum area of 1.0 ha. Tree covers of commercial forest plantations, palm crops, and trees planted for agricultural production are excluded.*

During the site visit, it was found that some areas that are part of the project do not comply with the previous condition, some areas being crops and other bodies of water, so it is necessary to modify the eligible areas of the project.

Project Developer Response	**Date:** 10-31-2022

The eligible area of the project is modified, complying with section 5.2 identification of REDD+ activity areas and its subchapters, declaring as eligible the areas that are stable forest for at least ten years and at the start date of the project; For this purpose, the discounting of permanent water bodies and present crops was carried out through reliable national geographic information.

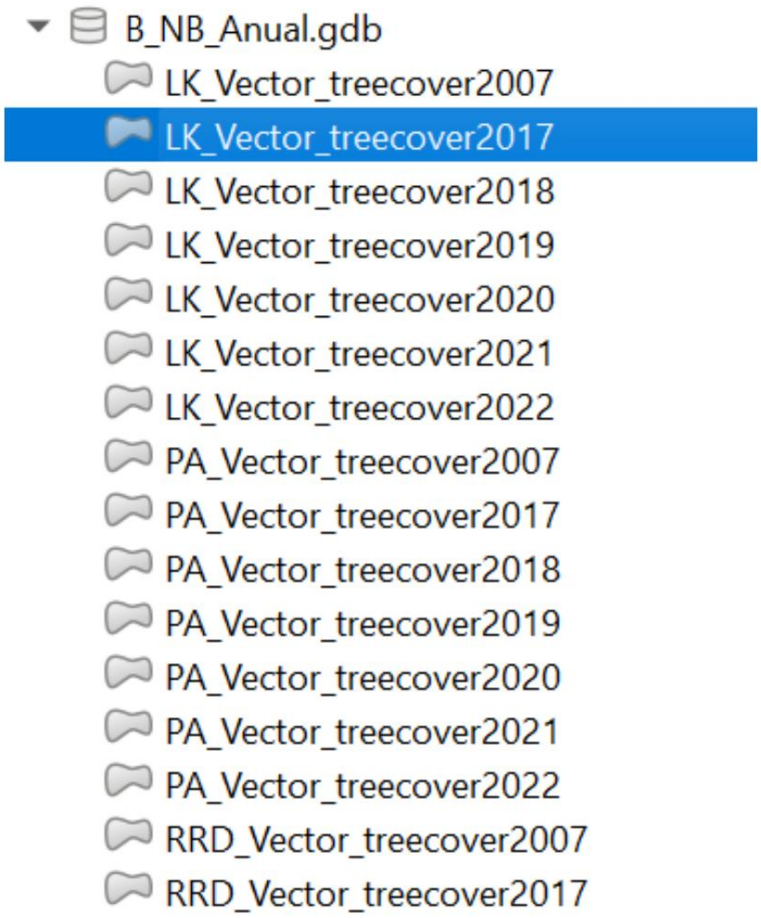
Documentation submitted by the project developer

- Audit_VV_1_2022\4_SIG\1_GDB\B_NB_Anual.gdb (for each of the Feature Classes within the GDB).
- Auditoria_VV_1_2022\4_SIG\4_Raster\B-NB (The included Rasters are left in TIF format). don't)
- Auditoria_VV_1_2022\4_SIG\5_SHP\B-NB (additionally, the vector results of each year of analysis are left in shape-file format)
- Audit_VV_1_2022\3_Carbono\Deforestacion_REDDPAZcificoSur_V1.xlsx (update of the area in the quantification of avoided emissions)

Evaluation of the audit team Date: 11-23-2022	

Machine Translated by Google

It is necessary that, for the generated layers, a differentiation of the information is made, where the identification of the forest and the non-forest is recognizable within the GDB.



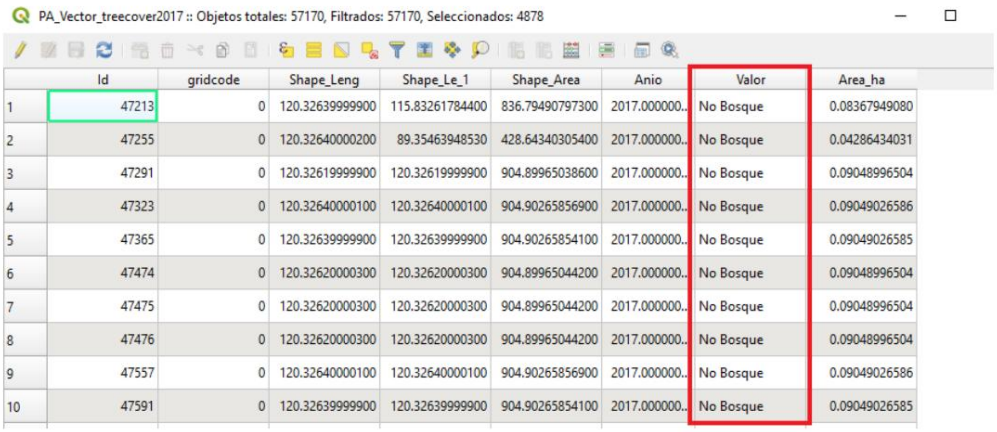
With this information, it will be possible to review the Deforestacion_REDDPAZ-cificoSur_V1 folder, and the parameters presented there.

Open SAC

Project Developer Response	**Date:** 17-12-2022

Machine Translated by Google

Although the differentiation is made through the “gridcode” field, the “Value” field is added in which the difference between the Forest and Non-Forest polygons is made more explicitly.



	Id	gridcode	Shape_Leng	Shape_Le_1	Shape_Area	Anio	Valor	Area_ha
1	47213	0	120.32639999900	115.83261784400	836.79490797300	2017.000000..	No Bosque	0.08367949080
2	47255	0	120.32640000200	89.35463948530	428.64340305400	2017.000000..	No Bosque	0.04286434031
3	47291	0	120.32619999900	120.32619999900	904.89965038600	2017.000000..	No Bosque	0.09048996504
4	47323	0	120.32640000100	120.32640000100	904.90265856900	2017.000000..	No Bosque	0.09049026586
5	47365	0	120.32639999900	120.32639999900	904.90265854100	2017.000000..	No Bosque	0.09049026585
6	47474	0	120.32620000300	120.32620000300	904.89965044200	2017.000000..	No Bosque	0.09048996504
7	47475	0	120.32620000300	120.32620000300	904.89965044200	2017.000000..	No Bosque	0.09048996504
8	47476	0	120.32620000300	120.32620000300	904.89965044200	2017.000000..	No Bosque	0.09048996504
9	47557	0	120.32640000100	120.32640000100	904.90265856900	2017.000000..	No Bosque	0.09049026586
10	47591	0	120.32639999900	120.32639999900	904.90265854100	2017.000000..	No Bosque	0.09049026585

In the same way, the layers in Shapefile format are added to the 4_SIG folder of the project for better review using QGIS software.

Documentation submitted by the project developer

Auditoria_VV_1_2022\4_SIG\1_GDB\B_NB_Anual.gdb
Audit_VV_1_2022\4_SIG\5_SHP\B-NB

Evaluation of the audit team | **Date:** 12-29-2022

The information is reviewed and a crosscheck is carried out with the areas defined for the project and the cartography provided with the new modifications and the discovery is considered completed.

SAC closed.

Machine Translated by Google

SAC No.	11	Requirement No.	Plantilla PDD- Sector UT V2.0.1 1.5	Date: 10-12-2022

Description of the SAC

Within chapter 1.7 of the DP, corresponding to the ownership or right to use the area, installation or process, the additional resolutions corresponding to the collective titles of the Rosario River are not evident within table 2, as are :

- Res. 1084 of November 23, 1998 - Res. 1213 of October 23, 2000
- Nothing. 653 of October 4, 2001
- Res. 2546 of December 23, 2002

If you are not part of the project, omit all the corresponding annexes within the folders that are contributed to the project.

Project Developer Response	Date: 10-31-2022

The documents from folder 10_Land Tenure are deleted, leaving only the current resolution corresponding to 2546 of December 23, 2002.

Documentation submitted by the project developer

Audit_VV_1_2022\10_Land Tenure\17_Res_2546_RioRosario.pdf

Evaluation of the audit team	Date: 11-21-2022

The requested modifications were made within the document.

Closed SAC

Machine Translated by Google

SAC No.	12	Requirement No.	Environmental and social safeguards	Date: 10-12-2022

Description of the SAC

Within the temporary association contract, 15 community councils are named that grant the Agroimpulso foundation the power to carry out this type of contract for the execution of projects aimed at generating emission reduction certificates for the project, however, it is not clear :

1. What is the agreement you have with the other community councils (3 Councils community) to carry out these agreements.
2. How this type of agreement signing is communicated to the community councils since a part of the percentage of the total profits of the project will be allocated to the execution of this agreement.

Project Developer Response — **Date:** 10-31-2022

1. The project follows the same regular negotiation channel for all community councils, within the process of consolidating the initiative, the community councils Imbilpí del Carmen, Tablón dulce and Tablón salado were in the process of determining involvement within the REDD+ PAZcífico Sur project, unlike the fifteen (15) remaining community councils, it is evident that the date of signing the management agreement with these community councils is after the signing of the temporary association contract between Fundación Agroimpulso and CO2CERO SAS. To guarantee the inclusion of all eighteen (18) community councils in the contractual figure established with the technical partner CO2CERO SAS, another yes is made to the temporary association contract signed on September 23, 2022.

2. These community councils were previously consulted in accordance with the procedure used in the remaining fifteen (15) community councils, to consolidate the initiative within their territory, which is described in the PDD subchapter 6 .
   Consult interested parties. During the socialization phase, they were given information related to the technical associate corresponding to CO2CERO SAS and the percentages under which the resource will be distributed were determined, for which all community councils through the agreement for management, presentation and project execution, ratified their decision and accepted the information previously received, including the three community councils involved after those initially defined (Imbilpí del Carmen, Tablón dulce and Tablón salado).

Documentation submitted by the project developer

Machine Translated by Google

1. Audit_VV_1_2022\1_Agreements\01_Technical associate contract\Contract_Agroim-pulse_CO2WAX.pdf

Audit_VV_1_2022\1_Agreements\01_Contract associated technical\OtroSi_Agroim-pulse_CO2CERO SAS.pdf
\Auditoria_VV_1_2022\1_Agreements\02_Community Contract\5_Convenio_Imbilpi del Car-men.pdf

Audit_VV_1_2022\1_Agreements\02_Community Contract\13_Agreement_Tablon dulce.pdf
Audit_VV_1_2022\1_Agreements\02_Community Contract\14_Agreement_Tablon Salado.pdf
Audit_VV_1_2022\6_Project document\1_Project document\PDD PAZcífico Sur_V2.docx\6. Consultation with interested parties

Evaluation of the audit team	**Date:** 11-22-2022

Within the other if of the contract, it is identified that:

1. In the modifications made, for the seventh clause, within the conditions specials on the marketing of bonds, paragraph 3 is missing, which is not found within the text. Make the respective clarification.
2. Regarding paragraph 4, Recalculate pro rata, with the partial sale of the bonds, When they refer to *"that the amount of bonds in each compartment can change depending on whether some parties sell and others do not, which will vary the percentage of initial participation…" they refer* to the percentages of the Agroimpulso and CO2CERO foundation. Or does it refer in the same way to 60% of the income of each community council?

3. Referring to the eighth clause. Advance: it is recommended that the amount not be set in a defined amount of carbon credits, due to the variation that the price of the same may have in the market at the time of its sale, being an advantage or disadvantage for the parties. .

Make the respective corrections and/or clarifications.

Open SAC

Project Developer Response	**Date:** 11-24-2022

Machine Translated by Google

1. Once the other yes of the project has been verified, the omission of paragraph 3 within the consolidation of the document is confirmed. In order to guarantee the traceability and consistency of the Other Yes document signed between Fundación Agroimpulso and CO2CERO SAS, the adjustment is made on it, including in the numbering of paragraph 3.
2. Regarding paragraph 4, the compartments created for the commercialization of the project's carbon credits are the method that allows their commercialization not to generate constant flows of resources to the communities, understanding the need to protect these benefits in time and space. , of foreign and illicit actors associated with the territory. In this way, the compartments grant each community a quantity of credits available for sale according to the investment priority, transaction security and transparency of its execution, depending on the participation percentages defined for each one. of them; In this way, the sales will not generate simultaneous income for everyone, but will be granted to the compartment (community) for which the sale was deliberated and made. These percentages are agreed upon, respecting the model of 60% for the community, 40% for technical and manager associates, without this influencing the amount corresponding to each one.
3. The definition of the price for the negotiation carried out between Fundación Agroimpulso and CO2CERO SAS was determined under the market dynamics at the time of the negotiation with the approval of both parties, however, it recognizes the risk associated with setting prices in the face of own oscillations. of this.

Documentation submitted by the project developer		
Audit_VV_1_2022\1_Agreements\01_Contract pulse_CO2CEROSAS_V2.pdf	associated	technical\Otrosí_Agroim-

Evaluation of the audit team	**Date:** 12-29-2022

The information related to the new documentation is verified and the discovery is concluded.

Closed SAC

SAC No.	13	**Requirement No.**	Environmental and social safeguards	**Date:** 10-12-2022

Description of the SAC

It is necessary to improve communication between actors external to the project such as mayors, governors, among other authorities that work in the territory, since it is evident that although it is true that a formal invitation is made by the project, it is not It is guaranteed that the information reaches the end user, that they manage to participate in the process that is being carried out with the communities.

Due to the above, it is necessary to carry out actions (meetings or socializations) in the near future with the different actors, so that they can obtain basic knowledge of the project, in addition to the emails that are sent, which can guarantee that a person like minimum of the entity that is invited has knowledge of the project.

Machine Translated by Google

Project Developer Response	Date: 10-31-2022
Attached is the list of attendance of the socialization carried out to the authorities and environmental entities in the territory on August 19, 2022 in Tumaco (Nariño), within which the Government of Nariño, Departmental Agriculture Secretariat, Recompas, Aso- caetnar, Fedecacao and National Learning Service (SENA). Additionally, in order to guarantee coupling with the institutional and project objectives, the responses to the questionnaire carried out to the participating entities regarding their relationship with the initiative are attached. Likewise, the project consolidates outreach strategies with environmental authorities according to their availability to carry out formal socialization. As an example of this, support is presented from the meeting held with the mayor of Tumaco in person for socialization. of the initiative.	

Documentation submitted by the project developer
Audit_VV_1_2022\11_Annexes and supplements\01_Calls\02_Socialization\So-cialization_AmbientalesAuthorities.pdf Audit_VV_1_2022\11_Annexes and supplements\01_Calls\02_Socialization\In-volucramiento_AmbientalesAuthorities.pdf Audit_VV_1_2022\11_Annexes and supplements\01_Calls\02_Socialización\So-cializacion_AlcaldiaTumaco.pdf

Evaluation of the audit team	Date: 11-23-2022
The socialization that is being presented on August 19 called “Socialización_Autorida-desAmbientales”, the attendance of the secretary of Recompas, Asocaernar, Fedecacao and SENA are not evident are not environmental authorities and if the participation of the community councils is evident, However, it does not respond to the finding, where environmental authorities are required to have first-hand knowledge of the basic information of the project. Open SAC	

Project Developer Response	Date: 11-24-2022
The attendance format for the socialization of August 19, 2022 is reviewed, ratifying the presence of the delegate of the Secretary of Agriculture Duvadier Jose Astaiza (Signer 1 on page 2) and delegate of the governorate of Nariño Sandra Lucia Mejía (Signer 20 on page 1). Additionally, the execution of socialization in the Tumaco mayor's office is confirmed; In the case of Roberto Payán and Magüi Payán, the processes are still being carried out due to the public order situation and availability of personnel to attend to news, achieving spaces with the Government Secretary of Magüi Payan and the UMATA of Roberto Payán. In the case of the mayors of these two municipalities, the project was presented via email and invitation to a socialization meeting (Check destination list of email support and presentation document issued.), still awaiting a response from Of the entity. In the cases of these municipalities, the media are informal, since their government facilities do not have the conditions to handle correspondence and respond to requirements, a situation evidenced in the field.	

Documentation submitted by the project developer

Machine Translated by Google

Audit_VV_1_2022\11_Annexes and supplements\01_Calls\02_Socialization\So-cialization_AmbientalesAuthorities.pdf Audit_VV_1_2022\11_Annexes and supplements\01_Calls\02_Socialización\So-cializacion_AlcaldiaTumaco.pdf Audit_VV_1_2022\11_Annexes and supplements\01_Calls\02_Socialization\So-cialization_Secretaria_MaguiPayan.pdf Audit_VV_1_2022\11_Annexes and supplements\01_Calls\02_Socialization\So-cialization_UMATA_RobertoPayán.pdf Audit_VV_1_2022\14_Findings\Findings 11-23-2022\ReDD+ PAZcífico Sur project presentation_ .msg Audit_VV_1_2022\14_Hallazgos\Hallazgos 11-23-2022\Presentation of REDD+ PAZcífico Sur project to authorities.pdf Audit_VV_1_2022\14_Findings\Findings 11-23-2022\Invitation_MaguiPayan.png Audit_VV_1_2022\14_Findings\Findings 11-23-2022\Invitation_RobertoPayan.png
Evaluation of the audit team **Date:** 12-29-2022
The information presented in the new set of documents is reviewed and the necessary clarity required is given. Closed SAC

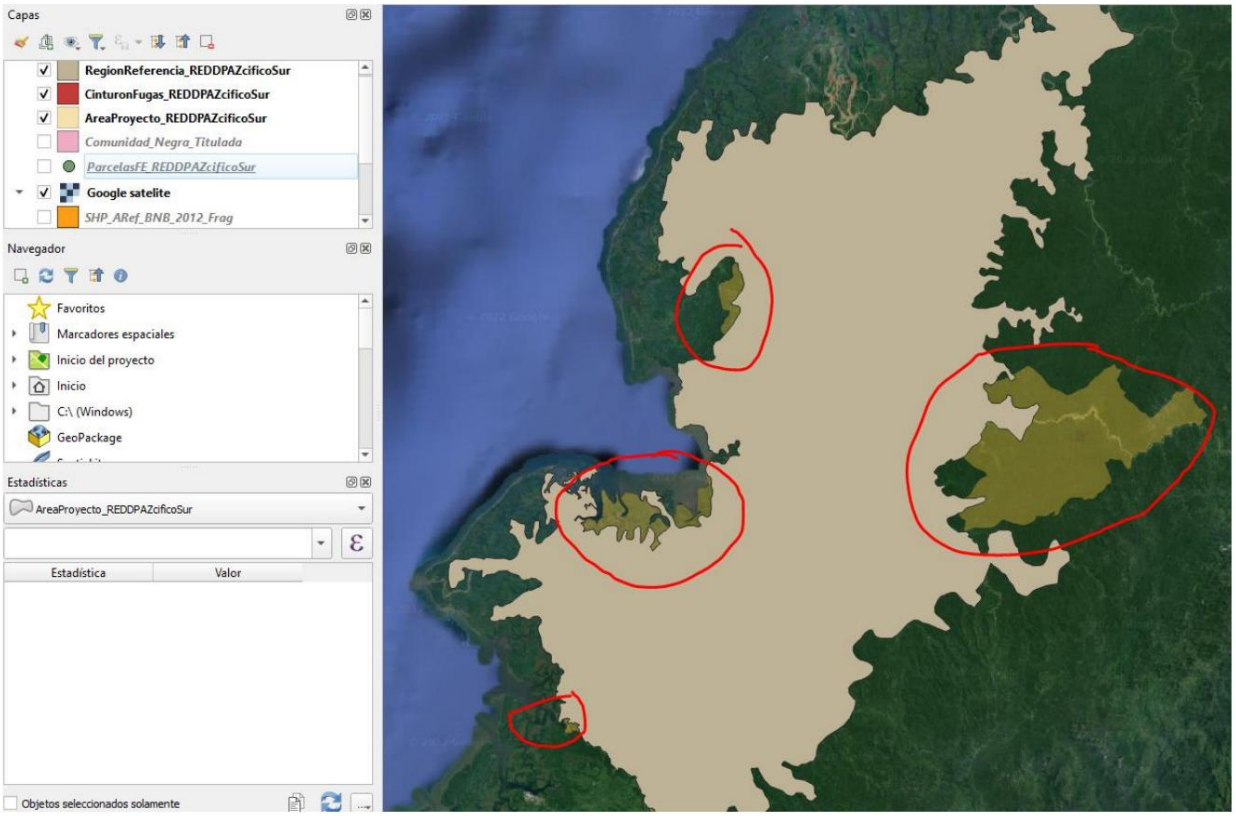
SAC No.	14	**Requirement No.**	REDD+ Methodology V 1.2 5.3	**Date:** 11-21-2022
Description of the SAC				

Machine Translated by Google

Within the spatial limits of the project, they must be explicitly defined in the PDD, where:

- ***The reference area*** *is the geographic region where the analysis of agents and causes of deforestation and forest degradation is carried out, it is the largest region of the PMCC, it is delimited from the preliminary analysis* ***and includes the other areas.*** *The reference area must be defined in a geographic information system. It must include forest areas and may or may not include non-forest areas. The reference area is not subject to monitoring, but must be re-evaluated in the event of a revalidation of the baseline scenario. Its delimitation is based on the identification of microbasins that overlap or are adjacent to the PMCC area.*

Based on the above, it follows that the reference area of the project as shown below does not include the other areas in their entirety:



Make the relevant modifications.

Project Developer Response	**Date:** 17-12-2022

The reference region is updated, complying with the criteria that must register the other areas; the other modifications that this change requires are also updated.

Documentation submitted by the project developer

Machine Translated by Google

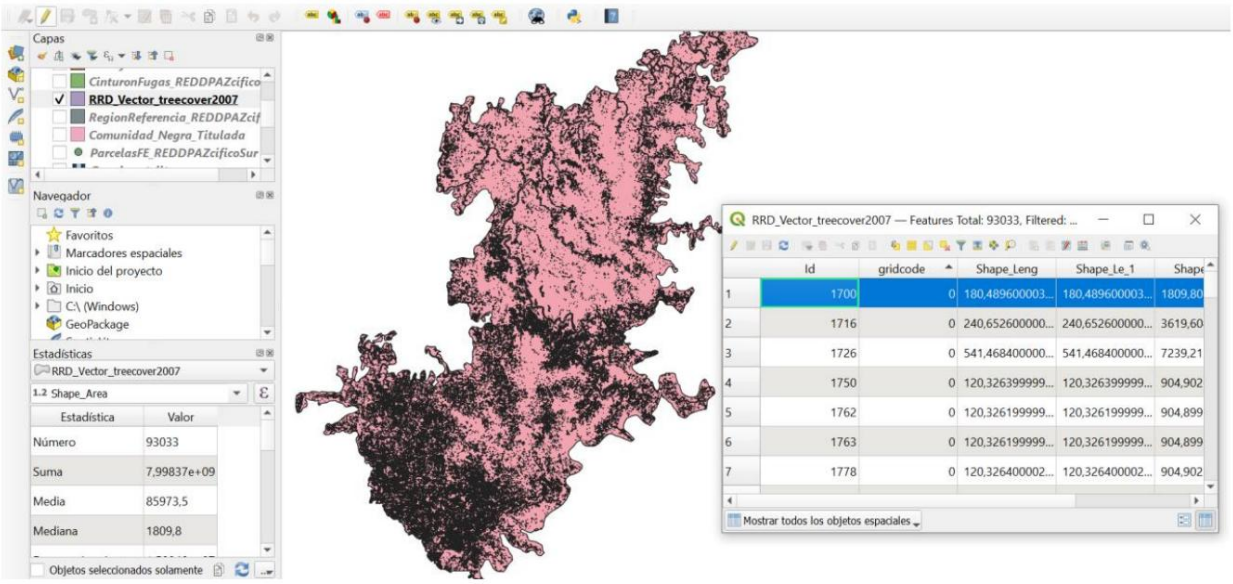
Audit_VV_1_2022\6_Project Document\1_Project Document\PDD PAZcific South_V3.docx\2.4.1 Reference Region\Figure 18. Audit_VV_1_2022\4_SIG\5_SHP\RegionReferencia_REDDPAZcificoSur4_2.shp

Evaluation of the audit team	**Date:** 12-29-2022
Modifications were made that comply with what is defined by the program. Closed SAC	

SAC No.	15	**Requirement No.**	REDD+ Methodology V 1.2	**ate:** 11-22-2022

Description of the SAC

Within the cartography provided, it is not possible to recognize which areas refer to forest and non-forest, so it is not possible to identify the values of the parameter table found within the document “Carbono_deforestación_REDDPAZci-fico Sur v1 ”. It is necessary that the cartography tables refer to the data that was generated to give clarity to the information.



Project Developer Response	**Date:** 17-12-2022
The GDB Feature class information is updated, explicitly differentiating the Forest and Non-Forest categories within the “Value” field.	

Documentation submitted by the project developer

Machine Translated by Google

Auditoria_VV_1_2022\4_SIG\1_GDB\B_NB_Anual.gdb	
Evaluation of the audit team	**Date:** 12-29-2022
The information is reviewed and the finding is considered satisfactorily resolved. Closed SAC	

SAC No.	16	**Requirement No.**	Announcement #7	**Date:** 11-22-2022
Description of the SAC				
Taking into account the requirements of the CERCARBONO program and its statement #7, it is necessary that: *"Cercarbono's voluntary carbon certification program informs holders and developers of REDD+ Climate Change Mitigation Projects (PMCC) and the Validation and Verification Bodies (OVV) authorized in our program that, due to the complexity it represents the formulation and development of REDD+ projects, based on the principle of transparency and the need for effective participation of the actors involved, has decided that from today Section 8.2 - Public consultation of the Cercar-bono Protocol, Version 4.1 , takes effect. This decision applies to PMCCs that: • Are in the formulation stage and have a registration ID on the EcoRegistry platform. • They have started or are in the validation stage with an OVV. The public consultation process will strengthen the design and transparency of REDD+ projects, and the final version of the Project Description Document (PDD) will be validated. The consultation will last 30 solar days and at the end of this period, EcoRegistry will generate a compilation of comments that the developer must respond to in a maximum of 15 solar days, which will be published in* *the project notes section in each of the PMCC. These comments must be inserted in their entirety, along with the responses to them by the developer, in the final version of PDD."* Due to the above, it is necessary to provide this process for the present Validation of the project.				
Project Developer Response				**Date:** 11-24-2022
Currently, the project has passed the internal review process by the certification program (See *Findings 11 - 23 - 2022\Estado_Ecoregistry.JPG),* in accordance with its registration and certification procedure, as well as consultations made directly, once Once the technical review process has been completed by Cercarbono, it moves on to the public consultation process, a state in which it has been since 11-24-2022 (See https:// www.cercar-bono.com/es/ comments-on-projects/).				
Documentation submitted by the project developer				
Audit_VV_1_2022\14_Findings\Findings 23 - 11 -2022\Estado_Ecoregistry.JPG Auditoria_VV_1_2022\14_Findings\Findings 23 - 11 -2022\ConsultaPublica_Ecoregistry.png https://www.cercarbono.com/es/comments-on-projects/				

Machine Translated by Google

Evaluation of the audit team	Date: 12-29-2022
The consultation is carried out on the standard platform, where everything requested is fulfilled. Closed SAC	

SA No.	1	Requirement No.	Project document template	Date: 10-12-2022

Description of the SA

La Ilustración 5 evidencia el objetivo principal del presente proyecto, siendo fundamental crear estrategias para reducir la tasa de deforestación y degradación forestal dentro de los distintos consejos comunitarios, las cuales se fundamentan en las actividades REDD, que, a su vez se orientan al cumplimiento de objetivos específicos del proyecto.



Ilustración 6. Diagrama de objetivos para el proyecto REDD+ PAZcífico Sur.
Fuente: **(CO2CERO SAS, 2022).**

Clarify whether illustration 5 mentioned in the paragraph shown above really shows the main object of the project or is it a typography issue and refers to illustration 6.

Modify all illustrations and figures in the document that require modification.

Project Developer Response	Date: 10-31-2022
The adjustment is made to the numbering and cross-references of figures and tables mentioned within the document. The numbering in the mentioned paragraph corresponding to illustration 6 of the document is adjusted.	

Machine Translated by Google

Documentation submitted by the project developer	
Audit_VV_1_2022\6_Project Document\1_Project Document\PDD PAZcific South_V2.docx\1.7.16 Project Context (P. 66.).	
Evaluation of the audit team	**Date:** 11-23-2022
The requested modifications were made within the document. SA Closed	

SA No.	2	**Requirement No.**	Agreement between the parties	**te:** 10-12-2022

Description of the SA

In order to give clarity to the principles that the Projects must consider, it is requested to clarify the following information corresponding to the document “agreement for management, presentation and execution of projects” that are part of the Community Contract folder:

- *"3. THIRD PERMIT FOR REFORESTATION OF DEGRADED AND/ OR DE-FORESTED AREAS. The XXXXXXX COMMUNITY COUNCIL grants AGROIMPULSO permission for the installation of forest plantations, reforestation processes of the natural forest and other activities that are contemplated within the project aimed at improving environmental conditions.* It is necessary to clarify in which areas these forest plantations will be implemented if these forest plantations are required.

- *“7. SEVENTH.PAYMENT: Once the carbon credits are issued and marketed, THE XXXXXXXX COMMUNITY COUNCIL undertakes to compensate AGROIMPULSO's efforts with payment for services in accordance with what is stipulated by law and tradition for this type of projects. PARAGRAPH: Taking into account that AGROIMPULSO is empowered for commercialization, once this is carried out, the corresponding monies will be managed through a trust in administration and from these sums the services and participation of AGROIMPULSO will be paid. This participation will be equivalent to a percentage of forty percent (40%) of the value of each sale.”* Clarification of the percentages of the different parts within the document is required, understanding that the total is 100% and 60% is equivalent to the percentage that corresponds to the communities.

Project Developer Response	**Date:** 10-31-2022

Machine Translated by Google

1. The project may establish restoration or reforestation activities in favor of reducing emissions from deforestation and forest degradation within the project limits, meeting the eligibility criteria since the project has 35,901.91 hectares that do not comply with the concept of forest, and this area is the main area to carry out these activities. 2. For each community council, due socialization and consent was applied related to the percentage of participation equivalent to 60%, highlighting that the Agroimpulso Foundation receives 40% as compensation for the efforts carried out. The consent minutes show how during the clarification phase of the project, questions and discussions related to the percentage for the communities were presented, which was an effective part of the consultation and was ratified in the management agreement. Likewise, the project presents the benefit distribution annex as a basis to guarantee the transparency and consistency of the decisions made in the different consultation, consent and information spaces.
Documentation submitted by the project developer
Audit_VV_1_2022\11_Annexes and supplements\01_Calls\01_Consents Audit_VV_1_2022\1_Agreements\02_Community contract

Evaluation of the audit team	**Date:** 11-23-2022
The documents provided are reviewed, and the situation is clarified. SA Closed	

SA No.	3	**Requirement No.**	Profit distribution annex	**Date:** 10-12-2022
Description of the SA				

Machine Translated by Google

In order to provide clarity to the document presented as “Profit Distribution Annex”, the following clarifications are requested:

1. Confirm the following date included in table 1.

Unión Río Rosario	18 de julio del 2021	Barbacoas (Santa María)
Unión Río Caunapi	14 de agosto de 201	Tumaco

Fuente: Fundación Agroimpulso. (2021)

2. The agreements reached regarding distribution percentages by community council are not clear, understanding with the site visit that not all councils agreed on the same percentages.

3. Clarification of the percentages of the different parts within the document is required. ment understanding that the total is 100% and 60% is equivalent to the percentage that corresponds to the communities.
4. Adjust the document font so that it is the same throughout the XXXX, including going spacing.
5. The documents of all the socializations carried out that are named in table 5 of the document are not found. Attach missing evidence.

N.º	Consejo Comunitario	Fecha de acta	Lugar
1	Agricultores del Patía grande	22/08/2021	Veredas: Laguna de Chimbuza (Tumaco, Nariño
		22/08/2021	Veredas: Pumalde, Yate, Remolino (Roberto Payan, Nariño)
		23/08/2021	Veredas: Limones (Roberto Payan, Nariño)
		23/08/2021	Veredas: Chimbuza y Maque (Roberto Payan, Nariño)
		4/09/2021	Vereda: Bocas de Chimbuza
		29/01/2022	Vereda: El retorno (Tumaco-Nariño)

Project Developer Response **Date:** 10-31-2022

Machine Translated by Google

1. The year of execution of the socialization of the Rio Caunapi community council is adjusted as August 14, 2021.
2. The percentages are presented specifically for each of the community councils, corresponding to community governance and management activities. Likewise, the determination of these percentages is ratified in the consent assemblies held by each community council, which are documented in meeting minutes and presented as annexes to the project.

3. The percentage of the community has been determined by the participants of the socialization and consent assembly, and is ratified under the management agreement with each of the community councils, supported by the signature of the legal representation. Likewise, the technical and manager associates recognize under the contractual figure that the percentage granted to the communities will be 60% (See Contract_Agro-impulso_CO2CERO SAS\Clause Six. Participation, profits, form and means of payment), finally, the benefit distribution agreement, particularly consolidates the income to be granted to each of the actors involved and the lines of investment that will take place at the territorial level, always recognizing the participation of the community within this percentage.

4. The font of the document is adjusted homogeneously, taking into account font, font size and spacing.
5. The supports mentioned in table 5 for the Patía Grande Farmers Community Council are verified, the table is adjusted with the available documents. The meeting dated 09/04/2021 corresponds to the consent assembly held in the Bocas de Chimbuza sector and the event dated 01/29/2022 is eliminated, as it corresponds to the assembly of the Rio Mejicano Community Council.

Documentation submitted by the project developer

1. Audit_VV_1_2022\2_Cobeneficios\Annex Distribution of Benefits_V3.docx\ Table 1. Execution of socialization and distribution of benefits REDD+ PAZcífico southern community councils (P. 4.).
2. Audit_VV_1_2022\2_Cobeneficios\Annex Distribution of Benefits_V3.docx\ Table 6. Percentage for governance and community management defined by the community councils in assembly (P. 11).

Audit_VV_1_2022\11_Annexes and supplements\01_Calls\01_Consents

3. Audit_VV_1_2022\1_Agreements\01_Technical associate contract\Contract_Agroim-pulse_CO2WAX.pdf

Audit_VV_1_2022\1_Agreements\02_Community contract
Audit_VV_1_2022\11_Annexes and supplements\01_Calls\01_Consents

4. Audit_VV_1_2022\2_Cobeneficios\Annex Distribution of Benefits_V3.docx
5. Audit_VV_1_2022\11_Annexes and supplements\01_Calls\01_Consent ments\1_Consentimiento_Farmers of Patia Grande.pdf

Audit_VV_1_2022\2_Cobeneficios\Annex Distribution of Benefits_V3.docx\ Table 4. Socializations and deforestation workshops carried out in the community councils of the REDD+ PAZcífico sur project (P. 9.).

Evaluation of the audit team	**Date:** 11-23-2022

Machine Translated by Google

The documents provided are reviewed. SA Closed

SA No.	4	Requirement No.	Environmental and social safeguards	Date: 10-12-2022
Description of the SA				
Within the consents signed by the communities and found in folder 11 of the project, they do not have the percentages of the distribution of benefits to those who are named. A common agreement was reached within these meetings. In what document can the evidence be found? What supports the distribution of 60% of benefits that was chosen by each community council?				
Project Developer Response				Date: 10-31-2022

Machine Translated by Google

Within the consent document made for each community council and in the cases of Rio Gualajo and Caunapí, an update is added to the consent, the percentage corresponding to each of them is determined and the factors related to the form of payment, the evidence for each socialization is found according to the following table.

Community Council	Numeral - Subchapter
Farmers of Patía Grande	11. Commitments\Number 8. For payment purposes.
Alto Mira and Frontera	11. Commitments\Number 7. For payment purposes.
Catangueros	11. Commitments\Number 8. For payment purposes.
Progress	11. Commitments\Number 7. For payment purposes.
Imbilpí del Carmen	12. Commitments\Numeral10 For payment purposes.
Telembí integration	11. Commitments\Number 7. For payment purposes.
Friendship	11. Commitments\Number 9. For payment purposes.
Helping hands from Patía Grande	11. Commitments\Number 9. For payment purposes.
The memory of our ancestors of the Mexican River	11. Commitments\Number 9. For payment purposes.
Union Patía old	11. Commitments\Number 7. For payment purposes.
Rescue the sticks	10. Commitments\Number 7. For payment purposes.
Gualajo River	Audit_VV_1_2022\11_Annexes and supplements\01_Convoca-torias\01_Consentimien-tos\12_Actualizacion_RioGua-lajo.pdf
sweet plank	11. Commitments\Number 11. For payment purposes.
salty plank	12. Commitments\Number 10. For payment purposes.
Union of Isagualpi basins	11. Commitments\Number 7. For payment purposes.
Union of the Chagüí River	11. Commitments\Number 8. For payment purposes.
Rosario River Union	11. Commitments\Numeral10 For payment purposes.
Union at Cauna River	Audit_VV_1_2022\11_Annexes and supplements\01_Convoca-torias\01_Consentimien-tos\18_Actualizacion_Consenti-miento_Caunapí.pdf"

Machine Translated by Google

Documentation submitted by the project developer	
Audit_VV_1_2022\11_Annexes and supplements\01_Calls\01_Consents.	
Evaluation of the audit team	**Date:** 11-23-2022
The documents provided are reviewed. SA Closed	

SA No.	5	Requirement No.	Carbon Reserve Tool V1.2	Date: 10-12-2022

Description of the SA

Request clarification from the Standard as to whether or not to use some indicators found in the tool based on the particular characteristics of the project, such as:

Ind_16a			La temperatura promedio anual del sitio de siembra se encuentra X grados por encima o por debajo del rango de tolerancia de las especies utilizadas en el PMCC.	
Ind_17a	Natural		Número de brotes de plagas o enfermedades en los últimos cinco años en el área del programa o proyecto o en áreas que se encuentren en un radio de 50 km de la zona del PMCC.	Ninguno

Project Developer Response	Date: 10-31-2022

Machine Translated by Google

In relation to the project area and the biological systems it houses, it is made up solely of forests, which correspond to mature systems whose ecological integrity is clearly defined, guaranteeing the survival and resilience of the individuals that generate their dynamics. , which reduces intolerance to variable climate systems, given the coupling of the area to these conditions for a historical period. Regarding reforestation and restoration activities, these have been carried out with native and/or endemic species, such as the mangrove *(Rhizophora mangle),* so they do not present differences in the temperature tolerance range according to their ecological requirements. Therefore, this indicator was not evaluated.

Likewise, forests are identified as ecosystems composed of multiple forms of life that constantly interact, presenting themselves in a state of natural biological balance, given the food chain and the different actors in the chain which allow the flow of energy. from producers, consumers and decomposers; without any of the above exceeding the capacity of the other (Quinto *et al.,* 2009). For their part, Valois & Martínez (2016) recognize the forests of the Pacific region for their high biodiversity and high degree of endemism, generating a dynamic balance in the different biological agents based on the dynamics of the forest. In this sense, the number of pests or diseases is not considered as a factor to be incorporated into the estimation of carbon reserves, since the natural balance conditions that forests present maintain negative phytosanitary agents in balance more or less. less constant, always seeking to return to a normal state situation (Brechelt, 2004).

Additionally, a formal request is made to CERCARBONO, taking into account the technical justification related to forest systems and their resilience to adverse events, different from the reaction of planted forest systems that do involve higher levels of vulnerability and for which these parameters have been defined. Giving as a response the non-application of the evaluation parameters related to temperature ranges and existence of pests.

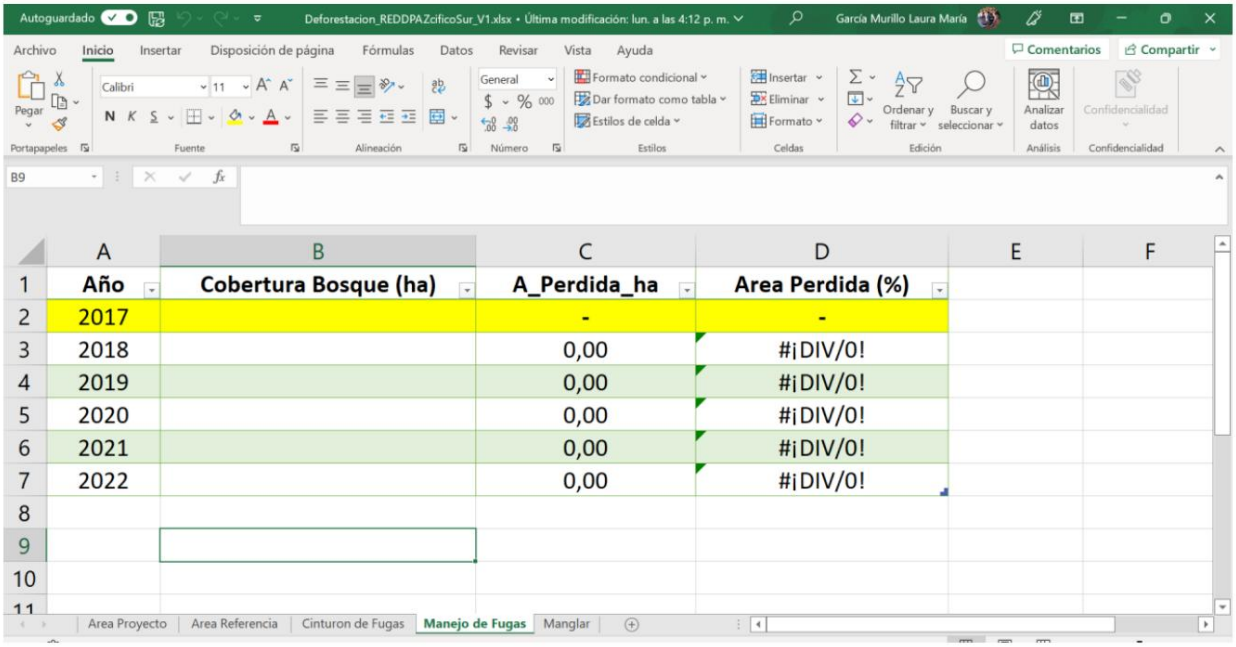
Documentation submitted by the project developer	
• Audit_VV_1_2022\11_Annexes and supplements\03_Filed documents\Request clarification Cercarbono_Carbon reserves.pdf • Audit_VV_1_2022\14_Findings\Findings 10-14-2022\Bibliography • Audit_VV_1_2022\12_Monitoring report\03_Reserves Analysis\Carbon reserve analysis REDDPAZcifico Sur.docx • Audit_VV_1_2022\3_Carbono\Carbon reserve REDDPAZcifico_Sur.xlsx • Audit_VV_1_2022\3_Carbon\CO2Zero Response_Carbon Reserve.pdf	
Evaluation of the audit team	**23-11-2022**
The documents provided are reviewed. SA Closed	

Machine Translated by Google

SA No.	6	Requirement No.	REDD+ Methodology V 1.2	Date: 11-22-2022

Description of the SA

Within the document “Deforestación_REDDPAZcificosur_V1”, in the leak management tab there is no type of information, it is necessary to modify the fields and/or modify the document where said tab is not taken into account.



	A	B	C	D	E	F
1	Año	Cobertura Bosque (ha)	A_Perdida_ha	Area Perdida (%)		
2	2017		-	-		
3	2018		0,00	#¡DIV/0!		
4	2019		0,00	#¡DIV/0!		
5	2020		0,00	#¡DIV/0!		
6	2021		0,00	#¡DIV/0!		
7	2022		0,00	#¡DIV/0!		
8						
9						
10						
11						

Project Developer Response — **Date:** 17-12-2022

The file in question is adjusted by deleting this spreadsheet, since the leak management area according to section 6.3 of the Cercarbono M/UT-REDD+ Methodology is defined as: area surrounding the project area, where activities are established *to control leaks.*
According to the above, no monitoring activities are implemented since leaks are monitored and discounted directly on the leak area not on the leak management area.

Documentation submitted by the project developer

- 3_Carbono\Deforestacion_REDDPAZcificoSur_V2.xlsx

Evaluation of the audit team — **Date:** 12-29-2022

Documents are modified.

SA Closed

Machine Translated by Google

SAF No.	1	Requirement No.	Cercarbon Protocol V4.1 2.1	Date: 10-12-2022

Description of the SAF

Within the objectives of the program, the following must be guaranteed:

- Promote a friendly, efficient and effective environment in which all actors that are part of the project cycle interact

Due to the above and what has been evidenced in the field, it is necessary for the project proponents to have greater clarity about the role that each of the actors involved must play, such as the Agroimpulso foundation and Co2cero, in order to guarantee the principles that must be fulfilled. consider the projects.

Project Developer Response	Date: 10-31-2022

Free, prior and informed consent is involved, and the participation of the different actors of the initiative, as a specific objective, highlighting the importance of the flow of information and effective communication between the parties that make up the initiative.

Documentation submitted by the project developer

Audit_VV_1_2022\6_Project Document\1_Project Document\PDD PAZcific South_V2.docx\ 1.4. Objective of PMCC (P. 9.).

Evaluation of the audit team	Date: 12-29-2022

The information that complies with the Request will be reviewed during the following verification period.

SAF Open

SAF No.	2	Requirement No.	Environmental and social safeguards	Date: 10-12-2022

Description of the SAF

Communication must be guaranteed with all the actors that are part of the process, through activities that guarantee the identification of the project, such as banners, recreational games that integrate more of the community, guaranteeing to reach more people who can be unrelated to the project.

Project Developer Response	Date: 02-11-2022

The project will identify the most favorable alternatives for community councils in order to achieve assertive and inclusive communication, where all members of the community have access. Within them, banners will be implemented in the areas with the greatest influx according to the community's indications, brochures and audiovisual media that will capture attention and transfer data related to the initiative in a focused manner. Additionally, continuous information spaces will be proposed, which allow identifying the level of relationship of the community with the initiative and strengthen the sense of belonging to it.

Machine Translated by Google

Documentation submitted by the project developer	
Audit_VV_1_2022\8_Field briefing\Brochure_SocializationProject.pdf	
Evaluation of the audit team	**Date:** 12-29-2022
The information that complies with the Request will be reviewed during the following verification period. SAF Open	

Monitoring report

SAC No.	01	**Requirement No.**	Plantilla PDD- Sector UT V2.0.1	**Date:** 10-12-2022
Description of the SAC				
The date of preparation of the report cannot be prior to the period being accredited, since, from the outset, there must be support for the end date of the verification period that should be contemplated within this document.				
Project Developer Response				**Date:** 10-31-2022
The date of preparation of the document is adjusted according to the delivery made to the audit team and corresponding to the completion date of the audited version, the date initially defined corresponded to the moment in which the structuring of the document began.				
Documentation submitted by the project developer				
Audit_VV_1_2022\12_Monitoring report\02_Monitoring report\Monito-reo report PAZcifico Sur.docx (p. 58.).				
Evaluation of the audit team				**Date:** 11-23-2022
The pertinent modifications were made. Closed SAC				

SAC No.	2	**Requirement No.**	REDD Methodology V1.2	**e:** 10-12-2022
Description of the SAC				

Machine Translated by Google

During the on-site visit, it was not possible to corroborate the information on plot 17, and with the evidence supported by the assembly of the plot (photos taken by the personnel who assembled the plot), it is possible to show that the location was not is the same, as shown below.

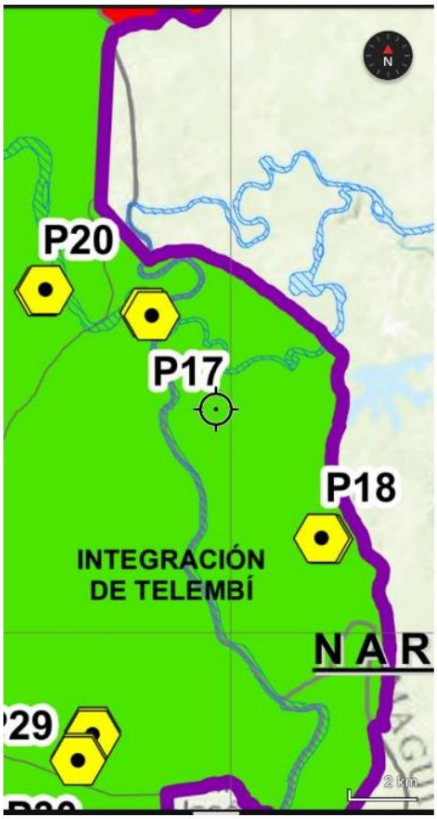


Illustration 1. location of audit plots

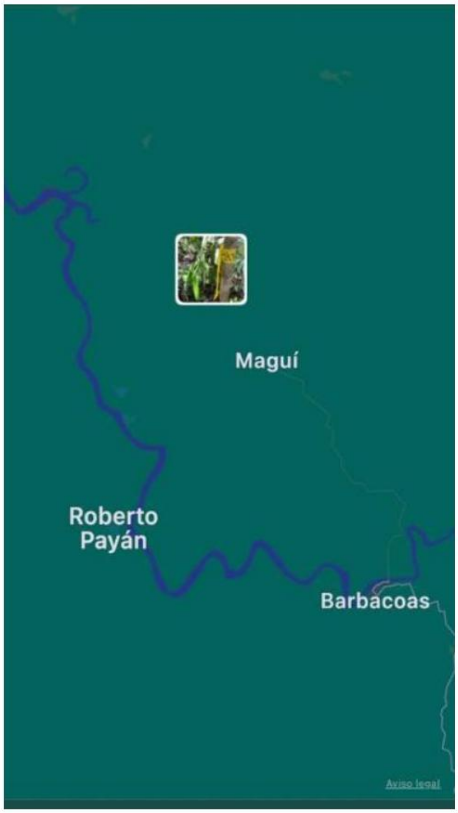


Illustration 2. Actual location of the plot

Due to the above, it is necessary to send real evidence of the location of all the plots, if possible with photographic records that support the real location of the plots.

Project Developer Response	**Date:** 10-31-2022

Machine Translated by Google

Photographic information from the supplier is attached, which demonstrates and materializes the presence of the 39 plots carried out for the identification of the emission factor and state of the forest covers concerning and similar to the project area. It is necessary to point out that due to adverse conditions of the area, it is not possible to take photographs in the area, limiting the visual support material, however within the Shapefile of the plots it is possible to identify the date and time of data collection.

Likewise, corroboration is carried out on the location of the plots made, showing that plot “P17” is actually located close to plot “P18”, this event occurred due to a combination of the information extracted for the location. of the plots, being replaced by a control point carried out in a municipal seat. Notification is made to the technical team of the operator in the field, reporting the news related to the correct location of the plots, the verification of the information for georeferencing and the rigor involved in a representative sampling of critical variables within the forest inventory. .

Documentation submitted by the project developer

- Audit_VV_1_2022\12_Monitoring report\01_Forest inventory\Photographic material Evidence
- Audit_VV_1_2022\4_SIG\5_SHP
- Audit_VV_1_2022\4_SIG\3_Maps

Evaluation of the audit team	**Date:** 11-23-2022

The pertinent modifications were made.

Closed SAC

SAC No.	03	**Requirement No.**	Cercarbon Protocol V4.1	**Date:** 10-13-2022

Description of the SAC

It is not possible to show the equipment used during the measurement of the plots

It is necessary to make modifications to the pertinent documents, where the use of all the equipment used during the forest inventory survey can be evidenced, along with the processes that are taken into account to calibrate said equipment.

Project Developer Response	**Date:** 02-11-2022

The adjustment is made to the methodological document used to establish the monitoring plots, adjusting the information related to field methods and elements used for measurement.

Documentation submitted by the project developer

Audit_VV_1_2022\12_Final Report_REED+Pazcifico Sur_V2.pdf of monitoring\01_Inventory forestal\InformeFi-

Evaluation of the audit team	**Date:** 11-23-2022

Machine Translated by Google

The pertinent modifications were made. Closed SAC

SAC No.	04	Requirement No.	Cercarbon Protocol V4.1	Date: 09-13-2022

Description of the SAC

It is necessary to modify the chapter of the forest inventory methodology carried out during the project, since it is not in accordance with what was observed in the field, during the site visit, it was evident that they do not comply with it and it is necessary to adjust the methodology for this verification and for future verifications, in order to adjust and regulate the plot assembly processes that allow for an order that is visible and that allows identifying their order within the plots.

On the other hand, within chapter 2.10.2 of the pdd, it is indicated *"The location of the plots was given at random in the ArcGIS ® Software from the creation of random points"* since according to the interviews carried out these points were not located randomly but where the most conserved ecosystems were found in some cases.

Project Developer Response — **Date:** 02-11-2022

The adjustment is made to the methodological document used to establish the monitoring plots, adjusting the information related to field methods and elements used for measurement. Likewise, the news obtained during the field phase is taken into account, so that it is coupled with the reality of the activities executed and implemented during the sampling.

The way in which the location of the plots were taken is described in more detail, since although they were made randomly in the GIS software in a first stage, prioritizing the proximity to bodies of water due to travel issues, they were also It took into account the community's decision due to public order issues and the verification that the plot was established in an eligible area.

Documentation submitted by the project developer

- Audit_VV_1_2022\12_Monitoring report\01_Forest inventory\Final Report_REED+Pazcifico Sur_V2.pdf
- Audit_VV_1_2022\6_Project Document\1_Project Document\PDD PAZcific South_V2.docx\2.10.2 Field Sampling Methodology (P. 112)

Evaluation of the audit team — **Date:** 11-23-2022

The pertinent modifications were made. Closed SAC

SAC No.	5	Requirement No.	Cercarbon Protocol V4.1	Date: 11-21-2022

Machine Translated by Google

Description of the SAC
Taking into account the current panorama, it is necessary to update the project data, taking into account the suspension of NTC 6208, so it is recommended to modify the information in the IPCC document (table 4.4) and not the values as shown. shown below within the document FE_REDD+_Pazcifico_SUR.

Root to shoot ratio	0,37	Bosque tropical lluvioso	Tabla 8 de la NTC 6208

It is necessary to indicate the path of the value used in the following table:

Aporte Madera Muerta y Hojarasca	2%		IPCC

Indicating the year and the table from which said percentage was obtained.

Project Developer Response	Date: 17-12-2022
The source of each data used to calculate the emissions reductions of the REDD+ project (Ex-ante and Ex-post) is included.	

Documentation submitted by the project developer
• 6_Project Document\1_Project Document\PDD PAZcific South_V3.pdf • 3_Carbono\FE REDD+ PAZCIFICO SUR - V2.xlsx

Evaluation of the audit team	Date: 12-29-2022
Modifications were made that respond to the finding. SAC Closed.	

SAC No.	6	Requirement No.	CERCAR-BONO tool to estimate the carbon stock in climate change mitigation initiatives in the land use sector V1.2	Date: 01-31-2023
Description of the SAC				

Machine Translated by Google

Buffer tool has no verification date:

ID del PMCC	
Vida útil del PMCC (años)	30
¿Es un programa o proyecto agrupado?	No
¿Es un proyecto REDD+?	Sí

Período de acreditación	Fecha de inicio	Fecha final
	01.01.2017	31.12.2036
Período de verificación	Fecha de inicio	Fecha final
	01.01.2017	dd.mm.2022
Fecha de elaboración	09.14.2022	
Persona a cargo	Andres Felipe Silva Rosas	

Project Developer Response	**Date:** 02-02-2023
The end date of the verification period is entered, corresponding to 09/10/2022, according to the documents that record the monitoring of the project.	

Documentation submitted by the project developer
Audit_VV_1_2022\12_Monitoring report\02_Monitoring report\Monito-reo report PAZcifico Sur.docx Audit_VV_1_2022\3_Carbono\REDDPAZcifico_Sur_V2.xlsm carbon reserve

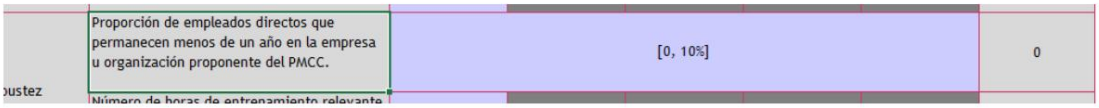
Evaluation of the audit team Date: 02-22-2023	
Changes were made to the tool, evidencing the requested information. SAC Closed.	

SAC No.	7	**Requirement No.**	CERCAR-BONO tool to estimate the carbon stock in climate change mitigation initiatives in the land use sector V1.2	**Date:** 01-31-2023
Description of the SAC				

Machine Translated by Google

To support some indicators of the tool, it is necessary to clarify:

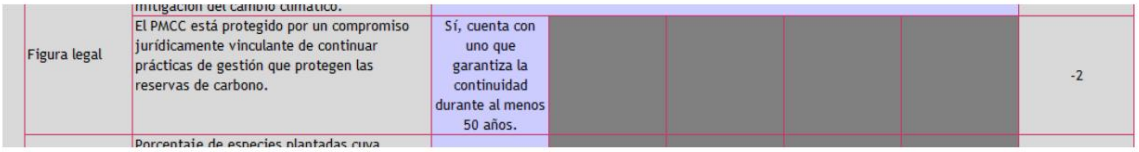
1. It is necessary to complement with supports the robust technique presented for the following indicator (resume or supports in certified work times):



2. Identify within the annexes what is the action plan defined to comply with the information. indicator shown below in the tool:



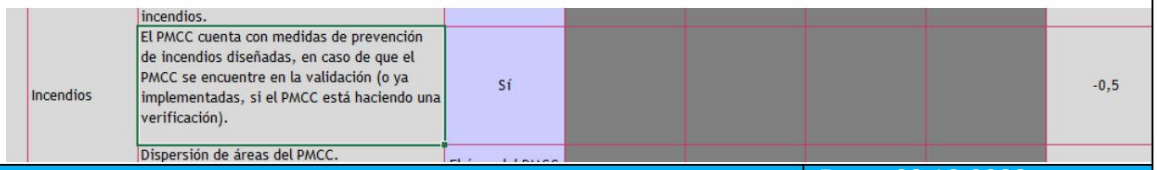
3. During the review of the information, the legally binding commitment was not found. Before continuing management practices that protect carbon stocks, as identified below, it is necessary to attach said document:



4. Identify by means of which document the indicators presented below are supported. nuation:



5. Within the project activities, there is no evidence of any related to forest fires, which, in compliance with the tool indicator, as shown below:



Project Developer Response | **Date:** 02 13 2023

Machine Translated by Google

1. The certificates of the collaborators who make up the design of the initiative are attached, relating the experience and execution time of activities associated with the area of knowledge of the project, evidencing that all of them exceed 1 year of minimum permanence in the organization .
2. It is justified how the REDD+ activity related to the defense of territorial limits constitutes the necessary action plan to reduce the influence of external agents within the territory.
3. Cercarbono is consulted on the application of this indicator taking into account the time scale at which it is evaluated (50 to 100 years) different from that established by the present 30-year project, to which the following results are obtained: The value of this indicator within the carbon reserve tool will be defined as 0.
4. Cercarbono was consulted about the application of the indicator taking into account its relationship with A/R type projects, to which the response was obtained that these indicators should not be taken into account since they correspond to Fo-type initiatives. subtraction – Reforestation.
5. It is indicated how capacity-building and training activities on sustainable forest management constitute the first mechanism to bring communities closer to the implications of witnessing or promoting forest fires.

Documentation submitted by the project developer

1. Audit_VV_1_2022\12_Monitoring report\03_Analysis Reserves\Supports\ AldanaCristian_CertificadoCO2ZERO
Audit_VV_1_2022\12_Monitoring report\03_Analysis Reserves\Supports\ AlfonsoAn-dres_CertificadoCO2ZERO
Audit_VV_1_2022\12_Monitoring report\03_Analysis Reserves\Supports\ Cotrino-Juan_CertificadoCO2CERO
Audit_VV_1_2022\12_Monitoring report\03_Analysis Reserves\Supports\ Guerrero-Brian_CertificadoCO2CERO
2. Audit_VV_1_2022\6_Project document\1_Project document\PDD PAZcífico Sur_V6.docx\ 7.1.4 Territorial appropriation and Protection of territorial limits.
3. Audit_VV_1_2022\14_Findings\Findings 01-02-2023\Response_Request Clarification 02 Cercarbono.pdf
4. Audit_VV_1_2022\14_Findings\Findings 01-02-2023\Response_Request Clarification 02 Cercarbono.pdf
5. Audit_VV_1_2022\6_Project document\1_Project document\PDD PAZcífico Sur_V6.docx\7.1.5 Protection and restoration of ecosystems

Evaluation of the audit team	**Date:** 02-22-2023

Machine Translated by Google

Regarding the evaluation of each of the points, the audit team has defined that:

1. The discovery is concluded by attaching sufficient evidence to answer the question.
   finding
2. The due justification is made within the project document, the discovery is considered complete.

3. The value is verified within the reservation tool, the property is terminated.
   llazgo.
4. The value is verified within the reservation tool, the property is terminated.
   llazgo.
5. The due modification is made within the project document, the discovery is completed.

Closed SAC

SAC No.	8	**Requirement No.**	REDD+ methodology for project execution REDD+ consistent with reference levels presented by the UNFCCC. Version 1.2	**Date:** 01-31-2023

Description of the SAC

For the documents Carbono_Deforestacion_REDDPAZcifico Sur_V2 and Carbono_Degrada-cion_REDDPAZcificoSur_V2 of the project, it is found that for the calculation of the buffer the values are being rounded, in some cases with the formula =ROUNDEAR() and in others =RE-WOUNDEAR.MINUS(), it is not understands the purpose of the function, being that the data returned by the reserve tool and by the formulas of the methodology, the exact results should be used, so the results that are being obtained in the document Carbono_To-tal_REDDPAZcificoSur_V2 differ in amount of tCO2e for the project, being lower for the audit team than for the developer.

If the principle of conservatism is used, it should be applied only at the end of the formula in the total data, and it should be =ROUND.PLUS() if this purpose is applied.

Project Developer Response	**Date:** 02-13-2023

The roundings are applied in accordance with the principle of conservatism established in the CERCARBONO protocol V.4.1, in which in section *"8.3.6 Uncertainty"* establishes that the rounding of GHG emissions or reduction of emissions generated in the scenario Baseline measurements must be made downwards, while for GHG emissions or reductions in GHG emissions or leaks generated in the project scenario they will be rounded up.

This is why the GHG emissions generated from the Baseline were rounded down, while the project emissions and leaks were rounded up. To determine the buffer, direct multiplication was established without rounding, while to establish the reduction of emissions generated by the project they were established with rounding down, in a conservative manner.

Documentation submitted by the project developer

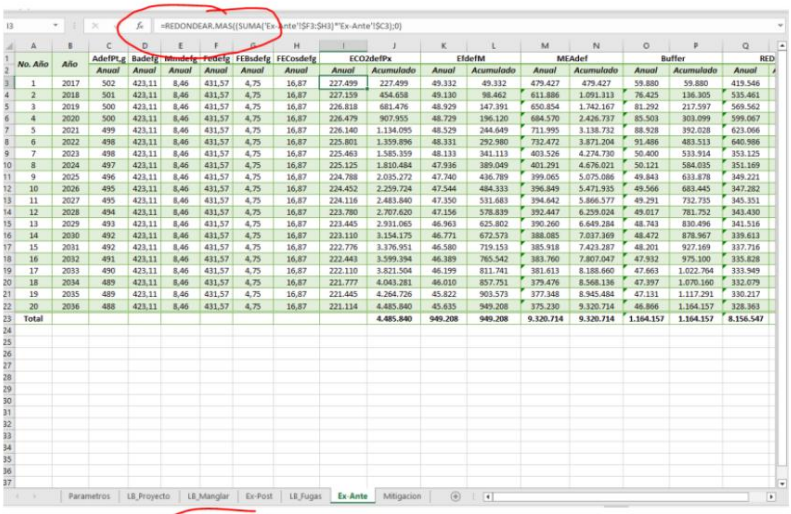
Machine Translated by Google

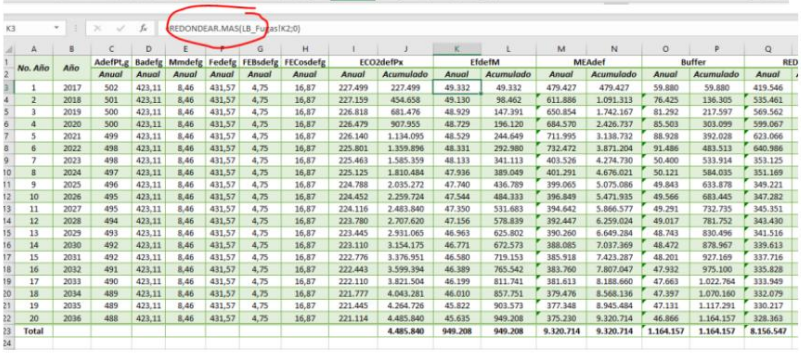
• Audit_VV_1_2022\3_Carbono\Carbono_Deforestacion_REDDPAZcifico On_V3.xlsx • Audit_VV_1_2022\3_Carbono\Carbono_Diferenciado_OVV_REDDPAZcifico-Sur_V2.xlsx • Auditoria_VV_1_2022\3_Carbono\Carbono_Degradacion_REDDPAZcificoSur_V3.xlsx • Auditoria_VV_1_2022\3_Carbono\Carbono_Total_REDDPAZcificoSur_V3.xlsx • Audit_VV_1_2022\6_Project document\1_Project document\PDD PAZcífico Sur_V6.docx\3. Calculation of GHG emissions and reductions of GHG emissions • Audit_VV_1_2022\12_Monitoring report\02_Monitoring report\PAZcifico Sur Monitoring Report_V3\6. Quantification of net GHG emissions and removals or net reductions in GHG emissions

Evaluation of the audit team	**Date:** 02-22-2023

Machine Translated by Google

- Taking into account the text exposed within the protocol in chapter 8.3.6, it is
  Note that for the document **Carbono_Deforestacion_REDDPAZcifico Sur_V3** the ExAnte sheet, where there are baseline calculations and they are rounded up and not down in ECO2defPx and EfdefM, as shown below:

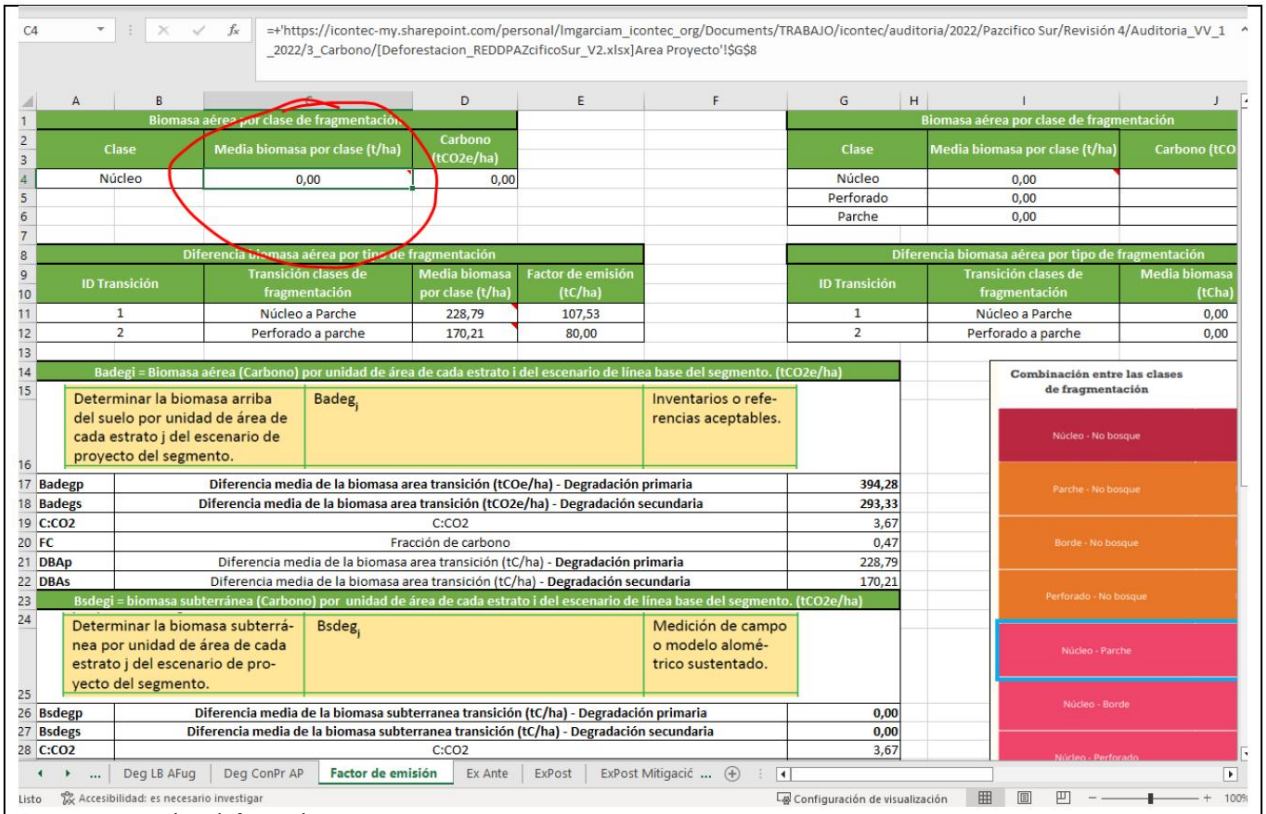




It is recommended that if the discount has already been made in the LB_Leaks sheet, it should not be made again in the Ex_ante calculation.

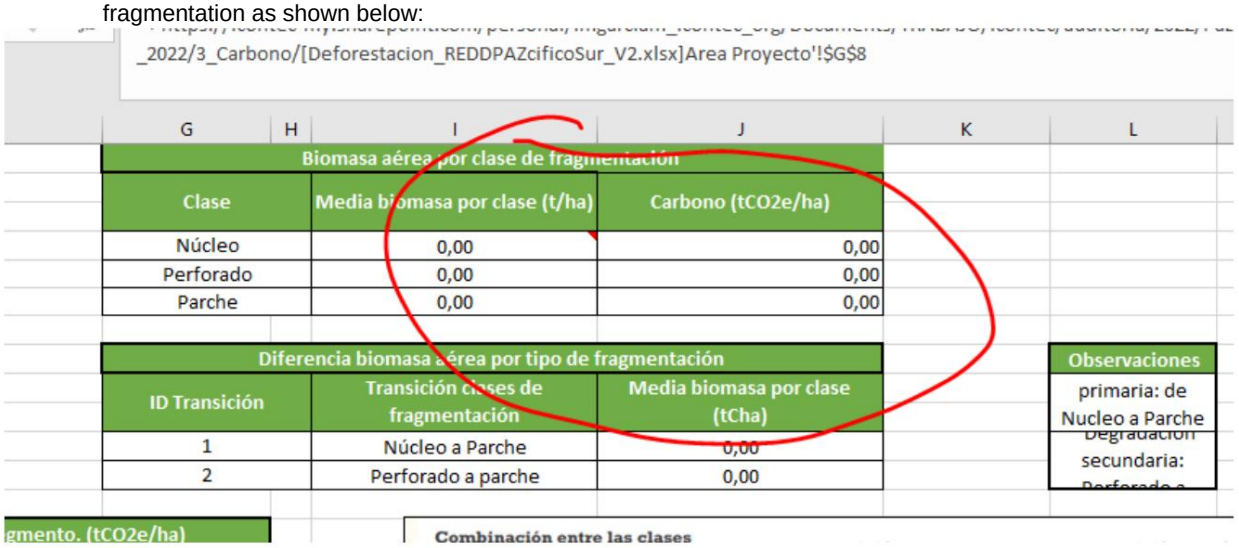
- In the document **Carbono_Degradacion_REDDPAZcificoSur_V3,** it is not possible
  identify the value of aboveground biomass by fragmentation class as shown below:

Machine Translated by Google



Request to update information

- In the document **Carbono_Degradacion_REDDPAZcificoSur_V3,** it is not possible identify the value of aerial biomass by fragmentation class, nor the difference in aerial biomass by type of fragmentation as shown below:

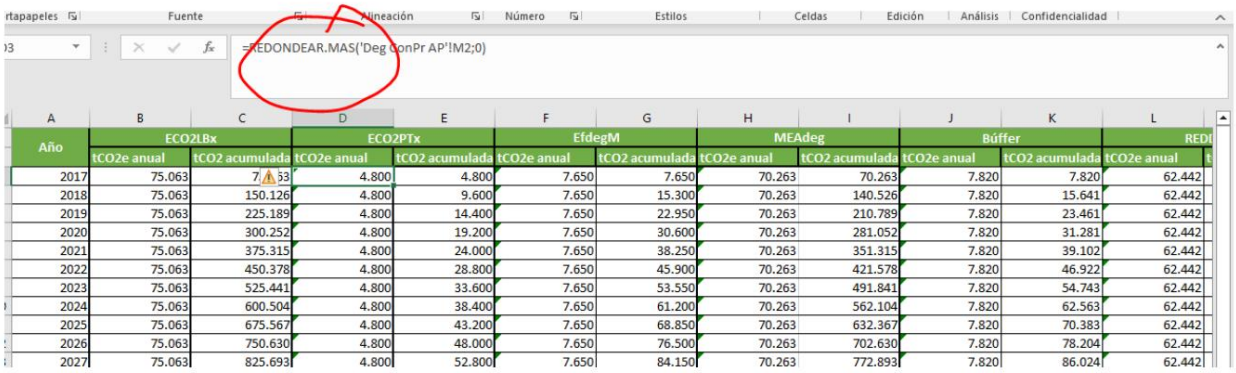


It is requested to update the information -

Taking into account the text exposed within the protocol in chapter 8.3.6, it is Note that in the document **Carbono_Degradacion_REDDPAZcificoSur_V3, in** the Exante tab, the use of the round more formula is evident for ECO2PTx= Avoided GHG emissions in all strata of deforestation segments,

Machine Translated by Google

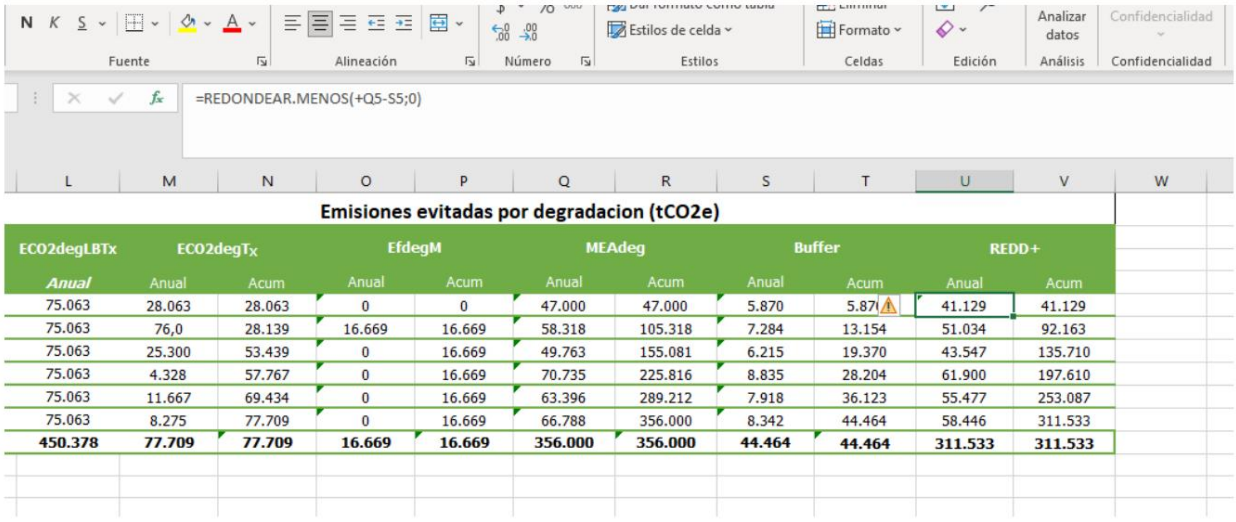
forest degradation, is applied for project scenario calculations (estimation of future emissions and removals if the project were executed), therefore it should be rounded down, as shown below:



Año	ECO2LBx		ECO2PTx		EfdegM		MEAdeg		Búffer		REDD
	tCO2e anual	tCO2 acumulada	tCO2e anual	tCO2 acumulada	tCO2e anual	tCO2 acumulada	tCO2e anual	tCO2 acumulada	tCO2e anual	tCO2 acumulada	tCO2e anual
2017	75.063	7[illegible]53	4.800	4.800	7.650	7.650	70.263	70.263	7.820	7.820	62.442
2018	75.063	150.126	4.800	9.600	7.650	15.300	70.263	140.526	7.820	15.641	62.442
2019	75.063	225.189	4.800	14.400	7.650	22.950	70.263	210.789	7.820	23.461	62.442
2020	75.063	300.252	4.800	19.200	7.650	30.600	70.263	281.052	7.820	31.281	62.442
2021	75.063	375.315	4.800	24.000	7.650	38.250	70.263	351.315	7.820	39.102	62.442
2022	75.063	450.378	4.800	28.800	7.650	45.900	70.263	421.578	7.820	46.922	62.442
2023	75.063	525.441	4.800	33.600	7.650	53.550	70.263	491.841	7.820	54.743	62.442
2024	75.063	600.504	4.800	38.400	7.650	61.200	70.263	562.104	7.820	62.563	62.442
2025	75.063	675.567	4.800	43.200	7.650	68.850	70.263	632.367	7.820	70.383	62.442
2026	75.063	750.630	4.800	48.000	7.650	76.500	70.263	702.630	7.820	78.204	62.442
2027	75.063	825.693	4.800	52.800	7.650	84.150	70.263	772.893	7.820	86.024	62.442

- Taking into account the text exposed within the protocol in chapter 8.3.6, it is

Note that in the document **Carbono_Degradacion_REDDPAZcificoSur_V3, in** the Expost mitigation tab, the use of the round less formula is evident for the calculation of REDD+ by degradation, therefore it should be rounded up, as shown below:



Emisiones evitadas por degradacion (tCO2e)

ECO2degLBTx	ECO2degTx		EfdegM		MEAdeg		Buffer		REDD+	
Anual	Anual	Acum	Anual	Acum	Anual	Acum	Anual	Acum	Anual	Acum
75.063	28.063	28.063	0	0	47.000	47.000	5.870	5.87[illegible]	41.129	41.129
75.063	76,0	28.139	16.669	16.669	58.318	105.318	7.284	13.154	51.034	92.163
75.063	25.300	53.439	0	16.669	49.763	155.081	6.215	19.370	43.547	135.710
75.063	4.328	57.767	0	16.669	70.735	225.816	8.835	28.204	61.900	197.610
75.063	11.667	69.434	0	16.669	63.396	289.212	7.918	36.123	55.477	253.087
75.063	8.275	77.709	0	16.669	66.788	356.000	8.342	44.464	58.446	311.533
450.378	**77.709**	**77.709**	**16.669**	**16.669**	**356.000**	**356.000**	**44.464**	**44.464**	**311.533**	**311.533**

Make the relevant modifications

Open SAC

Project Developer Response	**Date:** 02-27-2023

Machine Translated by Google

In order to provide a solution to the related findings, it is noted: • It is necessary to point out that for the "ExAnte" sheet of the deforestation activity, *ECO2Ptx* will correspond to CO2e emissions from deforestation within the project limit, while *EfdefM* will correspond to CO2e emissions from deforestation in the leakage belt, that is, both values will be developed under the scenario with the project, therefore , both will be rounded up.

- All cells that mention others are adjusted and reviewed, so that the cells are not repeated. corresponding rounded
- The links corresponding to Aerial and Underground Biomass are updated and adjusted by fragmentation class, according to what was generated in the baseline scenario.
- As in the Deforestation activity, both *ECO2Ptx* and *EfdefM,* as they are emissions that are believed to be generated in the project scenario, will be rounded up; taking into account that by rounding up the emissions generated closer to the baseline, therefore, a lower number of GHG emissions reductions are generated, therefore the emissions expected to occur by the system are more conservative. project.
- The corresponding rounding adjustments are made for all the values. "REDD+" columns, understood as the reduction of GHG emissions, will be upwards.

Documentation submitted by the project developer

- Audit_VV_1_2022\6_Project document\1_Project document\PDD PAZcífico Sur_V7.docx
- Audit_VV_1_2022\12_Monitoring report\02_Monitoring report\Monitoring report Monitoreo PAZcifico Sur_V4.docx
- Audit_VV_1_2022\3_Carbon

Evaluation of the audit team	**Date:** 03-13-2023

The information is reviewed and the finding is considered final, the corresponding evidence is attached to provide a solution to the finding.

Closed SAC

SAC No.	9	**Requirement No.**	Cercarbono Protocol V4.1	31-01-2023

Description of the SAC

Machine Translated by Google

In the cash flow, it is not clear what happens or in what cash what was invested in year 5 is discounted, since there was no income to the project, but it is not discounted from year 6 either.



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		$ 73.399.942.997,13	$
		$ -	$
$	-	$ 40.350.000,00	$
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			$
			$
			$
$	318.605.890,32	$ 668.191.019,16	$
		$ 72.731.751.977,97	-$
		$ 24.365.136.912,62	$
		$ 48.366.615.065,35	-$
		$ 48.366.615.065,35	$

Other expenses are not evident, such as the 40% that belongs to the other actors in the project (agroimpulso foundation and Co2cero).

Project Developer Response	**Date:** 03-02-2023

The adjustment is made to the cash flow of the project, adjusting data and costs to real values in accordance with the territorial dynamics and the consultations made to actors linked to the services and resources used for each activity, in the same way, adjusting the investment data from the initial year and is added to the expenses of the immediately following year.
Likewise, the flow is applied to the community's resources, making the differentiation of those resources that are allocated to the managing partners, equivalent to 40%.

Documentation submitted by the project developer

Audit_VV_1_2022\11_Annexes and supplements\07_Cost projection of REDD+ activities PAZcifico Sur.xlsx

Evaluation of the audit team	**Date:** 02-24-2023

Machine Translated by Google

During the new review of findings, differences are found on the cash flows delivered in V1 (figure 1) and V2 (figure 2) related to the costs of the activities as shown below,

Figure 1:

Nº	Actividad	Personal	Duración	Costo unitario (COP)	Cantidad	Costo total (COP)	
1	1.1 Capacitación en liderazgo y buenas prácticas administrativas	Comunidad	Global	$ 550.000,00	264	$ 145.200.000,00	Logístic ca
		Profesional gerencial	Mensual	$ 2.500.000,00	9	$ 22.500.000,00	Persor de P Car

Figure 2

1	1.1 Capacitación en liderazgo y buenas prácticas administrativas	Comunidad	Jornal	$ 100.000,00	270	$ 27.000.000,00	In
		Profesional gerencial	Mensual	$ 6.500.000,00	4	$ 26.000.000,00	Pe
		Equipo de acompañamiento	Mensual	$ 1.500.000,00	36	$ 54.000.000,00	Pe
		Profesional contable	Mensual	$ 6.500.000,00	1	$ 6.500.000,00	

Therefore, a clarification of these considerable increases evidenced during this review is requested.

open SAC

Project Developer Response | **Date:** 02-24-2023

The adjustment is made to the costs of some activities taking into account that, in some cases, the cost of professionals had been applied in the personnel category, however, depending on the requirement of the professional in the field for actions such as advice, training -tion or consulting, you choose to charge your work to the services category. Also, the costs of some activities were adjusted taking into account average values due to their price variability in different territories and approximations of the number of participants to be involved within each proposed exercise were consolidated.

For the items where the community is involved, an adjustment was made to their costs, breaking down the global item presented in the previous version, into an incentive for participation in the personnel item and adding elements related to transportation in the services item, this -day and food. In general, adjustments were made related to the disaggregation of some global costs, redistributing costs and recategorizing some activities.
Additionally, adjustments are applied to the future costs of the project, improving the application of formulas related to the interest rate and future value, where initially inflation values higher than 200% had been applied, an adjustment applied by the development team. -rroller at real average inflation rates for the period. In this way, substantial changes are observed in the project costing scenarios, but corresponding and traceable in terms of proposed values per item and application of appropriate accounting and financial terms.

Documentation submitted by the project developer

Evaluation of the audit team | **Date:** 03-13-2023

Machine Translated by Google

The information is reviewed and the finding is considered final, the corresponding evidence is attached to provide a solution to the finding. Closed SAC

SA No.	01	Requirement No.	Cercarbon Protocol V4.1	**Date:** 10-12-2022
Description of the SA				
The photos of the planting that was carried out within the Las Varas community council between the period of 2018 and 2021 with the 3 nurseries that were established in the territory are missing.				
Project Developer Response				**Date:** 02-11-2022
Photographs are attached for the restoration processes carried out by the Rescate las Varas, Rio Mejicano and Imbilpí del Carmen communities, which strengthens the evidence on the REDD+ activities carried out for the GHG mitigation initiative.				
Documentation submitted by the project developer				
Audit_VV_1_2022\2_Cobeneficios\02_ActividadesREDD\Supports\11_RestauracionRes-cateLasVaras Audit_VV_1_2022\2_Cobeneficios\02_REDD Activities\REDD+ Activities PAZcífico Sur_V2.xlsx\Evidences.				
Evaluation of the audit team				**Date:** 11-23-2022
The pertinent modifications were made. SA Closed				

Opportunity for improvement

1. When establishing temporary plots in the territory, it is necessary to improve the installation of the transects, guaranteeing an adequate methodology for sampling and data collection, leaving the plots established in the field for their respective monitoring, which, in the future in the following verifications, make it much easier to identify all the subdivisions that make up the plot and the individuals.
2. Communication is vital in REDD+ projects, where it is necessary to identify the appropriate measures to guarantee that the information reaches as many people as possible belonging to the community and that the information does not remain in the local councils.
3. the randomness of the plots, since they tend to be located within the limits of the project, Taking into account the safety of the personnel who go to the field and the actors who are located in the most wooded areas, however, this generates a bias in the estimates that must continue to be minimized.

Machine Translated by Google

18 ANNEX 2. Audit Plan

Title of the GHG mitigation project initiative	REDD+ PAZcific Sur			
Full name and position of the person responsible for the project	Brian Stig Guerrero Gaitán Carbon Project Specialist			
Email brian.guerrero@co2cero.co Crr 45ª		**Cell phone**	3213320976	
#104b-16, Bogotá. Colombia **going the country.**				
Data and position of the contact person	Brian Stig Guerrero Gaitán Carbon Project Specialist brian.guerrero@co2cero.co 3213320976			
Type of audit	**Fully remote**	x	**check**	x
	validation		**Partially remote**	x

With cordial greetings, I am writing to you to submit the proposal for the audit plan to be carried out on the GHG mitigation project presented by your organization. Likewise, for the opening meeting and closing meeting of the audit, I would like to thank you for inviting the relevant people from the areas that will be audited.

For the daily balance of information of the audit team, I thank you for having an agenda and a physical or remote space to hold the meeting, as well as access to the basic documentation of the GHG mitigation initiative.

Regarding the occupational health and safety conditions applicable to your organization, please inform them before carrying out the on-site visit so that the audit team can request from ICONTEC the personal protection elements that are necessary.

The information known from the execution of this audit will be treated confidentially by the audit team and Icontec. The language of the audit and its report will be in Spanish.

The conditions of this service are indicated in R-PS-012 REGULATION FOR VALIDATION AND VERIFICATION SERVICES.

Audit criteria	- ISO 14064-2:2019 - They search for trees - M/UT-REDD+ V 1.2 methodology for implementation of REDD+ projects consistent with national reference levels Tools: Tool for demonstrating additionality of climate change mitigation initiatives Cercarbono carbon reserve tool cercarbono tool to report contributions to SDGs

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	The validation and verification of the GHG mitigation project will be carried out through: -Audit supported by partially remote technological means
Audit objectives	**For validation:** Assess the probability that the implementation of the planned GHG project will produce the GHG removals/reductions declared by the project manager, considering the following: • Compliance with applicable validation criteria, including the principles and requirements of relevant GHG standards or programs within the scope of validation. • The establishment, justification and documentation of the GHG mitigation project. • The relevance of the planned controls of the GHG project. **For verification:** Verify compliance in the implementation of the mitigation project activities, including those associated with the methodology selected for the project, considering the following: • Compliance with applicable verification criteria, including the principles and requirements of relevant GHG standards or programs within the scope of verification. • GHG project planning information and documentation, including procedures and criteria for the project, baseline, quality control and assurance, risk management and this verification documents. • Emissions, removals, emission reductions and increases ments of removals that are reported in the baseline and the GHG project. • Any significant change in GHG emissions, removals, emission reductions and increases in removals since the last reporting period, or since the validation of the project, • Compliance with the principles and actual controls of the project and the monitoring, verification and reporting system necessary to comply with its documented procedures and current legislation in accordance with the audit criteria.
Scope of the audit	Project boundaries including its scenarios and baseline scenarios: The REDD+ PAZcífico Sur project is an initiative developed in eighteen (18) community councils in the department of Nariño, with the support of Fundación Agroimpulso and CO2CERO SAS, whose objective is the reduction of emissions due to deforestation and forest degradation on 371,748 hectares over a period of twenty (20) years. REDD+

Machine Translated by Google

PAZcífico Sur projects the reduction of 8,309,482 tCO2e during its credit period, with an annual average of 415,474 tCO2e, also including the total emission of 1,166,039 tCO2e within its leakage belt.

Physical infrastructure, activities, technologies and processes of the project GEI:

The support for achieving these objectives will be the strengthening of the fundamental axes of development of a community, which are improved from a socioeconomic, cultural and environmental perspective, directed at activities that improve the technical capabilities of workers, They empower all social groups within the community and generate a sense of belonging to the natural resources of their property.

GHG sources, sinks and/or reservoirs

Tipo de GEI	Activity that generates, removes or reduces it
CO2	Gas emitted by the elimination of aerial biomass resulting from deforestation processes within forest areas (Forest extraction and biomass burning).
CO2	Gas emitted by the elimination of aerial biomass resulting from degradation processes within forest areas (fragmentation and selective wood extraction).

Types of GEI: CO2

Defined time periods to execute the project activity:
Validation: 01/01/2017 to 12/31/2036
Verification: 01/01/2017 to 09/10/2022

Assurance Level	Resolution 1447 of 2018 – 95%	**Materiality - Relative importance**	Resolution 1447 of 2018 – 5%

Sampling Plan / Evidence collection plan

Regarding the information and documentation of the GHG mitigation project planning, including procedures and criteria for the project, the baseline, quality control and assurance, risk management and This verification is listed in the following table:

Parameters	Sampling (%)	Assurance Level (100%)
Methodologies and tools used to calculate removals	100	100
Formulas for calculating removals	100	100
Installments	100 (39)	4

Regarding the number of plots to visit and their regional location, they are listed in the following table:

Stratum	Number of Plots (ni)	X Coordinates	Y Coordinates
Native Forest			

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	Native Forest 17		1° 49' 48.608" N	78° 16' 11.978" IN
		14	1° 40' 58.469" N	78° 28' 17.551" IN
		4	1° 33' 36.375" N	78° 33' 6.927" IN
		7	1° 32' 10.360" N	78° 39' 7.085" IN
	Total	4		

Name of lead auditor	Laura María García Murillo	**Email**	lmgarciam@icontec.org
Auditor	THAT	**Technical expert**	THAT
Opening meeting	3/10/2022	**Hour**	7:30 am
Closing meeting 10/13/2022		**Hour**	3:00 pm
Date on which 09/30/2022 **I complete the audit plan**			

19 ANNEX 3.Interviews

LISTADO DE ASISTENCIA ENTREVISTAS

icontec

Nombre del programa: REDD+ Pacífico Sur. Facilitador: Laura García

Lugar: Imbil pal del Carmen Fecha: 3/10/2022.

N°	Nombre	Cédula	Empresa	Cargo	Dirección	Fecha de Entrevista	Firma
1	Dina Marcela Riascos	1087199534	CC. Tablón Salado	Representante L.	Tablón salado	03-Oct-22	
2	Germán Damiano Cedeño	87 920 006	cc Biotablon Dulce	Líder comunitario	Tablon Dulce	03-oct-22	
3	Wilman Posa	1205487X	CC. Tablon Dulce	Local			
4	José Eider Cuero	12.915.371	cc Tablon dulce	Líder	cc Tablon dul		
5	Erika Ortiz	1241871					
6	Jindiger Posso	1004123362	CC Tablon Dulce	Vocal	CC Tablon Dulce		
7	Maritza Rivera	59.677.635	CC Tablon Dulce	Presidenta	CC Tablon Dulce	03-10-22	
8	Yomaira Quinonez	1.140.923.654	Imbilpi del carmen	Fiscal		03 10 22	
9	Teofilo Ruiz	12.911.977	CC. Imbilpi		CC. Imbilpi	03-10-2022	
10	Maira Alejandra Cortés	1087.196.246	CC. Imbilpi	Secretaria	CC. Imbilpi	03-10-2022	
11	Mayerlin Padilla	59.675.030	Cormbilpi	Líder comunitaria	CC Imbilpi		
12	Nidia Angulo	59.672.554	CC Imbilpi	Líder comunitaria	CC Imbilpi	12-12	
13	Ana Ruiz	1087202751	CC Imbilpi	Vicepresidenta	CC Imbilpi	12-10-1993	
14	Elisabet Ruiz	1087202711	CC Imbilpi	Líder Comunitaria	CC Imbilpi	03-02-1994	
15	Yeraldy Padilla	1002012528	CC. Imbilpi	Líder	CC. Imbilpi	03-Oct-2022	
16	[illegible]	87946460	CC Imbilpi	Presidente	CC Imbilpi	03-oct-2022	
17	José Mauricio Valencia	1249139??	CC. Imbilpi	Rep Legal	CC Imbilpi	03/10/2022	
18	Brenda Valencia	59686856	CC. Tablon Salado	Local	CC. Tablon Salado	03/10/2022	
19	Yesenia Obando	59676381	CC Tablon Salado	Vice Presidente	CC Tablon Salado	03/10/2022	
20	Alexis Cabezas	1093185???	CC Tablon Salado	Presidente	CC Tablon Salado	03-10-2022	
21	Carmen Marquinez	59671101	CC Imbilpis				

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LISTADO DE ASISTENCIA ENTREVISTAS

Nombre del programa: REDD+ Pacífico Sur. Facilitador: Lina Gomez

Lugar: San Antonio Fecha: 04/10/2022

N	Nombre	Cedula	Empresa	Cargo	Direccion	Fecha de Entrevista	Firma
1	TITO ESTUPIÑAN A	80148629	CC las varas	representante legal	San Luis Robles	04-10-2022	
2	Luis Averyarca	1087120	"	Vocal	San Antonio	04-10-22	
3	Viviana R	1087718695	"		San Antonio	04-2022	
4	Martha Sanchez	59671519	CC Tumaco N°				Martha S
5	Raquel ortiz Rivas	1082028891	"		San antonio	04-2022	
6	Delbi ortiz A.	1085084984	"		El banco	04-2022	Yebis A.
7	Yebis A Bioso	98113162	" " las Varas	Fiscal	San antonio	04-2022	
8	Juan Martin Viñas	87942199	" " varas	Presidente local	San Antonio	04-2022	
9	[illegible]	[illegible]	[illegible]		[illegible]	04/10/22	
10	Samuel Vivas	87942523	CC las varas		San Antonio	04/10/2022	
11	Esteban ortiz	12.915397	cc las varas		San Antonio	04-2022	
12	Jeison ortiz	1004604416	"		San antonio	04-10-2022	
13	Albin Hurtado	12914461	"	comunidad	San Antonio	3155212659	
14	Mirella Hurtado	1087187212	"	comunidad	San Antonio	04-2022	
15	Jairo A R	19977546			San Antonio		SAROM R
16	Andres Rivas	5366027	"	Comunidad	San Antonio	04-2022	Andres Rivas
17	Monica Lucia Cabezas	1004639796	"	comunidad	San antonio	04-2022	
18	martin Siniguana	12909616	Las Varas	miembro comunidad	San Antonio	04-2022	
19	Alex Tide Tenorio	5.366043	cc Las Varas	Vocal S.	San Luis Robles	04-2022	
20	Ruben Rivera	12913703	cc Rescate las varas	Vocal	Tambillo	04-2022	Ruben Rivera
21	Lavi Flamia Luna	1087[illegible]872	cc Rescate las varas	Tesorero	Rescate	04-10-22	

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Nombre del programa: REDD+ Pacífico Sur. Facilitador: Lina Gomez

Lugar: San Antonio Fecha: 04/10/2022

N	Nombre	Cedula	Empresa	Cargo	Direccion	Fecha de Entrevista	Firma
1	Luisa Alejandra Preciado B	1004639759	CC. Rescate las varas		Inspección Policía	04-10-22	
2	ESTIVEN TENORIO H.	1087197328	CC Rescate las Varas	Vocal	Piñal Salado	04-10-22	
3	Kenny Angulo R	1087196356	cc rescate las varas	Vocal	Piñal Salado	04-10-22	
4	ALVAR CAICEDO	12912575	cc Rescate las varas	VOCAL	SAN DIEGO		ALVARO
5	Ana Isabela Mina	0944337159	- - - -	- - - - -	San Antonio	04-2022	
6	Monica ortiz	1.023.952.411	Rescate las varas	- - - - -	San antonio	04-10-22	
7	Sindy MORENO	1.146.949.086	Rescate las varas	- - - - -	San antonio	04-10-22	
8	RAFAEL BIOSO	1.087.711.015	Rescate las varas		San antonio	04-10-22	
9	Alexander Cerbano	1087769779	Rescate las varas		San antonio	04-10-22	
10	E. Flor Rivas G	59677861	Rescate	Vocal	San Antonio	04-10-22	
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LISTADO DE ASISTENCIA ENTREVISTAS

icontec

Nombre del programa: REDD+ Pacífico Sur Facilitador: Ivan Garcia

Lugar: Río Mataje Fecha: 04/10/2022

N°	Nombre	Cédula	Empresa	Cargo	Dirección	Fecha de Entrevista	Firma
1	Maria Garcia P.	27948016					Maria Garcia
2	Victor Alberto Cortillo A	98931960					Victor Cortillo
3	Jose Pz c.a	17057774					
4	Lina Rosa Mosquera	59676183	CCU Rioroso	R/legal	Chapilar		
5	Segundo Pastor Dorrego	12903598	CCU Rioroso	Agricultor	Candelo		Segundo
6	Daniel Obando	87944276	CC U.R Palito	Lider	Candelo		Daniel
7	Moreno Eider Arroyo	1057792795	CC U.R Rosario	Agricultor	B. cauca		Eider Moreno
8	Jose Hubertt	1408666889	CC U.R Rosario	Agricultor	Candelo		Jose Hubertt
9	Lozano Jhonny	98060785	CC U.R Rosario	Agricultor	El cacao		
10	Diana Quiñones Torres	1.089209375	CC. R Rosario	Agricultor	Iscuandé		Diana Q.
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LISTADO DE ASISTENCIA ENTREVISTAS

icontec

Nombre del programa: REDD+ Pacífico Sur Facilitador: Ivan Garcia

Lugar: Caunapi Fecha: 05/10/2022

N°	Nombre	Cédula	Empresa	Cargo	Dirección	Fecha de Entrevista	Firma
1	Walter Castro V.	1.089.119.098	C.C.U. R. Caunapi	R. Legal	La Brava	05/10/22	Walter Castro
2	Guillermo Dariosa	98.055.018	" " "	Delegado Junta	Villa Villorna	" "	
3	Edin Montaño M	1094134275	C C U R Caunapi	Equipo Técnico	La Vega	05/10/22	
4	Javier Montaño	87942250	CC U Rio caunapi	Coor. ambiental		05/10/2022	
5	Yoz de Quiñones	1089783762	CCU Rio caunapi		La Brava		Yoz de Q.
6	Edwin Montaño	1089188397	CCU Rio caunapi	Unidad técnica		05/10/2022	
7	Reynaldo Quiñones	1087205516	CC C R Caunapi		La Brava	05/10/22	Reynaldo Q.
8	Serfio Valverde	87959928	CC C R Caunapi	Lider	Alto Limones	05/10/22	
9	Edgar Viveros Cuero	1094578535	CCUR Caunapi	Lider	Alto Limones	05/10/22	
10	Elisabeth Cuero	1089210584		Vocal	La Brava	05/10/22	Elisabeth
11	Jenny Lizeth Angulo	1087712724	CCCR Caunapi	Vocero	La brava	05/10/22	Jenny Angulo
12	K. VIVIANA ARROYO J.	1.087.123.718	C.C.U.R.O Caunapi		La BRAVA	05/10/22	VIVIANA ARROYO
13	Luis Domguez	1.004.617.543	CC. U Rio Caunapi		La Brava	05/10/22	Luis Dominguez
14	Edin Mosquera V	1058273512	CCU Rio Caunapi		La Brava	05/10/22	Edin Cuero
15	Luis Cuero otis	12.918.072	CONSEJO Caunapi	Vocero Lavadero	Rio Caunapi	05/10/22	
16	Hermes Enrique Prado	12917706	C C R Rioroso	-Pi Subcentral	La brava	05/10/22	Enrique Prado
17	Jose Dennis Ortiz	12940193	CC R Rioroso		La Brava	05/10/22	
18	Luis Fernando Quintero	1089198748	CC R Caunapi		La brava	05/10/22	
19	Luis Prado Ortiz	1089196814	CC R Caunapi		La brava	05/10/22	Luis Prado
20	Luis Fernando Hurtado	1089206450	CC R Caunapi		La brava	05/10/22	Luis Hurtado
21	Oscar David Quiñones	1089209376	CC R Caunapi		La Brava	05/10/22	Oscar Quiñones

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LISTADO DE ASISTENCIA ENTREVISTAS

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Nombre del programa: REDD+ Pazcifico Sur Facilitador: Laura Garcia

Lugar: Cauca Fecha: 5/10/2022

N°	Nombre	Cédula	Empresa	Cargo	Dirección	Fecha de Entrevista	Firma
1	Doris Patricia Quiñones	1087202999	Cauca pi la braba	Junta directa	la braba	5-10-2022	
2							
3							
4		27173126		Fiscal		5-10-2022	
5		12919058				5/10/2022	
6		12918943				5/10/2022	
7		1091832972					
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LISTADO DE ASISTENCIA ENTREVISTAS

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Nombre del programa: REDD+ Pazcifico Sur Facilitador: Laura Garcia

Lugar: Casa de Gobierno CC Alto Mira y Frontera Fecha: 05/10/2022

N°	Nombre	Cédula	Empresa	Cargo	Dirección	Fecha de Entrevista	Firma
1	Nelsa Estupiñan	1087611967	Alto mira consejo	Comunidad	Imbili Bocana	5-10-22	
2	Amelia Cecilia Rodriguez	1087172117	CCAMYF	Secretaria J.V.A	Imbili Centro	5-10-22	
3	Edelsa Mena	1617647961	CC de Mayores	Directivo	Imbili KM4	5-9-2022	
4	Mary Yaneth Caicedo	1087116572	C.C. AMYF	Secretaria Suplente	El Manglar	05-10-22	
5	Edey Mabel Arboleda	27601317	CCAMYF	Vicepresidenta	Pambilar	05-10-22	
6	Paola andrea cuesta	1088236355	CCAMYF	Vicepresidenta	Vereda candelilla	05-10-22	
7	Fleiter Bolaños	13055926	CCAMYF	V. presidente	Baisa	05-10-22	
8	Ancamycortes	1218228809	CCAMYF	Comunidad	El Tal Pira	05-10-22	
9	Lucenith Ramirez P.	1087109197	CCAMYF	Comunidad Negra	La BALSA	05-10-2022	
10	Pablo Quiñones	12915429	CCAMYF	Vocal Junta gouna	Alta Junta	05-10-2022	
11	Filiber Manuel Rosero Estupiñan	12914134	CCAMYF	Vocal CCAMYF	Total Piscigua	05-10-2022	
12	Eglee Hancille	12910539	CCAMYF	Vocal	Guayabo		
13	STEVEN MARTINEZ	1087197770	CCAMYF	Comunidad	IMBILI	05-10-2022	
14	Ricaurte Ocampo	12906658	CCAMYF	Fiscal	Total	05-10-2022	
15	Maria del Carmen Cortes	1004608180	CCAMYF Amyfa	Secretaria	Piaipi	05-10-2022	
16	WILSON						
17	Rosa Elena Mesa	1089116786	CCAMYF	Presidenta Vereda	El panal	05-10-2022	
18							
19	JULIO CESAR	1146949347	CCAMYF	VOCAL	SAN FRANCISCO	05-10-2022	
20	Heylin Cabezas	1664076?2	CCAMYF	Presidente	Restrepo	05-10-2022	
21	EDGAR A QUIÑONES	87461557	CCAMYF	Vocal	Coordinador	05-10-2022	

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LISTADO DE ASISTENCIA ENTREVISTAS

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Nombre del programa: REDD+ Pazcífico Sur. Facilitador: Liana Garcia

Lugar: Bella Vista – Río Mejicano Fecha: 6/10/2022

N°	Nombre	Cédula	Empresa	Cargo	Dirección	Fecha de Entrevista	Firma
1	[illegible]	[illegible]	[illegible]	[illegible]	Bella Vista	06-10-22	[illegible]
2	Celdy Palacio	130539446	CC. Río Mejicano	Vice presidente	Bella Vista	06-10-22	[illegible]
3	Roberto Castillo S.	129072551	Junta Ejecutiva	Fiscal	Bella Vista	06-10-22	[illegible]
4	Nelsen Purbano	8 055 143	CC. Río Guala 50	Comunidad	Retroceso	06-10-22	NELSON
5	Ana Julia Rodríguez	1078228730	CC. Río Guala 50	Comunidad	Guachive	06-10-22	ANA RODRIGUEZ
6	Emilio Centeno Burbano	1004600172	CC. Río Guala 50	Comunidad	Buenos Aires	06-10-22	[illegible]
7	Luis Tirio Angulo	13057389	CC. Río Mejicano	Vocal	Retorno	06-10-22	[illegible]
8	Celdy Palacio y Reinaldo	5-761-619	CC. Río Mejicano	Vice pres. ejte	Santa Rosa	06-10-22	[illegible]
9	Cesar A. Arboleda C.	87948159	CC. Río Tuelo Ju	Presidente	Tuelo Ju	06-10-22	[illegible]
10	Senaro Manquinesth	12907046	CC. Río Mejicano	Comunidad	Santa Rosa	06-10-22	[illegible]
11	Martha Yepez	27570349	CC. Río Mejicano	Comunidad	Santa Rosa	06-10-22	Martha
12	Esneda Maquinez P.	59682800	CC. Río Mejicano	Comunidad	Santa Rosa	06-10-22	Esneda
13	Provincia Fuerza L.	59664502	CC. Río Guala 50	Comunidad	Guabal	06-10-22	[illegible]
14	Miguel Angel Cuarez	12902631	CC. Río Mejicano	Comunidad	Guallavu	06-10-22	MIGUELANGEL
15	Vicente Ceguera	5.361.560	C.C. Río Mejicano	Retorno	Retorno	06-10-22	[illegible]
16	Leis Solis	12.907.250	CC. Río Mejicano	Comunidad	Bella Vista	06-10-22	[illegible]
17	Juana de Dios Angulo	1895787	C.C. Río Mejicano	Comunidad	Bella Vista	06-10-22	[illegible]
18	Elvio Molano	10872158869	CC. Mejicano	R. Legal	Guabalo	06-10-22	[illegible]
19	Wendy Verjara D.	1004612292	C.C. Río Mejicano	Vocal	Guayabe	06-10-22	Wendy Verjara
20	Víctor Archite G.	1305744837	C.C. Río Guala 50	Vocal	Guayabi	06-10-22	[illegible]
21	Luis Arboleda	1004639452	CC. Río Garrapato	R. Legal	Kerachite	06.10.22	[illegible]

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LISTADO DE ASISTENCIA ENTREVISTAS

icontec

Nombre del programa: REDD+ Pazcífico Sur. Facilitador: Liana Garcia

Lugar: Chagui – San Pedro Fecha: 07/10/2022

N°	Nombre	Cédula	Empresa	Cargo	Dirección	Fecha de Entrevista	Firma
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	07-10-22	[illegible]
2	Ofelia Saya	36 925 152	Consejo Río Chagui	Comunidad	San pedro	07-10-22	[illegible]
3	Meisy Quiñones	59' 677274	Consejo Río Chagui	Comunidad	San pedro	07-10-22	Meisy Quiñones
4	Maria de los santos V	31 248 370	Consejo Río Chagui	Comunidad	San pedro	07-10-22	[illegible]
5	Mabel Valverde	59 687 599	Consejo Río Chagui	Comunidad	San pedro	07-10-22	mabel valverde
6	Jose Harlin Araujo	87 949 597	Consejo Río Chagui	Presidente	San pedro	07-10-22	Jose araujo
7	Luis Angel Quiñones	12 910 975	Consejo Río Chagui	Comunidad	San pedro	07-10-22	[illegible]
8	Fortunato castillo	16 855 903	Consejo Río Chagui	Comunidad	San pedro	07-10-22	No Firma
9	Ezequiel Quiñones	16 617871	Consejo Río Chagui	Vocal	San pedro	07-10-22	[illegible]
10	Wilber R. pereq	12 907 261	Consejo Río Chagui	Comunidad	San pedro	07-10-22	[illegible]
11	Carolina Ceno S.	1004 639232	Consejo Río Chagui	Comunidad	Nueva Vista	07-10-22	Carolina ceno
12	Judith Ceron R.	1010 071 095	Consejo Río Chagui	Secretaria	San pedro	07-10-22	Judith ceron
13	Victor Alfonso Quiño	1087114526	Consejo Río Chagui	Presidente Consejo	Chapul	07-10-22	[illegible]
14	Pablo Preciado	84 999 645	Consejo Río Chagui	Fiscal consejo	Negrito	07-10-22	[illegible]
15	David Pineda	1087 887 712	Consejo Río Chagui	Comunidad	San pedro	07-10-22	DAVID Pineda
16	Leidy laura Montano	1151 945 358	Consejo Río Chagui	Secretaria	Sirena	07-10-22	leidy laura
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LISTADO DE ASISTENCIA ENTREVISTAS

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Nombre del programa: REDD+ Estrategia de... Facilitador: Lana Gonzalez

Lugar: Bahia Solano Fecha: 7/10/2022

Nº	Nombre	Cedula	Empresa	Cargo	Direccion	Fecha de Entrevista	Firma
1	Angie Ituri	S'299.540.	CC. Manos amigas	Comunidad	Vda. Diego Angulo	8/10/2022	
2	Jean carlos Ituri	1004744591	CC. Manos amigas	comunidad	N. el diverso	8/10/2022	Carlos
3	Jose Rivas	11.707985	El Manzanillo	comunidad	diviso	08 10 22	Jose R
4	Yamileth Ituri	1004744585	CC manos amigas	comunidad	Diviso (Norte)	08-10-22	Yamileth Ituri
5	Cristian angulo	5290361	manos amigas	Comunidad	Diviso		
6	Cecilia #rafado	52900025	manos	comunidad	Diviso		
7							
8		29128590	Manos amigas	Comunidad	Diviso	31227922	
9	Jhonier Uriel Angulo	1.004744.215	Manos Amiga	Comunidad	Nansalvi el diverso	8/10/2022	Jhonier Angulo
10	Flora Angulo	22327259	manos amigas	Comunidad	Diviso	8/10/2022	Flora Angulo
11	Fermina Valencia	1677485	CC. Manos amigas	Rep. Legal	San Luis	08-10-22	Germina V.
12	Harold D. Angulo G.	1004744518	CC. Manos Amigas	Comunidad	Cualala	8/10/22	Harold D. Angulo G.
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LISTADO DE ASISTENCIA ENTREVISTAS

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Nombre del programa: REDD+ Pazcífico Sur Facilitador: Laura García

Lugar: Esmeraldas Fecha: 8/10/2022

N°	Nombre	Cédula	Empresa	Cargo	Dirección	Fecha de Entrevista	Firma
1	Fernando Martínez	1291130[illegible]	CC Amy P	Presidente	Tsáchila	08-10-22	
2	Antonio Alegría	0533[illegible]	CC Amy P	Presidente	Tsáchila	08-10-22	
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LISTADO DE ASISTENCIA ENTREVISTAS

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Nombre del programa: REDD+ Pazcífico Sur Facilitador: Laura García

Lugar: Roberto Payán Fecha: 8/10/2022

N°	Nombre	Cédula	Empresa	Cargo	Dirección	Fecha de Entrevista	Firma
1	Alejandro Quiñonez	12.776.786	Comunitario/Empresa	R. Legal	U/Tomaje	08/10/22	
2							
3	FABIAN PAZ	98350[illegible]	consejo comunitario	Presidente	Tomaje	08/10/22	
4	Jaime Quiñones	98350[illegible]	cc. Integración.	Presidente	Comunidad	08/10/22	
5	claudia cortes	1089555822	Consejo Com	Comunidad	Guayabo	08/10/22	
6	Pablo Elías Angulo P.	5.226.490	Comunitario Integración	R. Legal	Boca de Telembí	08/10/22	
7	Yuliana angulo	1004206[illegible]	Cafanguano	Comunidad	Pangta	08/10/22	
8	Gregorio Valencia	98[illegible]	[illegible]	Presidente	Mayor		
9	AVELINO MINA	98[illegible]	[illegible]	COMUNIDAD	MAMAJE		
10	SEGUNDO MOLINA	120[illegible]	[illegible]	COORDINADOR	MAMAJE		
11	HERNES ARROYO	94288[illegible]	CONSEJO AGRI	R. LEGAL	CHIMBUZA	8 de 2022	
12	JABER. ALIRIO CHILIAMBO	98350919	cc. unidad de cuencas	R. Legal	Negrito		
13	ROSA BENILDA CORTES	66[illegible]	CC unidad de cuencas	Secretario	Negrito	8-10-2022	
14	DANILO ANGULO	1004746[illegible]	integración telembí	presidente	Chilvi	08-10-22	
15	Elmer Ricaurte	1[illegible]		Tesorero	Chilvi	08-10-22	
16	Evén Prado	87433949	CLARICULTORES	Líder	CHIMBUZA	08-10-22	
17	VICTOR ORDOÑEZ	1098539[illegible]	CC CAFANGUANO	R Legal	Pumbi	08/2022	
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LISTADO DE ASISTENCIA ENTREVISTAS

icontec

Nombre del programa: REDD+ Pacífico Sur Facilitador: Lena García

Lugar: Agroimpulso Fecha: 09/10/2022

N°	Nombre	Cédula	Empresa	Cargo	Dirección	Fecha de Entrevista	Firma
1	FERLEY ARROYO TOSERO	82384589	Agroimpulso	Derechos	Cali	9-10-22	
2	Jhojan Cuellar S.	1116265239	Agroimpulso	Ing Ambiental	El Charco	09/10/22	
3	Francy Carmejo	66982138	Agroimpulso	Dire. General	Tumaco	09/10/22	
4	ERNESTO VALOIS	16778665	Agroimpulso	Operador logistico		3175726035	
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20 ANNEX 4. ONAC- ICONTEC Accreditation

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ONAC ACREDITADO

ANEXO DEL CERTIFICADO

INSTITUTO COLOMBIANO DE NORMAS TÉCNICAS Y CERTIFICACIÓN – ICONTEC
19-GEI-001
ACREDITACIÓN ISO 14065:2013
Alcance de la acreditación aprobado / Documento Normativo

Para la validación y verificación de las declaraciones de Gases Efecto Invernadero, especificadas en la norma internacional ISO 14064-3:2006 e ISO 14064-3:2019 para:

ACTIVIDAD	Sector	Documento Normativo o Programa
VALIDACIÓN/VERIFICACIÓN DE PROYECTOS GEI ISO 14064-2: 2006 ISO 14064-2: 2019	Forestación y reforestación	• Programa VCS (Verified Carbon Standard). • Programa CERCARBONO (Certificadora de Carbono) • Estándar para el Mercado Voluntario de Carbono – BCR Estándar
	Industrias Energéticas (fuentes renovables / no renovables)	• Programa VCS (Verified Carbon Standard). • Programa CERCARBONO (Certificadora de Carbono). • Estándar para el Mercado Voluntario de Carbono – BCR Estándar
	Demanda energética	• Programa VCS (Verified Carbon Standard). • Programa CERCARBONO (Certificadora de Carbono). • Estándar para el Mercado Voluntario de Carbono – BCR Estándar
	Transporte	• Programa VCS (Verified Carbon Standard). • Programa CERCARBONO (Certificadora de Carbono). • Estándar para el Mercado Voluntario de Carbono – BCR Estándar
	Manejo y eliminación de residuos	• Programa VCS (Verified Carbon Standard). • Programa CERCARBONO (Certificadora de Carbono). • Estándar para el Mercado Voluntario de Carbono – BCR Estándar

Sitios cubiertos por la acreditación
Sede principal: Carrera 37 No. 52-95, Bogotá D.C., Cundinamarca, Colombia

ONAC

CERCARBONO
Certified Carbon Standard

CERTIFICADO DE RETIRO DE UNIDADES DE CARBONO

Programa de certificación: Cercarbono

EcoRegistry certifica que el **2025-12-17** se han retirado **1,509** certificados de carbono del proyecto **PROYECTO REDD+ PAZCÍFICO SUR** identificado con el ID **CDC-114** , asociado al titular identificados con NIT o CC **CO2CERO (901.245.493-8),, Consejo Comunitario Agricultores del Patía grande (840.000.397-6),, Consejo Comunitario Alto mira y frontera (840.000.219-3),, Consejo Comunitario Catangueros (84.000.035-6),, Consejo Comunitario El progreso Río Patía Grande (840.000.450-9),, Consejo Comunitario Imbilpí del Carmen (840.000.349-2),, Consejo Comunitario Integración de Telembí (840.000.584-7),, Consejo Comunitario La amistad (900.121.749-1),, Consejo Comunitario Unión Patía viejo (840.000.360-4),, Consejo Comunitario Rescate Las Varas (840.000.646-5),, Consejo Comunitario Río Gualajo (840.000.630-8),, Consejo Comunitario Tablón dulce (840.000.647-2),, Consejo Comunitario Tablón salado (840.000.386-5),, Consejo Comunitario Unión de Cuencas de Isagualpi (840.000.401-8),, Consejo Comunitario Unión del Río chagüí (840.000.648-1),, Consejo Comunitario Unión Río Rosario (840.000.330-3),, Consejo Comunitario Unión Río Caunapi (900.025.971-1),, Consejo Comunitario El Recuerdo de Nuestros Ancestros Rio Mejicano (840.000.342-1),, FUNDACION AGRO IMPULSO (901.211.139-9)**. Dichos certificados de carbono están asignados al siguiente número serial:

Total TonCO2e: 1,509

Serial Inicial: CDC_114_1_11_321_14_R4_2X_CO_1_1_2021_10857
Serial Final: CDC_114_1_11_321_14_R4_2X_CO_1_1_2021_12365
Vintage Año de remoción (vintage): 2021



Usuario final: DEPARTAMENTO DE ANTIOQUIA
NIT: 890900286 - 0
El retiro se realiza como compensación voluntaria
Periodo de acreditación: 2017-01-01 a 2036-12-31

Aporta a los siguientes ODS:



Powered by EcoRegistry

CERCARBONO
Certified Carbon Standard

CERTIFICADO DE RETIRO DE UNIDADES DE CARBONO

Fecha: 2025-12-17
Nro. certificado: 885

Aporta a los siguientes ODS:



Powered by EcoRegistry

Factura Electrónica De Venta

HC No. 5657

CO2CERO SAS BIC
Nit 901245493 8

Documento Oficial de Autorización de Numeración Facturación Electrónica No. 18764088339568 que habilita desde HC 4001 hasta HC 6000. Vence 2027-02-04

IVA Régimen Común No somos Agentes de Retención de IVA

No somos Grandes Contribuyentes

Actividad Económica ICA 4690 11.04 X 1000

CLIENTE	DEPARTAMENTO DE ANTIOQUIA
NIT	890900286 0

DIRECCIÓN	CIUDAD	TELÉFONO
CL 42 B 52 106 P 1 OF 111	Medellín	3838111

FECHA FACTURA	FECHA VENCIMIENTO	VENDEDOR	FORMA DE PAGO
18/12/2025	17/01/2026	LAURA KATHERINE NIVIA GOMEZ	Credito

Item	Código	Descripción	Cantidad	U Medida	Valor Unitario	IVA	Valor IVA	Total
1	COLTAX	CREDITOS DE CARBONO REDD+ Certificados de carbono Compensación voluntaria Contrato No. 460001886	1.509	Und.	10.000	0	0,00	15.090.000,00

Total item: 1

Valor en Letras

CATORCE MILLONES SETECIENTOS DOCE MIL SETECIENTOS CINCUENTA PESOS M/CTE

SUBTOTAL	**15.090.000,00**
DESCUENTO	**0,00**
IVA	**0,00**
IMPUESTO AL CONSUMO	**0,00**
TOTAL DE LA OPERACIÓN	**15.090.000,00**
RETEFUENTE	**377.250,00**
RETEIVA	**0,00**
RETEICA	**0,00**
TOTAL MENOS RETENCIONES	**14.712.750,00**

CONSIGNAR EN LA CUENTA DE AHORROS 084197425 DEL BANCO DE BOGOTA A NOMBRE DE CO2CERO SAS.

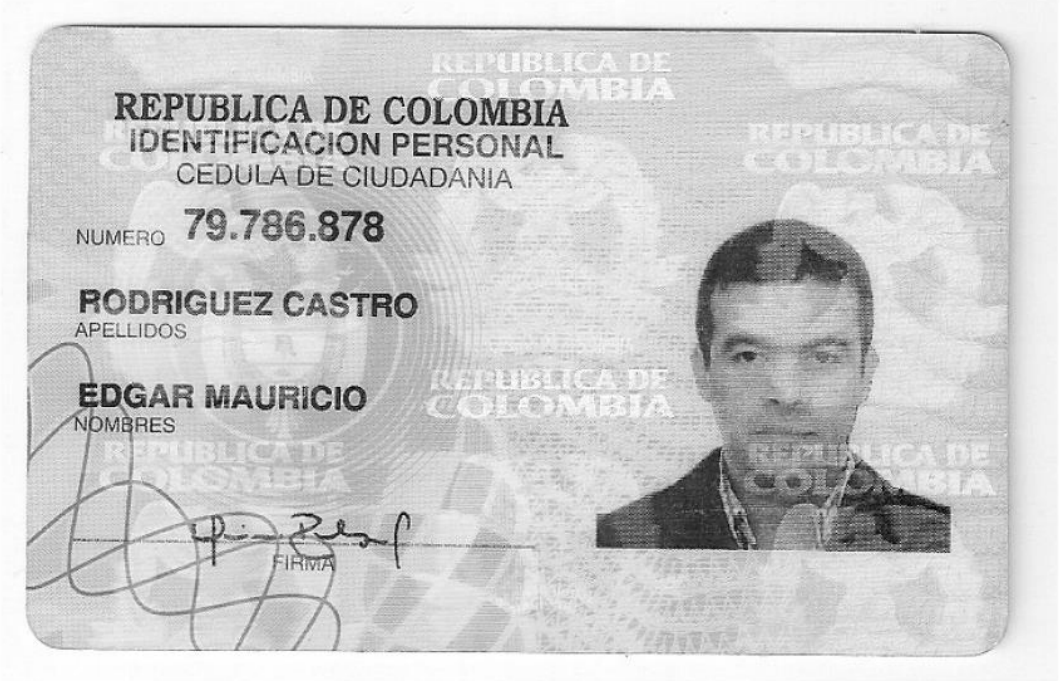
Esta factura de venta se asimila en todos sus efectos a la letra de cambio, el no pago en los plazos establecidos causa un interés de mora mensual liquidado a la tasa máxima permitida de conformidad con los Articulos 883 y 884 del Código de comercio.

Representación Gráfica de la Factura de Venta Electrónica

Fecha y Hora de Generación: 18/12/2025 17:09:57

CR 45 A 104 B 16 Bogotá D.C Teléfono 6047279 Ext 1103
Correo Electrónico contabilidad@co2cero.co

CUFE: 69a997ab3b13072d32910ebf5bcee7a878dada5bfcffb096cecbca4f6ea0590445cddfe86a16cb8ee419a78c1f490def --Expedición: 18/12/2025 05:18 PM
Fabricante y Proveedor Tecnológico: World Office Colombia SAS NIT 900534356-3 Software: World Office (wo_2)



REPUBLICA DE COLOMBIA
IDENTIFICACION PERSONAL
CEDULA DE CIUDADANIA

NUMERO 79.786.878

RODRIGUEZ CASTRO
APELLIDOS

EDGAR MAURICIO
NOMBRES

FIRMA



FECHA DE NACIMIENTO 21-ABR-1976

BOGOTA D.C.
(CUNDINAMARCA)
LUGAR DE NACIMIENTO

1.72 ESTATURA | O+ G.S. RH | M SEXO

31-OCT-1994 BOGOTA D.C.
FECHA Y LUGAR DE EXPEDICION

REGISTRADOR NACIONAL
JUAN CARLOS GALINDO VACHA

INDICE DERECHO

A-1525000-39156093-M-0079786878-20070214 04092 07045A 02 222338955

EL SUSCRITO REPRESENTANTE LEGAL DE CO2CERO S.A.S.
Nit. 901.245.493 – 8

CERTIFICA QUE:

La empresa CO2CERO S.A.S., brinda cumplimiento a las normas de seguridad social integral en salud, pensión, riesgos profesionales y aportes parafiscales, según lo establecido en la Ley 100 de diciembre 23 de 1993, artículos 11 y 12 del Decreto 1406 de 1999 y demás normas concordantes, encontrándose al día en los aportes de seguridad social y pagos de caja de compensación familiar, ICBF y SENA. En la actualidad tiene pago los aportes correspondientes al período Octubre de 2025.

La presente certificación se expide para dar cumplimiento a lo establecido en la Ley 789 de 2002, a los 17 días del mes de diciembre de 2025.

EDGAR MAURICIO RODRIGUEZ CASTRO
Representante Legal
C.C. 79.786.878

aportes en línea

Planilla Resumen

DATOS GENERALES DEL APORTANTE

Identificación	dv	Razon Social	Clase Aportante	Sucursal Principal	Direccion	Ciudad-Departamento	Teléfono	Exonerado SENA e ICBF
NIT 901245493	8	CO2CERO SAS	B - MENOS DE 200 COTIZANTES	CO2CERO BOGOTÁ	CRA 45 A 104 B 16	BOGOTA-BOGOTA D.E.	6047279	Si

DATOS GENERALES DE LA LIQUIDACION

Periodo		Clave		Tipo	Fecha		Pago		
Pensión	Salud	Pago	Planilla	Planilla	Limite	Pago	Banco	Dias Mora	Valor
2025-10	2025-11	1954834900	9495370702	E	2025/11/25	2025/11/25	BANCO DE BOGOTA	0	$47,966,900

LIQUIDACION DETALLADA DE APORTES

EMPLEADO				NOVEDADES																	PENSION		SALUD		CCF		RIESGOS				PARAFISCALES	
No.	Identificación		Nombre	ing	ret	tde	tae	tdp	tap	vsp	cor	vst	sln	ige	lma	vac	avp	vct	irl	vip	Codigo	Días	Codigo	Dias	Codigo	Días	Codigo	Días	Tarifa	Días	Exonerado SENA e ICBF
SUCURSAL: CO2CERO BOGOTÁ (47 Afiliados)																																
Centro de Trabajo: ABASTECIMIENTO RIESGO II (3 Afiliados)																																
Ciudad: BOGOTA Depto: BOGOTA D.E. (3 Afiliados)																																
1	CC	1098689805	DIAZ CAMACHO JUAN MANUEL																		23030 1	30	EPS005	30	CCF21	30	14-11	30	1.044%	30	Si
2	CC	1072496867	GOMEZ BELTRAN LAURA PAOLA																		23030 1	30	EPS017	30	CCF21	30	14-11	30	1.044%	30	Si
3	CC	1015474126	PINZON GONZALEZ PAOLA ANDREA																		23030 1	30	EPS037	30	CCF21	30	14-11	30	1.044%	30	Si
Centro de Trabajo: DIRECCIÓN GENERAL (1 Afiliados)																																
Ciudad: BOGOTA Depto: BOGOTA D.E. (1 Afiliados)																																
4	CC	80036624	RIVERA MICAN JOSE LUIS																		23100 1	30	EPS005	30	CCF21	30	14-11	30	4.350%	30	No
Centro de Trabajo: PRESIDENCIA (2 Afiliados)																																
Ciudad: BOGOTA Depto: BOGOTA D.E. (2 Afiliados)																																
5	CC	1072922003	ACERO RUEDA HEIDY JULIETH																		23020 1	30	EPS005	30	CCF21	30	14-11	30	1.044%	30	Si
6	CC	79786878	RODRIGUEZ CASTRO EDGAR MAURICIO																		25-14	30	EPS005	30	CCF21	30	14-11	30	1.044%	30	No
Centro de Trabajo: PROCESO ADMINISTRATIVO Y FINANCIERO RIESGO II (9 Afiliados)																																
Ciudad: BOGOTA Depto: BOGOTA D.E. (9 Afiliados)																																
7	CC	1014273291	CACERES PINTO MARIA CAMILA																		23030 1	30	EPS005	30	CCF21	30	14-11	30	1.044%	30	Si
8	CC	1032464082	CRUZ ACEVEDO DEISY CAROLINA																		23030 1	21	EPS010	21	CCF21	21	14-11	21	1.044%	21	Si
9	CC	1032464082	CRUZ ACEVEDO DEISY CAROLINA													X					23030 1	9	EPS010	9	CCF21	9	14-11	9	0.000%	9	Si
10	CC	1019106378	FORERO GUERRERO DEICY ROCIO		X																	0	EPS002	20		0	14-11	20	1.044%	0	No
11	CC	1019106378	FORERO GUERRERO DEICY ROCIO	X																	23030 1	10	EPS002	10	CCF21	10	14-11	10	1.044%	10	Si
12	CC	1013690923	GARZON PANTEVIS WENDY PAOLA																		23030 1	28	EPS005	28	CCF21	28	14-11	28	1.044%	28	Si
13	CC	1013690923	GARZON PANTEVIS WENDY PAOLA													X					23030 1	2	EPS005	2	CCF21	2	14-11	2	0.000%	2	Si
14	CC	1014194391	GOMEZ PEREZ CAMILO																		23030 1	30	EPS002	30	CCF21	30	14-11	30	1.044%	30	Si
15	CC	1007196325	GUEVARA BARRERA ANDRES FELIPE																		23020 1	30	EPS005	30	CCF21	30	14-11	30	1.044%	30	Si
16	CC	1010196932	MIRANDA QUINTERO ERIKA FERNANDA																		23030 1	26	EPS017	26	CCF21	26	14-11	26	1.044%	26	Si
17	CC	1010196932	MIRANDA QUINTERO ERIKA FERNANDA													X					23030 1	4	EPS017	4	CCF21	4	14-11	4	0.000%	4	Si
18	CC	1024521705	VILLAMIL RINCON GUILLERMO																		23030 1	30	EPS005	30	CCF21	30	14-11	30	1.044%	30	Si
19	CC	52254167	ZAMORA CANO LILIA YANETH													X					23030 1	7	EPS005	7	CCF21	7	14-11	7	0.000%	7	Si
20	CC	52254167	ZAMORA CANO LILIA YANETH													L					23030 1	3	EPS005	3	CCF21	3	14-11	3	0.000%	3	Si
21	CC	52254167	ZAMORA CANO LILIA YANETH									X									23030 1	20	EPS005	20	CCF21	20	14-11	20	1.044%	20	Si

| | | |

| | | |

aportes en línea

Planilla Resumen

DATOS GENERALES DEL APORTANTE

Identificación	dv	Razon Social	Clase Aportante	Sucursal Principal	Direccion	Ciudad-Departamento	Teléfono	Exonerado SENA e ICBF
NIT 901245493	8	CO2CERO SAS	B - MENOS DE 200 COTIZANTES	CO2CERO BOGOTÁ	CRA 45 A 104 B 16	BOGOTA-BOGOTA D.E.	6047279	Si

DATOS GENERALES DE LA LIQUIDACION

Periodo		Clave		Tipo	Fecha		Pago		
Pensión	Salud	Pago	Planilla	Planilla	Limite	Pago	Banco	Dias Mora	Valor
2025-10	2025-11	1954834900	9495370702	E	2025/11/25	2025/11/25	BANCO DE BOGOTA	0	$47,966,900

RESUMEN DE PAGO

RIESGO	CODIGO	NIT	DV	AFILIADOS	VALOR LIQUIDADO	INTERESES MORA	SALDOS E INCAPACIDADES	VALOR A PAGAR
AFP (ADMINISTRADORAS: 5)				53	$26,929,000	$0	$0	$26,929,000
COLFONDOS	231001	800,227,940	6	2	$2,570,000	$0	$0	$2,570,000
COLPENSIONES	25-14	900,336,004	7	12	$8,811,400	$0	$0	$8,811,400
PORVENIR	230301	800,224,808	8	25	$9,817,900	$0	$0	$9,817,900
PROTECCION	230201	800,229,739	0	11	$4,407,500	$0	$0	$4,407,500
SKANDIA	230901	800,253,055	2	3	$1,322,200	$0	$0	$1,322,200
ARL (ADMINISTRADORAS: 1)				53	$4,252,900	$0	$0	$4,252,900
ARL SURA	14-11	890,903,790	5	53	$4,252,900	$0	$0	$4,252,900
CCF (ADMINISTRADORAS: 3)				53	$6,536,700	$0	$0	$6,536,700
CAFAM	CCF21	860,013,570	3	47	$5,906,400	$0	$0	$5,906,400
CAJAMAG	CCF33	891,780,093	3	1	$102,900	$0	$0	$102,900
COMFANDI	CCF57	890,303,208	5	5	$527,400	$0	$0	$527,400
EPS (ADMINISTRADORAS: 9)				53	$8,952,700	$0	$0	$8,952,700
CAPITAL SALUD	EPSC34	900,298,372	9	1	$152,000	$0	$0	$152,000
COMPENSAR	EPS008	860,066,942	7	2	$167,100	$0	$0	$167,100
EPS SURA (ANTES SUSALUD)	EPS010	800,088,702	2	4	$637,700	$0	$0	$637,700
FAMISANAR	EPS017	830,003,564	7	4	$406,200	$0	$0	$406,200
NUEVA E.P.S.	EPS037	900,156,264	2	5	$430,700	$0	$0	$430,700
NUEVA EPS MOVILIDAD	EPS041	900,156,264	2	2	$152,200	$0	$0	$152,200
S.O.S. SERVICIO OCCIDENTAL DE SALUD S.A.	EPS018	805,001,157	2	1	$68,000	$0	$0	$68,000
SALUD TOTAL	EPS002	800,130,907	4	7	$629,300	$0	$0	$629,300
SANITAS	EPS005	800,251,440	6	27	$6,309,500	$0	$0	$6,309,500
ICBF (ADMINISTRADORAS: 1)				2	$777,400	$0	$0	$777,400
INSTITUTO COLOMBIANO DE BIENESTAR FAMILIAR	PAICBF	899,999,239	2	2	$777,400	$0	$0	$777,400
SENA (ADMINISTRADORAS: 1)				2	$518,200	$0	$0	$518,200
SENA	PASENA	899,999,034	1	2	$518,200	$0	$0	$518,200
TOTAL				53	$47,966,900	$0	$0	$47,966,900

GOBERNACION DE ANTIOQUIA
REPUBLICA DE COLOMBIA

Gobernación de Antioquia

RECIBO A SATISFACCION

Fecha Elaboración: 18.12.2025

Página: 1 de 1

NUMERO DE DOCUMENTO : 5000256395

FACTURA:	**Nro ACTA**:	**DOC CAUSACION:**

CODIGO PROVEEDOR: 2200016715	**NIT:** 9012454938	**NOMBRE / RAZON SOCIAL :** CO2CERO S.A.S.
Nro CONTRATO: 4600018863	**DEPENDENCIA:** SECRETARIA DE TALENTO HUMANO Y SERVICIOS ADMINISTRATIVOS	
FECHA SUSCRIPCION CONTRATO: 12.11.2025	**OBSERVACION:**	

PEDIDO: 1. 4500065999 SECRETARIA DE TALENTO HUMANO Y SERVICIOS ADMINISTRATIVOS

PED	POS PED	ANT	FONDO	CODIGO MATERIAL / SERVICIO	DESCRIPCION	CANTIDAD	UMB	V/R UNI. SIN IVA	% IVA	V/R UNI. INC. IVA	TOTAL INC. IVA
	1		0-1010	1000010	SISTEMA DE GESTION AMBIENTAL *	15090000	UN	1,000	0%	1,0000	15.090.000,000

V/R TOTAL NETO	15.090.000,000
V/R TOTAL IVA	0,000
V/R TOTAL	15.090.000,000

REVISIÓN DE SOPORTES Y REQUISITOS DIRECCIÓN DE CONTABILIDAD				DEDUCCIONES Y RETENCIONES	
1. Factura Original	V.Bo.	8. Firma y tel. Supervisor, # factura, contrato, fecha, y acta	V.Bo.	Estampillas	
2. Resolución de facturación vigente	V.Bo.	9. Porcentaje de particiación si es consorcio o unión Tem.	V.Bo.	Contribución Especial	
3. Cumple requisitos de factura Art. 617 E.T.	V.Bo.	10. T.P y antecedentes disciplinarios contador Per.Jurid.	V.Bo.	Retención de IVA	
4. Recibo a satisfacción por fondo	V.Bo.	11. Informe de seguimiento	V.Bo.	Retención en la Fuente	
5. RPC del pago	V.Bo.	12. Certificado de Industria y Comercio si se requiere	V.Bo.	Retención en la Fuente Obra Púb.	
6. Contrato y Rut actualizado.	V.Bo.	13. En caso de adición se deben anexar Otro SI o Adición	V.Bo.	Retención Empleados 1070	
7. Soportes del pago a seguridad social	V.Bo.	14. Elaborar Documento Equivalente si se requiere	V.Bo.	Retención Industria y Comercio	
		15. Rut Consorciados o integrantes de unión la temporal	V.Bo.		

MOVIMIENTO REALIZADO POR: Sandra Carolina Caro Garcés

SUPERVISOR(ES) Y/O INTERVENTOR(ES)

Jimenez Zuñiga, Beatriz Elena

CERCARBONO
Certified Carbon Standard

CERTIFICADO DE RETIRO DE UNIDADES DE CARBONO

Programa de certificación: Cercarbono

EcoRegistry certifica que el **2025-12-17** se han retirado **1,509** certificados de carbono del proyecto **PROYECTO REDD+ PAZCÍFICO SUR** identificado con el ID **CDC-114** , asociado al titular identificados con NIT o CC **CO2CERO (901.245.493-8),, Consejo Comunitario Agricultores del Patía grande (840.000.397-6),, Consejo Comunitario Alto mira y frontera (840.000.219-3),, Consejo Comunitario Catangueros (84.000.035-6),, Consejo Comunitario El progreso Río Patía Grande (840.000.450-9),, Consejo Comunitario Imbilpí del Carmen (840.000.349-2),, Consejo Comunitario Integración de Telembí (840.000.584-7),, Consejo Comunitario La amistad (900.121.749-1),, Consejo Comunitario Unión Patía viejo (840.000.360-4),, Consejo Comunitario Rescate Las Varas (840.000.646-5),, Consejo Comunitario Río Gualajo (840.000.630-8),, Consejo Comunitario Tablón dulce (840.000.647-2),, Consejo Comunitario Tablón salado (840.000.386-5),, Consejo Comunitario Unión de Cuencas de Isagualpi (840.000.401-8),, Consejo Comunitario Unión del Río chagüí (840.000.648-1),, Consejo Comunitario Unión Río Rosario (840.000.330-3),, Consejo Comunitario Unión Río Caunapi (900.025.971-1),, Consejo Comunitario El Recuerdo de Nuestros Ancestros Rio Mejicano (840.000.342-1),, FUNDACION AGRO IMPULSO (901.211.139-9)**. Dichos certificados de carbono están asignados al siguiente número serial:

Total TonCO2e: 1,509

Serial Inicial: CDC_114_1_11_321_14_R4_2X_CO_1_1_2021_10857
Serial Final: CDC_114_1_11_321_14_R4_2X_CO_1_1_2021_12365
Vintage Año de remoción (vintage): 2021



Usuario final: DEPARTAMENTO DE ANTIOQUIA
NIT: 890900286 - 0
El retiro se realiza como compensación voluntaria
Periodo de acreditación: 2017-01-01 a 2036-12-31

Aporta a los siguientes ODS:



Powered by EcoRegistry

CERCARBONO
Certified Carbon Standard

CERTIFICADO DE RETIRO DE UNIDADES DE CARBONO

Fecha: 2025-12-17
Nro. certificado: 885

Aporta a los siguientes ODS:



Powered by EcoRegistry