



EMISSIONS OFFSET PROJECT

Galilea Forest Conservation - Amé

September 20, 2019

**Document prepared by South Pole Carbon Asset
Management S.A.S.**



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1 Project Overview

The project seeks to conserve 30,840 hectares of forest known by the community as the Galilea forests. These forests are part of the priority areas for conservation in the Andes and Amazonian foothills region, as they are located in the biological corridor that connects the Andean and High Andean forests with the moorlands of the Sumapaz National Natural Park.¹ In addition, with respect to the department, it is the last relict of primary forest in eastern Tolima and contains the source of the Negro River, one of the main tributaries of the Hidro Prado dam.²

The objectives of the compensation project for the conservation of the Galilea-Amé Forest are as follows:

- Reduction of CO₂ emissions by avoiding deforestation of the forest.
- Biodiversity protection as it is a forest of high floristic and faunistic richness in the High Andean zone of Tolima.
- Conservation of natural water sources that benefit local communities, agricultural and livestock irrigation systems, and the Prado hydroelectric power generation system.
- Improving the living conditions of rural communities located in or around the project expansion area through the implementation of productive activities.

The project began with 13,314 hectares of forest belonging to the Amé Foundation and the University of Tolima. During the current monitoring period (January 01, 2018 to March 31, 2019) 522 hectares were included. Therefore, the current project area consists of 13,727 hectares.

In the monitoring of forest coverage, it was found that between January 1, 2018 and March 31, 2019 there was a deforestation of 13.3 hectares. Finally, as a result of the different activities carried out during this monitoring period (Table 1), it has been possible to reduce deforestation in the project area which has prevented the emission of 276.957 tCO₂e.³

1.1 Project implementation status summary

The Amé Foundation's project objective is to implement activities to control deforestation and conserve existing forests through the involvement of the families that live in and around the area. Table 1 presents the summary of the activities carried out in the monitoring period (January 01, 2018 - March 31, 2019).

¹ Villalba X. (2017). Bosque Galilea: un paraíso tolimense en riesgo por intereses petroleros. El Nuevo Día, el periódico de los tolimenses. Retrieved from: <http://www.elnuevodia.com.co/nuevodia/tolima/regional/403812-bosque-galilea-un-paraiso-tolimense-en-riesgo-por-intereses-petroleros>

² Information obtained from the Environmental Atlas of Tolima 2014.

³ This value does not include emission reductions achieved by new areas during the first monitoring period (see section 4.4).

Table 1: Activities implemented during the monitoring period

Activity	Progress
Beekeeping	<ul style="list-style-type: none"> • Hiring of Cristian Galindo as coordinator of the beekeeping project. Renewal of David and Daniel Parra's contracts. • Informative meetings in the area's villages with the objective of involving new people in the beekeeping program. As a result, three colonists⁴ who are located in the vicinity of the project area were involved. • Training of the three settlers in the principles of beekeeping. • Establishment of six apiaries with a production of 177 kg of honey. • Proposal for the construction of a collection center.
Research	<ul style="list-style-type: none"> • The Superior Council of the University of Tolima approved the creation of the research and technology transfer group "<i>Galilea Research Center</i>", which will be dedicated to studying biodiversity, natural products, agroindustrial development, zoology, among others. • Support in entering the forest to finalize the theoretical content of the book "<i>Ecología y conservación de las aves del Tolima</i>". • Support in entering the forest for the completion of the thesis "<i>Caracterización morfológica y acústica de los anuros de la reserva forestal bosque de Galileade la Universidad del Tolima</i>".
Conservation agreements	Inclusion of 10 new properties located in the expansion area of the project through the signing of conservation agreements.
Ranger program	<p>The ranger program is being carried out in conjunction with the participants of the beekeeping project. The main activities are:</p> <ul style="list-style-type: none"> – Tour of the roads that exist to enter the forest area to verify that no prohibited action is being carried out. – Installation of nine signs at the entrances with basic information about the project, its conservation objective, and the prohibition of logging. A census was taken of the settlers who carry out activities within the project area.
Ecotourism	Work with an architect to identify a suitable site in the lower part of the territory, outside the forest area, in order to purchase the land and build in a first phase a collection center, in a second phase the construction of the cabin that will serve both for the accommodation of future researchers and for the preliminary development of ecotourism activities, and in a third phase the construction of a visitor center and a multi-purpose hall.

⁴ Farmers who inhabit or use the area inside the forest



1.2 Project name

Conservation of the Galilea Forest-Amé

1.3 Type of project

This project is part of the mitigation actions in the agriculture, forestry and other land use (AFOLU) sector in the category of Reducing Emissions from Deforestation and Forest Degradation (REDD) projects. It is developed following the ICONTEC ES-I-CC-002 version 1 offset program certification protocol, under the AFOLU project requirements and is classified as an "avoided unplanned deforestation and degradation".

1.4 Project manager and other participating entities

Amé Foundation, proponent and responsible for the development of the forest protection project.⁵

Organization name	FUNDACIÓN FUNDAME.COL – Amé Foundation
Responsibilities	Entity proposing and responsible for the forest protection project
Contact	Luz Ángela Palacios
Role	Representative
Address	Autopista norte calle 114 - 44 office 804· Bogotá
Phone	+57 3134405160
e-mail	luzangela.palacios@gmail.com

ECOCARBONO SAS ZOMAC, the entity in charge of developing the productive projects and managing the carbon credits generated by the project.

Organization name	ECOCARBONO SAS ZOMAC
Responsibilities	Entity in charge of the development of productive projects and carbon credit commercialization.
Contact	Rafael Vargas Ríos
Role	Representative
Address	Carrera 3 No. 12-44 Palmas Neighborhood - Prado, Tolima
Phone	+57 3124456530
e-mail	rafavargasrios52@hotmail.com

South Pole Carbon Asset Management S.A.S (South Pole), a company that develops projects that seek to reduce Greenhouse Gas emissions, participates in the accompaniment for the issuance and trading of the carbon credits generated.

Organization name	South Pole Carbon Asset Management S.A.S (South Pole)
Responsibilities	Advice and support in the development of the project, monitoring and accounting of emissions reductions.
Contact	Daniela Herrera Serna

⁵ The University of Tolima and the other participants have signed agreements for the Amé Foundation to be the entity in charge. Supports: [Gestión de la información\Tenencia de la tierra\Acuerdos]



Role	ColTax Project Manager
Address	Carrera 46 # 7-59 · Medellín
Phone	+574 352 44 28
e-mail	d.herrera@southpole.com

Corporación Autónoma Regional del Tolima (Cortolima), is the environmental authority with jurisdiction in the project's area of intervention, in charge of receiving complaints and taking corrective measures when actions are being carried out that go against the conservation of the forest in the project.

Organization name	Tolima Regional Autonomous Corporation (Cortolima)
Responsibilities	Exercise the function of maximum environmental authority in the area of its jurisdiction.
Contact	Jorge Eliezer Cardoso
Role	Subdirector
Address	Av. Ferrocarril con 44 Esquina · Ibagué, Tolima
Phone	+57 3114747943
e-mail	notificacion.judicial@cortolima.gov.co

1.5 Starting date and duration of the project

The project began on September 1, 2010 and is expected to last 30 years. The accreditation period runs from September 1, 2010 to August 31, 2040.

The project has already conducted a first verification, corresponding to the period from September 1, 2010 to December 31, 2017.⁶ The second monitoring period runs from January 1, 2018 to March 31, 2019.⁷

1.6 Location and geographical limits of the project

1.6.1 Expansion area

The project is located in the eastern mountain range of the Colombian Andean zone, its area is mainly within the municipality of Villarrica, although it also includes areas of the municipalities of Cunday, Dolores, Purificación and Prado, all belonging to the department of Tolima. It is located between the coordinates: 3°40'34.28" - 4°1'21.87" N and 74°30'40.27" - 74°43'58.8" W (Illustration 1). The project expansion area consists of 30,840 ha of forest belonging to the Amé Foundation, University of Tolima, municipalities of Dolores and Villarrica and other private landowners.

⁶ In the audit report carried out by ICONTEC, February 9, 2018 is mentioned as the end date of the first verification period; however, all calculations in the report were made up to 2017 and no reduction corresponding to 2018 was claimed.

⁷ March 31, 2019 corresponds to the date up to which information is available from the IDEAM data cube.

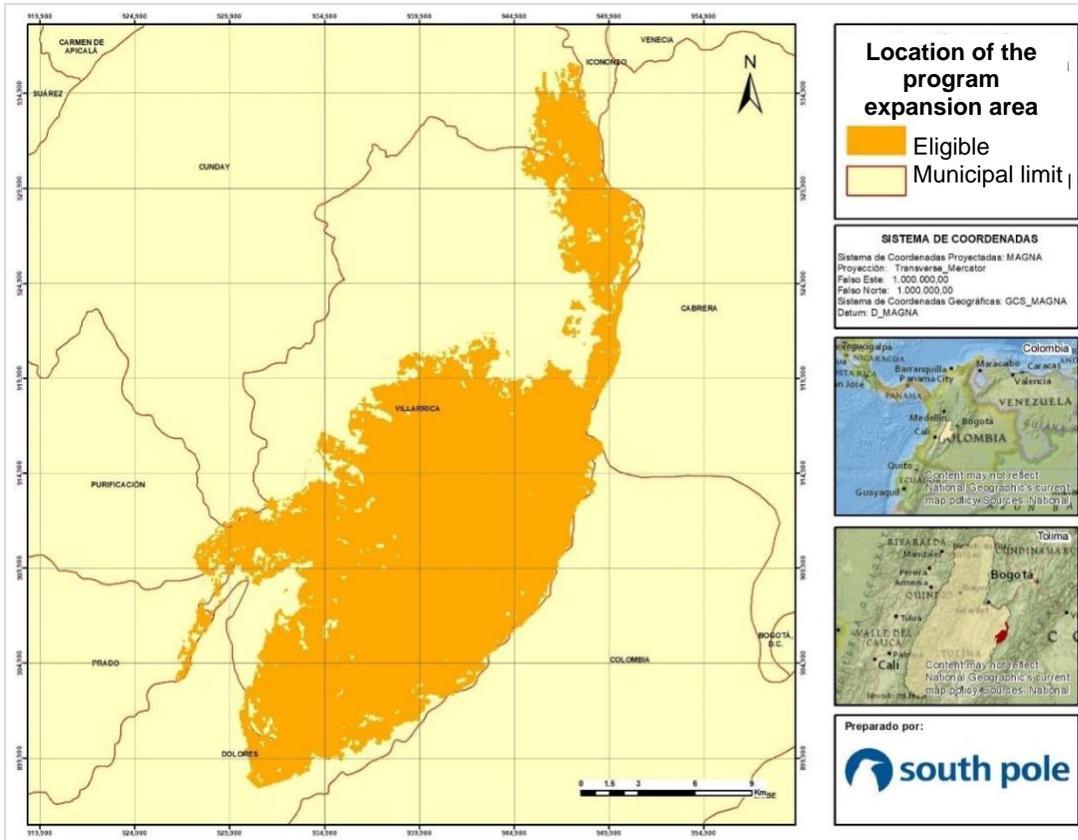


Illustration 1: Location of project expansion area.

1.6.2 Project area

The current project area is made up of lots owned by the Amé Foundation, the University of Tolima and private individuals,⁸ comprising 13,727 ha of forest (Illustration 2),⁹ The area is mostly in the municipality of Villarrica, which is located in the eastern part of the department of Tolima at a distance of 161 km from Ibagué, the department's capital. It is bordered on the north by the municipalities of Cunday and Icononzo, on the east by the department of Cundinamarca, on the west by the municipalities of Cunday, Purificación and Prado, and on the south by the municipality of Dolores.

⁸ Supports: [Gestión de la información\Tenencia de la tierra\Certificados tradición]

⁹ For this period, 10 new lots were included, see section 2.1.3.

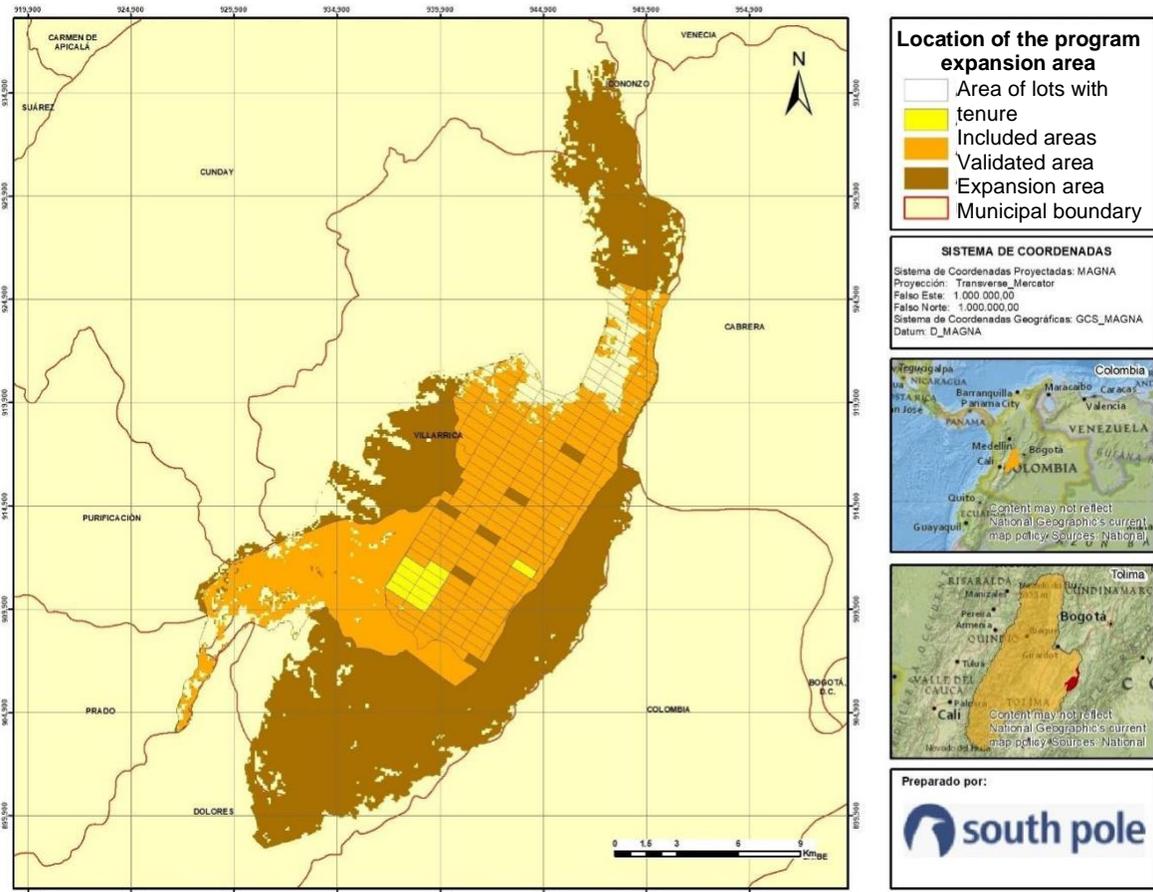


Illustration 2: Location of the current project area (included + validated)

2 Implementation status

2.1 Project activities implementation status

The proposed activities to reduce deforestation are found in section 1.5 of the Project Document (PD). The first of these, corresponding to the strategy of donating areas to the University of Tolima, was completed in year eight. The remaining activities continue to be developed, are in preliminary stages of development or have been modified, and the implementation status of each is summarized below.¹⁰

2.1.1 Beekeeping

In 2018, stage II of the honey production project began, in which the forestry engineer Cristian Mauricio Galindo was hired as project coordinator and David and Daniel Parra were hired as collaborators,¹¹ not only for the beekeeping process but also for the development of other project activities. Once the coordinator was hired, he was trained through a basic course on beekeeping and another on the management and production of Africanized bees.¹²

In addition to contracting, the communities of the Galilea, Alto Puerto Lleras, Bajo Puerto Lleras, Piñales, Altamira, Bello Horizonte, Cuatro Mil, and the communities of Tres Esquinas de Cunday were approached,¹³ in order to inform them about this project and increase the number of beehives on the land of those interested. Thanks to these approaches three new people joined the beekeeping project¹⁴ and the establishment of apiaries began on their farms (see Photo 1 and Photo 2).



Photo 1: Apiary of settler Leónidas Acosta



Photo 2: Apiary of settler Isidro Parra¹⁵

Through the work carried out since the beginning of the beekeeping project until March 31, 2019, six apiaries have been established for honey production (Table 2) and one more for

¹⁰ It is important to highlight that since the university is a public university and carbon credits are a new issue for the university, they are still studying the due process for the execution of the resources and therefore no progress has been made in several of the activities.

¹¹ Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Actividades\Apicultura\Contratos]

¹² Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Actividades\Apicultura\Certificados Cristian Mauricio]

¹³ Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Actividades\Apicultura\Socializaciones]

¹⁴ Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Actividades\Apicultura\Vinculaciones]

¹⁵ Testimonials, Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Actividades\Apicultura\Testimonio - Isidro Parra]

growing hives to be later transported to new apiaries. In total, the apiaries have produced 177 kilograms of honey (see Photo 3) that is subsequently marketed by Ecocarbon.¹⁶



Photo 3: Produced honey

Table 2: Apiaries and hives of the honey production project

Apiary	Owner ¹⁷	Village	Coordinates	
			Latitude	Length
1	Isidro Parra	Alto Puerto Lleras, Municipality of Villarrica.	03°49,73 N	074°41,41 W
2	Isidro Parra	Alto Puerto Lleras, Municipality of Villarrica.	03°49,73 N	074°41,34 W
3	Isidro Parra	Alto Puerto Lleras, Municipality of Villarrica.	03°47,24 N	074°69,34 W
4	Alirio Ramírez	Alto Puerto Lleras, Municipality of Villarrica.	03°45,83 N	074°40,95 W
5	Leónidas Acosta	Vereda Bajo Torres, Municipality of Cunday.	03°49,85 N	074°41,41 W
6	Edilberto Diaz	Vereda Bajo Torres, Municipality of Cunday.	03°48,92 N	074°42,26 W

In addition, a proposal was received for the construction of a collection center for honey processing (see Figure 3)¹⁸.

¹⁶ Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Actividades\Apicultura\Miel producida]

¹⁷ See pictures of the apiaries in: Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Actividades\Apicultura\Apiarios]

¹⁸ Proposal available in Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Actividades\Apicultura\Centro de acopio]



Illustration 3: Distribution scheme of the collection center

2.1.2 Research

The following were the activities developed in the research component during the monitoring period:

- Support in the work of entering the forest that allowed the completion of the written content of the book “*Ecología y conservación de las aves del Tolima*”,¹⁹ which has two chapters dedicated to the avifauna of the Galilea Forest, where 225 species were recorded. The book was developed by the professor and leader of the Biodiversity and Dynamics of Ecosystems Research Group (GIBDET) of the University of Tolima, Miguel Ángel Quimbayo; along with Hugo Nelson Loaiza, forestry technologist; Vivian Tatiana Flórez, biologist; and Julián Leal, forestry engineer. The book is awaiting editing for publication, a task that will be supported by the Amé Foundation.

Biology students from the University of Tolima, Andrés Viuche Lozano and María Paula Enciso Calle, who were in the project area during 2016 and 2017 to conduct research on the diversity of anurans in the forest, published the results of their research.²⁰ Viuche and Enciso Calle, (2018) recorded 21 species, of which four were reported for the first time in the department (*Atelopus subornatus*, *Hyloxalus edwardsi*, *Centrolene notostictum* and *Hyloscirtus*

¹⁹ Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Actividades\Investigación\Resumen ejecutivo libro avifauna]

²⁰ Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Actividades\Investigación\Tesis anuros]

bogotensis). In addition, two of the species recorded are critically endangered (*Atelopus subornatus* and *Hyloxalus aff. edwardsi*), one is vulnerable (*Centrolene daidaleum*) and one is near threatened (*Hyloscirtus bogotensis*).²¹



Photo 4: *Atelopus subornatus*



Photo 5: *Hyloxalus aff. Edwardsi*

- The University Council of the University of Tolima approved the creation of the research and technology transfer group "Galilea Research Center"²² which will be dedicated to:
 - Biodiversity
 - Natural products
 - Agro-industrial development center
 - Zoology
 - Research program
- Expedition Galilea 19.1 was conducted, led by Cortolima (Autonomous Regional Corporation of Tolima), in which 19 researchers from different branches of biology were between March 31 and April 4, 2019 identifying the wealth of fauna and flora of the Galilea Forest.^{23,24}

2.1.3 Conservation agreements

As part of the conservation agreements, during this monitoring period, agreements were signed with different private landowners that have land within the expansion area,²⁵ with the purpose of including their lots in the project area, in total, 10 properties were included in the project during this monitoring period (see Figure 2 and Table 3).

²¹ Threat categories according to the IUCN red list

²² At this moment we are waiting for the official support from the university that is in internal processes for the issuance of the support, as soon as it is shared it will be attached to the project's support folder.

²³ Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Actividades\Investigación\Publicación periódico]

²⁴ Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Actividades\Investigación\Publicación Cortolima]

²⁵ Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Actividades\Acuerdos de conservación]

Table 3: Areas included in the project

Deed ²⁶	Property	Coordinates		Owner
		Latitude	Length	
366-32953	123	3,79888	-74,5821	Fundación Amé
366-32979	149	3,79814	-74,6198	Rosa Perea
366-32986	156	3,79461	-74,622	Guillermo Ospina
366-32987	157	3,80025	-74,6308	Rosa Perea
366-32988	158	3,79671	-74,633	Rosa Perea
366-32989	159	3,79107	-74,6242	Rosa Perea
366-32996	166	3,78753	-74,6264	Enrique Ospina
366-32997	167	3,79318	-74,6352	Rosa Perea
366-32998	168	3,78967	-74,6374	Rosa Perea
366-32999	169	3,78403	-74,6286	Guillermo Ospina

2.1.4 Ecotourism

Work is currently underway with an architect to build in the lower part, outside the forest area, in a first phase a storage center, in a second phase the construction of the cabin that will serve both for the accommodation of future researchers and for the preliminary development of ecotourism activities, and in a third phase the construction of a visitors' center and a multi-purpose hall.

²⁶ Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Actividades\Acuerdos de conservación\Nuevas áreas]

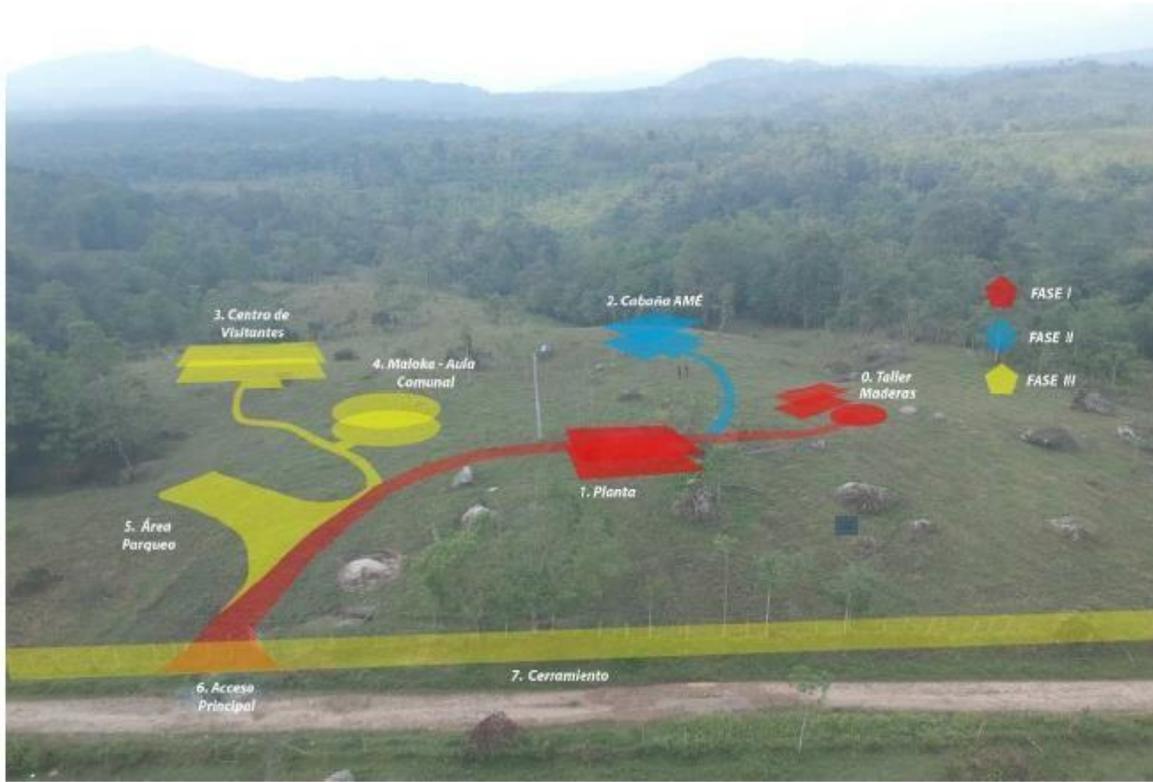


Illustration 4: Space distribution scheme

2.1.5 Ranger Program

As part of the control and surveillance work of the ranger program, nine informative signs were installed at the most frequented entrances to the Galilea Forest (see Illustration 5, Photo 6 and Photo 7). This was done to raise awareness in the communities about the importance of the cloud forest, as well as to inform that this is a private area of conservation interest and that logging is not permitted. The sign shows the important fauna and flora of the forest, the delimitation of the project area and the expansion area.²⁷

²⁷ Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Actividades\Programa de guardabosques\Señalización]



Illustration 5: Informative signage



Photo 6: Signage at the "Montañitas" entrance. Photo 7: Signage at "La Colonia" entrance"

From a tour, it was determined that in the project area there are a total of 13 colonist farms, who carry out activities inside the project, most of them live on the outside and make constant visits to the area. It was important to determine the settlers that make use of the project area because the initial idea was to symbolically purchase possession of the land; however, the presence of these people was

considered important to prevent deforestation, so it was decided to involve them in the work of forest rangers.

Although there has not yet been any training for forest rangers, based on the resolution issued by the University of Tolima (see section 2.1.2), there are plans to provide training in order to carry out the work in a more technical manner. However, for the time being, the people involved in beekeeping also support the work of the forest rangers in conjunction with the project coordinator.²⁸ The forest rangers are identified with vests informing about their work and they walk along the different roads in order to identify points where the forest has been cut down (see Photo 8 and Photo 9). Once deforestation is identified, a visit is made to the families in the surrounding area to inform them of the importance of conserving the forest and that deforestation is prohibited, likewise, Cortolima is informed.



Photo 8: Patrol route



Photo 9: Deforestation point identified

During the forestry rangers' work, the arrival of people in the vicinity of the project area has been detected. This presence is linked to the start of operations of the Brazilian company Petrobras, which obtained a hydrocarbon exploration and exploitation license in the Villarrica area.²⁹

2.1.6 Adequacy of historic trail

The adequacy of the historic trail was initially planned on a road located in the La Colonia area of the municipality of Villarrica, however, after verifying the location it was concluded that it would not be possible because the area is outside the project area. Even so, as part of the interests of the Amé Foundation is the adequacy of trails within the project area in order to facilitate research and ecotourism. Therefore, the trail adaptation activity will be implicitly included between the two mentioned above.

²⁸ Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Actividades\Programa de guardabosques\Recorridos de patrullaje]

²⁹ Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Actividades\Programa de guardabosques\Contrato Petrobras]

2.1.7 Establishment of butterfly farm

The establishment of a butterfly farm in the project area is still among the plans of the Amé Foundation, however, due to its direct relationship with the research program this activity will be considered within the plan of the research program in association with the University of Tolima. Therefore, for future monitoring, the establishment of the butterfly farm will be part of the research activity.

2.1.8 Environmental classroom and museum of memory

The establishment of an environmental classroom and a museum of memory in the facilities of the school located in the project area is one of the long-term plans of the Amé Foundation; currently the school is where the community gathers when meetings are called, so it is important to preserve it. Due to its relationship with the research and ecotourism program, this activity will be considered within the programs from the next periods.

According to the above, in the next monitoring, the project will focus on the first five activities described here, with which we seek to generate a long-term appropriation, in addition, these are the ones that have a greater environmental impact and benefit to the community and biodiversity.

2.2 Deviations from the Project Description

2.2.1 Update of the project area

As mentioned in section 2.1.3, as part of the conservation activities during this monitoring period, agreements were signed with owners of lots belonging to the expansion area, thanks to these agreements 10 lots were included in the project area, which have been under the same conservation objective as the other lots belonging to the project, since the beginning of the activities for the generation of carbon credits.

Therefore, as mentioned in section 1.4 of the PD, taking into account that the start of activities for the generation of carbon credits began with the return of the state presence to guarantee the security of the return of landowners, this has prevented the expansion of the agricultural frontier, not only in the areas belonging to the project at the time of validation, but also in the surrounding areas.

In addition, as seen in Illustration 2, the added lots are located in the central part of the project polygon, however, the landowners did not make it into the past validation process. The landowners have been working with the Amé Foundation and their previous figures to maintain a presence in the territory, so in section 4.4 the GHG emission reductions from the first verification are quantified for these new areas included.

2.2.2 Modification to project activities

Initially the project considered nine project activities, one of which has already ended (donation strategy), and as mentioned in section 2.1, of the remaining eight, two were included in other activities (establishment of a butterfly farm, environmental classroom and museum of memory) and one was eliminated (adaptation of the historical trail). Therefore, the project in its subsequent verifications will be in charge of implementing the remaining five activities.

- Beekeeping

- Research
- Conservation agreements
- Ecotourism
- Forest Ranger Program

2.1.1 Inclusion of emissions from leaks

For the first monitoring period the project did not consider deforestation leakage, however, taking into account that the ranger program is not limited only to the project areas, in this second monitoring the deforestation in the entire expansion area was monitored and counted as leakage from the project area (see section 4.3). Further monitoring will continue to evaluate deforestation throughout the expansion area.

2.1.2 Resolution 1447 of 2018

During 2018, Resolution 1447 of 2018, which regulates the system for monitoring, reporting and verification of mitigation actions at the national level, became effective. The following articles of this resolution are the most relevant for the project, for each of them an action of compliance and/or understanding was carried out in order to be in accordance with the resolution.

Article 3. Definitions.

In the PD, the project was called "Emissions Offset Program - Galilea Forest Conservation-Amé"; however, the definitions in the resolution state that REDD+ programs are under the responsibility of a national public entity and its owner is the Ministry of Environment and Sustainable Development (MADS), while for REDD+ projects, the owner is private or public.

Given the above, the name has been changed to "*Emissions Offset Project - Galilea Forest Conservation- Amé*" to comply with the definitions given by the resolution.

Article 10. National Registry for GHG Emission Reduction (RENARE).

The article establishes that any holder of a GHG mitigation initiative in the national territory that intends to qualify for payments for results or similar compensations must register its mitigation initiative in RENARE.

Therefore, the project is waiting for the platform to go live to register in the implementation phase.

Article 40. Maximum GHG mitigation potential for REDD+ projects, subject to national accounting.

The MADS and the Institute of Hydrology, Meteorology and Environmental Studies (IDEAM), through RENARE, will establish the maximum GHG mitigation potential subject to national accounting. In the absence of a Forest Reference Emission Level (FREL) submitted by Colombia to the United Nations Framework Convention on Climate Change (UNFCCC) applicable to the REDD+ project area, the maximum GHG mitigation potential applicable to the mitigation results will be established from its validated baseline.

Since there is no NREF submitted by Colombia to the UNFCCC applicable to the project area, the maximum potential of the project is given by the baseline already validated in the PD (which was carried out with the information of the Forest and Carbon Monitoring System - SMBYC).

Article 41. Establishment of baselines for REDD+ projects



In order to verify GHG emission reductions and removals generated from January 2020 onwards, the project holder shall adjust its baseline based on the most current NREF applicable to the project area.

Fundación Amé understands that once an NREF has been established and adapted to the geographical area of the project, the baseline should be adjusted following the methodological reconstruction of the NREF.

2.1.3 Inclusion of REDD+ safeguards

the UNFCCC proposes safeguards for REDD+, which should guide countries and ensure that the actions to be carried out in the territory are done correctly, increasing benefits, reducing social and environmental risks, and ensuring respect for the rights of communities. The safeguards must be reviewed and interpreted by each country taking into account its own context, legislation, stakeholder groups involved, and the way REDD+ activities will be implemented in the territory so that they can be adequately addressed and respected. (Camacho, Lara, & Guerrero, 2017).

In Colombia, the seven Cancun REDD+ safeguards have been translated into 15 elements that must be applied to all REDD+ Policies, Actions and Measures implemented at the national, regional and local levels. This is why it has been decided to include a section on safeguards applicable to the project (section 7).

1 Monitoring

3.1 Available data for validation

Data/Parameter	AE
Unit	Hectares (ha)
Description	Expansion area
Source	IDEAM and South Pole
Applied value	30.840 ha
Justification for the parameter selection or description of the measurement methods or procedures applied.	The limits of the expansion area were defined based on the processing and analysis of forest/non-forest cartographic information generated by IDEAM's SMByC.
Purpose	Delimitation of the potential area to be incorporated into the project over the life of the loan.
Comments	The 2010 layer was improved through the use of remote sensing (optical and radar) in order to categorize the information that in the satellite images was considered lost (no information) due to the presence of clouds.

Data/Parameter	RBSLRR _t
Unit	Annual percentage (%/year)
Description	Average deforestation rate in the reference region between 2000 and 2010.
Source	Calculated
Applied value	2.87 %/year
Justification for the parameter selection or description of the measurement methods or procedures applied.	Formula given by Puyravaud (2003), is considered in NTC 6208 and VCS methodology VM0015 for the projection of deforested area under the historical average approach. It comes from the processing and analysis of forest cover change maps generated by the SMByC.
Purpose	Estimated emission reduction in the baseline scenario.
Comments	Section 3.4.1.2 of the PD

Data/Parameter	ΔC_{AB}
Unit	Tons of carbon dioxide equivalent per hectare (tCO ₂ e/ha)
Description	Air carbon value change factor
Source	Yepes <i>et al.</i> , (2011) e IPCC, (2006)
Applied value	442.7

Justification for the parameter selection or description of the measurement methods or procedures applied.	Use of values given by national and international inventories
Purpose	Estimated emission reductions in the baseline scenario and the project scenario.
Comments	Section 3.4.3 of the PD

Data/Parameter	ΔC_{BB}
Unit	Tons of carbon dioxide equivalent per hectare (tCO ₂ e/ha)
Description	Change factor in the value of subway carbon
Source	Yepes <i>et al.</i> , (2011) e IPCC, (2006)
Applied value	156.5
Justification for the parameter selection or description of the measurement methods or procedures applied.	Use of values given by national and international inventories
Purpose	Estimated emission reductions in the baseline scenario and the project scenario.
Comments	Section 3.4.3 of the PD Belowground biomass degrades 1/10th per year.

Data/Parameter	RF _t
Unit	Percentage (%)
Description	Discount factor for non-permanence risks
Source	Guide for the formulation, validation and verification of climate change mitigation forestry projects (Guide ES-I-CC-002).
Applied value	15 %
Justification for the parameter selection or description of the measurement methods or procedures applied.	Following the guidelines (Section 7.1), in order to ensure the permanence of mitigation activities for the duration of the project, Amé Foundation will maintain a reserve of 15% of the total verified emission reductions, which cannot be traded.
Purpose	Quantification of net mitigation results
Comments	-

3.2 Monitored data and parameters

Data/Parameter	PA _t								
Unit	Hectares (ha).								
Description	Project area over time t.								
Source	IDEAM and South Pole.								
Description of the measurement and processing methods applied	The boundaries of the project area are defined based on the ownership of Fundación Amé, the University of Tolima and other individuals, the eligible forest area is selected thanks to the processing and analysis of forest/non-forest mapping information generated by the Forest and Carbon Monitoring System (SMBYC) of the IDEAM.								
Monitoring frequency	Each verification.								
Applied value		<table border="1"> <thead> <tr> <th>Monitoring</th> <th>PA</th> </tr> </thead> <tbody> <tr> <td>1 (2010 – 2017)</td> <td>13.314</td> </tr> <tr> <td>2 (2018 – 2019)</td> <td>13.727³⁰</td> </tr> </tbody> </table>	Monitoring	PA	1 (2010 – 2017)	13.314	2 (2018 – 2019)	13.727 ³⁰	
Monitoring	PA								
1 (2010 – 2017)	13.314								
2 (2018 – 2019)	13.727 ³⁰								
Monitoring equipment or instruments	GIS equipment, use of software: Sentinel Application Platform, ENVI 5.3 and ArcGIS. Satellite images from IDEAM data cube and Sentinel 1B radar images.								
Quality Assurance (QA/QC)	Cross-checking of GIS analysis.								
Purpose	Estimated emission reductions in the baseline scenario and the project scenario.								
Estimation method	Corresponds to the area of eligible forest according to the national definition.								
Comments	Section 3.2 of the PD and 3.3 of this report.								

Data/Parameter	ABSLPA _t
Unit	Hectares per year (ha/year).
Description	Area deforested at time t within the project area under the baseline scenario.
Source	Calculated.
Description of the measurement and processing methods applied	It comes from the multiplication of RBSLRR _t and PA _{t-1}
Monitoring frequency	Each verification.
Applied value	See support information: Estimaciones_Monitoreo
Monitoring equipment or instruments	GIS equipment, use of software: Sentinel Application Platform, ENVI 5.3 and ArcGIS

³⁰ The project area increased due to the signing of conservation agreements that allowed the inclusion of 10 new lots (see section 2.1.3).

	Satellite images from IDEAM data cube and Sentinel 1B radar images.
Quality Assurance (QA/QC)	Internal Control System (see section 6).
Purpose	Estimated emission reductions in the baseline scenario.
Estimation method	It comes from the multiplication of $RBSLRR_t$ and PA_{t-1}
Comments	The value as of time t_9 varied as new plots were included during this monitoring period. The value for the year 2019 was adjusted for the months that were analyzed in the monitoring.

Data/Parameter	APSPA,t
Unit	Hectares per year (ha/year).
Description	Annual deforested area under project scenario.
Source	Monitored.
Description of the measurement and processing methods applied	Section 3.5 of the PD.
Monitoring frequency	Each verification.
Applied value	See support information: Estimaciones_Monitoreo
Monitoring equipment or instruments	GIS equipment.
Quality Assurance (QA/QC)	Cross-checking of GIS analysis.
Purpose	Estimated emission reductions in the project scenario.
Estimation method	Satellite and radar image monitoring.
Comments	The value for 2019 was adjusted for the months that were analyzed in the monitoring.

3.3 Monitoring plan

The monitoring plan was carried out following the steps described in Illustration 6 and is available in *Annex I*.

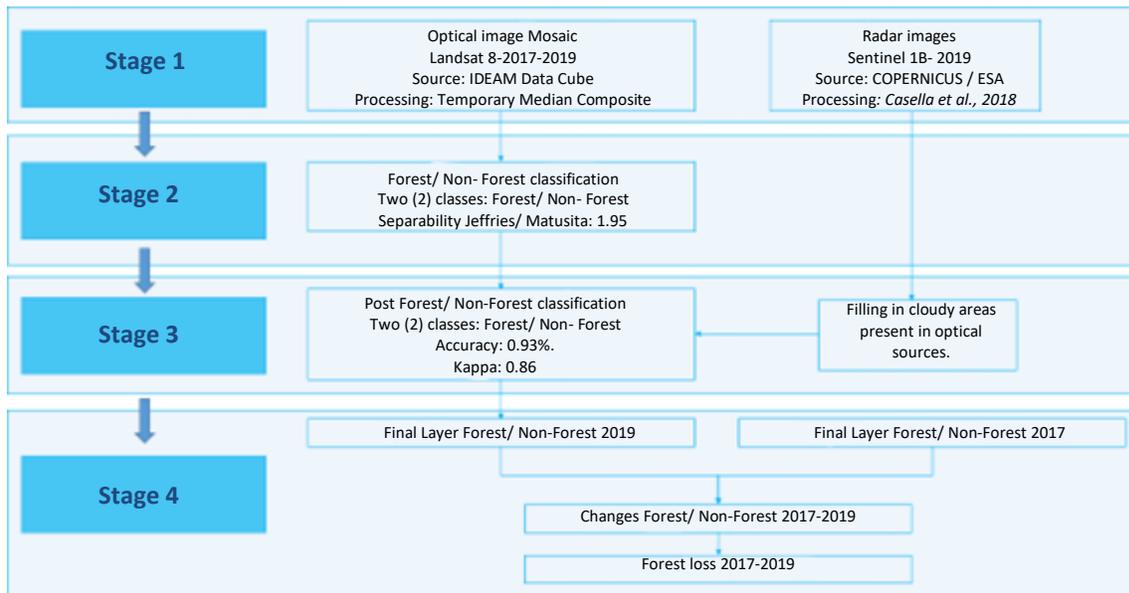


Illustration 6: Methodology for obtaining forest loss.

According to the analysis conducted, a total of 13.3 hectares have been deforested in the monitoring period in the project area, however, the trend of changes in coverage indicates expansion of deforested areas during the period 2010-2017, i.e., there are no new deforestation hotspots.

2 Quantification of GHG emission reductions

4.1 Baseline emissions

The area of annual deforestation that applies in year t within the project area is calculated as follows:

$$ABSLPA_t = PA_{t-1} * RBSLRR_t$$

Where:

ABSLPA_t Area deforested at time t, baseline scenario; ha

PA₋₁ Project area at time t-1; ha

RBSLRR_t Applicable rate of deforestation within the reference region in year t; %

t 1, 2, 3... T years of the accreditation period of the project; dimensionless.

Table 4 presents the projected area that would be deforested in the absence of mitigation activities in the baseline scenario in this monitoring period. It is important to clarify that the annual deforestation area projected in the baseline for the project is recalculated at each monitoring if the project area changes due to the inclusion of new areas belonging to the expansion area.

Table 4: Annual Deforestation, Baseline Scenario ³¹

Year (t)	Calendar year	Annual deforestation (ha)
		ABSLPA _t
9	2018	394,5
10	2019	95,8 ³²

Subsequently, the quantification of emissions associated with changes in carbon values within the project area was performed following the guidelines of Section 6.1.3 of the VCS Methodology VM0015 (Method 2). Taking into account that a weighted average of the different strata,³³ was made for the project area, the formula is as follows:

$$\Delta CBSLPA_t = ABSLPA_t * \Delta Cp_t$$

Being:

ΔCBSLPA_t Total change in carbon stocks within the project area in the baseline scenario at time t; tCO₂e

ABSLPA_t Area deforested at time t, baseline scenario; ha

ΔCp_t Carbon value change factor applicable per year t; tCO₂e/ha

³¹ Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Reducción de emisiones\Monitoreo] Sheet"ABSLPA_t y APSPAT"

³² The 2019 value is adjusted to correspond to the three months analyzed.

³³ See section 3.4.2 of the PD

Table 5: Carbon Stock Change, Baseline Scenario³⁴

Year (t)	Calendar year	Deforestation (ha)	Change in the stock of C (tCO ₂)
		ABSLPA _t	ΔCBSLPA _t
9	2018	394,5	228.725,3
10	2019	95,8	57.425,9

4.2 Project Emissions

Changes in carbon stocks in the area under the project scenario correspond to changes due to deforestation that could not be avoided. According to the results obtained in section 3.3, the area deforested in the second monitoring period within the project area was 13.3 ha.

Table 6: Annual Deforestation, Project Scenario³⁵

Year (t)	Calendar year	Annual deforestation (ha)
		APSPA _t
9	2018	10,6
10	2019	2,7

Subsequently, as well as the baseline emissions, the quantification of emissions associated with changes in carbon values within the project area was performed according to the guidelines of Section 6.1.3 of the VCS Methodology VM0015 (Method 2).

$$\Delta CUDdPA_t = APSPA_t * \Delta Cp_t$$

Where:

ΔCUDdPA_t Carbon emissions due to unplanned and not avoided deforestation within the project area at time t; tCO₂e

APSPA_t Deforested area at time t, project scenario; ha

ΔCp_t Factor of change in the carbon value applicable to year t; tCO₂e/ha

Table 7: Carbon Stock Change, Project Scenario³⁶

Year (t)	Calendar year	Deforestation (ha)	Change in C stocks (tCO ₂)
		APSPA _t	ΔCUDdPA _t
9	2018	10,6	6.917,0
10	2019	2,7	858,8

³⁴ Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Reducción de emisiones\Monitoreo] Sheet"ΔCBSLPA_t y ΔCUDdPA_t"

³⁵ Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Reducción de emisiones\Monitoreo] Sheet" ABSLPA_t y APSPA_t"

³⁶ Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Reducción de emisiones\Monitoreo] Sheet"ΔCBSLPA_t y ΔCUDdPA_t"

4.3 Leakage emissions

Changes in carbon stocks in the expansion area under the project scenario correspond to leakage emissions from deforestation that could not be avoided. According to the results obtained in section 3.3, the area deforested in the second monitoring period within the expansion area was 3.1 ha.

Table 8: Annual deforestation, area of expansion³⁷

Year (t)	Calendar year	Annual deforestation (ha)
		APSLK _t
9	2018	2,5
10	2019	0,6

Subsequently, the quantification of emissions associated with changes in carbon values within the expansion area was performed according to the guidelines of Section 8 of VCS Methodology VM0015 (Method 2).

$$\Delta CPSLK_t = APSLK_t * \Delta Cp_t$$

Where:

$\Delta CPSLK_t$ Carbon emissions due to unplanned and unavoidable deforestation within the expansion area at time t; tCO₂e

APSLK_t Area deforested at time t, area of expansion; ha

ΔCp_t Carbon value change factor applicable per year t; tCO₂e/ha

Table 9: Change in carbon stocks, area of expansion³⁸

Year (t)	Calendar year	Deforestation (ha)	Change in C stocks (tCO ₂)
		APSLK _t	$\Delta CPSLK_t$
9	2018	2,5	1.126,9
10	2019	0,6	291,4

4.4 Emissions first verification of included areas

As described in section 2.2.1, for the areas included during this monitoring period, the emission reductions corresponding to the first verification period were calculated following the same procedure described in sections 4.1 and 4.2.³⁹

4.5 Reduction of GHG emissions

³⁷ Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Reducción de emisiones\Monitoreo] Sheet "ABSLPAT y APSPAT"

³⁸ Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Reducción de emisiones\Monitoreo] Sheet " Δ CBSLPAT y Δ CUDdPAT"

³⁹ Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Reducción de emisiones\Áreas nuevas]

4.5.1 Reduction of total GHG emissions

The net reduction of GHG emissions for the monitoring period was calculated using the following equation:

$$\Delta REDD_t = \Delta CBSLPA_t - \Delta CUDdPA_t - \Delta CPSLK_t$$

Where:

- $\Delta REDD_t$ Net emission reductions attributed to project mitigation actions in year t; tCO₂e
- $\Delta CBSLPA_t$ Total change in carbon stocks within the project area under the baseline scenario at time t; tCO₂e
- $\Delta CUDdPA_t$ Carbon emissions due to unplanned and not avoided deforestation within the project area over time. t; tCO₂e
- $\Delta CPSLK_t$ Carbon emissions due to unplanned and not avoided deforestation within the expansion area over time. t; tCO₂e

Table 10: Total GHG emission reductions attributable to REDD+ activities⁴⁰

Year (t)	Calendar year	GHG emission reductions/mitigation actions ($\Delta REDD_t$), Annual (tCO ₂)	GHG emission reductions/mitigation actions, Cumulative (tCO ₂)
1	2010	2.273	2.273
2	2011	6.854	9.126
3	2012	6.888	16.014
4	2013	6.921	22.935
5	2014	6.953	29.888
6	2015	6.984	36.872
7	2016	7.014	43.886
8	2017	7.043	50.929
9	2018	220.681	271.610
10	2019	47.834	327.886
		Total	327.886

4.5.2 Reduction of emissions from marketable products

Regarding the reduction of tradable emissions, Fundación Amé will maintain a reserve of 15% of the total net emissions reduction, which cannot be traded in accordance with the requirements of the ES-I-CC-002 protocol.

⁴⁰ The information for years one through eight corresponds to the reduction calculated in section 4.4, the remainder to this monitoring period.

Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Reducción de emisiones\Monitoreo] Sheet "RECT"

[Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Reducción de emisiones\Áreas nuevas] Sheet "RECT"

In this way, the results of mitigation or marketable emission reductions (REC) to be generated by the project were calculated considering the following equations:

$$REC_t = \Delta REDD_t - VBC_t$$

$$VBC_t = (\Delta CBSLPA_t - \Delta CUDdPA_t - \Delta CPSLK_t) * RF_t$$

Where:

REC _t	Reduction of marketable emissions in year t; tCO ₂ e
ΔREDD _t	Net emission reductions attributed to project mitigation actions in year t; tCO ₂ e
VBC _t	Number of credits discounted for non-permanence risks at time t; tCO ₂ e
ΔCBSLPA _t	Total change in carbon stocks within the project area under the baseline scenario over time. t; tCO ₂ e
ΔCUDdPA _t	Carbon emissions due to unplanned and not avoided deforestation within the project area over time. t; tCO ₂ e
ΔCPSLK _t	Carbon emissions due to unplanned and not avoided deforestation within the expansion area over time t; tCO ₂ e
RF _t	Discount factor for non-permanence risks; dimensionless

Table 11: Reduction of marketable emissions generated by the project⁴¹

Year (t)	Calendar year	Net emissions reduction (tCO ₂)	Reserve for non-permanence risk (tCO ₂)	Reduction of marketable emissions (tCO ₂)
		ΔREDD _t	VBC _t	REC _t
1	2010	2.273	341	1.931
2	2011	6.854	1.028	5.825
3	2012	6.888	1.033	5.854
4	2013	6.921	1.038	5.882
5	2014	6.953	1.043	5.909
6	2015	6.984	1.048	5.936
7	2016	7.014	1.052	5.962
8	2017	7.043	1.057	5.986
9	2018	220.681	33.102	187.579
10	2019	47.834	8.441	47.834
			Total	278.698

⁴¹ The information for years one through eight corresponds to the reduction calculated in section 4.4, the remainder to this monitoring period..

Supports: [Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Reducción de emisiones\Monitoreo] Sheet "RECT"

[Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Reducción de emisiones\Areas nuevas] Sheet "RECT"

3 Compliance with laws, statutes and other regulations

The development of this project is framed in compliance with Colombian environmental legislation. The main laws and decrees that regulate environmental conservation in the country are listed in section 5 of the PD. The activities carried out in the project area during the monitoring period comply with the legal requirements for environmental conservation activities. In addition, as mentioned in section 2.2, during 2018 Resolution 1447 of 2018, which regulates the system of monitoring, reporting and verification of mitigation actions at the national level, became effective, the project complied with the relevant articles of this resolution.

As mentioned above, regarding Article 40. Maximum GHG mitigation potential for REDD+ projects, since there is no NREF submitted by Colombia to the UNFCCC applicable to the project area, the maximum potential of the project is given by the baseline already validated in the PD (which was made with information from the Forest and Carbon Monitoring System - SMByC). Additionally, with respect to Article 41. Establishment of baselines for REDD+ projects, Fundación Amé understands that from the establishment of an NREF that adapts to the geographic area of the project, the baseline should be adjusted following the methodological reconstruction of the NREF.

4 Information management

6.1 Database

As established in the protocol, the organization responsible for the project has a database that includes the information presented in Table 12.

Table 12: Data management

Information required	Location in the database
Area with forestry activities.	Soportes\Gestión de la información\Área actual
Geographic coordinates.	Soportes\Gestión de la información\Tenencia de la tierra\Centroides_lotes
Vegetation cover at the beginning of forestry activities.	Soportes\Gestión de la información\Cobertura inicial
Information on tenure and land use rights.	Soportes\Gestión de la información\Tenencia de la tierra
Species(s).	Not applicable
Provenance and production of plant material.	Not applicable
Objective of the forestry activity	Conservation
(e.g., conservation, recovery, production, etc.).	Not applicable
Start date of forestry activities.	Section 1.4 of the PD Soportes\Gestión de la información\Fecha de inicio
Silvicultural management.	Not applicable
Annual biomass growth, if periodic measurements are taken.	Not applicable – Monitoring is without measuring plots
Parameters related to the conservation of biomass to carbon variation according to the selected methodology.	Not applicable
Results of the quantification of removals.	Soportes\Gestión de la información\Monitoreo\Seguimiento 2 - 2018_2019\Reducción de emisiones
Disruption events (if any)	During this period there were no disturbance events other than forest loss during the monitoring period. In case of such events, they will be compiled and stored in the following folder: Soportes\Gestión de la información
Monitoring	Soportes\Gestión de la información\Monitoreo
Compensation report	Soportes\Gestión de la información\Informe de compensaciones

Annex II shows the processes that guarantee an Internal Control System.

5 Safeguards for REDD+

In the following, information is presented on how the national interpretation of the safeguards submitted by Colombia to the UNFCCC as part of the adoption of the measures mentioned in paragraph 70 of decision 1/CP.16 is being addressed and respected. These apply to REDD+ initiatives in Colombia, whether at the local, regional or national scale, becoming a guide of good practices to prevent possible risks and bring the greatest number of benefits. Table 13 shows the identification of the main instruments available to the project in each of the safeguards.

Table 13: Actions for safeguards compliance

National interpretation of safeguards	Safeguards compliance actions
<p>A1. Correspondence with international agreements signed by Colombia on forests, biodiversity and climate change.</p>	<p>The project is being developed within the framework of the National Forestry Development Plan and its activities are compatible with the objectives of national forestry programs and international conventions and agreements signed by Colombia in terms of forests, biodiversity and climate change, as well as the national policies corresponding to these agreements.</p> <p>Section 5 of the PD provides a list of all national, regional and local laws, statutes and regulatory frameworks in the country that are relevant to the project activities, and section 4.5.1 of this document shows the regulatory updates during this monitoring period.</p>
<p>B2. Transparency and access to information</p>	<p>As part of compliance with Resolution 1447 of 2018, any GHG mitigation initiative seeking to qualify for performance payments or similar offsets must be registered in RENARE. Therefore, the project will upload the information once the platform is in operation.</p> <p>In addition, the project has issued the bonds for the first follow-up in the ICONTEC,⁴² public registry and for the second follow-up, one of the registries available at the time of issuance will be selected to ensure transparency and access to information.</p>
<p>B3. Accountability</p>	<p>The University of Tolima reinvests the resources acquired by the project in the protection of the forest and the development of research projects.</p> <p>On the other hand, for the other participants with areas included in the project, the benefit distribution system consists of delivering to each landowner the income obtained from the carbon credits generated in their properties, except for those managed by Fundame, given the agreement with the owners of these properties, these last ones are and will be informed of the Foundation's management of the acquired resources and how the implementation of the different activities to reduce deforestation is progressing.</p>
<p>B4. Recognition of the structures</p>	<p>Project activities are carried out in accordance with the agreements between the owners of the properties, which include private and public landowners. These state that the Amé Foundation is the proponent and</p>

⁴² Information available at: <http://www.icontec.org/Paginas/Registro-de-Cancelacion-de-Reduccion-de-Emissiones-Verificadas---Proyectos-ICONTEC.aspx>

National interpretation of safeguards	Safeguards compliance actions
of forest governance	<p>executor of the project, The project also seeks to work together with Cortolima as the Regional Autonomous Corporation of the area to take corrective measures when the conservation of the areas of the properties is threatened.</p> <p>In addition, the project has included the settlers of their properties as part of it and has respected the area they have been using since before the beginning of the project.</p> <p>In addition, the University of Tolima, as owner of part of the land, is working together with Cortolima on different initiatives.</p>
B5. Capacity building	<p>The development of some of the project's activities begins with the training of the personnel that require it, for example, the activity related to honey production. Three permanent employees have been technically trained in this activity, and those who have already been trained will train others who decide to join the activity in the future.</p> <p>Training in each particular topic of the activities to be developed and basic training topics of the project will be carried out periodically, and the development of the activities by the communities in the project area will be verified. All communities will be invited to participate in the different activities so that the training and education on the different topics can be replicated in each community.</p> <p>In addition to honey production training, other activities that require technical training and that will be developed in later periods are the forest ranger program and the ecotourism program.</p>
C6. Free, prior, and informed consent	<p>Not applicable, there are no ethnic groups in the project area.⁴³ However, socialization activities have been carried out to include the community in the project activities.</p>
C7. Respect for traditional knowledge	<p>Not applicable, there are no ethnic groups in the project area. However, the inclusion of the families that use the project area (settlers) and the surrounding area is sought in order to carry out the activities.</p>
C8. Profit sharing	<p>The project is developed in a private area; therefore, the distribution of economic benefits is made among the participants who own land there. However, the economic benefits obtained are used to promote the start-up, implementation and maintenance of various activities aimed at avoiding deforestation. Thanks to this, people in the areas surrounding the project who wish to participate in project activities will benefit economically.</p> <p>In addition to the economic benefit, the conservation and sustainable use of forests, the maintenance of forest diversity and ecosystem services, and the promotion of forest research provide ecosystem and cultural benefits.</p>

⁴³ See section 1.3 of the PD and section 2.1.3 of this document for information on project participants and land tenure.

National interpretation of safeguards	Safeguards compliance actions
C9. Territorial rights	<p>Since the feasibility phase, project participants have demonstrated that they hold title to the land on which project activities are carried out and for the duration of the project's accreditation period. In addition, settlers have been identified who develop activities within the project area despite not having legal tenure of the land, these people have been allowed to maintain their work and are given the opportunity to participate in activities to prevent deforestation.</p>
D10. Participation	<p>The project promotes the full and effective participation of the inhabitants of the surrounding area to guarantee the reduction of deforestation, and approaches are made to the surrounding communities to inform them about the project and to get them involved in the idea (see section 2.1.1).</p>
E11. Forest conservation and biodiversity	<p>Payment for results from the implementation of the project functions as a financial instrument that contributes to the development of measures that promote conservation processes and maintenance of local ecosystem services. The implementation of the activities will at no time encourage the replacement of natural forests with plantations or agricultural crops, nor the introduction of exotic species that threaten local biodiversity; on the contrary, the activities are aimed at conserving the existing forest area and reducing deforestation.</p>
E12. Provision of environmental goods and services	<p>The research activity in association with the University of Tolima seeks to expand the knowledge of the forest and the biodiversity that inhabits it, as well as the maintenance of the ecosystem services it provides.</p>
F13. Environmental and territorial planning	<p>Activities to avoid deforestation in the project forest area are framed to avoid the risks of reversion. In other words, the measures are intended to be sustainable and not temporary, seeking long-term sustainability in the interventions. The aim is to encourage active participation and involvement in the activities of the area's inhabitants.</p>
F14. Sector planning	<p>There is currently oil exploration in the expansion area of the project; however, as part of Cortolima's sectoral planning actions, the Corporation is seeking to declare the Galilea Forest a protected area that will form part of the National System of Protected Areas in this environmentally important territory.⁴⁴</p>
G15. Control and monitoring to avoid displacement of emissions	<p>The project follows up by monitoring changes in forest cover in each verification period using satellite or radar information for the entire expansion area and maintains a presence in the territory through the activity of forest rangers.</p> <p>In addition, the aim is always to link the actors of the territory so that the people who deforest are the ones who develop sustainable productive activities and do not displace their activity to other places, and in the event of not being able to avoid deforestation, emissions from deforestation in the expansion area are considered as emissions from leakage.</p>

⁴⁴ An agreement would allow the declaration of the Galilea forest, available at: <https://www.cortolima.gov.co/boletines-prensa/acuerdo-permitir-declaratoria-bosque-galilea>

6 Bibliography

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