



MAGNOLIOS DE YARUMAL REDD+ PROJECT



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

Contact Information: Daniela Herrera Serna (d.herrera@southpole.com)

Project Title	Magnolios de Yarumal REDD+ Project
Version	Version 1
Date of Issue	29-May-2020
Prepared By	South Pole Carbon Asset Management S.A.S.
Contact	Carrera 46 # 7-59 · Medellín · Colombia Phone: +57 4 520 5000 southpole.com · southpole.com/sp-colombia

CONTENTS

1	PROJECT DETAILS	4
1.1	Summary description of the project	4
1.2	Sectoral scope and project type	4
1.3	Project Eligibility	5
1.4	Project design	8
1.5	Project proponent	10
1.6	Other entities involved in the project	11
1.7	Ownership.....	12
1.8	Project start date	14
1.9	Project crediting period.....	14
1.10	Project Scale and Estimated GHG Emission Reductions or Removals	14
1.11	Description of the project activity.....	15
1.12	Project location	18
1.13	Conditions prior to project initiation.....	19
1.14	Compliance with laws, statutes, and other regulatory frameworks.....	31
1.15	Participation under other GHG programs.....	38
1.16	Other forms of credit	38
1.17	Additional Information Relevant to the Project	38
2	SAFEGUARDS.....	39
2.1	No Net Harm	39
2.2	Local Stakeholder Consultation	39
2.3	Environmental Impact	40
2.4	Public Comments	40
2.5	AFOLU-Specific Safeguards	40
3	APPLICATION OF METHODOLOGY	41
3.1	Title and reference of methodology	41
3.2	Applicability of methodology	41
3.3	Project boundary.....	42
3.4	Baseline scenario	49
3.5	Additionality	51
3.6	Methodology Deviations	77

4	QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS.....	77
4.1	Baseline Emissions	77
4.2	Project Emissions	77
4.3	Leakage.....	77
4.4	Net GHG Emission Reductions and Removals	77
5	MONITORING	78
5.1	Data and Parameters Available at Validation	78
5.2	Data and Parameters Monitored.....	79
5.3	Monitoring Plan	80
6	APPENDIX.....	81

1 PROJECT DETAILS

1.1 Summary description of the project

The Magnolios de Yarumal REDD+ Project is an initiative developed in the North of the Antioquia Department (Colombia) to conserve the native forests of the region and preserve highly-endangered flora species, such as magnolia (*Magnolia polyhypsophylla*, *M. guatapensis*, *M. yarumalensis*). REDD+ Magnolios is a grouped project which, in its first stage, includes 120 holdings belonging to 75 owners of peasant farms located mainly in the Regional Integrated Management District (RIMD) called Alto de Ventanas, and three private reserves managed by non-profit entities. The project expansion area (PEA) includes all woodland areas in the municipalities of Yarumal, Briceño, Valdivia and Santa Rosa de Osos.

Agriculture and livestock farming are the main agents and drivers of deforestation in the area. The North of Antioquia has stood out as one of the regions with the highest production of dairy cattle. Santa Rosa de Osos is the municipality with the highest nation-wide share in specialized dairy. In the absence of the project, the most likely scenario of land use is to continue with deforestation because of the conversion of forests into pastures to develop traditional livestock farming and agricultural activities.

The aim of the project is to reduce the emission of greenhouse gases (GHG) by implementing four strategic lines, focused on environmental aspects such as the research on biodiversity and the conservation and restoration of forests. Some efforts in conservation strategies for endangered species as the magnolia (*Magnolia* spp) and wax palm (*Ceroxylon* spp) are included. The project also pursues to strengthen environmental education in rural communities through recreational activities related to environmental and biodiversity dimensions, for the management of their territory.

This initiative seeks the certification of activities that will allow to reduce 164,031 total and 8,202 annual average of tCO₂e, produced by unplanned deforestation during the crediting period. Starting date is February 23, 2016, considering a duration of 20 years, it may be renewed for additional 10 years for a total project crediting period of 30 years.

1.2 Sectoral scope and project type

In general, the project is developed according to the requirements of AFOLU projects (Agriculture, Forestry and Other land use), and it is classified as an Unplanned Deforestation and Degradation Avoided (AUDD) project to Reduce Emissions from Deforestation and Forest Degradation (REDD), as it aims to decrease deforestation and preserve carbon stocks associated with above and below-ground biomass; activities

consistent with REDD+ actions defined by the United Nations Framework Convention on Climate Change (UNFCCC) in paragraph 70 of Decision 1/CP.16.¹

In the same way, this REDD+ project is one of the mitigation actions in the Land Use, Change in Land Use, and Forestry (USCUSS) sector that are promoted at national and regional level according to the National Development Plan 2018-2022, the Colombian Low-Carbon Development Strategy (ECDBC), the REDD+ National Strategy (ENREDD+), and the principles and goals of the National Climate Change Policy and the National Forest Policy.

1.3 Project Eligibility

The REDD+ Project is eligible under the VCS program because:

- The Project and the implementation of the activities will not lead to any violation of the law, regardless of whether the law is enforced or not.
- The Project activities do not consider hydrological conservation, drainage, or degradation of native ecosystems to generate GHG credits.
- The project certifies the reduction of net greenhouse gas (GHG) emissions by decreasing unplanned deforestation of forests, activities included in the scope of the VCS Program.
- The Project does not include carbon-footprint evaluations or carbon-neutral statements.
- The Project area meets the definition of forest² submitted by Colombia before the UNFCCC for the purposes of the REDD+ National Strategy (ENREDD+) and, in particular, for building the proposal of the National Reference Level (REFL); besides, the project area was covered by forests for a 10-year period before the project starting date.

According to the requirements of the Standard, it must be proved that the project areas were covered by forests for at least ten (10) years before the project starting date.

To choose the eligible area of the project, the forest-non forest cartographic information from the Forest and Carbon Monitoring System (SMBYC) in a 1:100.000 scale was analyzed; to that end, the 2005 and 2016 layers were employed, and the stable forest during this period was classified as the eligible area, and as non-eligible area those areas with non-stable forest or with gains or losses of forest cover in the same period.

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

2 For Colombia, the forest is defined as any portion of land where tree-covered areas predominate with a minimum canopy density of 30%, a minimum canopy height (*in situ*) of 5 m at the time of its identification, and a minimum area of 1,0 ha; excluding tree covered areas from commercial forest plantations, palm crops, and trees planted for agro-livestock production. This definition is consistent with the criteria defined by the United Nations Framework Convention on Climate Change (UNFCCC) in its Decision 11/COP.7, with the definition adopted by Colombia before the Kyoto Protocol (MAVDT, 2002), as well as with the definition of natural forest cover included in the adaptation for Colombia of the legend from the CORINE Land Cover methodology (CLC Colombia).

The information sources and the cartographic processing carried out to evaluate the eligibility are detailed in the following paragraphs.

Baseline data

To prepare the eligibility analysis for the 2005-2016 period in the project area, a post-processing of the forest-non forest layers produced by the Forest and Carbon Monitoring System (SMBYC) was carried out (Table 1). These cartographic layers are in TIFF format and they were analyzed based on semi-automated digital processing of remote sensors from Landsat imagery (TM, ETM+ y OLI) of medium spatial resolution (30 m), downloaded from the Earth Resources Observation and Science Center (EROS) server, of the United States Geological Survey (USGS), to generate data on the distribution of forest and non-forest covers at a spatial scale of 1:100,000 (Galindo, et al., 2014). A total of 63 Landsat (TM, ETM+ y OLI) images cover the Colombian territory in different years between 2000 and 2018. The result of the cartographic layers are multiple-time series with the following characteristics:

- Forest: land mainly occupied by trees that may contain shrubs, palms, cane for construction (*Guadua angustifolia*), grasses, and lianas, where three-covered areas predominate with a minimum canopy density of 30%, a minimum canopy height of 5 m, and a minimum area of 1 hectare. Tree-covered areas from commercial forest plantations and urban parks are excluded (MAVDT, 2002).
- Non-forest: these lands do not have the characteristics of a forest. Water bodies are included.
- No information: it corresponds to masked values such as clouds, cloud shadows, and areas without information due to loss of data in Landsat imagery.

Table 1. Cartographic information employed to mark out eligible areas.

Layer	Spatial resolution	Minimum mapping unit	Geographical limits		Source information
			Latitude	Longitude	
Forest, non-forest cover. Fine resolution. Republic of Colombia. Year 2005	30 m	1 ha	12°30,7' N – 4°13,5' S	66°01,4' W – 79°50,8' W	TM and ETM+ Landsat imagery from the 2005 period
Forest, non-forest cover. Fine Resolution. Republic of Colombia. Year 2016	30 m	1 ha	12°30,7' N – 4°13,5' S	66°01,4' W – 79°50,8' W	TM and ETM+ Landsat imagery from the 2016 period

Source: Environmental Information System (SIA) – Metadata management.³

³ Environmental Information System (SIA) – Metadata management. Available at: <http://geoapps.ideam.gov.co:8080/geonetwork/srv/es/main.home?uuid=61eed66b-672e-472d-8450-9a4856ad09c4>

Cartographic processing

To get the forest and non-forest layers for the period 2005-2016, a cartographic cut was made to the layers from the SMByC considering the expanse of the project area. Then, employing the forest and non-forest layers of the years 2005 and 2016, a cartographic crosscheck of both years was made to obtain the eligible areas; that is, those areas that remained as stable forest in the period (2005-2016), and the non-eligible area, those ones with a non-stable forest, with losses and gains of forest cover during the same period. The areas without information correspond to areas that in one of the two periods were clouds, cloud shadows or areas with data loss.

Subsequently, the information from the cartographic crosschecking in raster format was transformed into vector format. Then, MAGNA Colombia Bogotá (WKID: 3116) was projected onto planar coordinates, calculating the areas, and eliminating isolated areas of less than 1 hectare. A table of attributes was created with the following categories: eligible (1), non-eligible (2), and without information (3). Lastly, a cartographic cut was made including the limits of the project and the areas were recalculated.

Results

In total, 2,275 ha of eligible forest were found, which are equivalent to 30.5% of the project area in 2016 (Table 2).

Table 2. Eligibility of lands, period 2005-2016.

Category	Total area (ha)	Total area (%)
Eligible	2,275	30.5
Non-eligible	4,827	64.7
No information	351	4.8
Total	7,457	100.0

Source: prepared by South Pole (2020).

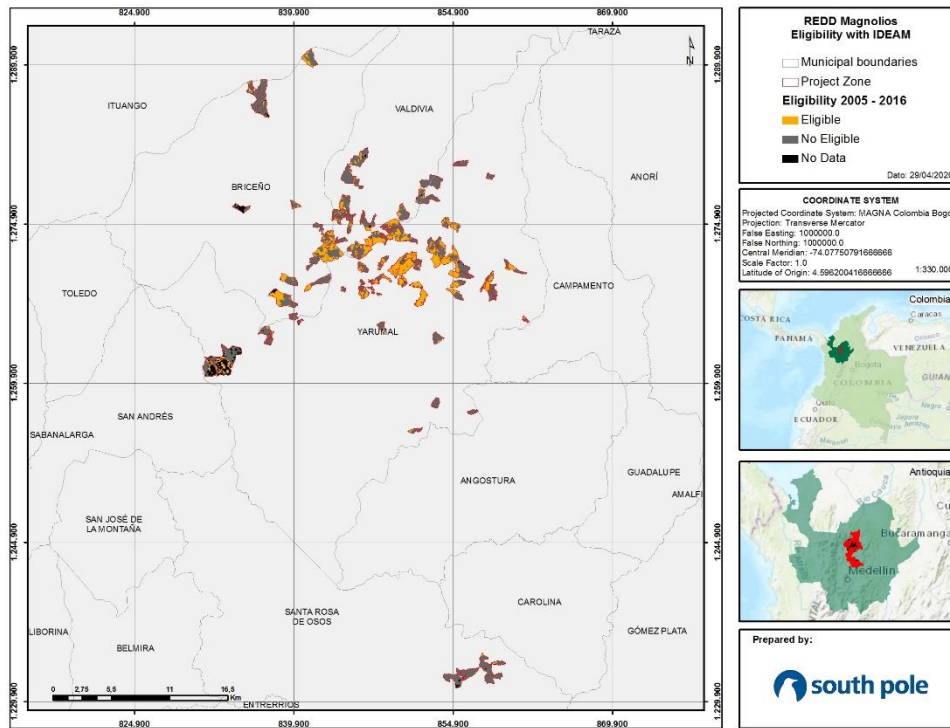


Figure 1. Eligibility map, period 2005-2016.

Source: Prepared by South Pole (2020)

1.4 Project design

The project will employ a programmatic approach (grouped project) The first stage includes the natural reserves of Magnolios Foundation, Salvamontes Corporation, and Guanacas Foundation; and the private owners grouped by Alto de Ventanas Foundation and Magnolios Foundation. The expansion area is the northern region of Antioquia, specifically in the jurisdiction of the Yarumal, Briceño, Valdivia, and Santa Rosa de Osos municipalities.⁴ It covers an area of 272,252 ha, and is located between the coordinates 7°26'5,10" N - 6°30'50,36" N and 75°11'46,81" W - 75°41'14,02" W.

1.4.1 Eligibility criteria

The inclusion of new areas will take place in line with future verifications of the first stage. The criteria for they to be eligible are the following ones:

4 . It should be clarified that the property with real estate registration 037-8055 is recorded in public deed in the Campamento municipality but, according to the municipal limits established by the Geographic Institute Agustín Codazzi (IGAC), the property is located in Yarumal; therefore, as the property is equivalent to less than 1% of the total project area, Campamento is not included in the project expansion area.

Technical criteria

- Areas located in the project expansion area that correspond to the jurisdiction of Yarumal, Briceño, Valdivia, and Santa Rosa de Osos municipalities.
- Having areas that meet the forest definition adopted by Colombia before the United Nations Framework Convention on Climate Change (UNFCCC), which defines forest as an essentially tree-covered area, with a minimum canopy density of 30%, a minimum canopy height (*in situ*) of 5 m at the moment of its identification and, a minimum area of 1 ha (MAVDT, 2002).
- Areas where deforestation takes place in an unplanned way produced by activities such as livestock farming, agriculture, or mining.

Methodological criteria

- That the eligible area to generate Verified Carbon Units (VCU) has been a stable forest for a minimum 10-year period before the project starting date.
- It should be the same baseline scenario defined in Section 3.4
- It must be able to prove the additionality of activities like those described in Section 3.5.
- The starting date of the new stages should be after February 23, 2016, and this must consider both the starting date of the first stage and the maximum retroactivity period allowed by the standard (five years).
- The project activities for the new stages should be in line with any of the three strategic lines defined for the first stage: conservation and restoration of forests, strengthening of environmental education in rural communities, and research on biodiversity as a tool to preserve and protect the territory.
- Not to be included in any other project or program related to GHG emission reduction.
- To meet the applicability criteria of the VM0015 methodology.

Administrative criteria

- The owner of new areas to be included shall prove that he/she owns the right to use the property, either as owner or possessor of the real estate.
- The new stages should be subject to consultation processes with key stakeholders similar to the ones carried out for the first stage, and they must include compliance with the free and informed prior consultation process, and compliance with REDD+ Safeguards for Colombia.⁵
- The owner must be able to prepare in advance the management of documents and requirements for entering and registering the area before the National Registry for the Reduction of GHG Emissions (RENARE), of Colombia.

⁵ Camacho A., Lara I., Guerrero R. D. 2017. Interpretation of Social and Environmental Safeguards for REDD+ in Colombia. MADS, WWFColombia, ONU REDD+ Colombia. Bogotá-Colombia

- The owner must be able to prove that the properties are not included in the Single Registry of Abandoned Properties and Territories (RUPTA), or in the Registry of Land Usurped and Forcibly Abandoned (RTDAF) of the National Land Agency of Colombia.

1.5 Project proponent

Organization name	Salvamontes Corporation ⁶
Contact person	Carlos Mauricio Mazo
Title	Legal representative – Chief Executive Officer
Address	Calle 17 # 37-33 Apto 1102, Medellín, Antioquia
Telephone	+57 312 6761663
Email	salvalaselva33@gmail.com

Organization name	Alto de Ventanas Foundation ⁷
Contact person	Mariano Esteban Taborda
Title	Legal representative – Chief Executive Officer
Address	Calle 20 # 21-67, Yarumal, Antioquia
Telephone	+57 4 8871966 – + 57 313 7088832
Email	marianotaborda582@gmail.com

6 Salvamontes Corporation is a non-profit entity, owner of six nature reserves, whose main goal is the conservation, protection, and improvement of the environment, which is devoted to preserve and protect the flora and fauna, to propagate species critically endangered, as the magnolia (*Magnolia spp*), and to strengthen community environmental education. As well as to the development of activities aimed to preserve flora and fauna.

7 Alto de Ventanas Foundation is a non-profit entity, whose main corporate purpose is the conservation and protection of environment, through environmental education, agro-environmental activities and raising awareness towards the recognition, appropriation, enjoyment, preservation, and sustainable use of resources and associated biodiversity. It is the entity that groups many private owners who belong to the project.

Organization name	Guanacas Foundation ⁸
Contact person	José Rodrigo Castaño Díaz
Title	Chief Officer
Address	Calle 5A # 43A-73, Medellín, Antioquia
Telephone	+57 3006084827
Email	fundacionguanacas@gmail.com

Organization name	Magnolios Foundation ⁹
Contact person	Christian Dannecker
Title	Legal representative – Chief Executive Officer
Address	Carrera 41A # 22sur-87, Medellín, Antioquia
Telephone	+57 4 352 44 28
Email	fundacionmagnolios@gmail.com

1.6 Other entities involved in the project

Organization name	South Pole Carbon Asset Management S.A.S (South Pole)
Role in the project	Advice and guidance in the development of the project, monitoring and accounting of emission reduction. South Pole will also be responsible for marketing the mitigation results verified by the project

⁸ Guanacas Foundation is a non-profit entity, mainly devoted to the preservation of nature and wildlife in all its manifestations, as well as to the conservation of water, botanical and biodiversity resources in general, in the Guanacas reserve of Santa Rosa de Osos, Antioquia.

⁹ Magnolios Foundation is a non-profit entity, whose main goal is to tackle climate change by preserving native forests and regenerating degraded ecosystems, thanks to the acquisition of land, conservation and restoration of forests, propagation of critically endangered species as the magnolia (*Magnolia* spp), as well as the community environmental education.

	South Pole is a globally active project developer and consultant, with a successful track record in forest carbon projects.
Contact person	Daniela Herrera Serna
Title	Head of Colombian Carbon Tax Projects
Address	Carrera 46 # 7-59, Medellín, Antioquia, Colombia
Telephone	+57 4 520 5000
Email	d.herrera@southpole.com

1.7 Ownership

1.7.1 Conditions of land tenure and use rights

All the properties making up the initiative have a Tradition and Freedom Certificate, which guarantees that all natural persons and legal entities integrating the initiative are the owners of the properties; and that according to Articles 656 and 669 of the Civil Code of the United States of Colombia (Law 84 of 1873), they are granted rights of use, enjoyment, and disposal of that real estate.¹⁰ In this way, it is legally guaranteed that the owners of those properties can receive the benefits from the project. [Appendix I](#) includes the information about the 75 owners and 120 properties integrating the REDD+ initiative.

Apart from the Tradition and Freedom Certificate, the private owners who are grouped under the Alto de Ventanas Foundation and the Magnolios Foundation signed a Letter of Intent endorsing these entities as their representatives in the project (Figure 2). In the event that the owner of the property could not directly be involved in the project, because of situations as the owner living abroad or being a senior citizen who cannot actively join the project; then, there are authenticated powers of attorney through which the owner empowers a family member to represent him/her in the project.

It is important to keep in mind that foundations are entities pursuing a special charity or community education purpose (in this case, environmental conservation, research and education), for which specific assets are earmarked and, consequently, there are not direct associated persons but a set of assets empowered with legal capability, whose goal is to promote the welfare or benefit of persons other than those belonging to the Foundation, that is, its goal is to benefit third parties.

¹⁰ In virtue of Article 656 of Law 82 from 1873, the properties or farms or real estate are assets that cannot be transported from one place to another, such as lands and mines; and those ones that adhere permanently to them, such as, buildings, trees. Furthermore, plants are unmovable property by adhesion, because they adhere to the soil through their roots (Art. 657 of the same law).




FUNDACIÓN PRO AMBIENTAL ALTO DE VENTANAS – YARUMAL (ANT.)

FUNDACION ALTO DE VENTANAS
Yarumal - Antioquia

ASUNTO: Carta de Intención para autorización para Asociado.

Yo, _____ identificado con la CC No. _____ de _____, y en pleno uso de mis facultades legales, mediante la presente autorizo a la **FUNDACION ALTO DE VENTANAS** a representarme legalmente y a estar conforme con las respectivas negociaciones que la fundación haga en mi representación de asociado, para la cual aporte mi predio en busca de la elaboración de un proyecto para **PSA y REDD**, que se está llevando a cabo con la multinacional **SOUTH POLE CARBON** para el pago de bonos de carbono.

En ningún momento esta carta de intención autorizara a la asociación para poner ni mi nombre como propio, así como mi predio, en alguna situación de riesgo contractual, ni con cláusulas ninguna de permanencia obligatoria.

Figure 2. Sample of Letter of Intent signed by project participants who were grouped in Alto de Ventanas Foundation.

Source: Alto de Ventanas Foundation (2019).

1.7.2 Agreement with the owners, holders, and occupants of the project area

The three foundations participating in the project and South Pole Carbon Asset Management S.A.S. (South Pole) signed agreements for the purchase of Emission Reductions (ER) generated by the REDD+ project, within each of the properties that they manage. These instruments lay down the general terms and conditions that apply to the development of the project (from its feasibility to its verification) and to the subsequent purchase of the ER that was agreed upon by the parties. The agreements also specify the activities that shall be performed by each of the parties, regarding the formulation and implementation of the project during the crediting period, and the subsequent responsibilities related to the purchase and sale of the verified emission reduction units (VER).

1.8 Project start date

The starting date of the emission-reduction project is February 23, 2016, which corresponds to the hiring date of forest rangers in the Guanacas Foundation to carry out —among others— control and surveillance tasks, the creation of nurseries, propagation of plant material, and caring for the facilities.¹¹

This date was chosen taking into account that according to Resolution 1447 of 2018 —which regulates the Monitoring, Report and Verification System (MRV) of nationwide mitigation actions in Colombia and establishes the mechanism for the National Registry for the Reduction of GHG Emissions (RENARE)— the mitigation actions that are valid for less than five years can only be reported in the country for national accounting purposes, as of January 1, 2020.

1.9 Project crediting period

The crediting period starts on February 23, 2016, ending on February 22, 2035, it may be renewed for additional 10 years for a total duration of 30 years.

1.10 Project Scale and Estimated GHG Emission Reductions or Removals

Project Scale	
Project	X
Large project	

Year	Estimated GHG emission reductions or removals (tCO ₂ e)
2016	5,020
2017	6,304
2018	7,592
2019	7,737
2020	7,881
2021	8,026

¹¹ Forest rangers' contracts are available in Supports/Project Activities.

Year	Estimated GHG emission reductions or removals (tCO ₂ e)
2022	8,170
2023	8,315
2024	8,459
2025	8,604
2026	8,650
2027	8,729
2028	8,818
2029	8,818
2030	8,818
2031	8,818
2032	8,818
2033	8,818
2034	8,818
2035	8,818
Total estimated ERs	164,031
Total number of crediting years	20
Average annual ERs	8,202

1.11 Description of the project activity

The aim of the project is to reduce the emission of greenhouse gases (GHG) implementing three strategic lines focused on environmental aspects, such as the research on biodiversity and the conservation and restoration of forests; activities that not only contribute to GHG reduction but that also have positive impacts on biodiversity. Some efforts are included in conservation strategies for endangered species as

the magnolia (*Magnolia* spp) and wax palm (*Ceroxylon* spp). The project also pursues to strengthen environmental education in rural communities through recreational activities related to environmental and biodiversity dimensions, for the management of their territory.

Table 3 presents a summary description of the project strategic lines and their related activities.

Table 3. Strategic lines and activities of the project.

Strategic line	Goal	Activity	Description	Starting date
Strengthening of local governance	To strengthen environmental management activities by creating non-profit entities that manage financial resources for the implementation of activities to preserve and restore forests and recover threatened species.	Forest rangers	Creation of a team of forest rangers to perform control and surveillance activities, propagation of plant material, sowing, and maintenance.	2016
		Official legalization of entities	Registration of Guanacas Foundation before the Chamber of Commerce.	2007
			Registration of Salvamontes Corporation before the Chamber of Commerce.	2016
			Registration of Magnolios Foundation before the Chamber of Commerce.	2016
			Registration of Alto de Ventanas Foundation before the Chamber of Commerce.	2019
Conservation and restoration of forests	To progress in recovering and maintaining forest covers in the north of Antioquia, especially, in areas degraded by natural or anthropic agents as a measure of mitigation and adaptation to climate change.	Acquisition of land for forest conservation	In great measure, this activity has been carried out thanks to the efforts of non-profit entities, in their private reserves, where they have acquired land and hired forest rangers since 2010 to guarantee the protection and conservation of forests. On the side of private owners, forest relicts have also been preserved, mainly as an altruistic task and for the need of caring for headwaters and/or springs in their holdings.	2016
		Strategy for the conservation of magnolia trees (Magnoliaceas)	Design of a system to protect and monitor magnolia fruits (<i>Magnolia polyhypophylla</i> , <i>M. guatapensis</i> , <i>M. yarumalensis</i>), by developing an	2016

Strategic line	Goal	Activity	Description	Starting date
			innovative technique that protects them from rodents and birds; thus, the harvest of viable seeds is guaranteed for subsequent germination and reintroduction to the eco-system.	
		Program to increase populations of wax palm (<i>Ceroxylon</i> spp).	Seed collection, germination, and reintroduction in natural forests of three wax palm species: <i>Ceroxylon quindiuense</i> , <i>C. vogelianum</i> and <i>C. parvifrons</i> .	2016
		Propagation of native species from cloud forests	Setting up of nurseries for the propagation of native tree species of cloud forests such as oak (<i>Myrsine coriacea</i>) and leathery colicwood (<i>Myrsine coriacea</i>). A method was also developed for the propagation from spores of tree ferns (<i>Cyathea</i> spp), with a significant percentage of survival, for their subsequent reintroduction in fertilizing activities	2016
		Passive restoration	Acquisition of holdings degraded by livestock farming and agriculture to enable its ecological recovery through passive restoration processes.	2016
Strengthening environmental education in rural communities	To promote educational facilities around environmental issues regionally important, as the basis to empower rural communities in the management of natural resources.	Environmental education	In these workshops, topics such as human-feline conflict, biodiversity, water, among others, have been addressed; as a result, programs have been established that are well embraced in rural communities, for example: felines in the mist, and flora and fauna sanctuaries of the Guanacas Foundation and the program Saving Magnolios from Salvamontes Corporation and Magnolios Foundation.	2018

Strategic line	Goal	Activity	Description	Starting date
Research on biodiversity	To encourage the knowledge of biodiversity as a tool to preserve and protect the territory.	Biodiversity monitoring	Project proponents have made inventories of flora and fauna, which have been valuable to learn about the biotic diversity of the region. Where new orchid species haven been discovered, for example: <i>Lepanthes cissyana</i> , <i>L. dougdarlingii</i> , <i>L. sabinadaleyana</i> .	2016

Source: prepared by South Pole (2019), according to the information provided by the project proponents.

1.12 Project location

The REDD+ project Magnolios de Yarumal is located in the northern region of the Antioquia Department, most of the holdings are in the Yarumal and Briceño (75%) municipalities and, in a small proportion, in Valdivia and Santa Rosa de Osos (25%) (Table 4). The project area is located between the coordinates 7° 13'46.09" - 6° 41'6.56" N and 75° 19'32.94" W - 75° 36'14.26" W, covering an area of 7,457 hectares.

Table 4. Proportion of the project area within the municipalities of the project expansion area.

Municipality	Area	
	Hectares	%
Yarumal	3,860	52.0
Briceño	1,699	23.0
Valdivia	1,376	18.0
Santa Rosa de Osos	522	7.0
Total	7,457	100.0

Source: prepared by South Pole (2020).

Figure 3 shows a map pinpointing the location of the project and the expansion area.

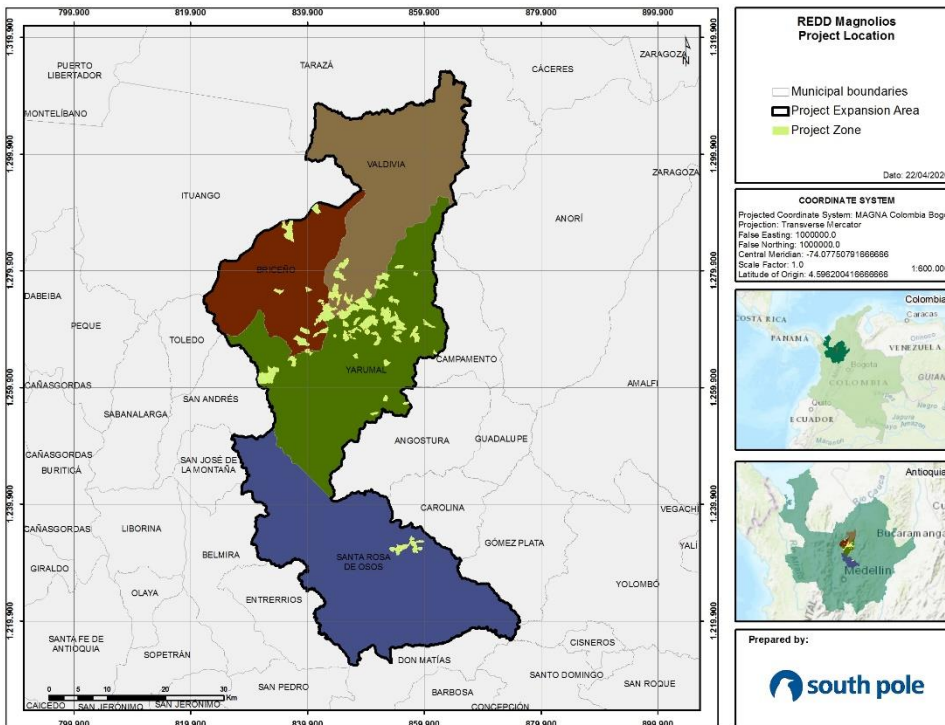


Figure 3. Project location map.

Source: prepared by South Pole (2020).

1.13 Conditions prior to project initiation

The REDD+ Project Magnolios de Yarumal is developed in a region historically deforested mainly by livestock farming. The most likely scenario, in the absence of the project, is continuing with deforestation because of the conversion of forests into pastures for dairy farming.

Contributing to preserve native forests with great diversity and a high rate of endemism is one of the main goals of the project. The following paragraphs describe the environmental preconditions in the municipalities of the project expansion area, including biophysical and biotic aspects.

1.13.1 Climate

The annual average temperature in the project expansion area is 14 °C. Figure 4 shows the monthly-average track record of temperatures in the jurisdictions of two municipalities within the project expansion area. As to rainfall, annual averages fluctuate between 2,000 and 4,425 mm/year, with a multi-year average of 2,866 mm/year. Throughout the year, the area has a noticeable rainy season from April to November, and a dry season from December to March (Figure 5).

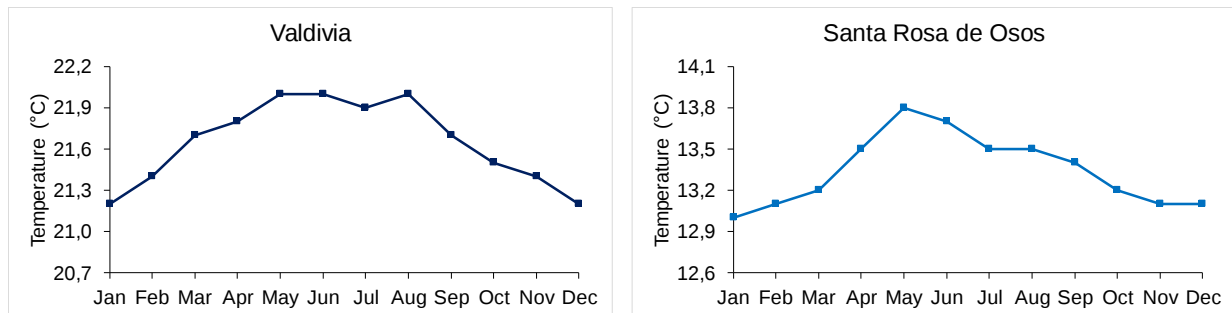


Figure 4. Monthly-average track record of temperatures in two municipalities of the project expansion region.

Source: prepared with data provided by the Hydrology, Meteorology, and Environmental Studies Institute (IDEAM), on the Open Data Platform of Colombia.¹²

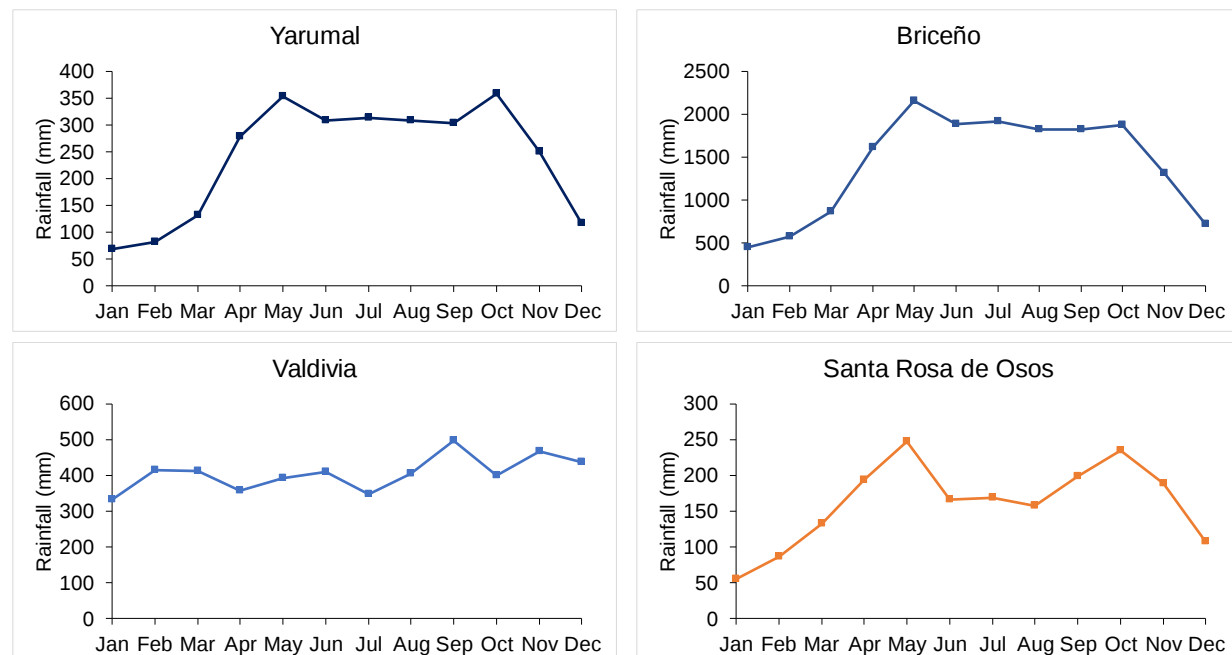


Figure 5. Monthly-average track record of rainfall in the municipalities of the project expansion region.

Source: prepared with data from the Hydrology, Meteorology, and Environmental Studies Institute (IDEAM) (2019).¹³

12 Open Data from Colombia. Rainfall averages and mean temperature. Average for the period 1981-2010. Available at: <https://www.datos.gov.co/Ambiente-y-Desarrollo-Sostenible/Promedios-Precipitaci-n-y-Temperatura-media-Promed/nsxu-h2dh>. Accessed on December 12, 2019; Valdivia Station 26255030; Santa Rosa de Osos Station 2701055. No historical temperature information was found for the Yarumal and Briceño municipalities.

13 Open Data from Colombia. Available at: <https://www.datos.gov.co/Ambiente-y-Desarrollo-Sostenible/Promedios-Precipitaci-n-y-Temperatura-media-Promed/nsxu-h2dh>. Accessed on December 12, 2019; Valdivia Station 26255030; Yarumal Station 27020190; Briceño Station 20199050100162-1; Santa Rosa de Osos Station 2701055.

1.13.2 Geology and geomorphology

According to the General Study of Soils and Land Zoning in Antioquia,¹⁴ in the expansion area of the REDD+ Project, the formation of Antioquian batholith (Ksta) predominates with 42.2%, mainly located towards the municipalities of Yarumal and Santa Rosa de Osos, followed by intercalated schists (Pz (es+ev) that occupy 23.9%, concentrated towards Yarumal and Briceño; and the Puqui meta-tonalite (Pempt), that represents 10.0% and is part of the Valdivia and Briceño municipalities. Other formations that are distributed throughout the expansion area, such as actinolitic and chloritic schists, quartz-sericitic schists; micaceous gneiss from Puquí, Yarumal stock, and amphibolites add up to 20.7%. Each of the remaining formations represent less than 1% of the territory.

The predominant formations in the northern area, between the municipalities of Valdivia and Briceño are the graphitic, cuarzoscovitic, chloritic, and amphibolic schists, phyllites, quartzites, marbles and serpentinites (T-Mbg3); whereas, in the South, granodiorites, tonalites, and quartzodiorites predominate (K2-Pi) (Servicio geológico Colombiano, 2015). The project expansion area of the Antioquian batholith rocks is concentrated on the geostructure of the Cordillera Central (central mountain range), made up of two large units: the Altiplano (high plateau) (9%) and the Cauca-Nechí erosive front (91 %).

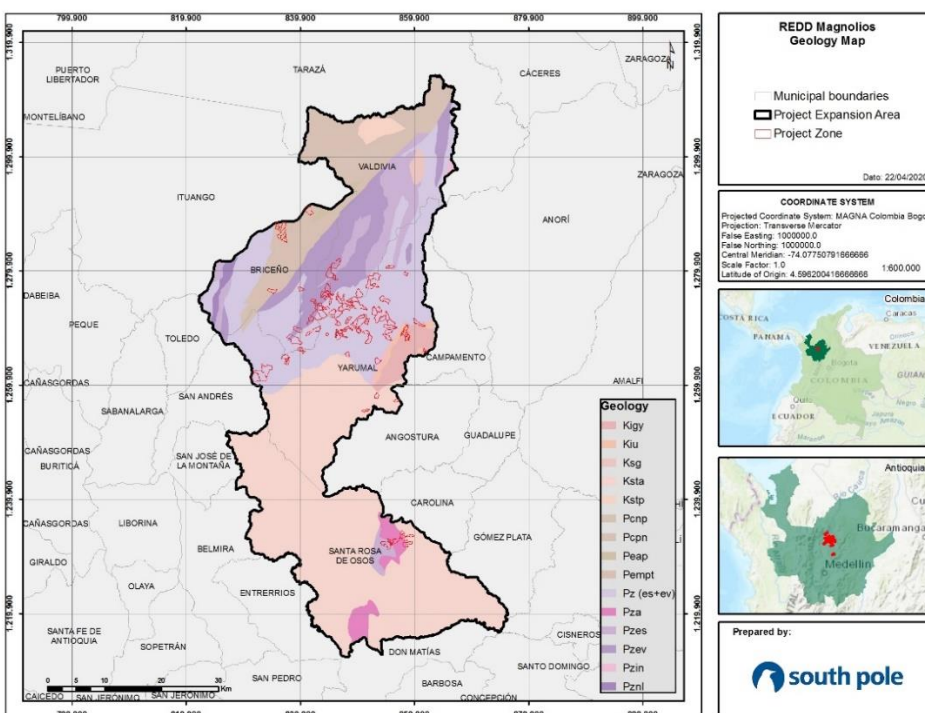


Figure 6. Geology map in the project expansion area.

Source: prepared by South Pole (2020) based on IGAC (2007).

14 Geographic Institute Agustín Codazzi. (2007). General Study of soils and land zoning, Antioquia department. Bogotá.

Regarding geomorphology, in the Northern Altiplano of Antioquia, gentle to undulating hills predominate, watersheds with a medium slope and long-flank hills with slopes around 12% (Cano, Fernández, & Santa, 1966), and erosion and dendritic drainage patterns that promote erosive processes; whereas, in the Cauca-Nechí Erosive Front irregular watersheds of medium length predominate (Ecosistemas ESP S.A.S, 2016). The activity of the Romeral and Espíritu Santo faults, that cross the Yarumal and Toledo municipalities, have influenced on the geomorphological processes of the area (Secretaría de planeación del municipio de Yarumal, 1999).

1.13.3 Soils

The soils in the Antioquia Department are characterized by being located on warm, temperate, cold, and very cold thermal floorings, with humidity conditions from dry to very humid. The Antioquia Department has eight types of landscape, among which is the alluvial plain, foothills, low hills, high plateau, and mountains which, in turn, are formed by reliefs and land forms that are closely related to the original lithology and/or sediments, degree of alteration, slope, and climate. The topography of the Antioquian region is very rough, as it is crossed by the Central and Occidental Mountain Ranges of the Andes, that separate the valleys of Cauca and Magdalena rivers. The geographical units in which the Department soils have specialized are consociations, associations, and complexes (IDEAM, 2007).

The expansion area of the REDD+ project Magnolios de Yarumal is characterized by well-drained soils, low fertility, and medium erosion. They are divided into 15 geographical units (IDEAM, 2007) (Figure 7). The Zulaibar Association, is the unit with the greatest influence in the project expansion area, with 38.23%; followed by the Ituango Association (27.06%), Raudal Association (9.14%), Ventanas Consociation (7.62%), El Cinco Association (5.17%), and Yarumal Association (4.42%), the remaining associations are represented by less than 2% of the territory. The geographical units integrating the expansion area are described as follows:

- Zulaibar Association (ZL): derived from igneous rocks (granites, quartzodiorites, and granodiorites), and the presence of volcanic ash in some areas. These are deep, well-drained soils, textures ranging from lime to sandy type and loamy soils, low fertility, and light to severe erosion.
- Ituango Association (IT): mountain soils composed of metamorphic rocks (schists), well-drained soils, with fine to medium texture, low erosion, and fertility, with a slight reaction to a strongly acidic one.
- Raudal Association: mountain with rows and beams and hot-humid climate. Deep and shallow, well-drained soils, fine to medium textures, light and moderate erosion, low fertility, very strongly acidic reaction.
- Ventanas Consociation (VC): soils developed from metamorphic rocks (schists of different type), with gneiss intrusion; they are deep and shallow, limited by compact rock. They are well-drained (in some areas excessively), from moderately coarse to fine textures and from low to low fertility.

- El Cinco Association: mountain with rows and beams and from hot-humid to very humid climate. Deep and shallow, well-drained soils, fine to moderately coarse textures, light to moderate erosion, from low to moderate fertility.
- Yarumal Association: Mountain with rows and beams and from temperate humid to very humid climate. Deep, well-drained soils, medium and fine textures, light and moderate erosion, low fertility, from very strong to strongly acidic reaction.
- La Pulgarina Association: high plateau with small valleys and cold-humid and very humid-cold climate. Moderately deep soils, imperfect to moderate natural drainage, medium to moderately coarse textures, from very strong to strongly acidic reaction, low fertility.
- Guadua Association: high plateau with hillocks and hills; and cold-humid and very humid-cold climate. Deep to moderately deep, well-drained soils; medium textures, from strong to moderately acidic reaction, low fertility, from light to moderate erosion.
- Amagá Association (AN): soils developed from mafic plutonic igneous rocks of gabbro type, they are well drained, from deep to moderately deep; from moderately coarse to fine textures, and from low to moderate fertility.
- Remedios Association: Low hills with hillocks and mounds, and from hot-humid to very humid climate. Shallow and deep, limited by rock, well-drained soils; fine textures, from very strong to strongly acidic reaction, low fertility.
- Aldana Association (AL): soils developed from volcanic ashes deposited on different type of rocks, from heterogeneous and heterometric colluviums and alluviums; they are medium to fine textures, the natural drainage is good, slight to moderate erosion is observed produced by diffuse runoff, furrows, and small mass movements. There are occasional deposits of new materials, either by gravity or from water; and stones of different sizes can be found on the surface.
- Zaragoza Association: mountain with rows and beams, and from hot-humid to very humid climate. Deep and moderately deep, well-drained soils; fine and moderately fine textures sometimes with rock fragments, from extreme to strongly acidic reaction, high aluminum saturation, low fertility.
- Margarita Association: Low hills with hillocks and mounds, and hot-humid climate. Deep, well-drained soils developed from sedimentary rocks located in areas with slopes below 12°.
- Yali Association: mountain with colluvial glaciis and colluvia from earth moving, and hot-humid climate. Deep, well-drained soils; moderately fine and fine textures in some horizons, from very strong to strongly acidic reaction, high content and saturation of aluminum, from low to very low fertility.
- Poblano Association (PO): Soils have developed from heterometric deposits with mixed colluvial and colluvium-alluvial materials; they are deep to moderately deep, limited by the presence of rock fragments, including fine gravel, rubble, and stones in the profile; well-drained with natural drainage, from fine to moderately coarse textures; some soils have high aluminum saturation, causing toxicity to most plants. The soils of this unit present from very low up to very high pedogenetic evolution, with structure especially in the upper horizons, and from very low to high fertility.

The information about soils is the basis for interpreting the Reference Level (REFL) of soil organic carbon (COS) in Colombia. Through plots from different regions of the country, the Ministry of Environment and Sustainable Development (MADS) collected samples to determine the COS content by region, in the case of the Andean region (where the Antioquia Department and the project expansion area are located) estimation was: a soil organic carbon content of 6 tC/ha (MADS & IDEAM, 2019).

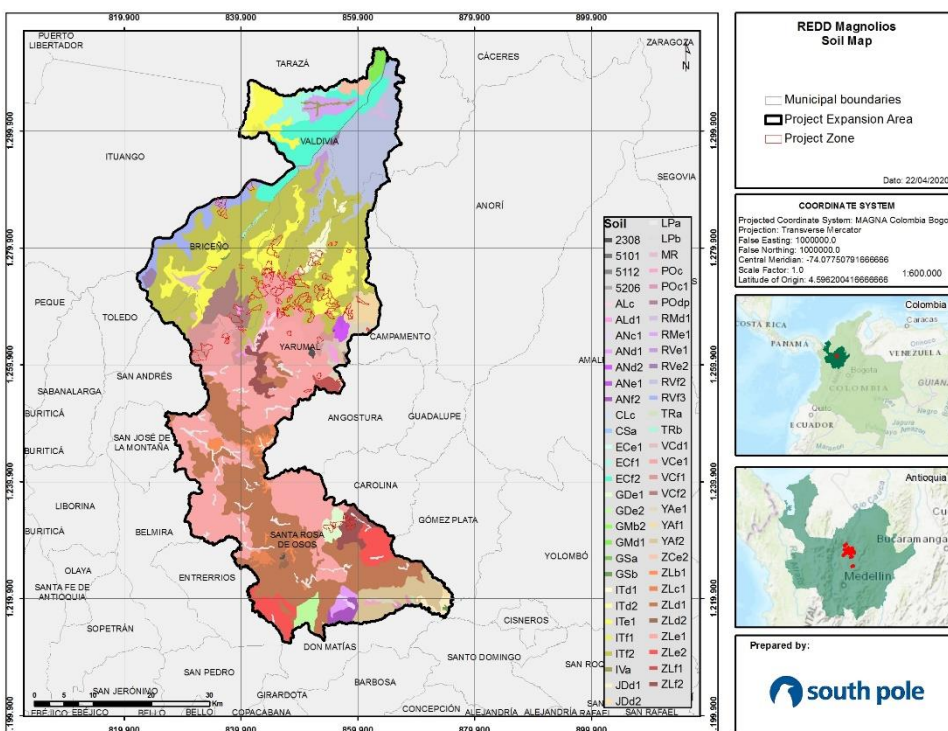


Figure 7. Soil map in the project expansion area.

Source: prepared by South Pole (2020) based on (IGAC, 2007).

1.13.4 Hydrology

The expansion area of the REDD+ Project is in an area with huge water resources, on the basin of the Nechí river, that covers a large part of the North and Northeast of Antioquia and flows into the Cauca river. The hydrological characteristics of the main municipalities in the project expansion area are described as follows.

The Yarumal municipality is part of the Nechí river basin, located in the North and Northeast of the Antioquia Department, that flows into the Cauca river. This municipality has huge water resources, mainly integrated by the Nechí, Espíritu Santo, San Julián rivers, and El Rosario, El Popal, Berlín, San Mateo, Yarumal, Media Luna and Lejía creeks. Piedras Blancas, el Rosario, San Antonio, Santa Juana, Santa Bárbara, and Santa Isabel are other important creeks that can be included (IGAC, 2018).

The microbasins that feed the city-center aqueduct are Santa Ana, Chorros Blancos, and Picadores I and II, where the erosive processes and poor-quality water triggered by livestock farming are evident. For the rural area, Llanos de Cuivá, Ochalí, La Loma, El Cedro, el Pueblito, and Cedeño are available, they characterize by having large paddocks for livestock farming (Municipio de Yarumal, 2012).

Despite the strong water capacity of the municipality, water bodies are contaminated by garbage, chemicals used in crops, and organic matter from houses and paddocks (Municipio de Yarumal, 2012).

In the same way, Briceño distinguishes by having a large water supply distributed throughout the municipality. The Espíritu Santo is its main river, it runs along the eastern part the municipality, and where it is intended to set up a small hydroelectric power station (SHPS). The most extensive and important creeks include Quebrada Socavones, San Vicente, San Bernardo, located in the southeast of the municipality and tributaries of the Espíritu Santo river. The creeks Purí, Chiri and El Pescado are in the southwest; Cañaveral, in the center; La Quintana and Cenizas, in the west; and Santa Juana in the northwest (IGAC, 2018). Furthermore, it relies on the creeks Marianitos, Cusumbí, La Trinidad, and La Triana, which are supply sources for the aqueduct (Ecosistemas ESP S.A.S, 2016).

In the Valdivia municipality, the Cauca river basin (Ecosistemas ESP S.A.S, 2016) and three main rivers called El Pescado, Puqui and Espíritu Santo stand out. There are other important basins, including the creeks El Oro, that flows into the Espíritu Santo river, the Valdivia creek flowing into the Cauca River, and another smaller ones as the creeks El Corcovado, Candela, Dolores, Lanchas, Neri, Honda, Guamera, Santa Barbara, Cachirime, among others (Muñoz Herrera, 2015; IGAC, 2018). Some of these creeks supply water to the municipality through the aqueduct and sewerage network (Muñoz Herrera, 2015).

Lastly, Santa Rosa de Osos holds two of the most emblematic rivers of the region, the Grande and Guadalupe rivers, which flow into the Porce river and supply water to two hydroelectric power stations for the production of energy that serves the Medellín metropolitan area and other Antioquian municipalities (UMATA, 2012). Among the main creeks are Cuestas, del Medio, Guanacas, La Chorrera, El Haitón, El Atajo, Vallecitos, Orobajo, and La Mina (IGAC, 2018).

Santa Rosa classified all the areas comprising 100 m around the headwaters and a woody-vegetation buffer zone of 30 m from the maximum flood level in the currents of micro-basins that feed village and municipal-government seat aqueducts and, in general, where there is evidence of the existence of water bodies, areas protecting sources of drinking-water supply. Among them the following creeks are found: Cimitarra, San Pablo, del Cedral, San Juan, Aragón, Puente Largo, Belén, Las Cruces, San José, Aguas Lindas, San Pablo and Orobajo (Municipio de Santa Rosa de Osos, 2000).

1.13.5 Vegetation and land uses

The delimitation of land covers in the municipality was based on the Map of Inland, Coastal, and Marine Ecosystems of Colombia, scale 1:100.000, version 2.1 (IDEAM, 2017).¹⁵ The minimum categories are defined in line with the categories proposed by the adaptation of the Corine Land Cover methodology for Colombia (CLC Colombia), and their definitions are presented in detail in the National Legend of Land Covers (IDEAM, 2010).

Figure 8 shows the land covers from the project and expansion area. Pastures mostly dedicated to dairy farming cover 64% of the area (CORANTIOQUIA, 2006). In second place, secondary vegetation covers 8% of the area, followed by heterogeneous agricultural areas that correspond to crop mosaics, pastures, and natural spaces in different layers.

The riverside areas remain with poor vegetation cover, and the significant forest areas are concentrated towards the uplands of Briceño, Valdivia, and Yarumal municipalities. Santa Rosa relies on high-Andean forests, mainly oak groves (CORANTIOQUIA, 2006), tall stubbles, and natural forests highly intervened by livestock activity and timber harvesting for domestic purposes.

As to mining, the area has a talc deposit of great importance, with reserves over 20 million tons at a depth of less than 200 meters. Furthermore, there are mining extractions, mainly illegal ones (Muñoz Herrera, 2015). On account of the high mining potential of the region (CORANTIOQUIA, 2006), the extraction of materials is important in the construction sector and as a source of employment for a portion of the population. The hydroelectrical and road projects have produced changes and territorial trends (CORANTIOQUIA, 2006) that affect the natural resources.

Regarding agro-livestock activities, the production of dairy cattle, poultry, breeding of pigs and pisciculture constitute most of the economic activity in the territory. Plantain, cassava, maize, and bean crops stand out. Sapote and avocado are produced on a small scale and, in recent years, the cultivation of coffee, cocoa, and rubber has been implemented to replace illicit crops.

With the increasing economic potential and the globalization of markets, the soils in Santa Rosa are mainly used for high-tech livestock production (CORANTIOQUIA, 2006), which increases the progressive deterioration of natural resources and the productivity in the country (Municipio de Santa Rosa de Osos, 2000). The pressure on areas of ecological and economic value is mainly exerted by the expansion of the livestock and cropping frontier. The main crops are focused on the production of potato and tree tomato (UMATA, 2012).

In most of the cases, harvested timber is used as prop of tree tomato and other fruit trees, large stakes, and wood-burning stoves (UMATA, 2012). It is part of the dissected and hilly highlands region comprising the central range on the north of the Antioquia Department, characterized by agro-livestock production,

¹⁵ Updating (2017) of the Map of Inland, Coastal and Marine Ecosystems of Colombia (MEC), scale 1:100.000, Hydrology, Meteorology and Environmental Studies Institute (IDEAM). Available at: http://181.225.72.78/Portal-SIAC-web/faces/Dashboard/Biodiversidad2/mapa_ecosistemas/estadoEcosistemasColombiano.xhtml

and dairy farming with improvement in pastures and management of paddocks with electric-wire fences and pig-slurry based irrigation (CORANTIOQUIA , 2006).

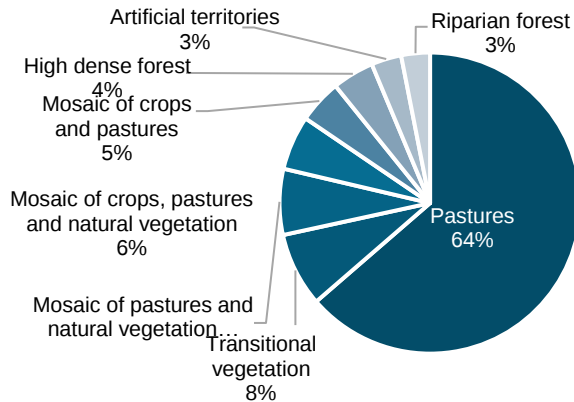


Figure 8. Representativeness of land covers in the project expansion region.

Source: prepared by South Pole (2020) based on IDEAM (2017).

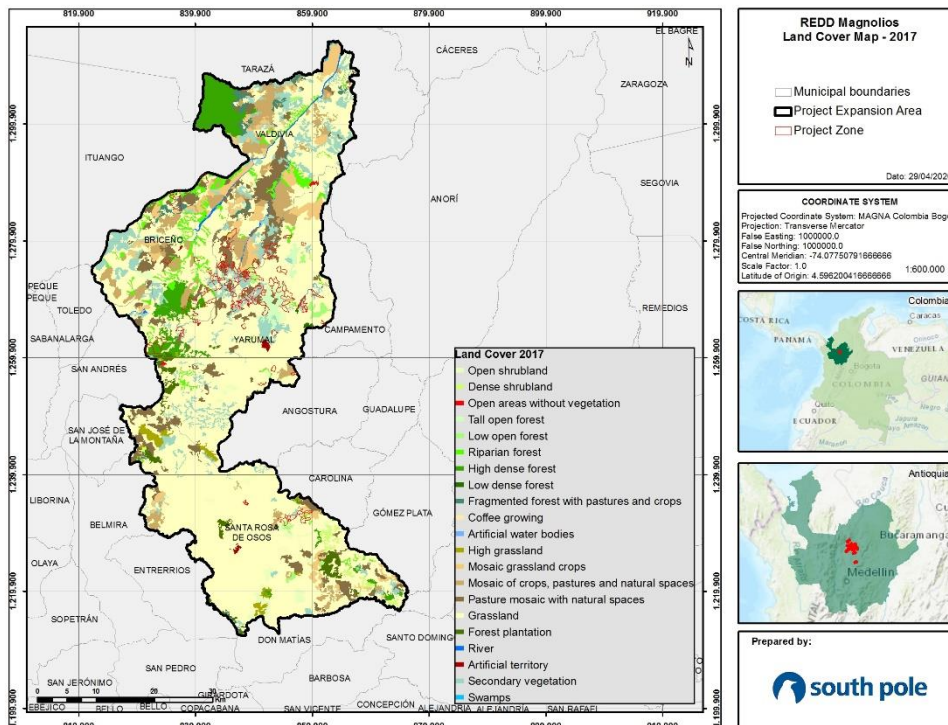


Figure 9. Map of land covers in the project expansion region.

Source: prepared by South Pole (2020), based on the Map of Inland, Coastal, and Marine Ecosystems of Colombia (2017).

1.13.6 Holdridge life zones

The expansion area of the REDD+ Magnolios Project is recognized by the diversity of its life zones; that is, biogeographical regions with similar conditions of temperature, rainfall, and humidity that determine the plant communities of a given area (Holdridge , 1967). There are eight life zones in the expansion area (Figure 10), that enable the distribution of flora and fauna from different ecosystems and the growing of lowland and highland forest. The life zones in the project expansion area are described as follows.

Table 5. Holdridge life zones in the expansion region.

Life zone	Description	Area (hectares)
Lower-montane very humid forest (vhf-LM)	It is located between 1,800 – 2,800 m above sea level, it has a humid cold climate between 12°C and 18°C, and annual rainfall between 2,001 – 3,000 mm.	87,522
Pre-montane pluvial forest (pf-PM)	It is located between 800 – 1.800 m above sea level, with a very humid temperate climate, mean temperature between 18°C and 24°C, and rainfall ranging between 3,001 – 7,000 mm/year	61,869
Very humid tropical forest (vhf-T)	Climate is very cold humid, between 6°C and 12°C, with rainfall ranging between 2,001 – 3,000 mm/year It is located between 2,800 – 3,700 m above sea level.	38,530
Lower-montane pluvial forest (pf-LM)	It is located between 800 – 1.800 m above sea level, with a very humid temperate climate, mean temperature between 18°C and 24°C, and rainfall ranging between 3,001 – 7,000 mm/year	34,916
Lower-montane humid forest (hf-LM)	Cold dry clime, it is located between 1.800 – 2.800 m above sea level, with temperatures between 12°C and 18°C, and rainfall ranging between 1,001 – 2,000 mm/year	15,975
Montane pluvial forest (pf-M)	Very cold humid climate, between 6°C and 12°C, with rainfall ranging between 2,001 – 3,000 mm/year It is located between 2,800 – 3,700 m above sea level. The project expansion area is in the Yarumal municipality, and a small portion in Santa Rosa de Osos.	5,221
Pre-montane very humid forest (vhf-PM)	It is located between 800 – 1,800 m above sea level, with a humid temperate climate between 18°C and 24°C, and rainfall ranging between 2,001 – 3,000 mm/year	4,205
Humid tropical forest (hf-T)	Hot-humid climate with temperatures above 24°C, it is located between 0 – 800 m above sea level, and rainfall between 2,001 – 3,000 mm/year.	3,670

Source: prepared by South Pole (2020) based on IDEAM, IGAC, IAvH, IIAP & INVEMAR (2008).

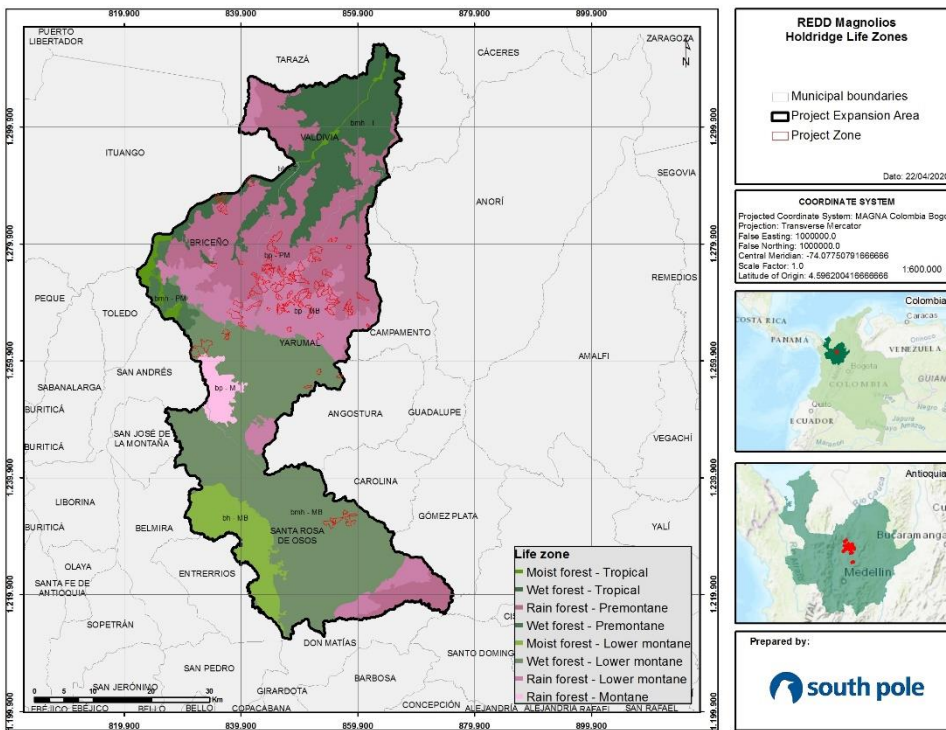


Figure 10. Map of life zones in the project expansion region.

Source: prepared by South Pole (2020) based on IDEAM, IGAC, IAvH, IIAP & INVEMAR (2008).

1.13.7 Biodiversity

Cloud forests mainly predominate in the project expansion area, they are mostly characterized by the amount and density of species of angiosperms, mosses, birds, mammals, amphibian, and reptiles they have. Those ecosystems hold many endemic species, representing up to 10% of bird and amphibian species worldwide (Alvarez-Aquino, Williams-Linera, & Newton, 2004; Wilson & Rhemtulla, 2016; Ramírez-Soto, et al., 2018).

Specifically, in the private reserves integrating the project, where biodiversity is being monitored, 700 plant species, 421 bird species, 18 mammal species, and 50 herpet species have been registered. Among this great diversity, it stands out that 57 plant species are threatened in some degree or that they are endemic; and as to the fauna, thanks to trap cameras, there are records of five feline species out of the six ones registered for Colombia, and of endemic species as the Antioquian chocolate frog (*Hyloscirtus antioquia*) (Figure 11).



Figure 11. Cougar (*Puma concolor*) registered through trap camera (left) and chocolate frog (*Hyloscirtus antioquia*) registered in the project area (right).

Source: Guanacas Foundation (2018).

Regarding plant species, three magnolia species stand out in the project area: (*Magnolia polyhypsophylla*, *M. guatapensis* y *M. yarumalensis*), their populations have severely decreased because of their good-quality wood; the most critical case is *Magnolia polyhypsophylla*, only 25 specimens of them are registered in natural conditions (communication with Mauricio Mazo, coordinator of the program Salvando Magnolios from Salvamontes Corporation, January 2020) (Figure 12). It also stands out the great diversity of orchids, even in the Salvamontes Reserve they have the unique known natural population of *Dracula lemurella* classified as an endangered species according to the International Union for Conservation of Nature (IUCN); and three new species of *Lepanthes* (*Lepanthes cissyana*, *L. dougdarlingii* y *L. sabinadaleyana*) have been described (Viera-Urbe & Moreno, 2019) (Figure 13).



Figure 12. Magnolia species registered in the Magnolios and Salvamontes reserves: *M. polyhypsophylla* (left), *M. guatapensis* (center), *M. yarumalensis* (right).

Source: Salvamontes Corporation (2018).

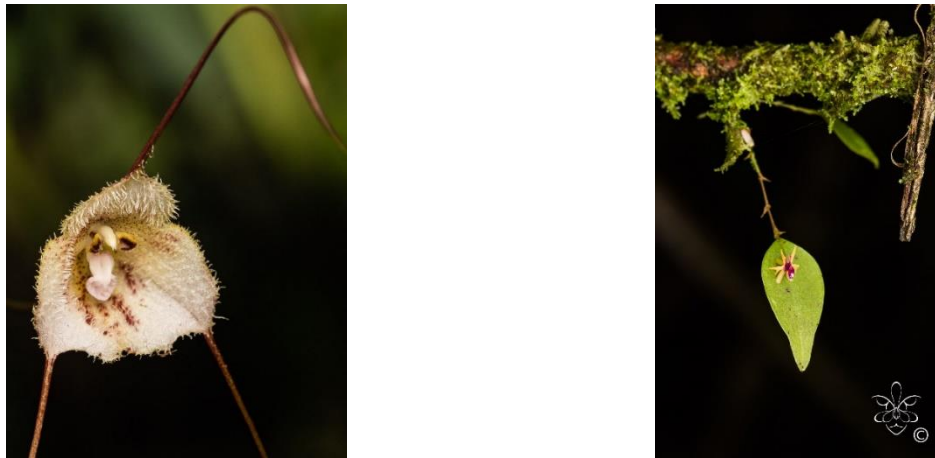


Figure 13. Orchids registered in Salvamontes reserve. *Dracula lemurella* (left), *Lepanthes alcicornis* (right).

Source: Salvamontes Corporation (2018).

1.14 Compliance with laws, statutes, and other regulatory frameworks

1.14.1 National laws, statutes, and other regulatory frameworks related to mitigation projects

The regulations applicable to this emission-reduction initiative are limited to laws, decrees, resolutions and other national and sectoral rules regarding forest, climate change, management and conservation of natural resources, special protection zones, and biodiversity associated to private property, as well as national forest programs, and international agreements signed about these subject matters. The development and implementation of the initiative and the project activities are compatible with the regulatory framework described below.

- Political Constitution:¹⁶ being a country abiding by the rule of law, it is governed by the laws of a political constitution, our Magna Carta of 1991 is the ultimate compendium of rules within the set of national laws, stating specifically in Articles 8 and 79, the obligation of all citizens of protecting the natural endowments and cultural wealth of the Nation and watch over the preservation of a healthy environment. The REDD+ initiative fosters the conservation of forests and their biodiversity among its beneficiaries; consequently, it watches over the preservation of ecosystem services associated to forest ecosystems that are closely linked to the provision of

¹⁶ Constituent Assembly. Political Constitution of the Republic of Colombia. Colombia; 1991. http://www.secretariassenado.gov.co/senado/basedoc/constitucion_politica_1991.html.

water, improvement of air quality, maintenance of native-and-migratory-species habitat, among others.

- National REDD+ Strategy:¹⁷ the mitigation project is part of the Comprehensive Strategy for Deforestation Control and Forest Management (EICDGB), which aims to curb deforestation and degradation of forests, addressing the complex causes that produce them; it starts by recognizing the strategic meaning of those ecosystems for the country, because of their sociocultural, economic and environmental importance, their potential as a development option in the framework of the peacebuilding process, and because they contribute to the mitigation and adaptation to climate change.
- Law 164 of 1994:¹⁸ it approved the United Nations Framework Convention on Climate Change (UNFCCC) which made visible on a global scale the problem of climate change resulting from greenhouse gas (GHG) concentrations in the atmosphere, and fostered the development and adoption of mechanisms for their stabilization, including the REDD+ projects, to a level that prevents dangerous anthropogenic interference in the historic climate system, and within a timeframe sufficient to allow ecosystems to adapt naturally to the climate change, to ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner.
- Law 165 of 1994:¹⁹ deforestation, habitat destruction, and hunting are the main reasons for the increase in the number of endangered species and decline in their populations (species with a reduced distribution area). An example of this are the species of the *Magnolia* genus in the Yarumal, Valdivia, Santa Rosa de Osos, and Briceño municipalities, that have been decimated due to the quality of their wood and their limited distribution. The activities of the project include to encourage the protection of these species, as well as of other vulnerable ones, such as the river otter, the ginger gele tree (*Aniba perutilis*), and the cougar, through educational workshops on the protection of biodiversity and, at the same time, offer fair financial incentives to the owners of the holdings affiliated to the initiative. Thus, the project aligns with the Convention on Biological Diversity, adopted by Colombia in virtue of the Law 165 of 1994, referring to the conservation of biodiversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.
- Law 99 of 1993:²⁰ The REDD+ initiative is ruled by the guidelines of national regulations issued by the Presidency of the Republic and the Ministry of the Environment, today Ministry of Environment and Sustainable Development, and by the regulations, standards and directives of

17 Ministry of Environment and Sustainable Development, Institute of Hydrology M y EA-I. Comprehensive Strategy for Deforestation Control and Forest Management. Bogota D.C.; 2017.

18 Presidency of the Republic of Colombia. Law 164 of 1994. Colombia; 1994. http://www.secretariassenado.gov.co/senado/basedoc/ley_0164_1994.html.<0

19 Presidency of the Republic of Colombia. Law 165 of 1994. <https://www.cancilleria.gov.co/convenio-sobre-diversidad-biologica-cbd>. Published in 1994. Revised: February 19, 2020.

20 Presidency of the Republic of Colombia. Law 99 of 1993. Colombia; 1993. http://www.secretariassenado.gov.co/senado/basedoc/ley_0099_1993.html. Revised: February 19, 2020.

the Regional Autonomous Corporation of the Center from Antioquia (CORANTIOQUIA), with jurisdiction in the project area.

- Paris Agreement: the greenhouse gas reductions (GHG) produced by the decrease in deforestation rates in the project area contribute to give effect to the commitment entered into by signing the Paris Agreement on April 22, 2016, on the Day of the Earth, in which Colombia committed to reduce its GHG emissions by 20% compared to projections until 2030, or 30% if it relies on international cooperation. In order to meet this goal, national strategies such as the National Climate Change Policy (PNCC)²¹ were created, which aims to guide and articulate all national efforts through different mechanisms, including the Colombian Low-Carbon Development Strategy (ECDBC), the National Plan of Adaptation to Climate Change (PNACC), and the Comprehensive Strategy for Deforestation Control and Forest Management (EICDGB).
- The following international agreements: United Nations Framework Convention on Climate Change (UNFCCC), Convention on Biological Diversity, International Tropical Timber Agreement, Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and the Kyoto Protocol.
- National policies: Comprehensive Strategy for Deforestation Control and Forest Management, National Plan for Forest Development (PNDF), National Climate Change Policy (PNCC), and the Policy for Comprehensive Management of Biodiversity and its Ecosystem Services.

Besides, Colombia has submitted country safeguards before the United Nations Framework Convention on Climate Change (UNFCCC), as part of the adoption of measures mentioned in paragraph 70 of the Decision 1/CP.16 (CMNUCC, 2011) of the UNFCCC. These are applied to the initiatives to be taken in Colombia to reduce forest degradation and deforestation, whether local, regional, or national ones, becoming a good-practice guide to prevent possible risks and generate the greatest amount of benefits. Table 6 identifies the main instruments available to the Emission-Reduction Project to enforce every single safeguard.

Table 6. Main instruments identified by the REDD+ Project Magnolios de Yarumal to enforce the safeguards.

No.	Type	National interpretation of safeguards	Instruments to enforce the safeguards identified in the Emission Reduction Project
1	Institutional	Alignment with international agreements signed by Colombia on forests,	The REDD+ Magnolios Project is developed under the national REDD+ strategy and the National Plan for Forest Development, and its activities are in line with the goals of the national forest programs and the conventions

21 Ministry of Environment and Sustainable Development. National Climate Change Policy – PNCC. Bogota D.C.; 2016. <https://www.minambiente.gov.co/index.php/politica-nacional-de-cambio-climatico#politica-nacional-de-cambio-climatico-pncc>. Revised: February 19, 2020.

No.	Type	National interpretation of safeguards	Instruments to enforce the safeguards identified in the Emission Reduction Project
		biodiversity, and climate change	and international agreements signed by Colombia in terms of forests, biodiversity and climate change, as well as the national policies corresponding to these agreements.
2		Transparency and access to information	All the owners grouped in this initiative have appropriate channels and information media to know the context of the project since its formulation.
3		Accountability	Mechanisms will be designed so that the Foundations involved in the initiative report to the private owners grouped by them on the accountability of the project. To that end, there will be instruments such as minutes, official statements, and annual reports to inform about the progress in project management.
4		Recognition of forest governance structures	From the feasibility stage, the project recognizes the leadership of each of the executive officers of the non-profit entities. All the owners of the holdings integrating the initiative endorse the proponents to represent them in this initiative, as described in Section 1.7
5		Capacity building	Spaces will be managed with non-profit entities and private owners for training in the development of the project activities prior to the implementation.
6	Social and cultural	Free, prior, and informed consent	From the beginning of the project, it has been ensured that project participants effectively participate in the decision-making process regarding its formulation. An effective mechanism will be created to disseminate the important aspects of the project management in the implementation.
7		Respect for traditional knowledge	Cultural traditions will be considered for the development of the project activities.
8		Allocation of benefits	A participatory Benefit-Sharing System (BSS) will be created, that will facilitate spaces for its construction both with private owners and non-profit entities.
9		Territorial rights	All project participants are owners of the areas integrating the initiative; therefore, they have

No.	Type	National interpretation of safeguards	Instruments to enforce the safeguards identified in the Emission Reduction Project
			been granted rights of use of that real estate (see Section 1.7).
10		Participation	The effective participation of project proponents has been guaranteed through socialization spaces.
11	Territorial and environmental	Conservation of forests and their biodiversity	The REDD+ Project Magnolios de Yarumal is a financial instrument that will contribute to develop measures that promote conservation processes and the maintenance of ecosystem services at local level.
12		Provision of environmental goods and services	The project activities that have been considered pursue to reduce deforestation through direct actions of environmental conservation, research, and education in rural communities (see Section 1.11).
13		Territorial and environmental management	The REDD+ Project Magnolios de Yarumal recognizes and respects environmental determinants in the territory such as the Regional Integrated Management District Alto de Ventanas, and the land management plans of the municipalities taking part in the initiative (see Section 1.14.2).
14		Sectoral planning	
15		Forest control and surveillance to prevent the displacement of emissions	The REDD+ Project Magnolios de Yarumal provides for forest tracking and surveillance by monitoring changes in forest cover in each verification period.

Source: prepared by South Pole (2020).

1.14.2 Compliance with regional and local regulations

Within regional regulations framework, sectoral regulations are developed according to the individual social and environmental characteristics of each region or subregion, which the project should demonstrate its compatibility with. The implementation of the initiative activities is coherent with the instruments of special protection, territorial management, and sectoral laws applicable to the environment, which are shown in Table 7.

Table 7. Regional regulatory framework.

Regulation	Description	Compatibility with the project
Municipal development plan	Development Plan 2016-2019: It is the time... Yarumal ²²	The environmental dimension of the development plan promotes the enjoyment of a healthy environment and low-carbon growth with a view to ecological and sustainable projects and activities, such as reforestation, protection of micro-basins, and ecological trails, which harmonize with conservation initiatives such as carbon projects.
	Development Plan 2016-2019: Opportunity for change and progress for Briceño ²³	The REDD+ initiative aligns with the fourth strategic line of the Development Plan: Briceño sustainable and protector of the environment. It invites rulers and inhabitants to manage the Briceño's natural endowment and biodiversity in a sustainable way, it also pursues to reduce the climate change impact by strengthening the culture of care, protection, responsible exploitation of natural resources, development of a forest planning and management plan, forest stewardship, and support for environmental projects.
	Development Plan 2016-2019: Standing together for Valdivia ²⁴	The sixth strategic line of the Development Plan, included in the environmental dimension, focuses on environmental management, adaptation to and mitigation of climate change by improving production systems, in order to reduce GHG emissions, and increase the planted area of the municipality
	Development Plan 2016-2019: For the sake of	The environmental dimension of the Santa Rosa Development Plan focuses mainly on the protection of the territory's water resources, as well as on research activities that enable to identify areas with strategic

22 Municipal mayoralty of Yarumal. Municipal Development Plan 2016-2019: It is the time Yarumal. Yarumal; 2016. www.yarumal.gov.co. Revised: February 19, 2020.

23 Municipal mayoralty of Briceño. Agreement 012 of 2016: Approving the Municipal Development Plan 2016-2016 Opportunity for Change and Progress for Briceño. Colombia; 2016:1-34

24 Municipal mayoralty of Valdivia. Development Plan 2016-2019: Standing together for Valdivia. Valdivia; 2016. <http://www.valdivia-antioquia.gov.co/planes/plan-de-desarrollo-20162019>. Revised: February 21, 2020

Regulation	Description	Compatibility with the project
	Santa Rosa investment and social justice for all ²⁵	ecosystems for purchase and conservation by the municipal administration. The areas of interest include Guanacas Village, where the lots of the Guanacas Cloud Forest Foundation are located, they present a proposal for declaration of a private protected area and a regional one, a corridor linking cloud forests from the mountain range of the village (Cordillera) to the Carolina del Príncipe municipality, the Angostura forests, the moorland system, and the Porce-Nechí biological corridor
Local System of Protected Areas (SILAP)	Consolidation of conservation initiatives in the Santa Rosa de Osos municipality - Antioquia ²⁶	Thanks to the participation of the Guanacas Cloud Forest Foundation, the REDD+ Magnolios initiative promotes that the goal of the Santa Rosa Local System of Protected Areas is met; it aims —among other activities— to ensure the permanence of high-Andean forests, to conserve and promote the enjoyment of areas and elements of the landscape that are benchmarks of identity, roots, and social cohesion, and to preserve the ecosystems that guarantee the municipality's environmental services, in particular, water supply and regulation.
Action plan of Regional Autonomous Corporation (CAR) with jurisdiction in	Action Plan 2016-2019: For the sake of the environmental heritage of our territory ²⁷	The project area is distributed throughout the Tahamies territorial offices (Yarumal, Briceño and Santa Rosa de Osos) and Panzenú (Valdivia) of CORANTIOQUIA, they are areas of importance for the conservation of biodiversity with 718 species reported, including the Alto de Ventanas Regional Integrated Management District, that encourage the creation of a fauna corridor

25 Mayoralty of Santa Rosa de Osos. Development Plan 2016-2019: For the sake of Santa Rosa investment and social justice for all. Santa Rosa de Osos; 2016. [http://www.santarosadeosos-antioquia.gov.co/MiMunicipio/Programa de Gobierno/Plan de Desarrollo 2016-2019.pdf](http://www.santarosadeosos-antioquia.gov.co/MiMunicipio/Programa%20de%20Gobierno/Plan%20de%20Desarrollo%202016-2019.pdf).<0

26 Autonomous Corporation of the Center of Antioquia CORANTIOQUIA, Mayoralty of Santa Rosa de Osos. Consolidation of conservation initiatives in the Santa Rosa de Osos municipality – Antioquia – Local System of Protected Areas. Santa Rosa de Osos; 2015

27 Regional Autonomous Corporation of the Center of Antioquia CORANTIOQUIA. Action Plan 2016-2019: For the sake of the environmental heritage of our territory. Medellín, Colombia; 2016. http://www.corantioquia.gov.co/sitios/ExtranetCorantioquia/ciadoc/AGUA/AIRNR_CN_8832_2011.pdf

Regulation	Description	Compatibility with the project
the project area		to protect vulnerable species such as the cougar and the jaguar. The relevant properties located in this area are of special interest for conservation, because most of them are located in areas classified as hazard zones, which have been considerably degraded by anthropogenic activities that entail the fragmentation of forest areas, including extensive livestock farming, very common throughout the subregion.

Source: prepared by South Pole (2020).

1.15 Participation under other GHG programs

1.15.1 Projects registered (or seeking registration) under other GHG program(s)

The project is not registered, nor has it applied for registration in any other GHG program.

1.15.2 Projects rejected by other GHG programs

The project is not registered, nor has it applied for registration in any other GHG program.

1.16 Other forms of credit

1.16.1 Emissions trading programs and other binding limits

The project is not part of emission trading programs or other binding limits.

1.16.2 Other forms of environmental credit

The project has not requested or received any other type of environmental credit related to GHG, including renewable energy certificates.

1.17 Additional Information Relevant to the Project Leakage Management

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

1.17.2 Commercially Sensitive Information

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

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

1.17.3 Sustainable Development

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

1.17.4 Further Information

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

2 SAFEGUARDS

2.1 No Net Harm

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

2.2 Local Stakeholder Consultation

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

- *The procedures or methods used for engaging local stakeholders (e.g., dates of announcements or meetings, periods during which input was sought).*
- *The procedures or methods used for documenting the outcomes of the local stakeholder consultation.*
- *The mechanism for on-going communication with local stakeholders.*

- *How due account of all and any input received during the consultation has been taken. Include details on any updates to the project design or justify why updates are not appropriate.*

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

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

2.3 Environmental Impact

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

2.4 Public Comments

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

2.5 AFOLU-Specific Safeguards

For AFOLU projects, provide details on the following:

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

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

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

3 APPLICATION OF METHODOLOGY

3.1 Title and reference of methodology

The methodology employed to develop the project is VM0015 Methodology for Avoided Unplanned Deforestation, version 1.1.

3.2 Applicability of methodology

The VM0015 methodology has no geographical restrictions and can be used globally. Table 8 describes the applicability conditions of the methodology and its compliance.

Table 8. Applicability conditions of VM0015 methodology.

Applicability condition	Compliance
The baseline activities may include planned or unplanned logging of wood, firewood collection, charcoal production, agricultural and grazing activities, provided that the category is unplanned deforestation as stated in the latest VCS AFOLU requirements.	The baseline activities include unplanned deforestation from activities such as dairy farming and agriculture (see Section 3.5).
Project activities may include one or a combination of the eligible categories defined in the description of the methodology scope.	The scope of the project activity is avoided deforestation without logging, (Scope A of the methodology)
The project area may include different types of forest, including, but not limiting to, growth forests, degraded forests, secondary forests, planted forests, and agroforestry systems that meet the definition of “forest”.	The project area includes six types of forest: • Lower-montane very humid forest (vhf-LM) • Tropical humid forest (hf-T) • Very humid tropical forest (vhf-T) • Pre-montane pluvial forest (pf-PM) • Lower-montane humid forest (hf-LM) • Montane pluvial forest (pf-M)
At the beginning of the project, the project area will only include land that qualifies as “forest”, being such for a minimum 10-year period before the project starting date.	For the quantification of carbon credits, the project area only includes the land classified as stable forest during the period 2005-2016 (see section 3.4).
The project area may include wooded wetlands (such as lowland forests, floodplain forests, mangrove forests) if they do not grow on peat.	The project does not include wetlands.

Applicability condition	Compliance
Peat will be defined as organic soils with at least 65% of organic matter and a minimum thickness of 50 cm. If the project area includes wooded wetlands growing on peat (for example, peat swamp forests), this methodology is not applicable.	

Source: prepared by South Pole (2020).

3.3 Project boundary

The sources, sinks, and reservoirs of GHG, and the spatial and temporal limits relevant for the project are below.

3.3.1 Sources, sinks, and reservoirs of GHG

According to VCS VM0015 methodology, the pools of above-ground and below-ground biomass must be included as a minimum; in the case of the REDD+ project Magnolios de Yarumal, these pools were taken into account to get a more conservative approximation both of the baseline scenario and the project scenario. Table 9 describes the relevant carbon sinks for the baseline scenario and the project considered by VCS VM0015 methodology.

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

Carbon pool	Included?	Justification
Above-ground biomass	Trees: included	The change in carbon stocks for this sink is always significant. Mandatory according to the methodology.
	Non-woody vegetation: excluded	Optional according to the methodology.
Below-ground biomass	Included	Optional according to the methodology.
Dead leaves	Excluded	It is not significant because it represents less than 5% of GHG emissions.

Carbon pool	Included?	Justification
Dead wood	Excluded	It is not significant because it represents less than 5% of GHG emissions.
Soil organic carbon	Excluded	Optional according to the methodology.
Sawn timber products	Excluded	It is not significant because it represents less than 5% of GHG emissions.

Source: prepared by South Pole (2020) based on VM0015 methodology.

Relevant GHG sources for the baseline scenario and the project, considered by VM0015 methodology, are presented below.

Table 10. Sources and GHG included or excluded within the boundaries of the project area.

Source		Gas	Included?	Justification/Explanation
Baseline	Biomass burning	CO ₂	Excluded	Counted as carbon stock change
		CH ₄	Excluded	It is not significant because it represents less than 5% of GHG emissions.
		N ₂ O	Excluded	Considered insignificant according to VCS Program Update of May 24th, 2010
		Other	NA	NA
	Emissions from livestock farming	CO ₂	Excluded	Not a significant source
		CH ₄	Excluded	The omission is conservative
		N ₂ O	Excluded	
		Other	NA	NA
Project s	Biomass burning	CO ₂	Excluded	Counted as carbon stock change
		CH ₄	Excluded	According to the methodology, potential emissions are insignificant.
		N ₂ O	Excluded	Considered insignificant according to VCS Program Update of May 24th, 2010
		Other	NA	NA
		CO ₂	Excluded	Not a significant source

Source		Gas	Included?	Justification/Explanation
	Emissions from livestock farming	CH ₄	Excluded	The activities of the project will not increase the amount of livestock in the project area. On the contrary, the project will tend to avoid the conversion of forests into pastures, it will also promote alternative activities to livestock farming, reducing thus the amount of emissions produced by this activity. In this way, the exclusion of livestock-farming emissions is, therefore, conservative.
		N ₂ O	Excluded	
		Other	NA	NA

Source: prepared by South Pole (2020) based on VM0015 methodology.

3.3.2 Geographical boundaries

The following spatial limits were defined, considering the guidelines of VM0015 methodology.

Project area (PA)

According to VM0015 methodology, the project area (PA) corresponds to the area or areas under the control of the project proponent, where activities will be developed. On the project start date, the area should include only the forest area.

For the REDD+ project, the PA corresponds to the forest cover of 2016, which encompasses an area of 2,676.88 ha and is located between the coordinates 7°13'44,05" N - 6°41'06,50" N and 75°23'13,23" W - 75°19'44,51" W (WGS84 coordinates system). It should be clarified that, for the quantification of carbon credits, only the stable forest during the period 2005-2016 will be taken into account, it corresponds to an area of 2,275,42 hectares. The PA does not include forests in which REDD+ project activities will not be carried out or that have not been included in the baseline assessment; and 100% of the area is under control of the project proponents at the time of validation.

Current land tenure and property are described in Section 1.7.1.

Appendix I enumerates the owners of the holdings that are part of the initiative.

Section 1.5 explains the roles of the proponents.

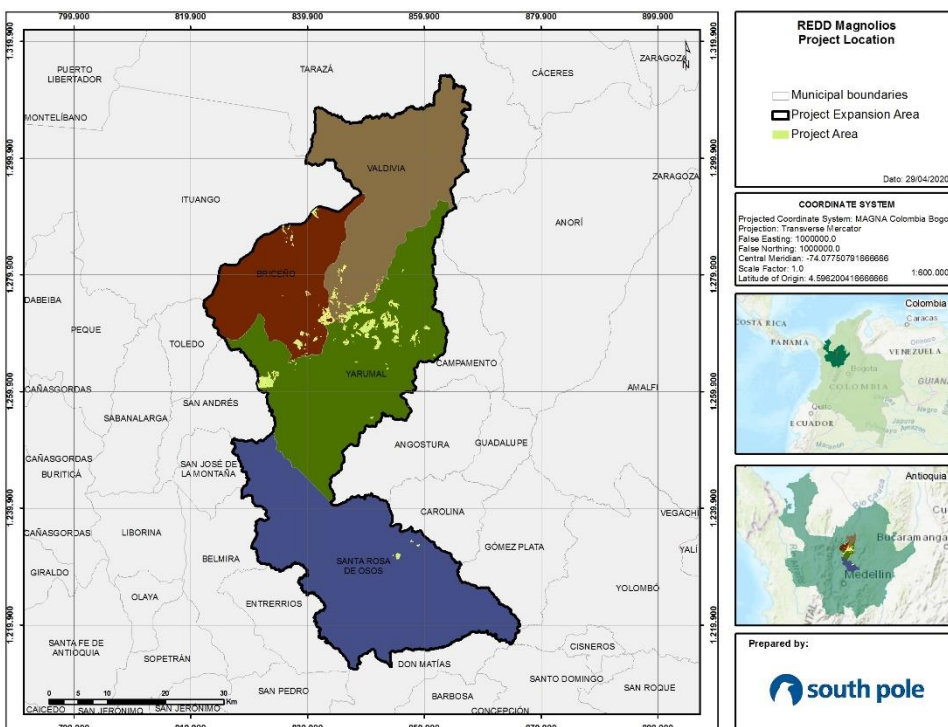


Figure 14. Location map and geographical limits of the project area.

Source: prepared by South Pole (2020).

Reference region (RR)

According to the VM0015 methodology, the reference region (RR) corresponds to the spatial delimitation of the analytic domain from which rates, agents, drivers, and usage patterns, change in land cover and use will be obtained, that will be prospected and monitored.

As the Antioquia Department does not rely on a national or subnational baseline, the reference region was defined according to the criteria of the methodology (Table 11).

Table 11. Delimitation criteria for the reference region according to the VM0015 methodology.

Requirement	Description	Compliance
Area	For projects of less than 100,000 ha, the reference region should be between 20 and 40 times the size of the project area.	The reference region covers an area of 91,903 ha, which is equivalent to 34 times the project area.
	Agent groups: the groups of deforestation agents expected to be found in the project	The deforestation agents present in the project expansion area, reference

Requirement	Description	Compliance
Deforestation drivers and agents	area must exist of have existed and produce deforestation in other parts of the reference region during the historical reference period.	region, and project area (PEA, RR, PA) are below. Stockbreeders: it includes producers mainly devoted to extensive cattle rearing (bovine), those who incorporate it for productive purposes, and those who introduce it to ensure land tenure. Agricultural producer: this category includes farmers and other small-and-medium-scale agricultural producers mainly devoted to the production of maize, bean, coffee, potato, and tree tomato. Along with livestock farming, agriculture is one of the most important deforestation agents in the reference region within the project expansion area.
	Infrastructure drivers: if new or improved infrastructure (such as roads, railroads, bridges, hydroelectric reservoirs, etc.) is expected to be developed close to or within the project area, the reference region should include the stratum where such infrastructure was built in the past and where the impact on forest cover had been similar to that expected from the new or improved infrastructure in the project area.	No infrastructure will be developed or improved in the project area.
	Other spatial drivers expected to exert influence on the project area: there must exist or have existed any spatial deforestation driver considered relevant (for example, resettlement programs, mining, and oil concessions, etc.) elsewhere of the reference region. The historical impact of those drivers must have been like the one expected in the project area.	Deforestation drivers in the PEA, BR and PA are low land productivity, lack of incentives for conservation, land tenure problems, local tradition, and armed conflict.

Requirement	Description	Compliance
Lay of the landscape and ecological conditions (at least 3 conditions must be met)	Types of forest/vegetation: at least 90% of the project area should have the same classes or type of vegetation existing in the RR.	The plant covers present in the project area are present in the reference region (Figure 15).
	Elevation: at least 90% of the project area should be within the range of at least 90% of the RR.	The altitudinal range of the project area is between 172 and 2,875 m above sea level, which is within the range of the reference region (152 – 2,972 m above sea level).
	Slope: the average slope of at least the 90% of the project area should be within the $\pm 10\%$ of the average slope of the 90% from the rest of the reference region.	This criterion was not evaluated because it meets the other three landscape requirements.
	Rainfall: the average annual rainfall in at least 90% of the project area should be within the $\pm 10\%$ of the average annual rainfall of at least the 90% from the rest of the reference region.	The rainfall of the project area is between 2,039 and 3,372 mm per year and its annual average is 2,720 mm per year, it is within the range of the reference region that has an annual average of 2,715 mm per year and a range of 1943-3,627 mm.
Socio-economic and cultural conditions	Legal status of the land: the legal status of the land (private, forest concession, conservation concession, etc.) at the baseline within the project area should exist elsewhere of the reference region. If the legal status of the project area is a unique case, it should be proved that the legal status is not biasing the PA baseline (for example, by showing that access to land by deforestation agents is similar to other areas with a different legal status).	The legal status of the PA holdings is private, and this condition is also general in the PEA and the BR (see section 1.7).
	Land tenure: the land tenure system prevailing in the project area in the reference case is located elsewhere of the reference region.	Land tenure in the project area corresponds to private property owners, which is a general land-tenure condition in the project expansion area and the reference region (see Section 1.7).

Requirement	Description	Compliance
	Land use: the current and projected classes of land use in the project are found elsewhere of the reference region.	The project area and the reference region have the same classes of land use.
	Mandatory regulations and policies: the project area will be ruled by the same policies, laws, and regulations that apply elsewhere in the reference region.	Mandatory policies and regulations apply both to the project area and the project expansion area and the reference region (see Section 1.14).

Source: prepared by South Pole (2020) based on the requirements of the VM0015 methodology.

The reference region marked out for the project covers an area of 91,903 ha and is located in the coordinates 7°13'50,77"N - 6°39'34,52"N and 75°17'44,36"W - 75°36'14,25"W, in the Yarumal, Briceño, Valdivia, and Santa Rosa de Osos municipalities (Figure 15).

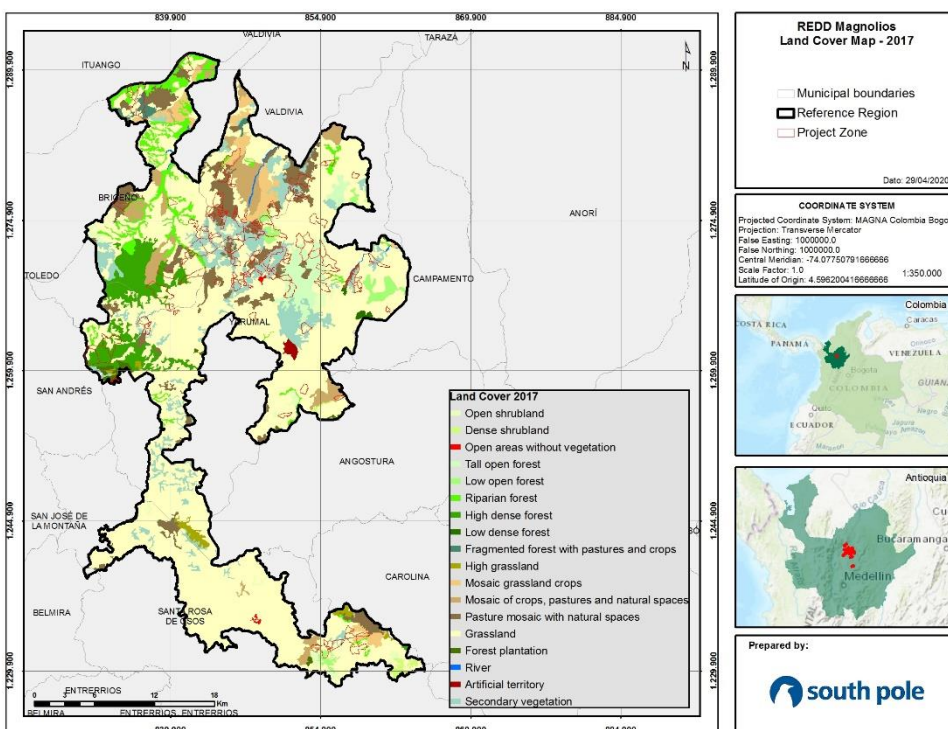


Figure 15. Map of land covers in the reference region.

Source: prepared by South Pole, (2020)

Leakage belt

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

1. To consider activity-shifting leakage, project use a deduction of 15 percent to the gross GHG emission reductions and/or removals.
2. To consider of market leakage and as timber could be a significant commodity driving deforestation and/or degradation in the baseline scenario, the project will apply a deduction of 10 percent to the gross GHG emission reductions and/or removals.

Forest

For the Forest Carbon and Monitoring System (SMBYC) and for this project, forest cover is understood as any portion of land where tree cover predominates with a minimum canopy density of 30%, a minimum canopy height (*in situ*) of 5 m at the time of its identification, and a minimum area of 1,0 ha; excluding tree covers from commercial forest plantations, palm crops, and trees planted for agro-livestock production. This definition is consistent with the criteria defined by the United Nations Framework Convention on Climate Change (UNFCCC) in its Decision 11/COP.7, with the definition adopted by Colombia before the Kyoto Protocol (MAVDT, 2002), as well as with the definition of natural forest cover included in the adaptation for Colombia of the legend from the CORINE Land Cover methodology (CLC Colombia).

3.4 Baseline scenario

The baseline scenario of the project is a set of biophysical, social, economic aspects, and historic conditions. The analysis of deforestation agents and drivers concluded that activities such as livestock farming and small-scale agriculture have contributed to deforestation in the project expansion area. In the case of livestock farming, it is not only carried out as a productive work, but also as a way of securing land tenure, which has historically contributed to make it one of the most lucrative activities in the region. As to small-scale agriculture, it is to decrease unsatisfied basic needs of the population.

According to the additionality analysis, in the absence of the project, the most likely scenario of land use is to continue with deforestation because of the conversion of forests into pastures to develop traditional livestock farming and agricultural activities (see more details in Section 3.5).

Considering the above, the foundations participating in the REDD+ project have worked to reduce deforestation not only inside their reserves but also in the surrounding rural communities. For example, Mauricio Mazo the executive director of Salvamontes Corporation—before registering with the Chamber of Commerce in February 2016—had been taken some actions in the territory, mainly related to the conservation of the magnolia species. Furthermore, although the Guanacas Foundation undertook conservation actions in the territory, initially, as an altruistic effort of its founder Rodrigo Castaño, as of 2007, they began to manage some activities of greater scope as legal entity. These activities considered different initiatives of reforestation and propagation of native species, especially in the Santa Rosa de Osos municipality; however, it was not until February 2016 that the Guanacas Foundation decided to

start activities to control deforestation and hired a team of four forest rangers to ensure the implementation of forest control and surveillance mechanisms, as well as some passive restoration areas in its jurisdiction area; besides of participating in different activities of propagation of native species.

As of December 30, 2016, Magnolios Foundation complements the previous work of Salvamontes Corporation and Guanacas Foundation. And it is the one having the initiative of developing a REDD+ project pooling the efforts of non-profit entities and farmers in the northern region of Antioquia.

Lastly, in the selected baseline scenario and in the absence of mitigation activities, the project includes actions related to the reduction of carbon emissions produced by deforestation in the forests of several municipalities: Santa Rosa de Osos, Yarumal, Briceño, and Valdivia (Antioquia); which are deforested at the existing or historical rates defined by the Forest and Carbon Monitoring System (SMBByC) of Colombia. For the deforestation period 2005-2015, the average rate in the reference region was 1.34% annually, which is equivalent to a deforestation threat for the project area of 30,5 ha of forest per year; quite considerable given the pressure that cattle rearing and small-scale agriculture exert on the region.

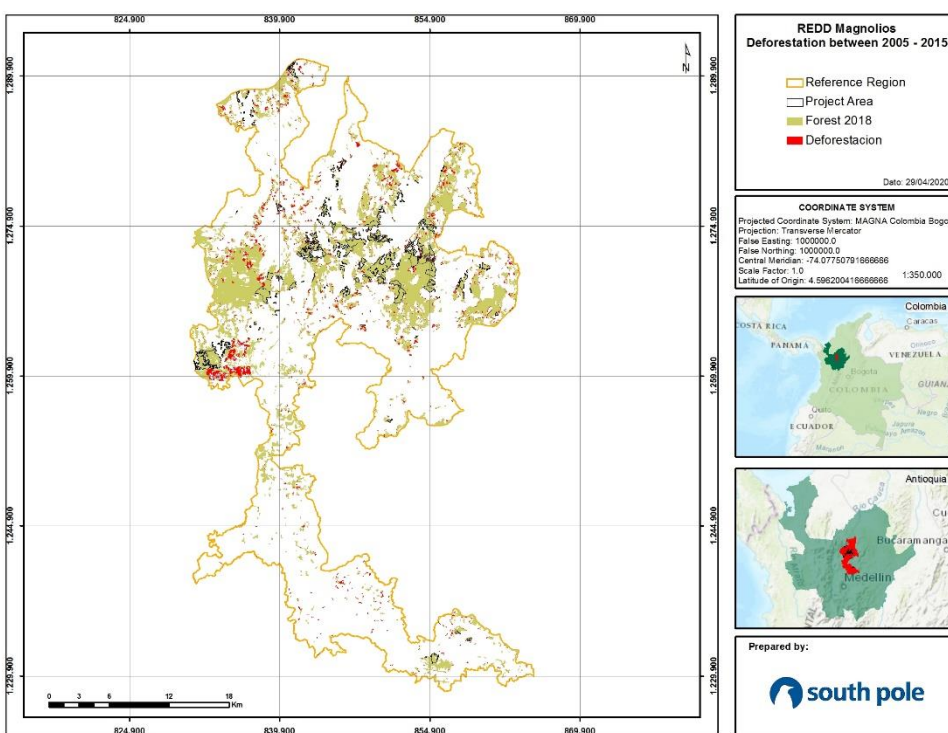


Figure 16. Map of historic deforestation in the reference region, period 2005-2015.

Source: prepared by South Pole (2020).

3.5 Additionality

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

This tool is applicable because it meets the following conditions:

1. The AFOLU activities of the Project do not involve any violation of applicable laws.
2. The baseline was selected under a progressive approach that justifies the decision over the most plausible scenario for project development.

3.5.1 STEP 1. Identification of alternative land-use scenarios for the activity of the AFOLU project.

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

Livestock farming

Over the last 500 years, Colombia has undergone the transformation of its lands into livestock, agricultural, and mining use, as one of the main sources of income and a way of securing land tenure. For the year 2011, about 1.7 million holdings in Colombia were devoted to the agro-livestock activity, and 49% of them were somehow related to livestock farming. (González Arenas et al., 2011).

Livestock farming is one of the main activities carried out in Antioquia, because the northern region of this Department is recognized as the country's dairy basin. In the project expansion area (Yarumal Briceño, Valdivia, and Santa Rosa de Osos municipalities), 77.9% of the cover es related to agro-livestock production that involves permanent and temporary crops, and livestock farming. However, 60.8% corresponds to pastures, and 17.1% are mosaics of pastures, natural spaces and/or crops, showing the representativeness of this land use in the territory.

Livestock farming in the project expansion area is basically extensive livestock farming, with a productivity of 0.79 headage/hectare. The ratio headage-number of holdings ranges from 42 to 43.8 headage per holding, values that did not change dramatically throughout the project's historical reference period (Figure 17). The highest number of specimens per hectare is in the Santa Rosa de Osos municipality, which traditionally have subsisted on livestock farming, especially for milk production.

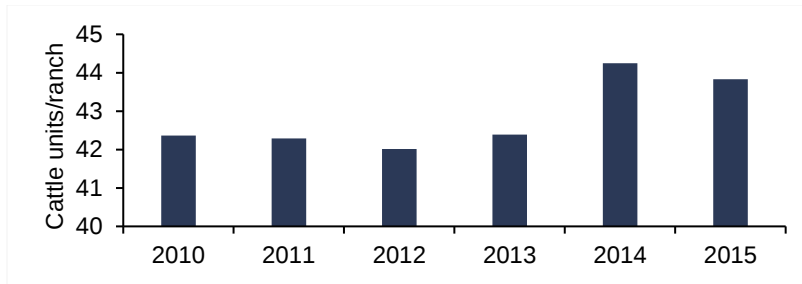


Figure 17. Headage per cattle farm for Antioquia.²⁸

Source: prepared by South Pole based on statistics from Fedegán (2017).

Since 2004, the number of cattle farms has been variable both at national and departmental level. Although the years 2015, 2010 and 2012 concentrated the largest amount of properties devoted to this purpose, the activity has always been present in the territory in at least 38.8%²⁹ of the farms at departmental level. This shows that despite the years when cattle farms decrease, they increase again in subsequent years (Figure 18), indicating that there is no certainty that the presence of livestock farming will reduce in the absence of the carbon project.

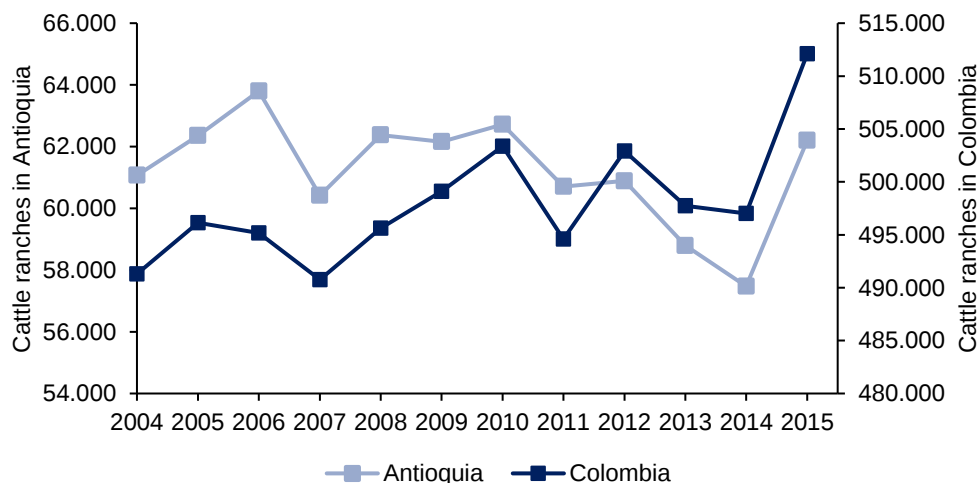


Figure 18. Cattle farms at departmental and regional level.³⁰

Source: prepared by South Pole based on statistics from Fedegán (2017).

²⁸ Fedegán, 2017. Statistics. Available at: <https://www.fedegan.org.co/estadisticas/inventario-ganadero>. Accessed on January 9, 2020.

²⁹ Based on the approximate number of cattle farms in the Antioquia Department in 2013.

³⁰ Fedegán, 2017. Statistics. Available at: <https://www.fedegan.org.co/estadisticas/inventario-ganadero>. Accessed on January 9, 2020.

Agriculture

Agriculture is one of the most important economic activities of the country, over the last 25 years it has contributed on average with 15.4% of total Gross Domestic Product (GDP)³¹ (DPN, 2019). For Antioquia it is one of the main economic activities in its rural territory, and although its origin is unknown, there are historical records acknowledging that indigenous tribes were dedicated to maize production (Gutiérrez, 1939).

The project expansion area holds an agricultural potential of 24.2% of the Department along with other municipalities from the northern and northeastern regions (CORANTIOQUIA, 2006) According to the information on land covers from the Map of Inland, Coastal, and Marine Ecosystems of Colombia (IDEAM, 2017), about 10.4% of the project expansion area³² has (permanent and temporary) crops; which implied that in 2017 this activity was among the main causes of environmental impact and advance of the cropping frontier in the northern region (Contraloría General de la Nación, 2018).

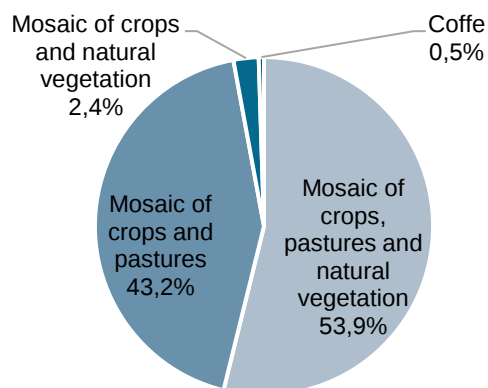


Figure 19. Share of land cover with crops in the project expansion area (Yarumal Briceño, Valdivia, Santa Rosa de Osos municipalities).

Source: prepared by South Pole based on the Map of Inland, Coastal, and Marine Ecosystems of Colombia, IDEAM (2007).

³¹ GDP: Gross Domestic Product. Economic indicator that reflects the monetary value of all final goods and services produced by a country or region in a given period, usually a year. It is employed to measure the wealth of a country. For further information visit: <https://www.banrep.gov.co/es/estadisticas/producto-interno-bruto-pib>

³² IDEAM, 2017. Map of Inland, Coastal and Marine Ecosystems of Colombia.

During the entire period 2014-2019, in the Antioquia Department a total of 80,887 hectares of coffee, cassava, plantain, sugar cane, bean, maize, tomato, tree tomato, and potato were planted (Figure 20); coffee was the crop planted in greater quantity (59.2%), followed by plantain (18.9%). For their part, crops with smaller area were tomato (2.3%) and cassava (0.7%). In general, permanent crops presented the largest established area and the highest production, plantain accounting for 25.3%.

The evaluated crops do not have a defined behavior because they increased and decreased during the period. The largest planted area (129.080,49 ha) was established with coffee during 2015, and the smallest one was cassava in 2014, with 494,89 hectares. During 2015 and 2016 no sugar cane crops were established, and in 2019 tree tomato was not reported (Figure 21).

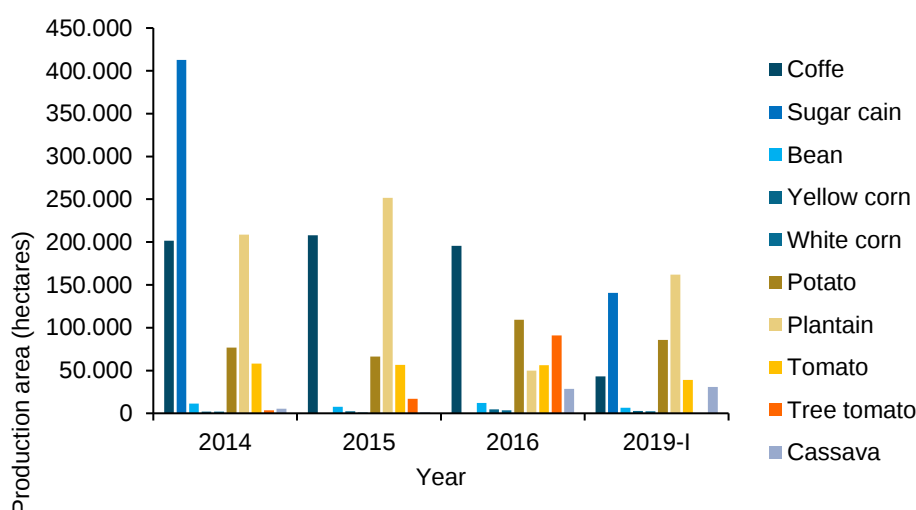


Figure 20. Departmental analysis of the main agricultural commodities in the expansion area of the REDD+ Magnolios project (products with less extension area).³³

Source: prepared by South Pole based on historical records from the National Agro-livestock Survey (ENA).

³³ National Agro-livestock Survey (ENA) period 2014-2019. Available at: <https://www.dane.gov.co/index.php/estadisticas-por-tema/agropecuario/encuesta-nacional-agropecuaria-ena>. Accessed on March 6, 2020.

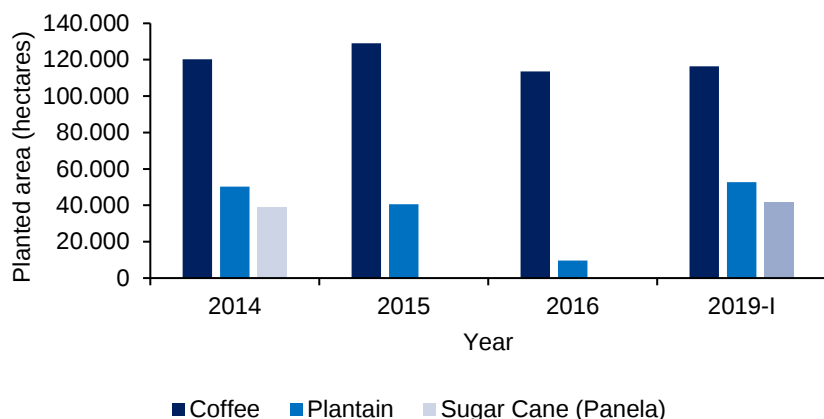


Figure 21. Departmental analysis of the main agricultural commodities in the expansion area of the REDD+ Magnolios project (products with less extension area).³⁴

Source: prepared by South Pole based on historical records from the National Agro-livestock Survey (ENA).

Mining

In Colombia, the historical average investment in the mining sector is 61.7%, well above than that of other countries, given the high potential for the extraction of different mineral resources (charcoal, limestone, sands, gravels, silver, gold, among others) and their strategic location for transportation and marketing; in addition to the need of boosting and serving the international market (there is a created demand). The share of this activity in the GDP went from 1.3% in 1977 to 6.6% in 2004 (DPN, 2019), and between 2005 and 2019 it had an average of 5.7%. Colombia, like Chile and Peru, contributed with foreign investment in mining by 26% during 2016, ranking among the High-Importance³⁵ countries, and holding the eighth position among the countries with the largest share of mining GDP, considering that 33 countries from Latin America and the Caribbean were analyzed. The project expansion region holds some of the areas with highest mining potential, such as the municipalities of Briceño and Valdivia (CORANTIOQUIA, 2006).

For the period 2012-2019, the greatest production of minerals in the Antioquia Department was mainly limestone, gravels, clays, sands, among others, because they are minerals of greater availability; but the extraction of gold and silver was also present. In the expansion region, the departmental production of graves and sands was 5.8% and 4,4%, respectively. In 2013, the largest amount of gravels was extracted, with a total volume of 350.416 m³.

³⁴ National Agro-livestock Survey (ENA) period 2014-2019. Available at: <https://www.dane.gov.co/index.php/estadisticas-por-tema/agropecuario/encuesta-nacional-agropecuaria-ena>. Accessed on March 6, 2020.

³⁵ Highest category taking into account the mining share in the GDP. Those countries in which the mining share in the PIB is over 3.5%.

As mentioned before, the extraction of minerals in Antioquia for the same period was also focused on the production of gold, silver, and talc; the latter being produced in Yarumal (this municipality accounts for about 51% of departmental production). In the period 2012-2019 Antioquia produced 45.6% of the country's gold (182 tons), and 60.3% of silver (61.7 tons), of which the project expansion area contributed 0.83% of gold and 1.25% of silver in the Department (production of 1,50 and 0,77 tons of gold and silver, respectively). In the period 2012-2019, the year with the highest mineral production was 2018 with 588,66 kilograms of gold and 527 kilograms of silver (Figure 22).

Mining has also been identified as one of the main drivers of both planned and unplanned deforestation in the Antioquia Department because of the loss of forest cover needed in the extraction areas. For example, the production of gravels requires total clearance of vegetation cover in the free-end as it is considered open-pit mining.

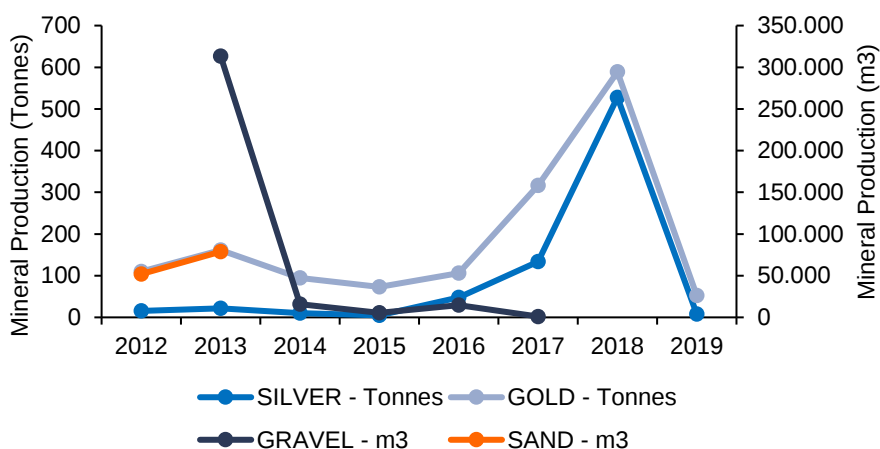


Figure 22. Production of minerals in the expansion area of the REDD+ project Magnolios de Yarumal (Yarumal, Briceño Valdivia, and Santa Rosa de Osos municipalities).³⁶

Source: prepared by South Pole based on data from the Mining/Energy Planning Unit (UPME) (2020).

Until 2005, the expansion area of the REDD+ project Magnolios de Yarumal had the mining-concession contract L685 with dossiers JI8-08071 and JIT-08461 for the exploitation of gold, aluminum, and concentrates, being in force from April 1, 2014 to March 31, 2044. The first dossier is in the jurisdiction of the municipalities of Gómez Plata (7.0%), Carolina del Príncipe (18.2%), and Santa Rosa de Osos (74.8%); the second one, in Carolina (1.9%), and Santa Rosa de Osos (98.1%). These concession contracts cover the area of the Guanacas natural reserve located in the Santa Rosa de Osos municipality,

³⁶ UPME, 2020. Mining/Energy Planning Unit. Available at:

<http://www1.upme.gov.co/simco/Cifras-Sectoriales/Paginas/mineriaconsolidadonacional.aspx>. Accessed on February 10, 2020.

the title JI-0871, however, covers more than 80% of the reserve, so initiatives were taken to avoid the exploitation in the reserve and surrounding areas. As a result, the company Red Eagle Mining of Colombia Limited Colombia Branch decided to waive the mining title on February 24, 2015 on the grounds of lacking social and environmental feasibility to guarantee environmental sustainability. This waiving may lead to planned deforestation because new applications can be submitted before the National Mining Agency (ANM) by being aware of the existence of minerals of high economic value such as gold and platinum. According to the records of the Mining Cadastre, the current legal status of both titles is terminated, in a dissolution process. However, it is possible that in the future new mining exploitations may be produced, increasing the deforestation rate.

Project activity carried out without the project being registered as VCS AFOLU project

The area where the activity of the REDD+ project Magnolios de Yarumal will be developed corresponds to eight life zones where lower montane very humid forest (vhf-LM), pre-montane pluvial forest (pf-PM), and lower-montane pluvial forest (pf-LM) stand out. They are part of the Regional Integrated Management District (RIMD) of Alto de Ventanas (located in the vicinity of the municipalities of Yarumal, Valdivia, and a small part of Briceño) where their main activities focus, in general, on the protection, conservation, and sustainable use of their natural resources (Ecosistemas ESP S.A.S, 2016). Thanks to the initiative of private owners, three natural reserves were created (Salvamontes, Magnolios and Guanacas), that do not have a registry of the National System of Protected Areas (SINAP), but whose mission is the sustainable use of natural resources and the protection of plant species threatened, such as *Magnolia* spp and *Ceroxylon* spp.

The RIMD was registered via Agreement 528 of April 26, 2018 and is located between the municipalities of Yarumal (71.8%), Valdivia (25.1%), and Briceño (3.1%). The definition of this instrument promotes in the territory to combine strategies of preservation, conservation, and sustainable use at regional level to (i) preserve forest relicts in the Alto de Ventanas area because they have a high amount of endemisms, and (ii) to guarantee the survival of flora and fauna species threatened in some degree, according to the Red List of Threatened Species of the International Union for Conservation of Nature (IUCN).³⁷

This protection instrument is delimited looking for ecosystem that represent unaltered natural features or altered ecosystems of special singularity, that have an environmental offer or resources allowed to be used to guarantee their conservation, that present natural or seminatural ecosystems that are not altered in more than 50% of their total surface, among others. Under these premises, it is possible to resort to a declaration that involves preparing a Preliminary Study that will present the fulfilment of the requirements provided for, a delimitation proposal, land management and zoning, the analysis and characterization of land uses, plan of activities, the Environmental Management Plan (EMP) with its related budget, among others, that will make possible to implement the conservation, preservation, and sustainable use strategies.

³⁷ Corantioquia, 2018. Legal technical study for the declaration of protected area in the Alto de Ventanas region.

The Environmental Management Plan requires an approach of the programs and projects to be implemented, the budget and investment plan are limited because the Regional Autonomous Corporations—whose obligations include supervising, monitoring and evaluating the programs that are implemented in the Regional Integrated Management Districts—do not have enough money to deliver them. In many cases, the activities focused on conservation are proposed as initiatives from the owners that decide to establish reserves (Magnolios, Salvamontes, Guanacas) and through them, certain resources are managed that, in addition to being variable, they depend on the will of donors. Given the uncertainty for the lack of financial resources and formalization of the activities to be implemented, the deforestation risk remains latent, since land-use scenarios such as agriculture, mining, and livestock farming predominate; the latter being the most likely because tradition and the need to satisfy the market prevail.

As the declaration of Regional Integrated Management District is recent (2018), the proposal of the RIDM Environmental Management Plan is awaited in order to identify and quantify budget restrictions for the activities of protection, conservation of ecosystems and, even, restoration and rehabilitation of degraded areas. Nevertheless, they face several social and environmental problems so that the proposed plans can be fully achieved (Ecosistemas ESP S.A.S, 2016).:

Socio-environmental problems

- The construction related to economic interests for accessing forest uplands to take advantage of the natural resources.
- Burning firewood for cooking food in the homes, using wood extracted from the forest.
- Lack of environmental education and training programs targeted to communities in the villages.
- Proliferation of illicit crops
- Illegal settlements on railroad tracks, due to displacement of families.
- Lack of sanitary landfills for solid waste in Briceño and Valdivia, which makes that they often end in water currents, creating environmental and public health problems.
- Dumping of sewage into the main creeks and tributaries that originate in Alto de Ventanas, and other hills of high ecological importance.
- Extreme poverty situation of many families, related to overcrowding problems, poor quality of life, and poor wellbeing of families.
- Land tenure conflicts on the edges of the road to the Caribbean coast.
- Scarce cohesion and organization of Community Action Boards (JAC) because the tasks and responsibilities of the representatives making them up, and the specific tasks that should be performed by the committees are unknown.

Institutional problems

- Little economic capacity to expand the presence and institutional support.
- Lack of electricity coverage and other basic services in many areas of the region.

- Reduced support with training and guidance programs for the community.
- Lack of productive projects, community assistance, or strengthening of local initiatives.
- Public order problems that prevent access to certain areas of the Regional Integrated Management District.

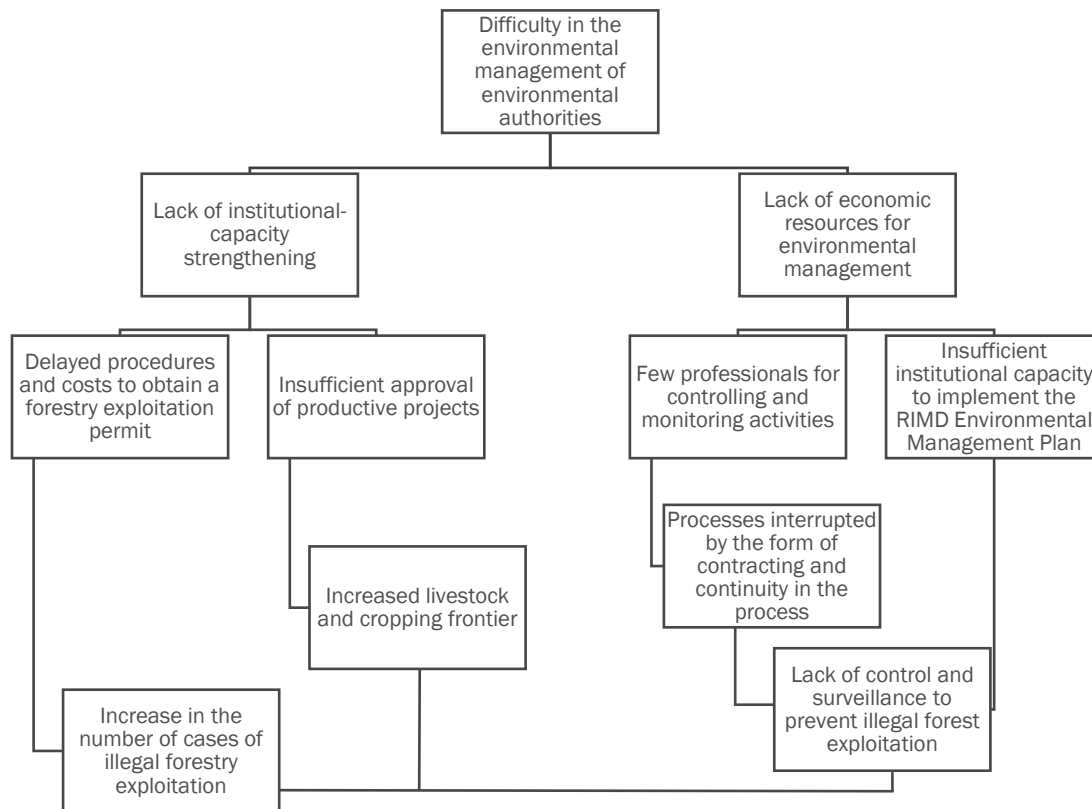


Figure 23. Problems Corantioquia faces when proposing and implementing the Environmental Management Plan of the Regional Integrated Management District Alto de Ventanas.

Source: prepared by South Pole based on (INVEMAR, 2015).

The project activities related to the reduction of deforestation of forests in the northern of the Antioquia Department are articulated with those allowed in the Regional Integrated Management Districts, and they focus on the protection, conservation, and sustainable use of forests.

Result from Sub-step 1a. Identification of alternative land-use scenarios credible for the proposed activity of the VCS AFOLU project.

The alternative land-use scenarios are:

- Livestock farming
- Agriculture (subsistence and commercial)

- Mining
- Project activity carried out without the project being registered as VCS AFOLU project.

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

All the land-use scenarios resulting from Sub-step 1a apply to the project area, they are ruled by Colombian mandatory laws and regulations at national, regional, and local level. The evidence of this assertion is based on the promotion of these land uses in the country. Colombia has a Ministry of Agriculture and Rural Development (MADR) whose powers include making policies to develop the Agro-livestock, Fisheries, and Rural Development Sector, to guide and direct the approach of plans, programs, and projects within the areas themselves.³⁸

Although it is unknown the starting date of agriculture in Antioquia, evidence was found of maize sown land of the indigenous when they were mainly devoted to hunt and mining. In 1809, the maize, sugar cane, plantain, and cacao crops were praised (Gutiérrez, 1939) and in 2015, they were mainly regulated by Decree 1071. Furthermore, livestock farming is considered one of the major branches of the economic activity based on the International Standard Industrial Classification of all Economic Activities – Fourth Review (CIIU), stating the fees that should be paid for water use, in addition, stockbreeders are required to maintain the vegetation cover, preventing the formation of cattle trails and other practices that produce erosion or degradation of soils, as provided for in Decree 1076 of 2015;³⁹ in December 1993, the National Livestock Fund is created through the Law 0089; and, in 2015, together with agriculture, both activities are under the responsibility of the Ministry of Agriculture and Rural Development (Table 12). For its part, mining is regulated by the Ministry of Mining and Energy which is responsible for making and adopting —on a timely basis— policies, plans, programs, projects, rules and regulations for the mining and energy sector, according to the directives of the national government. In addition, it is regulated by Law 685 of 2001, and for ore reduction and marketing of minerals it is required the Single Registry of Mineral Marketers (RUCOM). The development of works and activities related to mining-exploitation projects requires an Environmental Impact Assessment (EIA) that must be submitted before the Ministry of Environment and Rural Development or the Regional Autonomous Corporations.

Although the mining activity is more regulated than the agro-livestock one, and despite all the measures and even the effort of the Department to formalize it, during 2017, 57% of the activity was carried out informally. In the northern region of the Antioquia Department, 38.6% of the exploitations are engaged in informal mining (Contraloría General de la Nación, 2018).

38 MADR, 2020. Ministry of Agriculture and Rural Development. Available at: <https://www.minagricultura.gov.co/ministerio/quienes-somos/Paginas/Funciones.aspx>. Accessed on February 7, 2020.

39 Presidency of the Republic, 2015. Decree 1076 of 2015. Available at: <http://www.suin-juriscol.gov.co/viewDocument.asp?ruta=Decretos/30019960>. Accessed on February 7, 2020.

As to the Regional Integrated Management Districts (RIMD), among which is the Alto de Ventanas, according to subparagraph d. of Article 2.2.2.1.2.1 from Decree 1076 of 2015, the RIMD are part of the categories of protected areas of the SINAP. In this geographical spaces, although their structure has been modified, they are made available to human population to be used for sustainable use, preservation, restoration, knowledge, and enjoyment;⁴⁰ and they are endorsed, among others, by Decree Law 2811 of 1974, Law 99 of 1993, and Decree Law 216 of 2003 (Table 12).

The list of instruments demonstrating the legality of the credible land-use scenarios is below.

Table 12. Laws, decrees, and resolutions proving the legality of land use.

Activity	Regulation	Note	Specific articles
Livestock farming	Law No. 0089 of December 10, 1993, and Decree No. 696 of March 30, 1994	“By which the Quota of Livestock and Dairy Development is created, and the National Livestock Fund is created.”	Article 1. The parafiscal contribution to promote the livestock and dairy sector will abide by the conditions provided for in this Law, paragraph 12 of Article 150 of the National Constitution.
	Resolution No. 3814 of September 27, 1995.	“By which approval is granted to perform inspection visits to accounting books and other accounting supports of those who have the legal obligation of collecting and paying the Quota of Livestock and Dairy Development.”	
	Law No. 395 of August 2, 1997, and Decree No. 3044 of 1997	“By which the eradication of foot-mouth disease throughout the Colombian territory is declared of national social interest and as a health priority, and other measures aimed to this end are issued.”	
	Decree No. 1187 of June 30, 1999	“By which the Stabilization Fund to Develop the Export of Meat, Milk and Dairy Products is organized.”	
	Decree No. 2255 of 2007	“By which Decree 696 of 1994 that regulates Law 89 of 1993 is modified.” Related to livestock development and the National Livestock Fund.	
Agriculture	Law 1876 of 2017	“Through which the National System of Agro-livestock Innovation is created, and other provisions are issued.”	Article 1. The Areas of Interest for Social and Economic Rural Development (ZIDRES) are created as territories suitable for agriculture, livestock, forestry, and fish farming activities identified by the Unit of Rural Agro-livestock Planning (UPRA).

40 Presidency of the Republic, 2015. Decree 1076 of 2015. Available at: <http://www.suin-juriscal.gov.co/viewDocument.asp?ruta=Decretos/30019960>. Accessed on February 7, 2020.

Activity	Regulation	Note	Specific articles
	Law 1776, of January 29, 2016	By which the Areas of Interest for Economic and Social Rural Development (ZIDRES) are created and developed.”	
	Law 1731 of 2014	“By which financing measures are adopted to reactivate the agro-livestock, fisheries, fish-farming, forestry, and agro-industrial sectors.”	
	Law 811 of 2003	By which Law 101 of 1993 is modified, the organizations of chains in the agro-livestock, fisheries, forestry, and fish-farming sectors are created, as well as the Agricultural Processing Companies (SAT), and other provisions are issued.	
	Law 607 of 2000	By which the creation, functioning and operation of the Municipal Units of Agro-livestock Technical Assistance (UMATA) are modified; direct rural technical assistance is regulated.	
	Law 160 of 1994	“By which the National System of Agrarian Reform and Peasant Rural Development is created, a subsidy for the acquisition of lands is established, the Colombian Institute of Agrarian Reform is reformed, and other provisions are issued.”	
	Resolution No. 000051 of 2020	“By which the cover and crops included in the Agri-livestock Risk Management Plan for the 2020 term are established, and other provisions are issued.”	
	Resolution No. 000006 of 2020	“By which the National Plan to Promote the Marketing of Production from the Peasant, Family, and Community Economy is adopted, drafted as provided for in Point 1.3.3.4 of the Final Agreement.”	
Agriculture and livestock farming	Decree 1071 of 2015	“By which the Single Regulatory Decree of the Administrative, Agro-livestock, Fisheries, and Rural Development Sector is issued.”	Article 1.1.1.1. The Ministry of Agriculture and Rural Development is in charge of guiding, controlling, and evaluating the performance of duties of their attached and associated entities, without prejudice to the decision-making powers granted to them, such as their participation in policy-making, in preparing sectoral programs, and in delivering them.
			Article 1.1.1.2. The Agro-livestock, Fisheries, and Rural Development Sector, in line with current regulations, is integrated by the Ministry of Agriculture and Rural Development and its attached and associated entities.
			Article 1.2.1.2. Entities attached to the Ministry of Agriculture and Rural Development without legal status:

Activity	Regulation	Note	Specific articles
			1. Unit of Rural Agro-livestock Planning – UPRA.
			Article 1.2.2.1. Entities attached to the Ministry of Agriculture and Rural Development without legal status: 2. Financing Fund for the Agro-livestock Sector – FINAGRO. 5. The Livestock Funds. 6. Supply Corporations in which the Nation or decentralized entities of the sector, national ones, own shares or have paid-in capital. Article 1.2.2.1. Entities attached to the Ministry of Agriculture and Rural Development without legal status:
	Law No. 101 of December 23, 1993	“General Law of Agro-livestock and Fisheries Development.”	
Mining	Resolution 40076 of 2020	“By which the methodology of distribution and partial allocation of operating resources is defined, to encourage the comprehensive use and exploitation of non-renewable natural resources in territorial entities for the 2019-2020 biennium, and the related allocation is made.”	
	Decree 2253 of 2017	“By which Article 365 from Law 1819 of 2016 is regulated and the Single Decree for the Administrative Sector of Mines and Energy 1073 of 2015, is added, in relation to the incentive for investments in hydrocarbons and mining.”	
	Decree 1666 of 2016	“By which the Single Regulatory Decree for the Administrative Sector of Mines and Energy, 1073 of 2015, is added, related to mining classification.”	

Activity	Regulation	Note	Specific articles
	Law 685 of 2001 and Law 1382 of 2010	“By which the Mining Code is issued, and other provisions are issued.”	Article 1.To promote technical exploration and exploitation of state and private property mining resources, encouraging these activities to satisfy the requirements of their internal and external demand, and that they be harnessed in line with the principles and rules of rational exploitation of non-renewable natural and environmental resources, according to a comprehensive concept of sustainable development and economic and social strengthening of the country.
RIMD (Regional Integrated Management District)	Decree Law 2811 of 1974	“It issues the National Code of Renewable Natural Resources and Protection of the Environment, which includes in Article 310 the creation of the figure Regional Districts of Integrated Management of Renewable Natural Resources to promote and legislate the national use.”	
	Law 99 of 1993	“By which the Ministry of Environment is created, the Public Sector responsible for the management and conservation of the environment and renewable natural resources is rearranged, the National Environmental System (SINA) is organized, and other provisions are issued.”	Article 4. It establishes the National Environmental System (SINA), comprising the Ministry of the Environment, the Regional Autonomous Corporations, departments, districts, municipalities, research institutes, and civil society.
			Article 31. It determines that the Regional Autonomous Corporations should abide by the policies and guidelines established by the Ministry of Environment and Sustainable Development.
	Decree Law 216 of 2003, related to the SINAP	“By which the goals, organizational structure of the Ministry of Environment, Housing and Territorial Development is determined, and other provisions are issued.”	Article 4. The conservation and management of protected areas is a joint responsibility of the National Government, the Regional Autonomous Corporations, the territorial entities, and other actors involved in the management of protected areas.
			Article 14. The categories of protected areas include the Regional Integrated Management Districts, that are in charge of the Regional Autonomous Corporations.

Activity	Regulation	Note	Specific articles
			Articles 34 and 35. They specify the different management categories that can be assigned to the areas, and they determine the activities allowed in each one of them.
All	Decree 1076 of 2015	It is a compilation of the norms issued by the National Government headed by the President of the Republic. This initiative attempts to collect in a single piece of legislation all the current regulatory decrees issued as of today, which develop environmental laws.	

Source: prepared by South Pole (2020) based on the laws, decrees, and resolutions set forth.

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

The scenarios previously presented abide by the current legislation.

Sub-step 1c. Selection of the baseline scenario

The traditional livestock farming and agricultural activities is the baseline scenario selected; they are described in Section 3.4.

According to the analysis previously performed and considering the analysis of agents and drivers of deforestation, the activities in the expansion area of the REDD+ project Magnolios de Yarumal, which will most likely be carried out in a scenario without a project, are livestock farming and agriculture (subsistence and commercial), because they have traditionally been practiced in the area for more than 80 years.⁴¹

By tradition, and despite the barrier this land uses may represent to implement the project (lack of access to credits, technological barriers, difficulties in transportation and high production costs, ecological restrictions, armed conflict, lack of association capacity, etc.), the inhabitants of rural areas prefer to continue with these practices instead of implementing a new one. On one side, livestock farming involves securing land tenure, less investment in resources and workforce, besides of a market with an attractive national consumption of milk and meat that has an annual average of 136.6 liters and 18.8 kg/year per

41 Official creation date of the Fondo Ganadero de Antioquia S.A. However, a bovine inventory over 30,000 headage was calculated in the Valle de Aburrá (Antioquia) for 1976. Source: Sourdis Nájera, Adelaida. Ganadería: La industria que construyó al país. Available at: <https://www.banrepcultural.org/biblioteca-virtual/credencial-historia/numero-266/ganaderia-la-industria-que-construyo-al-pais>. Accessed on March 6, 2020.

inhabitant, respectively. On the other, agriculture is based on ancestral techniques that create stronger roots and predisposition to change from traditional systems.

In this way, thinking of modifying traditional systems for the sake of conservation practices is a difficult decision for rural inhabitants to be made and even considered. Coupled with this, on account of the low fertility of soils, they prefer to deforest new areas to offset production costs and increase their profits; and example of this is that, in the project expansion area, there is a 1.4% of forest plantations versus 60.8% of pastures.

At regional level and in line with what is mentioned by Toro (2011), it is necessary to increase the production of milk and meat to satisfy the market, hoping to generate a positive impact on Antioquian livestock farming—a goal embodied in the Development Plan “Antioquia para todos, manos a la obra” [Antioquia for all, all hands on deck]— which will promote an increase in livestock production areas if production processes are not improved.

In addition to this, Visión Colombia’s fundamental principles considered that by 2019 (DPN, 2019) Colombian agriculture would have increased its production competitively and its ability to access international markets, offering better quality of life to rural population and the country. The proposed goals included to develop the productive potential and diversify exports, promoting the effective development of Colombian agriculture. As a result, the activities in the rural area will focus on strengthening agro-livestock activities rather than on protecting and preserving the forests.

3.5.2 STEP 2: Investment analysis

Not applicable. Barriers analysis was applied.

3.5.3 STEP 3: Barrier analysis

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

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

Investment barriers

The Guanacas, Salvamontes, and Magnolios nature reserves were established mainly by nature-lovers owners interested in preserving the forests of the region rather than in generating financial resources, because the protection and conservations activities yield environmental benefits and rarely economic gains. For example, to register a nature reserve as a civil-society nature reserve (SCNR) before the National System of Protected Areas (SINAP) requires financial resources and a long-term investment, and that is why people often give up. In addition to this, getting the registry does not guarantee access to financial support from the SINAP, which is not an attractive perspective for private owners, as it is the case of the Guanacas Foundation that after a two-year process decided to waive the registration process as SCNR in order to prioritize other type of activities that offer long-term economic stability.

Because of this, the foundations depend on donations or on the management of resources from the activities they can perform according to their legal status. That is why, in most cases, the conservation activities are subject to the management of financial and operational resources that can be processed through the environmental authority, which in this case would be the Regional Autonomous Corporation (CAR), Corantioquia.⁴² However, such access is difficult, for example, only Guanacas —of the three foundations— has been able to get this type of resources through a contract executed with Corantioquia in 2013 to develop and legalize the activities allowed in Zona de Páramo of the Belmira RIMD.

In 2019, Corantioquia allocated 3.1% of the general total budget for the Comprehensive Management of Protected Areas for the conservation of biodiversity, 58% of which was allocated to obligations, it implies that little budget⁴³ can be invested to manage protected areas. Corantioquia has jurisdiction over 80 municipalities grouped into 7 territories where it performs formal accompaniment. On account of its legal capacity, it is responsible —within its jurisdiction— for administering the environment and the renewable natural resources and promoting their sustainable development, according to the legal provisions and policies of the Ministry of Environment, Housing and Territorial Development,⁴⁴ which makes that the allocation of financial resources depend on the obligations and the immediate needs.

Due to the above, more than 30% of the final budget between 2014 and 2019 was mainly allocated to regulate the use of Renewable Natural Resources (RNR), the improvement of urban and rural water sanitation, and to strengthen the operating capacity for a comprehensive administration of the natural endowment, leaving a small percentage for the comprehensive management of protected areas (4.4%). Considering the period 2014-2019, the highest budget was obtained in 2015 whereas the lowest one in 2018 (Figure 24).

42 Corantioquia. Regional Autonomous Corporation of the Center of Antioquia.

43 On average between 2014-2019, less than 42% (1.345.619.199 COP) of the final budget for the comprehensive management of protected areas could be allocated for this purpose, because the obligations of Corantioquia totaled more than 58%.

44 Corantioquia. Regional Autonomous Corporation of the Center of Antioquia. Compilation of statutes. Available at: [http://www.corantioquia.gov.co/SiteAssets/Lists/Administrar%20Contenidos/AllItems/Estatutos%20\(Compilacion\).pdf](http://www.corantioquia.gov.co/SiteAssets/Lists/Administrar%20Contenidos/AllItems/Estatutos%20(Compilacion).pdf). Accessed on March 4, 2020.

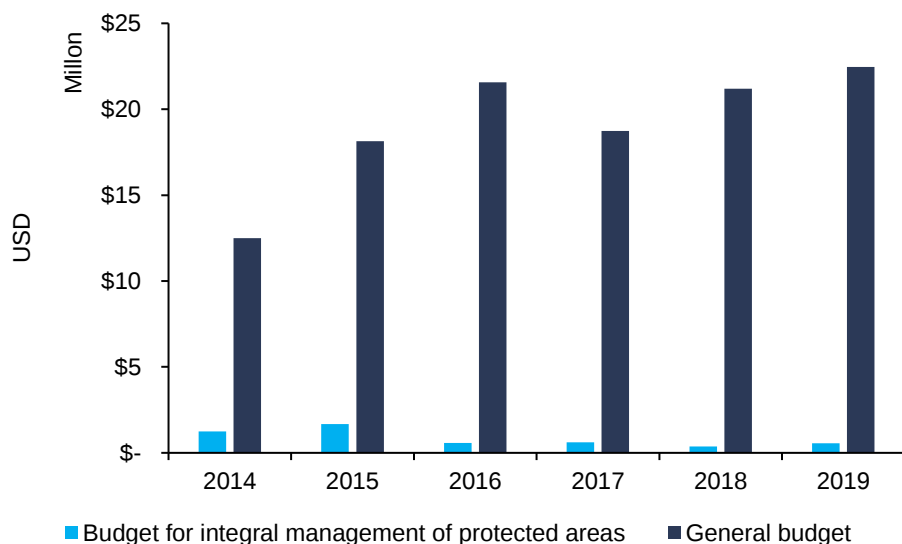


Figure 24. Execution of investment expenses of Corantioquia.⁴⁵

Source: prepared by South Pole (2020) based on information about the budget execution of Corantioquia 2014-2019.

As to Foundations, obtaining resources for the maintenance of nature reserves is limited to the donations and revenues from the execution of projects, being always below optimal operating costs (Figure 25). To prevent generating greater losses, they must resort to hiring less staff than the really needed and reduce the budget for the implementation of conservation activities. For example, they hire less forest rangers⁴⁶ because resources are not sufficient, generating that a large part of the land cannot be permanently supervised, as a result people not related to the project intrude because they see the benefit of extracting flora and/or fauna, leading to a loss of biodiversity and a reduction of protected forests. In addition to this, in many cases, ecological restoration measures cannot be implemented because of the costs involved in hiring and handling staff.

It can be inferred, from Figure 25, that the revenues from the private reserves proposing the Magnolios project (from donations and management of resources through projects) are less than the expenses for staff, debts, maintenance of facilities, among others costs. There is no money available for unforeseen expenses, and little budget is allocated for sowing activities. Furthermore, earmarked costs amount 80.2%, below the optimum for operation. During 2019 and 2020, only the Guanacas Foundation —thanks

⁴⁵ Corantioquia 2014-2019. Budget execution. Available at: <http://www.corantioquia.gov.co/Paginas/VerContenido.aspx?List=MenuInferior&item=210>. Accessed on February 10, 2020.

⁴⁶ The Magnolios Foundation requires at least four forest rangers for the reserve; however, they have only one person who is also shared with Salvamontes Corporation, and he performs various tasks because they do not have budget to hire more labor. On the other hand, the Guanacas Foundation had to reduce its team of forest rangers, from four persons in 2016, to three since 2019.

to a donation from an international conservation charity— managed to acquire a new property of 131.7 ha highly threatened to be deforested for livestock activities and that additionally has a strategic location to establish ecological connectivity in the region. Moreover, the three foundations have a current deficit over USD 62 000 for debts with banks and land taxes of several years that they owe on the properties. The foregoing proves that the lack of financial resources for the proper operation of the reserves is a barrier for the success of the conservation projects in areas where livestock and agriculture economy predominates, as well as extraction activities such as mining.

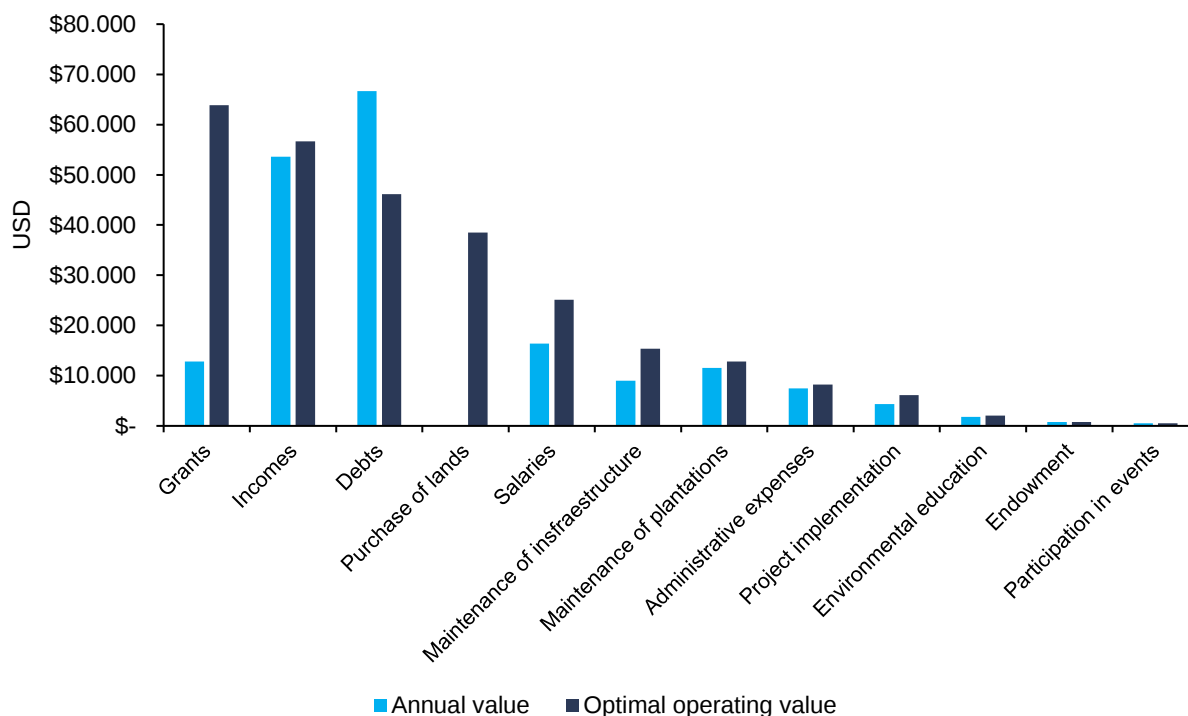


Figure 25. Operating costs of the reserves in the expansion area of the REDD+ project Magnolios de Yarumal for the year 2019.

Source: prepared by South Pole (2020) based on information supplied by the Magnolios and Guanacas reserves.

Institutional barriers

Private nature reserves can be part of the National System of Protected Areas (SINAP), however, on account of the difficulties in the registration process as a private protected area, many owners waive such process, as it was the case of the Guanacas Foundation that spent two years in procedures and preferred to waive the registration because it was taking a lot of time and carrying out formalities that did not guarantee resources would be obtained for their maintenance. Furthermore, the obligations of

Civil Society Nature Reserves include that the activities that can be performed are restricted,⁴⁷ limiting frequently the access to financial resources (Figure 25); as it is the case of the reserves of the project that prefer to manage their resources by other means that guarantee their financial sustainability, so they be able to continue performing actions aimed at the conservation of forests and reduce deforestation. To date, there are 796 Civil Society Nature Reserves (RNSC) in the country, totaling 160,399 hectares. Nevertheless, accessing the registry implies allocating budget to prepare the relevant reports and the approach of an Environmental Management Plan (EMP), which requires financial resources to collect information on the physical-biotic, sociocultural, legal, economic characteristics of the properties which, certainly, most of the owners do not have. After proposing and starting to execute the EMP, despite the fact that Decree 1076 of 2015 states that it is possible to access public incentives, the red tape and lack of clarity of the owners of the reserves versus the procedures make the registration an impossible task.

The investment operation plan of Corantioquia does not have a defined budget for the support or management of resources for regional nature reserves such as Guanacas, Salvamontes and Magnolios but rather for the management and administration of protected areas. The largest amount of capital is allocated for the control and monitoring of activities that require environmental license, protection of natural resources, education programs and risk management, but not for the promotion of private conservation sites. This situation entails that many times it is necessary to resort to the community pursuing to propose socio-economic alternatives related to the protection of biodiversity to guarantee the preservation of forests and, with them, the species threatened.

Because of their legal status, foundations and corporations have restrictions to participate in tenders or execute contracts. For example, the Magnolios Foundation can only carry out activities related to the research, study, and implementation of various aspects relevant to biodiversity and climatic change, REDD+, payments for environmental services, and the like. Salvamontes Corporation cannot perform or execute accts and contracts exceeding current one hundred monthly legal minimum wages or donations amounting the same. Although the Guanacas Foundation has a broader scope of action, it can carry out activities related to biodiversity either for protection and/or implementation. Due to these limitations, the possibility of managing resources is restricted by the time and the access to contracts. Besides, in some cases, there is a lack of administrative and operational personnel (professionals in specific fields, administrators, accountants, etc.) to increase the management capacity. Despite the responsibility of the Regional Autonomous Corporations to support this type of initiatives that enable the protection of forests and other natural resources, additional support is needed to train personnel on conservation issues.

Barriers related to local tradition

As mentioned in Sub-step 1b., livestock farming and agriculture in the region have a fairly noticeable cultural component, as a result, rural people who have forests in their properties would rather continue with the activity they have practiced ancestrally because it would be better to expand the agro-livestock

⁴⁷ Permanent constructions, single-crop farming, excessive use of agrochemicals, facilities without appropriate conditions, etc.

frontier (greater purchasing power) than using alternative techniques, such as conservation or implement strategies that improve the productivity of their land. The profitability of conservation activities is basically nil even if it is compared to the low income provided by small-scale livestock or subsistence agriculture activities.

Given the education level of rural people (in 2017, only 49.1% enrolled in upper secondary) it is evident that most adults do not get access to higher education and, consequently, they do not have professional or technological level jobs; as a subsistence alternative, they resort to the use of land because they are knowledgeable about this activity that has been practiced since the time of their ancestors.

Besides, the strengthening of the agro-livestock productivity at regional and local levels to satisfy the market makes that the expansion region continues to be an important source of revenues for the Department. Having more than 60% of the territory covered with pastures, the population in the expansion area would prefer their traditional activities because they have greater prospects in the local market (DPN, 2019) than implementing a conservation project.

Barriers posed by social conditions and land-use practices

Up to now, there have been evidence of illicit crops for several years towards the area of Briceño, Valdivia, and even Yarumal (Figure 26). The expansion area went from 122 hectares in 2012 to 2,987 in 2018, implying that social and economic conditions of the region may have a different behavior than other regions without this problem.

Figure 26 shows the dynamics of temporary and abandoned lots in the last three years (until 2012), mainly towards the Valdivia and Briceño area. However, from 2012 on, crops have considerably increased in the project expansion area.

It is known that in places producing coca the economic offer to work in illicit crops is better compared to legal activities like agriculture, because labor rate is higher as it is a risky activity. In addition to this, illicit crops entail other type of problems such as violence and clashes between armed groups fighting over for the territory. Although in 2016, a Peace Agreement was signed in La Habana with the intention of discouraging production of illicit crops⁴⁸ and promoting the eradication of existing ones, in municipalities such as Valdivia, a significant increase in these crops has been observed.

48 National Government and FARC-EP. Agreement for the termination of conflict and the construction of a stable and lasting peace. Available at: <http://www.altocomisionadoparalapaz.gov.co/procesos-y-conversaciones/Documentos%20compartidos/24-11-2016NuevoAcuerdoFinal.pdf>. Accessed on February 7, 2020.

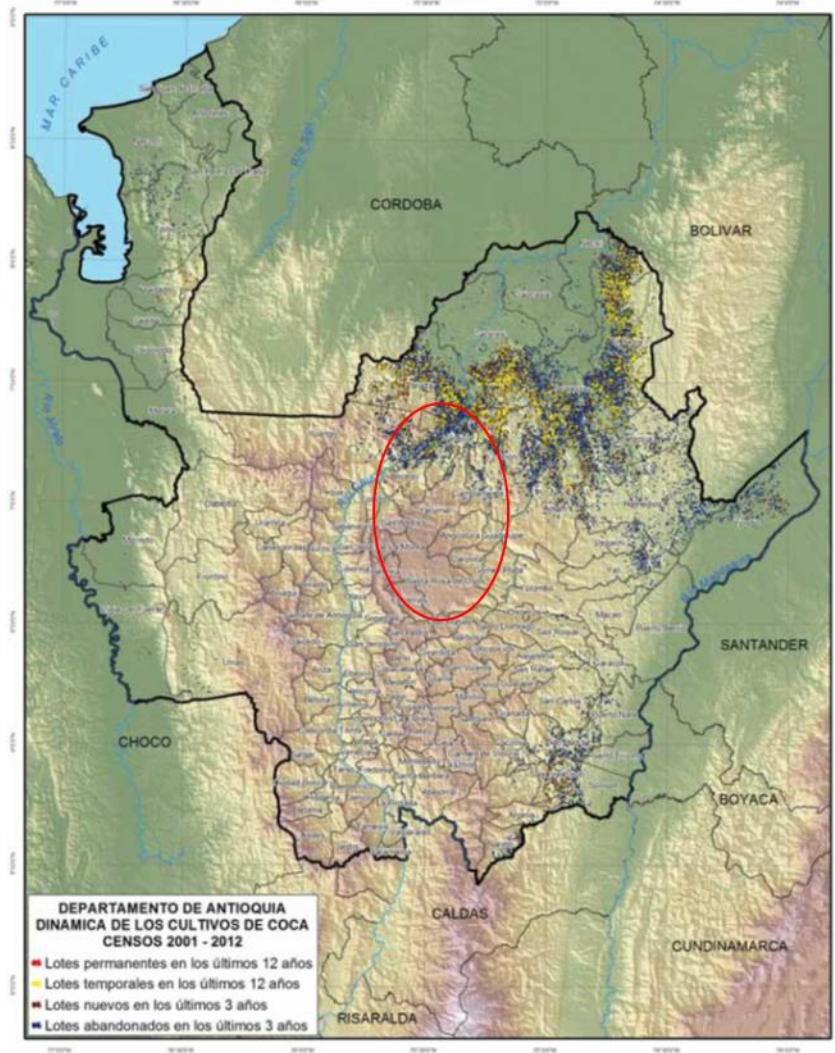


Figure 26. Dynamics of coca crops in the expansion area of the REDD+ project Magnolios de Yarumal for the period 2001-2012.

Source: UNODC (2014).

Barriers related to land tenure

The informality of land tenure (45% in Antioquia) and its breaking up makes that owners consider the need of establishing production initiatives focused on self-consumption or the over-exploitation of resources to guarantee their income. All the owners integrating the REDD+ initiative have a legal document proving land tenure. However, owners and occupants were ruled out from the start. Subsequently, of the 216 properties that wanted to participate in the initiative, 38.9% were rejected due to additional land-tenure problems or because the owners desisted. In the first case, incomplete hereditary succession procedures, disposal of property, restitution of lands and fractional ownership (multiple owners), that is why not all could participate in the process. In the second, owners did not want

to continue. Finally, the project area registers 132 properties, 0.8% have an area of less than 2.5 hectares; 14.4% between 2.5 and 10 hectares; 46.2% between 10 and 50 hectares; 20.5% between 50 and 100 hectares, and 18.2% over 100 hectares; it shows that more than 61% of the owners do not have more than 50 hectares of land.

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

Among the alternative land-use scenarios, livestock and agriculture are activities that by tradition and despite the barriers they may pose for their implementation (lack of access to credits, technological barriers, difficulties in transportation and high production costs, ecological restrictions, armed conflict, lack of association capacity, etc.), the inhabitants of rural areas prefer to continue with these practices instead of implementing a new one. In this way, they are selected as the determined baseline scenario. Only livestock⁴⁹ will be used to quantify the reduction in emissions, because this scenario is associated with a higher content of carbon in the above-ground biomass than agriculture.⁵⁰ Thus, it is guaranteed that *ex ante* estimates are conservative according to the guidelines of the VM00015 methodology. Table 13 shows the list of land-use scenarios and their respective limitations or barriers that were identified.

Table 13. Alternative land uses and identified barriers.

Alternative land use	Type of barrier
Livestock farming	It is the main land use in the territory, firstly in the rural area under environmental conditions that generate poor productivity; and the lack of economic incentives facilitating that the activity expands to other lands to increase profitability. It is mainly practiced towards the Santa Rosa de Osos and Yarumal municipalities.
Agriculture Permanent crops: Coffee, plantain, sugar cane, and tree tomato Temporary crops: cassava, tomato, maize, bean	As the second economic activity in the area, agriculture is established by the climatic conditions of the expansion area, by the variety of its life zones that allow to plant different crops (legal al illicit ones).

⁴⁹ Over the last years, Antioquia has featured as the Department with the largest headage number in the country.

⁵⁰ The agriculture that takes place in the project expansion area is for subsistence and commercial purposes. There are permanent crops such as coffee, plantain, sugar cane, tree tomato; and temporary crops such as cassava, tomato, maize, and bean. However, in 2019, Antioquia contributed 12.7% of permanent crops and 5.4% in temporary crops in the established area.

Alternative land use	Type of barrier
Mining	Barriers posed by local tradition Mining is not a main economic activity in the project expansion area. And, by tradition, people in the project expansion area have a greater vocation towards livestock and agriculture activities. For example, when the mining company Red Eagle began exploration work in the Santa Rosa de Osos municipality, there was a great rejection of the community and local authorities, after a long consensus process, they were able to start working, but they had to waive to one of the two mining titles where they intended to work, and do it in a smaller area than the planned one.

Source: prepared by South Pole (2020).

3.5.4 STEP 4: Common-practice analysis

Although various initiatives have been undertaken to curb deforestation in several departments and regions of Colombia, the activities of the REDD+ Project Magnolios de Yarumal stand out from the others because they encourage the protection of forest species threatened, as the *Magnolia* spp; and it is also a region that holds a high endemism within the Department. Additionally, the conservation activities are proposed by the Union of Private Owners and Nature Reserves to promote the protection of those resources and increase the workforce in the region, that has mainly been dedicated to agro-livestock production and, in some cases, to illicit crops.

In the northern and central regions of Antioquia there are 11 Regional Integrated Management Districts (RIMD), among which is Alto de Ventanas and where the REDD+ initiative is located. This category of protection includes the sustainable use and conservation of forests, allowing the versatility of activities in the territory, tending towards, above all, to protect natural resources. Although the initiative proposes several conservation alternatives, it pursues to secure the permanence of endemic species and protect the *Magnolia* spp in closure conditions.

The Corantioquia jurisdiction has 236,856 protected hectares, 11 of them are Regional Integrated Management Districts (RIMD), 3 are Regional Protective Forest Reserves (RFPR), and 1 is a Regional Natural Park (PNR). In 2019, just over 3% of the Corporation's budget was allocated to these 15 protected areas, but about 60% of it was allocated to commitments, implying that access to resources is really limited for the areas.

Table 14. Regional Integrated Management Districts in the Corantioquia jurisdiction.

Name	Year of creation	Administrative act
Ciénaga de Chiqueros	2018	Agreement 543 of August 22, 2018
Alto de Ventanas	2018	Agreement 528 of April 26, 2018.
Ciénaga de Barbacoas	2017	Agreement 493 of May 5, 2017
Ciénagas El Sapo y Hoyo Grande	2017	Agreement 508 of October 26, 2017
Cacica Noría	2016	Agreement 480 of November 29, 2016
Corredor de las Alegrías	2015	Agreement 459 of July 2, 2015
Nubes Trocha Capota	2010	Agreement of May 20, 2010
Cuchilla Jardín Támesis	2009	Agreement 316 of April 22, 2009
Divisoria Valle de Aburra río Cauca	2007	Agreement 267 of September 10, 2007
Cañón del río Alicante	2006	Agreement 233 of October 12, 2006
Cuchilla Cerro Plateado Alto San José	2006	Agreement 244 of December 21, 2006
Ríos Barroso y San Juan	2006	Agreement 245 of December 21, 2006

Source: adapted from the Single National Registry of Protected Areas (RUNAP)⁵¹

As shown in Table 14, the Alto de Ventanas RIMD is the second one registered in Antioquia in 2018, presenting itself as one of the latest protection initiatives at regional level. To date, there is no registry of the Environmental Management Plan of Alto de Ventanas RIMD, so, the economic proposal for its execution is unknown due to its recent declaration. However, considering the investment plan of Corantioquia, it is fact that for the management of protected areas there are not enough resources for their maintenance since there is evidence of variability in the investment in the period 2014-2019. In 2015, 8.2% of the final budget of the corporation for the Comprehensive Management of Protected Areas

51 Single National Registry of Protected Areas (RUNAP) Available at: <http://runap.parquesnacionales.gov.co/>. Accessed on February 10, 2020.

for the Conservation of Biodiversity⁵² was invested; however, in 2018, it was only 1.9%, which implies that there is no guarantee of the availability of resources for this activity.

In the 80 municipalities of the Corantioquia jurisdiction there are only 8 private areas registered as Civil Society Nature Reserve, 2 of them are in the project expansion area: Patio Bonito-Los Erizos⁵³ and El Gramero⁵⁴ located in the Santa Rosa de Osos municipality. These reserves cover an area of 14,78 ha and 10 ha respectively, accounting for less than 1% of the 251,908 ha of the project expansion area and showing the scarce incentives from the institutions to promote private conservation initiatives.

The REDD+ Project Magnolios de Yarumal is the first in the northern region of Antioquia that works grouping areas of small farmers in a landscape-level initiative, along with private reserves. Small properties are part of this initiative that, if the proponents were not united under the grouped approach, they would not have the opportunity to implement or promote impact activities to reduce deforestation in their territory. To make this possible, a great logistic effort was required to convene peasants, to delimit the properties, and to gather the legal documents on land tenure. Besides, it is highlighted that peasants and the reserves of the project that devote their properties for conservation, they renounce the high opportunity cost that these lands may offer if they were assigned to livestock farming and agriculture.

Despite the financial, institutional, and social barriers that non-profit entities and the owners of the project area face for the sake of conservation, they have worked together to maintain environmental education, conservation activities, biodiversity, and crops, since the project starting date. Furthermore, work has been done with government entities, through agreements, to enforce the obligations for generating environmental impacts by the Public Companies of Medellín (EPM),⁵⁵ and between the period 2010-2015, by the Santa Rosa de Osos municipality, for reforestation, sowing, and maintenance of native species in the Guanacas village.

Finally, it is evident that the project activities focused on conservation and sustainable use of forests are not a common practice, considering that they arose from the initiatives of the owners from the area and some foundations and corporations, and not from the SINAP or from the work of the Regional Autonomous Corporation.

⁵² Corantioquia. Regional Autonomous Corporation of the Center of Antioquia. Budget execution, investment expenses. Available at: <http://www.corantioquia.gov.co/Paginas/VerContenido.aspx?List=MenuInferior&item=210>. Accessed on February 07, 2020.

⁵³ Auto 077 de 2017. Available at: https://storage.googleapis.com/pnn-web/uploads/2017/05/Auto_077_050517_sgm.pdf. Accessed on April 20, 2020.

⁵⁴ Auto 079 de 2019. Available at: https://storage.googleapis.com/pnn-web/uploads/2017/05/Auto_079_050517_sgm.pdf. Accessed on April 20, 2020.

⁵⁵ An agreement was signed between EPM and Guanacas Foundation, within the framework of EPM's environmental obligations to compensate for its environmental impact, where Guanacas contributed with the land and EPM with the project implementation costs. Twenty-one hectares were established to compensate for closure conditions, and four hectares to compensate for the loss of biodiversity. The Guanacas Foundation had to formulate and implement the project, in addition to perform the corresponding maintenance.

The proposed activities of the project aim at changing the land use from livestock and agriculture to activities with a less negative impact that allow the natural environment to recover and the connectivity among the forest covers in the area, historically very affected by the processes of social and economic development stimulated by the country's agro-livestock demand and the local tradition.

3.6 Methodology Deviations

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

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

4 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

4.1 Baseline Emissions

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

4.2 Project Emissions

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

4.3 Leakage

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

4.4 Net GHG Emission Reductions and Removals

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

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

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

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

5 MONITORING

5.1 Data and Parameters Available at Validation

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

Data / Parameter	
Data unit	Indicate the unit of measure
Description	Provide a brief description of the data/parameter
Source of data	Indicate the source(s) of data

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

5.2 Data and Parameters Monitored

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

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

QA/QC procedures to be applied	<i>Describe the quality assurance and quality control (QA/QC) procedures to be applied, including the calibration procedures where applicable.</i>
Purpose of data	<i>Indicate one of the following:</i> • <i>Calculation of baseline emissions</i> • <i>Calculation of project emissions</i> • <i>Calculation of leakage</i>
Calculation method	<i>Where relevant, provide the calculation method, including any equations, used to establish the data/parameter.</i>
Comments	<i>Provide any additional comments</i>

5.3 Monitoring Plan

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

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

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

6 APPENDIX

Appendix I. General information on the properties and owners participating in the REDD+ Project Magnolios de Yarumal.

Property	ID in database	Username	Identification number (CC or NIT)	Proponent	Municipality	Registration number
1	1_1	Mariano Esteban Taborda Restrepo y Héctor Darío Taborda	CC 15.273.582	Alto de Ventanas FoundationAlto de Ventanas Foundation	Valdivia	037-43302
2	1_2	Mariano Esteban Taborda Restrepo, Hugo Alberto Monsalve restrepo	CC 15.273.582; CC 15.325.100	Alto de Ventanas FoundationAlto de Ventanas Foundation	Yarumal	037-49843
3	2	Argemiro Alberto Taborda Ramírez	CC 15.317.920	Magnolios Foundation	Yarumal	037-49464
4	3	Noelia Amparo Restrepo Medina	CC 32.552.293	Magnolios Foundation	Yarumal	037-15825
5	5	José Arnulfo López Molina	CC 8.035.018	Magnolios Foundation	Yarumal	037-17561
6	8	José Joaquín Jiménez Uribe	CC 15.345.399	Magnolios Foundation	Yarumal	037-29615
7	9_1	Celly de Jesús Villegas de Carvajal	CC 32.480.941	Alto de Ventanas FoundationAlto de Ventanas Foundation	Briceño	037-21743
8	9_2	Celly de Jesús Villegas de Carvajal	CC 32.480.941	Alto de Ventanas Foundation	Briceño	037-39558
9	10	Cesar Octavio Builes Carvajal	CC 15.321.514	Alto de Ventanas Foundation	Yarumal	037-35

Property	ID in database	Username	Identification number (CC or NIT)	Proponent	Municipality	Registration number
10	11	Transportes Barbelos (Andrés Velásquez Villegas – Gerente)	NIT 901208060 - 5	Alto de Ventanas FoundationAlto de Ventanas Foundation	Briceño	037-49
11	13	Ramón Nicolas Jaramillo Ruiz	CC 15.317.197	Alto de Ventanas FoundationAlto de Ventanas Foundation	Briceño	037-7924
12	14	María Rocío Zabala Zabala	CC 32.550.545	Alto de Ventanas FoundationAlto de Ventanas Foundation	Valdivia	037-49346
13	16_1	Rubén Edilson Bedoya Pérez	CC 15.325.913	Alto de Ventanas FoundationAlto de Ventanas Foundation	Yarumal	037-4789
14	16_2	Rubén Edilson Bedoya Pérez	CC 15.325.913	Alto de Ventanas FoundationAlto de Ventanas Foundation	Yarumal	037-13893
15	17	Roberto Antonio Jaramillo Ruiz	CC 15.319.425	Alto de Ventanas FoundationAlto de Ventanas Foundation	Yarumal	037-36560
16	18_1	Javier Arturo Ruiz Naranjo	CC 15.318.537	Alto de Ventanas FoundationAlto de Ventanas Foundation	Yarumal	037-7579
17	18_2	Javier Arturo Ruiz Naranjo	CC 15.318.537	Alto de Ventanas Foundation	Yarumal	037-32733
18	21_1	Rubén Darío Zapata Restrepo	CC 15.322.895	Alto de Ventanas Foundation	Yarumal	037-32082
19	21_2	Rubén Darío Zapata Restrepo, Alejandro	CC 15.322.895, CC 1.152.192.738,	Alto de Ventanas Foundation	Yarumal	037-3661

Property	ID in database	Username	Identification number (CC or NIT)	Proponent	Municipality	Registration number
		Zapata Rico, Carlos Alberto Zapata Restrepo, Elkin Dabier Zapata Restrepo, Laura Melissa Zapata Restrepo y Santiago Alberto Zapata Restrepo	CC 15.323.135, CC 15.326.502, CC 1.140.881.491 and CC 15.325.842			
20	23	José Gonzalo Elorza Fernández	CC 3.662.322	Alto de Ventanas Foundation	Yarumal	037-4378
21	24	Héctor Darío Taborda Ramírez	CC 15.317.246	Alto de Ventanas Foundation	Briceño	037-3844
22	26	Adrián Mauricio Zapata Zabala	CC 15.271.724	Alto de Ventanas Foundation	Briceño	037-23130
23	28	Pablo Andrés Flórez Valencia	CC 71.778.846	Magnolios Foundation	Valdivia	037-27980
24	31	César Augusto Cano Pulgarín	CC 98.458.559	Alto de Ventanas Foundation	Yarumal	037-14778
25	32	Jesús Armando Franco Cruz	CC 15.319.856	Alto de Ventanas Foundation	Yarumal	037-58627 (CERRADO) / 037-58625
26	33_1	Dierman Eleisson Ruiz Guzmán	CC 1.042.768.042	Alto de Ventanas Foundation	Yarumal	037-49944
27	33_2	Dierman Eleisson Ruiz Guzmán	CC 1.042.768.042	Alto de Ventanas Foundation	Yarumal	037-22402
28	33_3	Dierman Eleisson Ruiz Guzmán	CC 1.042.768.042	Alto de Ventanas Foundation	Briceño	037-37568

Property	ID in database	Username	Identification number (CC or NIT)	Proponent	Municipality	Registration number
29	33_4	Dierman Eleisson Ruiz Guzmán	CC 1.042.768.042	Alto de Ventanas Foundation	Briceño	037-37153
30	34	Eduardo de Jesús Elorza Fernández	CC 15.320.954	Alto de Ventanas Foundation	Yarumal	037-12149
31	36_1	Gerardo Antonio Zabala Franco	CC 15.318.285	Alto de Ventanas Foundation	Yarumal	037-7668
32	36_2	Gerardo Antonio Zabala Franco	CC 15.318.285	Alto de Ventanas Foundation	Yarumal	037-26127
33	37	Raúl de Jesús López Ospina, Yomaira Pérez Correa, Eulicer Alcides López Hincapié	CC 15.315.358, CC 32.564.453 and CC 15.328.188	Alto de Ventanas Foundation	Yarumal	037-14036
34	38	Hernán Roberto Cano Jaramillo y Roberto Emilio Cano Casas	CC 3.649.896	Alto de Ventanas Foundation	Yarumal	037-49366
35	40_1	Fernando León Pérez Correa	CC 15.322.814	Alto de Ventanas Foundation	Yarumal	037-36075
36	40_3	Fernando León Pérez Correa	CC 15.322.814	Alto de Ventanas Foundation	Yarumal	037-50792
37	40_4	Fernando León Pérez Correa	CC 15.322.814	Alto de Ventanas Foundation	Yarumal	037-36541
38	40_5	Fernando León Pérez Correa, Juan Camilo Pérez Cuadrado	CC 15.322.814 CC 1.001.848.571	Alto de Ventanas Foundation	Briceño	037_3839
39	42_1	Fredy Ignacio Carvajal Villegas	CC 98.544.515	Alto de Ventanas Foundation	Briceño	037_51777

Property	ID in database	Username	Identification number (CC or NIT)	Proponent	Municipality	Registration number
40	42_2	Fredy Ignacio Carvajal Villegas	CC 98.544.515	Alto de Ventanas Foundation	Briceño	037-49982
41	42_3	Fredy Ignacio Carvajal Villegas	CC 98.544.515	Alto de Ventanas Foundation	Briceño	037-51778
42	43	Luis Arturo Hernández Gómez 56% e Iván Antonio Vera 6% 38% Sin Dueño	CC 1.023.801.289	Alto de Ventanas Foundation	Briceño	037-4702
43	44	Luis Javier Torres Muñetón	CC 15.322.086	Alto de Ventanas Foundation	Valdivia	037-48699
44	45	Piedad Esteira Restrepo Roldan	CC 32.557.982	Alto de Ventanas Foundation	Valdivia	037-6453
45	49_1	Santiago Carvajal Villegas	CC 1.042.764.631	Alto de Ventanas Foundation	Briceño	037-16232
46	49_2	Santiago Carvajal Villegas	CC 1.042.764.631	Alto de Ventanas Foundation	Briceño	037-51779
47	50_1	Héctor Orlando Taborda Restrepo	CC 15.328.496	Alto de Ventanas Foundation	Briceño	037-41407
48	50_2	Héctor Orlando Taborda Restrepo	CC 15.328.496	Alto de Ventanas Foundation	Briceño	037-6152
49	51_1	Aleida María Correa López	CC 32556335	Alto de Ventanas Foundation	Yarumal	037-29329
50	51_2	Aleida María Correa López	CC 32.556.335	Alto de Ventanas Foundation	Yarumal	037-11317
51	51_3	Aleida María Correa López	CC 32.556.335	Alto de Ventanas Foundation	Yarumal	037-3721

Property	ID in database	Username	Identification number (CC or NIT)	Proponent	Municipality	Registration number
52	53	Román Daniel RestrepoRestrepo	CC 15.318.642	Magnolios Foundation	Valdivia	037-40941
53	54	Edier Hernán Zabala Arroyave	CC 15.329.762	Alto de Ventanas Foundation	Yarumal	037-3520
54	56	Gustavo Antonio Cuartas Pino y Heriberto Cuartas Pino y Carlos Antonio Cuartas Pino	CC 15.328.347	Alto de Ventanas Foundation	Yarumal	037-35923
55	57	Gustavo Ernesto Arroyave López (Javier Belisario Arroyave López)	CC 15.329.125	Alto de Ventanas Foundation	Yarumal	037-19437
56	58	Jesús Octavio Jiménez Elorsa	CC 15.323.898	Alto de Ventanas Foundation	Yarumal	037-54417
57	59	Georlin Antonio Palacio López	CC 15.323.735	Alto de Ventanas Foundation	Yarumal	037-2735
58	60	Francisco Donaldo Restrepo Vélez – María Clementina Maya de Restrepo	CC 642.424 CC21.713.779	Alto de Ventanas Foundation	Yarumal	037-4955
59	62_1	Héctor Evelio Chavarría García	CC 15.316.603	Alto de Ventanas Foundation	Yarumal	037-5611
60	62_2	Héctor Evelio Chavarría García	CC 15.316.603	Alto de Ventanas Foundation	Yarumal	037-19937
61	62_3	Héctor Evelio Chavarría García	CC 15.316.603	Alto de Ventanas Foundation	Yarumal	037-19804

Property	ID in database	Username	Identification number (CC or NIT)	Proponent	Municipality	Registration number
62	63	Pedro Nolasco Pérez Gaviria	CC 15.320.076	Alto de Ventanas Foundation	Yarumal	037-49360
63	66	Gildardo de Jesús Areiza Zabala	CC 15.321.476	Alto de Ventanas Foundation	Yarumal	037-20668
		Gildardo de Jesús Areiza Zabala	CC 15.321.476	Alto de Ventanas Foundation	Valdivia	037-14510
		Gildardo de Jesús Areiza Zabala	CC 15.321.476	Alto de Ventanas Foundation	Yarumal	037-14511
		Gildardo de Jesús Areiza Zabala	CC 15.321.476	Alto de Ventanas Foundation	Yarumal	037-51508
64	67_1	Evelio de Jesús Velásquez Londoño	CC 722.380	Alto de Ventanas Foundation	Yarumal	037-6169
65	67_2	Evelio de Jesús Velásquez Londoño	CC 722.380	Alto de Ventanas Foundation	Yarumal	037-22422
66	67_3	Evelio de Jesús Velásquez Londoño	CC 722.380	Alto de Ventanas Foundation	Yarumal	037-22557
67	68	Héctor Horacio ZabalaZabala and Alicia González Jaramillo	CC 15.317.278 CC 22.210.560	Alto de Ventanas Foundation	Briceño	037-832
68	70_1	Luis Alberto Restrepo Mesa	CC 3.659.842	Alto de Ventanas Foundation	Yarumal	037-22091
69	70_2	Luis Alberto Restrepo Mesa	CC 3.659.842	Alto de Ventanas Foundation	Yarumal	037-23083
70	70_3	Luis Alberto Restrepo Mesa	CC 3.659.842	Alto de Ventanas Foundation	Yarumal	037-28625

Property	ID in database	Username	Identification number (CC or NIT)	Proponent	Municipality	Registration number
71	71_1	María Gudiel Londoño de Pérez	CC 32.552.042	Alto de Ventanas Foundation	Yarumal	037-22510
72	71_2	María Gudiel Londoño de Pérez 50% and Rosa Isabel Yepes de Pérez 50%	CC 32.552.042 CC 21.990.344	Alto de Ventanas Foundation	Yarumal	037-5722
73	73	Luis Fernando Cano Madrigal	CC 15.325.350	Alto de Ventanas Foundation	Briceño	037-8450
74	75	Jorge Gustavo Rojas Lopera	CC 15.323.732	Alto de Ventanas Foundation	Yarumal	037-57307
75	76_1	Salvamontes Corporation	NIT 900936131-9	Magnolios Foundation	Valdivia	037-21472
	76_2	Salvamontes Corporation	NIT 900936131-9	Magnolios Foundation	Valdivia	037-21473
	76_6	Salvamontes Corporation	NIT 900936131-10	Magnolios Foundation	Yarumal	037-14839
76	76_3	Salvamontes Corporation	NIT 900936131-9	Magnolios Foundation	Yarumal	037-15527
77	76_4	Salvamontes Corporation and German Humberto Zabala	NIT 900936131-9	Magnolios Foundation	Yarumal	037-48578
78	76_5	Salvamontes Corporation	NIT 900936131-9	Magnolios Foundation	Valdivia	037-8577
79	81	Salvamontes Corporation y Magnolios Foundation	NIT 900936131-9 NIT 901040305-0	Magnolios Foundation	Yarumal	037-15314

Property	ID in database	Username	Identification number (CC or NIT)	Proponent	Municipality	Registration number
80	82	Gloria Elena Castro De Zabala	CC 32.552.736	Alto de Ventanas Foundation	Yarumal	037-54917
81	83	Tulia Inés Barrientos Martínez	CC 22.217.265	Alto de Ventanas Foundation	Yarumal	037-7403
82	87	Margarita Cecilia Ruiz de Jaramillo	CC 22.205.457	Alto de Ventanas Foundation	Yarumal	037-11415
83	88	Yeleny Andrea Munera Medina	CC 32.560.293	Alto de Ventanas Foundation	Yarumal	037-11246
84	91	José Medardo Casas Porras	CC 15.315.817	Magnolios Foundation	Valdivia	037-27634
85	93_1	Guillermo Restrepo – Margaritha Ligia Echavarría Pérez	CC 15317009 – CC 32.555.635	Magnolios Foundation	Valdivia	037-43332
86	93_2	Guillermo Restrepo Restrepo – Margaritha Ligia Echavarría Pérez	CC 15.317.009 CC 32.555.635	Magnolios Foundation	Valdivia	037-5509
87	95	Eugenio de Jesús Villegas Mazo	CC 153.15.723	Magnolios Foundation	Briceño	037-4116
88	98	Hermenegildo Palacio Lopera y Jesús Alberto Palacio Lopera	CC 15.320.560	Magnolios Foundation	Yarumal	037-41862
89	99_1	Jairo Ovidio Restrepo	CC 15.318.502	Magnolios Foundation	Valdivia	037-14831
90	99_2	Jairo Ovidio Restrepo	CC 15.318.502	Magnolios Foundation	Valdivia	037-14840
91	100_4	Pluvio Antonio Restrepo Arboleda	CC 15.316.742	Alto de Ventanas Foundation	Yarumal	037-52800

Property	ID in database	Username	Identification number (CC or NIT)	Proponent	Municipality	Registration number
92	100_1	Pluvio Antonio Restrepo Arboleda	CC 15.316.742	Alto de Ventanas Foundation	Valdivia	037_711
93	100_2	Pluvio Antonio Restrepo Arboleda	CC 15.316.742	Alto de Ventanas Foundation	Valdivia	037_54454
94	100_3	Pluvio Antonio Restrepo Arboleda	CC 15.316.742	Alto de Ventanas Foundation	Valdivia	037_28848
95	101	Nicolas Enrique López López	CC 15.328.114	Alto de Ventanas Foundation	Campamento	037-8055
96	105	Luis Gustavo Holguín	CC 15.323.982	Alto de Ventanas Foundation	Yarumal	037-5761
97	106	Orlando de Jesús Restrepo Medina	CC 15.320.424	Alto de Ventanas Foundation	Valdivia	037-49841
98	107	Jhon de Jesús Velásquez Ramírez	CC 15.324.469	Alto de Ventanas Foundation	Yarumal	037-21967
99	110_1	Hernán de Jesús Roldan Eusse y Jhon Jairo Franco Olarte	CC 15.420.664 CC 15.326.182	Alto de Ventanas Foundation	Yarumal	037-14696
100	110_2	Hernán de Jesús Roldan Eusse and Jhon Jairo Franco Olarte	CC 15.420.664 CC 15.326.183	Alto de Ventanas Foundation	Yarumal	037_51231 /037-54441
101	110_3	Hernán de Jesús Roldan Eusse and Jhon Jairo Franco Olarte	CC 15.420.664 CC 15.326.184	Alto de Ventanas Foundation	Yarumal	037_32635
102	111_1	Hernán de Jesús Roldan Eusse	CC 15.420.664	Alto de Ventanas Foundation	Yarumal	037_10766
103	111_2	Hernán de Jesús Roldan Eusse	CC 15.420.664	Alto de Ventanas Foundation	Yarumal	037-8503

Property	ID in database	Username	Identification number (CC or NIT)	Proponent	Municipality	Registration number
104	112	Hernán de Jesús Roldan Eusse and Elkin Hernán Roldan	CC 15420664 CC 15329729	Alto de Ventanas Foundation	Yarumal	037-59084
105	113_1	Guillermo Alexander Correa López, Dora Elena López Rojas, Yuliana Patricia Correa López, Andrea Elena Correa López	CC 71.318.185	Magnolios Foundation	Yarumal	037-48349
106	115	María Noralba Elorza Munera	CC 32.557.379	Alto de Ventanas Foundation	Yarumal	037-49508
107	116_1	Froilán Arroyave Mesa	CC 15.322.776	Alto de Ventanas Foundation	Briceño	037-42610
108	116_2	Froilán Arroyave Mesa	CC 15.322.776	Alto de Ventanas Foundation	Briceño	037-42609
109	117_1	José Rodrigo Castaño Díaz	CC 71.644.966	Guanacas Foundation	Santa Rosa de Osos	025-6879
110	117_2	José Rodrigo Castaño Díaz	CC 71.644.966	Guanacas Foundation	Santa Rosa de Osos	025-7303
111	117_3	José Rodrigo Castaño Díaz	CC 71.644.966	Guanacas Foundation	Santa Rosa de Osos	025-7304
112	117_4	José Rodrigo Castaño Díaz	CC 71.644.966	Guanacas Foundation	Santa Rosa de Osos	025-18876
113	117_5	José Rodrigo Castaño Díaz	CC 71.644.966	Guanacas Foundation	Santa Rosa de Osos	025-18877
114	117_6	José Rodrigo Castaño Díaz	CC 71.644.966	Guanacas Foundation	Santa Rosa de Osos	025-20280

Property	ID in database	Username	Identification number (CC or NIT)	Proponent	Municipality	Registration number
115	117_7	José Rodrigo Castaño Díaz	CC 71.644.966	Guanacas Foundation	Santa Rosa de Osos	025-20281
116	117_8	José Rodrigo Castaño Díaz	CC 71.644.966	Guanacas Foundation	Santa Rosa de Osos	025-20282
117	117_9	José Rodrigo Castaño Díaz	CC 71.644.966	Guanacas Foundation	Santa Rosa de Osos	025-20283
118	117_10	Guanacas Foundation	NIT 900174471-7	Guanacas Foundation	Santa Rosa de Osos	025-13080
119	117_11	José Rodrigo Castaño Díaz	CC 71.644.966	Guanacas Foundation	Santa Rosa de Osos	025-15657
120	117_12	José Rodrigo Castaño Díaz	CC 71.644.966	Guanacas Foundation	Santa Rosa de Osos	025-12995