



# CUMARE CARBON PROJECT

## Monitoring Report

Document Prepared by CLIMIT and CAIA



Coordinated by



|                           |                                                                                                                                                                                                          |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Project title             | Cumare carbon project                                                                                                                                                                                    |
| Project ID                | 2532                                                                                                                                                                                                     |
| Monitoring period         | 26-November-2020 to 31-December-2023                                                                                                                                                                     |
| Original date of issue    | 24-May-2024 is the date the monitoring report was completed following the completion of the audit.                                                                                                       |
| Most recent date of issue | 29-07-2025 is the date on which the document was most recently submitted                                                                                                                                 |
| Version                   | 04                                                                                                                                                                                                       |
| VCS Standard Version      | 4.7 (version number of the VCS Standard at the moment of registration)                                                                                                                                   |
| Prepared by               | CLIMIT (Agustin Inthamoussu, Ines Arocena),<br><a href="mailto:agustin.inthamoussu@climit.net">agustin.inthamoussu@climit.net</a> , <a href="mailto:ines.arocena@climit.net">ines.arocena@climit.net</a> |

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# 1 PROJECT DETAILS

## 1.1 Summary Description of the Implementation Status of the Project

The Cumare carbon project will comprise a total area of 10,913 hectares (ha). As of December 2023, 5,667.6 ha had been planted.

During this monitoring period (26-Nov-2020 to 31-Dec-2023), 141.3 ha were added to previous verification: 92 ha correspond to new plantations in San José and El Porvenir and the rest corresponds to areas which were replanted or reincorporated to the project (refer to section 3.1 for further detail). The new forests consist of plantations of *Eucalyptus pellita*, *Eucalyptus urograndis* and *Pinus caribaea*. The project is currently in its eighth year after the project start date, and the first plantations will be completed by year ten of the project.

The main objectives of the project activity are timber production, land restoration and carbon sequestration through afforestation. All practices follow the FSC standard certification as a minimum practice condition, ensuring sustainable forest management, a net positive impact on social, environmental and economic aspects.

During the monitoring period, the objective of planning and designing the 141.3 ha of new plantations was maintained, minimizing the environmental impact. The total carbon stock in December 2023 is 1,375,793 tCO<sub>2</sub>, which means that the forest carbon stock has increased by 872,389 tCO<sub>2</sub> since last verification.

## 1.2 Audit History

The table below includes the audit history of the project. The table includes all monitoring periods, including the period of this monitoring report.

| Audit type              | Period                                 | Program | Validation/verification body name | Number of years |
|-------------------------|----------------------------------------|---------|-----------------------------------|-----------------|
| Validation/verification | (01-November-2016 to 25-November-2020) | VCS     | AENOR                             | 4               |
| Verification            | 26-November 2020 to 31 December 2023   | VCS     | Tuv Sud                           | 3               |

## 1.3 Sectoral Scope and Project Type

The table below shows information relevant for AFOLU projects:

|                                     |               |
|-------------------------------------|---------------|
| Sectoral scope                      | 14            |
| AFOLU project category <sup>1</sup> | ARR           |
| Project activity type               | Afforestation |

The activity implemented by the project is the establishment of forests on land that had previously been under grassland, therefore corresponds to the VCS scope 14: "Agriculture, Forestry and Other Land

<sup>1</sup> See Appendix 1 of the VCS Standard

Use” as an Afforestation, Reforestation and Revegetation (ARR). This is a grouped project that seeks to obtain timber products for commercialization and to capture large amounts of carbon dioxide from the atmosphere in Meta and Vichada department.

## 1.4 Project Proponent

The following table include the contact information for the project proponent(s).

|                   |                                                                                    |
|-------------------|------------------------------------------------------------------------------------|
| Organization name | REFORESTADORA CUMARE S.A.S                                                         |
| Contact person    | Paula Sanchez                                                                      |
| Title             | Legal attorney                                                                     |
| Address           | Calle 118 No. 5-33 piso 2, Bogotá, Colombia                                        |
| Telephone         | +57 601 8052020                                                                    |
| Email             | <a href="mailto:paula.sanchez@campocapital.com">paula.sanchez@campocapital.com</a> |

## 1.5 Other Entities Involved in the Project

The following tables provide contact information and roles/responsibilities for all other project participant(s).

|                     |                                                                                                                                                                                                                                                                                                                                                   |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Organization name   | Campo Forestal S.A.S.                                                                                                                                                                                                                                                                                                                             |
| Role in the project | Campo Forestal S.A.S. is a Colombian company that acts as an independent forest operator, managing forest assets belonging to institutional investors and/or individuals. Its objective is to maximize the return on investment made by its owners. Currently this company is the representative and administrator of REFORESTADORA CUMARE S.A.S. |
| Contact person      | Aura Amaría Echeverri                                                                                                                                                                                                                                                                                                                             |
| Title               | Project manager director                                                                                                                                                                                                                                                                                                                          |
| Address             | Calle 118 No. 5-33 piso 2, Bogotá, Colombia                                                                                                                                                                                                                                                                                                       |
| Telephone           | +57 601 8052020                                                                                                                                                                                                                                                                                                                                   |
| Email               | <a href="http://www.campoforestal.com">www.campoforestal.com</a> , <a href="mailto:mamigo@cambium.cl">mamigo@cambium.cl</a>                                                                                                                                                                                                                       |

|                     |                                                                                                                                                                                                                                                                                                                  |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Organization name   | CAIA Ingeniería SAS                                                                                                                                                                                                                                                                                              |
| Role in the project | CAIA is a consultancy firm from Colombia, specialized in climate change mitigation projects. The company is responsible for the national aspects of the project documentation preparation, acting as the consultant to REFORESTADORA CUMARE SAS in relation to the carbon credit generation project in Colombia. |

|                |                                 |
|----------------|---------------------------------|
| Contact person | Alexander Valencia              |
| Title          | CEO                             |
| Address        | Dg 67 ## 7-94, Bogotá, Colombia |
| Telephone      | +57 1 7033701                   |
| Email          | avalencia@caiaingenieria.com    |

|                     |                                                                                                                                                                                                                                                                                                          |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Organization name   | CLIMIT                                                                                                                                                                                                                                                                                                   |
| Role in the project | Climit is a consultancy firm in Uruguay, specialized in climate change mitigation projects. Together with CAI, is responsible for the carbon estimation, project documentation preparation and acting as the consultant to REFORESTADORA CUMARE SAS in relation to the carbon credit generation project. |
| Contact person      | Agustin Inthamoussu                                                                                                                                                                                                                                                                                      |
| Title               | CEO                                                                                                                                                                                                                                                                                                      |
| Address             | Av. de las Americas 8200                                                                                                                                                                                                                                                                                 |
| Telephone           | +598 94527788                                                                                                                                                                                                                                                                                            |
| Email               | <a href="mailto:agustin.inthamoussu@climit.net">agustin.inthamoussu@climit.net</a>                                                                                                                                                                                                                       |

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Organization name   | Campo Capital                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Role in the project | Carbon Coordinator. Campo Capital is a Colombian company that operates the project with Campo Forestal and is in charge of coordinating the development of the carbon component. It has the specific responsibilities of coordinating the participation of the other parties involved in the forestry and carbon components, ensuring that the activities of measuring and reporting greenhouse gas (GHG) emissions are carried out correctly and in compliance with the regulations and standards, and preparing and organizing the information necessary for the PDD. |
| Contact person      | Paula Sanchez                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Title               | Legal representative                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Address             | Calle 118 No. 5-33 piso 2, Bogotá, Colombia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

|           |                                                                                    |
|-----------|------------------------------------------------------------------------------------|
| Telephone | +57 601 8052020                                                                    |
| Email     | <a href="mailto:paula.sanchez@campocapital.com">paula.sanchez@campocapital.com</a> |

## 1.6 Project Start Date

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Project start date | 01-November-2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Justification      | <p>The grouped project start date of an AFOLU project is the date on which activities that led to the generation of GHG emission reductions or removals are implemented.</p> <p>The project start date is 1 November 2016, when the first plantations in the farm of El Porvenir were established leading to the generation of GHG emission removals.</p> <p>As it is described in the silvicultural report that presents the values of the establishment, maintenance and property administration prepared by Campo Forestal to REFORESTADORA CUMARE SAS, the plantation activities were completed in October 2016. As a way to demonstration, REFORESTADORA CUMARE SAS presents supporting evidence. Campo Forestal makes payments to the companies contracted for the purchase of Eucalyptus and Pinus seedlings, as well as for advice and plantation services. These companies were Reforiente, Refocosta (<a href="https://www.refocosta.com/servicios/">https://www.refocosta.com/servicios/</a>) and Grupo Valt (<a href="https://volveralatierra.com/">https://volveralatierra.com/</a>). It is shown that the plantations in REFORESTADORA CUMARE SAS were completed in October 2016 and the project start date is 1 November 2016 (the first day of the following month as a way to apply conservatism).</p> |

## 1.7 Project Crediting Period

|                                                       |                                                                                                                                                           |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Crediting period                                      | <input type="checkbox"/> Seven years, twice renewable<br><input type="checkbox"/> Ten years, fixed<br><input checked="" type="checkbox"/> Other 100 years |
| Start and end date of first or fixed crediting period | 01-November-2016 to 31-October-2116                                                                                                                       |

## 1.8 Project Location

The grouped project area is located in Colombia, in Meta and Vichada departments. The first instance of the project area started in the farm of "El Porvenir," located in the center-east of Meta department. A second instance is now added to the project and corresponds to the farm known as "San José".

The map in figure 1 shows the location of the project instances. The area is homogeneous in terms of climate, land use history and socio-economic conditions. The project occupies a total net area of 5,667.6 ha.

Project area was stratified to homogenize the population and achieve more accurate results in the variables measured. The preliminary stratification was done prior to the implementation of the measurements and was established in the Monitoring Plan of the Project Design. The strata were defined with two main variables: tree species and plantation date.

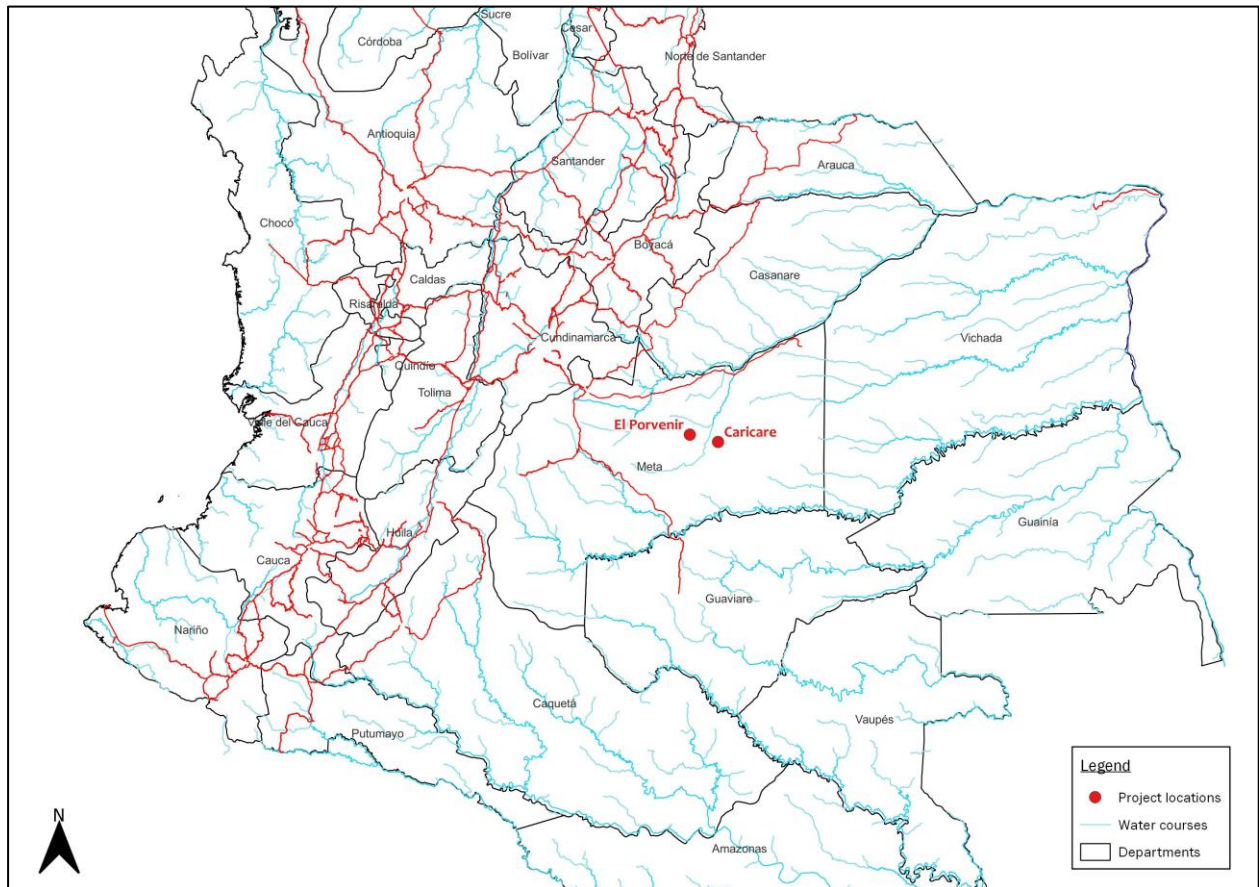


Figure 1. Project location in Colombia

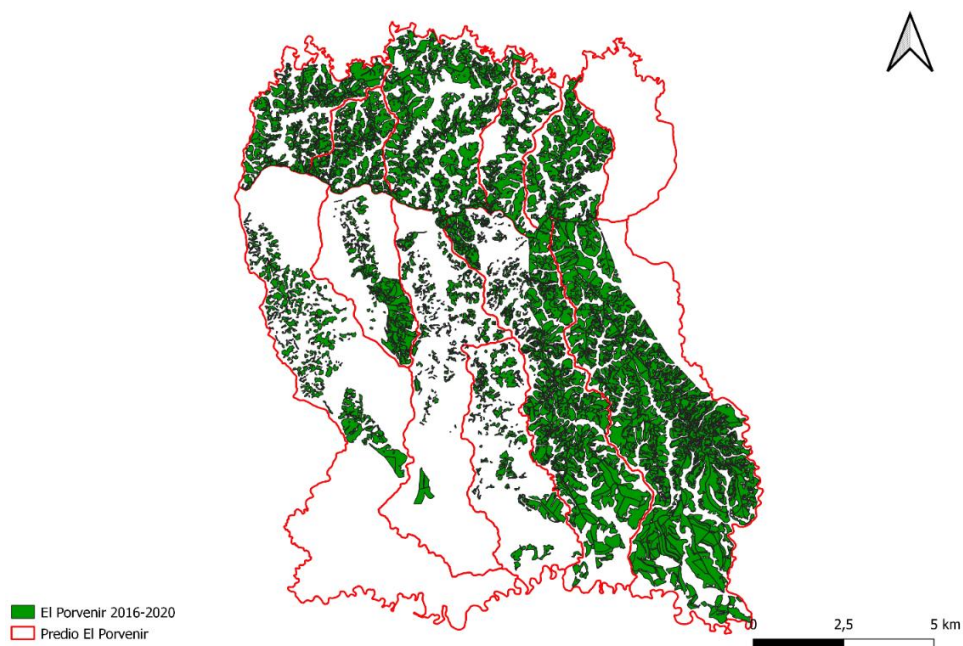


Figure 2. El Porvenir - More detailed view of the project area (green polygons)

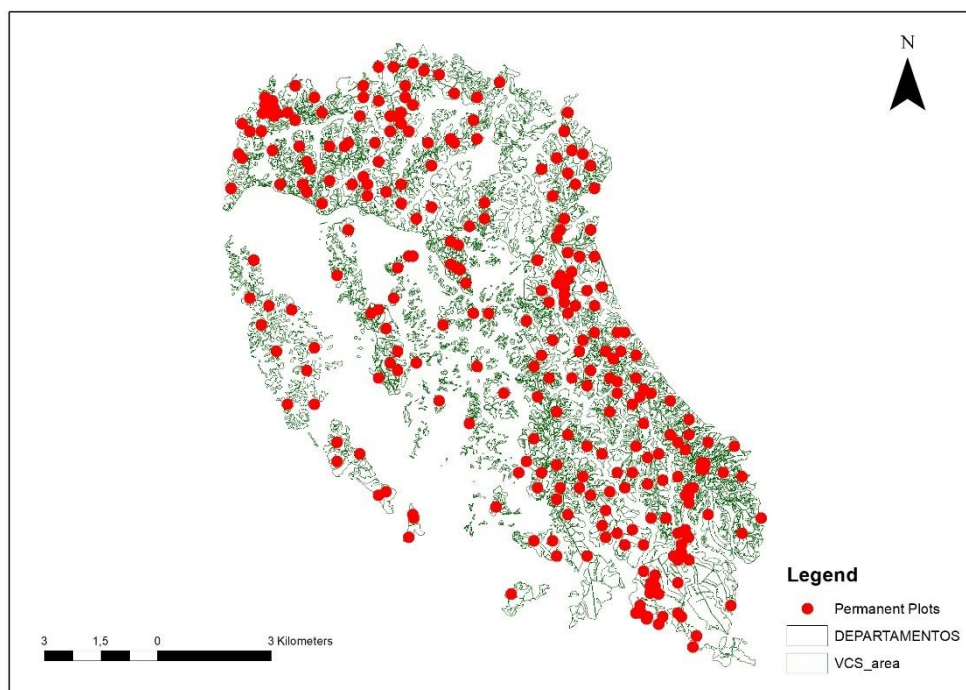


Figure 3. El Porvenir - More detailed view of the project area (green polygons) and permanent sample plots (red dots).

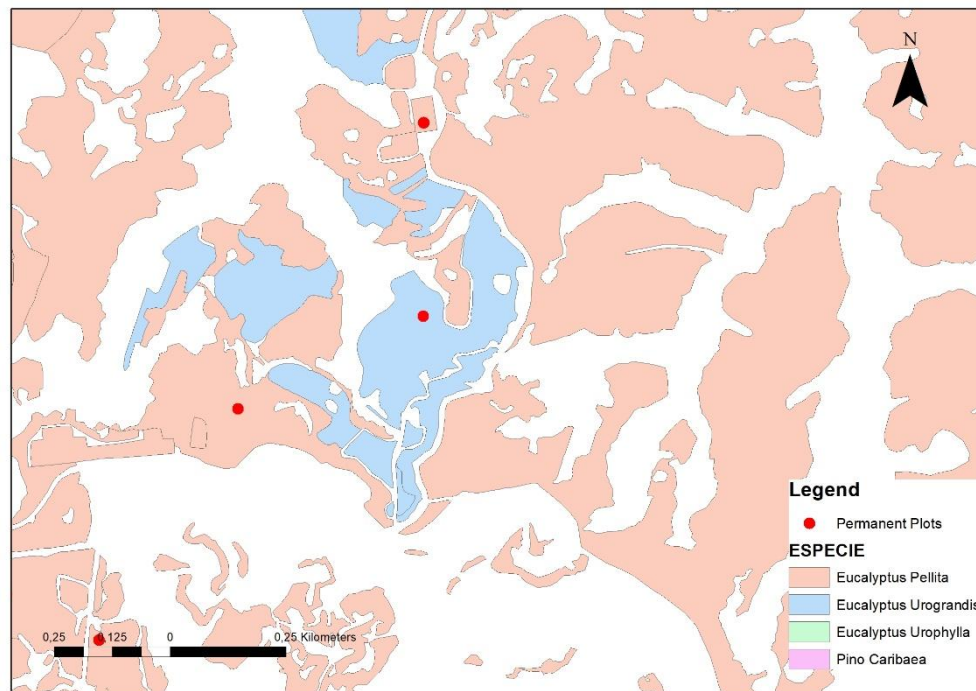


Figure 4. El Porvenir - Project boundaries showing different species and permanent sample plots.

According to Google Earth information, the center of property El Porvenir coordinates are 3° 40' 04.49" N / 72° 30' 30.67" and the center coordinates for Caricare are 3° 34' 0.32" N / 72° 13' 43.72" O. Both properties are in the department of Meta (capital Villavicencio).

The baseline study determined that continuation of extensive grazing is the most likely use of the land in the department. Livestock production with grazing of unmanaged grassland is the existing activity prior to the project implementation. This alternative is credible as it has been the historical activity performed in the project area. The soils in farms on this region are very poor and livestock production does not require large investments to make the cattle farmer survive precariously. Furthermore, the UPRA (Unidad de Planificación Rural Agropecuaria<sup>2</sup>) from the Ministry of Agriculture has a user-friendly GIS web-based platform publicly available for any person in: <https://sipra.upra.gov.co/>. There is a set of layers that can be overlapped to the project boundaries and determine the aptitude for the land to different productive chains: cotton, banana, potato, avocado, rice, poultry, fisheries, cacao, onion, strawberry, among other many other productive chains. Despite the platform can indicate different aptitudes to different land uses, they are not credible or realistic. In conclusion, the project area is suitable to produce different grasses (*Bracharia decumbens*, *Cynodon nlemfuensis*, *Megathyrsus maximus*, *Bracharia humidicola*) which is the basis for cattle production.

However, in this section it is presented the actual and prior environmental conditions of the project area, including information on the climate, hydrology, topography, relevant historic conditions, soils, vegetation, and ecosystems, among other variables.

#### General overview

<sup>2</sup> <https://www.upra.gov.co/>

The department of Meta is part of the Orinoquia region. Orinoquia is part of the hydrographic basin of the Orinoco River that flows into the coasts of Venezuela.



Figure 5. Landscape on REFORESTADORA CUMARE SAS farm



Figure 6. Landscape on REFORESTADORA CUMARE SAS farm before the acquisition of the land, fire management of grasslands (left hand side) and livestock present in the area before the project start (right hand side)



Figure 7. Landscape on REFORESTADORA CUMARE SAS farm before the acquisition of the land

## 1.9 Title and Reference of Methodology

The following information include the methodology and tools applied to the project.

| Type (methodology, tool or module). | Reference ID, if applicable | Title                                                                                                                                       | Version |
|-------------------------------------|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Methodology                         | AR-ACM 0003                 | Afforestation and reforestation of lands except wetlands                                                                                    | 02.0    |
| Methodological tool                 | N/A                         | Combined tool to identify the baseline scenario and demonstrate the additionality in A/R CDM project activities                             | 01      |
| Methodological tool                 | N/A                         | Estimation of non-CO2 GHG emissions from burning of biomass attributable to a CDM A/R project activity                                      | 04.0.0  |
| Methodological tool                 | N/A                         | Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity | 02.0    |
| Methodological tool                 | N/A                         | Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities                         | 01.1.0  |
| Methodological tool                 | N/A                         | Calculation of the number of sample plots for measurements within A/R CDM project activities                                                | 02.1.0  |

|                     |     |                                                                                                                                |      |
|---------------------|-----|--------------------------------------------------------------------------------------------------------------------------------|------|
| Methodological tool | N/A | Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activity                        | 04.2 |
| Methodological tool | N/A | Estimation of carbon stocks and change in carbon stocks in deadwood and litter in A/R CDM project activity                     | 03.1 |
| Methodological tool | N/A | Demonstrating appropriateness of allometric equations for estimation of aboveground tree biomass in A/R CDM project activities | 01.1 |

## 1.10 Double Counting and Participation under Other GHG Programs

### 1.10.1 No Double Issuance

Is the project receiving or seeking credit for reductions and removals from a project activity under another GHG program?

☐ Yes ☒ No

### 1.10.2 Registration in Other GHG Programs

Is the project registered or seeking registration under any other GHG programs?

☐ Yes ☒ No

This project is not registered or seeking registration under other GHG Programs. "CUMARE Carbon Project" is not even considering the presentation of the project to other projects.

## 1.11 Double Claiming, Other Forms of Credit, and Scope 3 Emissions

### 1.11.1 No Double Claiming with Emissions Trading Programs or Binding Emission Limits

Are project reductions and removals or project activities also included in an emissions trading program or binding emission limit? See the *VCS Program Definitions* for definitions of emissions trading program and binding emission limit.

☐ Yes ☒ No

### 1.11.2 No Double Claiming with Other Forms of Environmental Credit

Has the project activity sought, received, or is planning to receive credit from another GHG-related environmental credit system? See the *VCS Program Definitions* for definition of GHG-related environmental credit system.

☐ Yes ☒ No

### 1.11.3 Supply Chain (Scope 3) Emissions

Do the project activities affect the emissions footprint of any product(s) (goods or services) that are part of a supply chain?

☐ Yes

☒ No

The VCU's generated by REFORESTADORA CUMARE SAS in the second verification will not be used in any Emissions Trading Program.

It should be mentioned that the project does not overlap with other carbon projects. This can be justified through cartographic information which is verified on the RENARE platform. According to the platform, the El Porvenir and Caricare farm do not overlap with other carbon projects.

### 1.12 Sustainable Development Contributions

During the monitoring period, the project focused on tree care, after plantations done some years ago. These activities are aligned with Sustainable Development contributions. This included the application of specific technologies and measures within sustainable forest management practices. Activities were carried out in various locations, covering strategic forested areas in different regions. These measures not only promoted the health and vitality of the trees but also had positive impacts on the environment, biodiversity, and the quality of life of local communities.

**Table 1: Sustainable Development Contributions**

| Row number | SDG target | SDG indicator                                                                    | Net impact on SDG indicator        | Current project contributions                                                                                                                                                                                                              | Contributions over project lifetime                                                          |
|------------|------------|----------------------------------------------------------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 1)         | 1.1        | 1.1.1 Proportion of population below the international poverty line              | Implemented activities to decrease | In the framework of the COVID19 effects and the consequences on work activity, families in the project surroundings were increasing their conditions of poverty. Cumare donated a food basket to 40 families of El Tropezón village, twice | Donation a food basket to 40 families of El Tropezón village (twice)                         |
| 2)         | 2.3        | 2.3.2 Average income of small-scale food producers, by sex and indigenous status | Implemented activities to increase | Continue to support the micro-entrepreneur's program in the frame of COVID: working with chicken farming, banana production, fruit and citrus production and cattle raising                                                                | Support in the establishment of 6 small -scale productive projects in the Tropezón community |
| 3)         | 13.0       | Tonnes of greenhouse gas emissions removed                                       | Implemented activities to increase | By the project activity (greenfield plantations), 1.375.781 tCO2 has been removed from the atmosphere during the monitoring period                                                                                                         | Projected to remove 1.729.336 tCO2 from the atmosphere                                       |
|            |            |                                                                                  |                                    |                                                                                                                                                                                                                                            |                                                                                              |

## 1.13 Commercially Sensitive Information

N/A

# 2 SAFEGUARDS AND STAKEHOLDER ENGAGEMENT

## 2.1 Stakeholder Engagement and Consultation

### 2.1.1 Stakeholder Identification

Since the stakeholder make up has not changed since validation, there is no need to complete the tale below. However, as a way of transparency and continuation of the project stakeholder engagement, the table has been completed.

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Stakeholder Identification                  | The stakeholder make up has not changed since first validation/verification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Legal or customary tenure/access rights     | The legal or customary tenure/access rights have not changed since first validation/verification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Stakeholder diversity and changes over time | Stakeholder groups include the public and private sector, companies, NGO's, individual farmers, all of them with different backgrounds. But since the last verification happened very recently, their diversity and changes over time are imperceptible.                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Expected changes in well-being              | <p>The Campo Forestal project brings benefits to the communities near the farm, such as: work for the region, support for micro-entrepreneurs with the "Seed Capital" project, and environmental education for schools in the region. As mentioned before, Campo Forestal wants to show that it is present, therefore it is always supporting the neighbours, fixing the streets, helping the neighbours, improving the infrastructure of the health centres, providing supplies for the health centres.</p> <p>The project's social plan contains 5 strategic lines of action that are developed every year:</p> <ol style="list-style-type: none"> <li>1. Good neighborly relations</li> </ol> |

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          | <ol style="list-style-type: none"> <li>2. Dissemination of the forestry project</li> <li>3. Hiring local labor</li> <li>4. Social impact analysis</li> <li>5. Local development support</li> </ol> <p>Further information on each of these lines of action has been sent to the VVB.</p> <p>Within the framework of its ongoing commitment to the local community, Campo Forestal has launched in August 2023, an innovative initiative to identify and address support opportunities. As a result of this approach, three key areas of action have been identified. Firstly, an improvement and equipping of the technology classroom at the local school has been planned, with a detailed budget already approved by GFP. Additionally, a financial support program has been established to provide basic computer education for children, with a computer engineer hired to conduct regular classes. Finally, a maintenance program for school grounds has been implemented to mitigate potential risks associated with the presence of snakes.</p> <p>This support to schools is included in the strategic line “Local development support” :</p> <ol style="list-style-type: none"> <li>1. Special donations: Children's Day, Mother's Day, Christmas, etc.</li> <li>2. Donations of educational items: computers, building repairs, etc.</li> <li>3. Donations for maintenance of the headquarters: maintenance of green areas.</li> <li>4. Donations for student support</li> <li>5. Environmental education</li> </ol> <p>These initiatives reflect Campo Forestal's commitment to the well-being and safety of the local community, as well as its determination to foster positive and sustainable relationships with all involved parties.</p> |
| Location of stakeholders | Local stakeholders are very well identified and continuously visited as part of the FSC certification.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

|                       |                                                                                                                                                                   |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Location of resources | Stakeholders own their own land which is a different land than Cumare. Cumare land is private land the stakeholders do not have access or customary access to it. |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 2.1.2 Stakeholder Consultation and Ongoing Communication

|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ongoing consultation                | <p>Campo Forestal is actively consulting stakeholders about the development of the project. These consultations are properly document in another dataset “Communications register”, where the following information is registered: Campo Forestal representative, institution and name of the person contacted by Campo Forestal, type of communication (communication, complaint, gratitude, donation, informative, reunion meeting, visit, among others), topic of discussion, response action, response date and response time. Campo Forestal has been recording this consultation process since 2014.</p> <p>The main procedure or method that Campo Forestal has for the relationship with the communities near the farm is the day-to-day relationship. To achieve this, the security company hired by Campo Forestal oversees relations with the neighbours. The security company is the representative of Campo Forestal for the neighbours.</p> |
| Date(s) of stakeholder consultation | Permanent                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Communication of monitored results  | As part of the VCS project, the project proponent will communicate the projects design and implementation, including the results of monitoring, risks, costs, and benefits the project bring to local stakeholders, all relevant laws and regulations covering workers’ rights in the host country and the process of VCS Program validation and verification and the validation/verification body’s site visit. The method for communicating is by the use of the same channels as in the FSC certification.                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Consultation records                | With the aim of maintaining and reinforcing communications to and from the project with neighbours, neighbourhood organizations, etc., all of them (requests, collaborations, complaints, claims, acknowledgments, questions, and donations) are recorded in a comp that allows to verify the level of communication and response from Campo Forestal. These interventions are reviewed and monitored to strengthen the relationship with neighbours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | and the community in general. Likewise, a response period was established according to the type of communication received.                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Stakeholder input | <p>During this monitoring period, there were some stakeholder's input in part, to the reinforcement of the social management program, in addition to the improvement in the registration system for these communications.</p> <p>Complaints from neighbors are channeled through supervisors, who, together with the Operations Manager, manage responses or solutions as soon as possible.</p> <p>It should be noted that the response time to complaints from neighbors has been reduced, with one month being the time limit to solve the request</p> |

### 2.1.3 Free, Prior, and Informed Consent

The project is implemented on privately owned land and there is no need to include FPIC discussion on stakeholders' consultation. The project does affect property rights.

The project proponent has always respected stakeholders' rights to participate in consultations and consent, following FSC principles for maintaining or improving the social and economic well-being of local communities and maintain or improve the social and economic well-being of workers.

### 2.1.4 Grievance Redress Procedure

| Grievances received | Resolution and outcome                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| N/A                 | <p>There is Grievance Redress Procedure on place which has not received any grievance during the monitoring period. The project proponent does have an open channel for communication in which stakeholders' comments are channeled through forest supervisors, who, together with the Operations Manager, manage responses or solutions as quickly as possible. Many queries and request have been received during this monitoring period but no complaints.</p> |

### 2.1.5 Public Comments

| Summary of comments received            | Actions taken |
|-----------------------------------------|---------------|
| There has not been any comment received | N/A           |

## 2.2 Risks to Stakeholders and the Environment

### 2.2.1 Management Experience

Cumare's ability to implement similar activities and engage with communities is demonstrated through FSC certification (Forest Stewardship Council), which supports our experience and expertise in sustainable and participatory forest management.

The FSC certification not only validates our forest management processes but also our ability to effectively engage communities. We have consistently demonstrated our commitment to responsible practices in all our operations, from planning to implementation.

In areas where relevant experience may be lacking, we have established strategic partnerships with other recognized organizations in the forestry and community sectors such as CAIA and CLIMIT. These partnerships allow us to access specialized knowledge and additional resources to support our projects and fill any identified experience gaps.

Additionally, any new entity involved in the project design or implementation must demonstrate a strong management experience. Our recruitment strategy focuses on identifying and hiring talent with the skills and knowledge necessary to ensure the long-term success of the project.

### 2.2.2 Risk assessment

| Risk identified.                                           |                     | Mitigation or preventative measure taken                                                                                                                                                                                                                                               |
|------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Natural and human-induced risks to stakeholders' wellbeing | No risks identified | Preventing actions: open communication and engagement with stakeholders throughout the project lifecycle. This includes consulting with local communities, relevant authorities, experts, and NGOs to understand their concerns, gather insights, and co-create mitigation strategies. |
| Risks to stakeholder participation                         | No risks identified | Preventing actions: comprehensive stakeholder analysis and mapping exercise identifying all relevant stakeholders, including local communities, governmental bodies, NGOs, and industry partners. It has prioritize engagement based on                                                |

|                           |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           |                     | stakeholders' influence, interest, and potential impact on the project.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Working conditions        | No risks identified | <p>The project FSC certified, a standard that requires and audits the complete and correct compliance with legislation (environmental, labor, among others).</p> <p>FSC has strong emphasis on workers' rights and social responsibility in forest management. Key requirements include: compliance with labor laws and international labor conventions (such as ILO standards), ensuring fair wages, contracts, and working hours, providing safe and healthy working conditions with appropriate safety equipment and training, protecting workers from forced labor, child labor, and discrimination and freedom of association and the right to collective bargaining.</p> <p>See validity of the FSC certification <a href="#">here</a>.</p> |
| Safety of women and girls | No risks identified | <p>The project FSC certified, a standard that requires preventing gender-based violence, harassment, and discrimination, promoting equal opportunities for women in employment and leadership roles, ensuring safe working conditions for women, including protection against any form of exploitation or abuse and providing policies or mechanisms for reporting and addressing gender-related grievances.</p>                                                                                                                                                                                                                                                                                                                                  |

|                                                                                                                                               |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                               |                     | See validity of the FSC certification <a href="#">here</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Safety of minority and marginalized groups, including children                                                                                | No risks identified | <p>FSC certification:</p> <p>Respect for Indigenous Peoples' rights, ensuring their participation in decisions affecting their lands and livelihoods.</p> <p>No child labor, in accordance with ILO conventions (minimum age standards and protection against hazardous work).</p> <p>Protection of ethnic minorities, migrants, and marginalized communities from exploitation or discrimination.</p> <p>Ensuring free, prior, and informed consent (FPIC) for Indigenous and local communities affected by forestry activities.</p> <p>Implementation of grievance mechanisms to report and address any human rights violations.</p> <p>See validity of the FSC certification <a href="#">here</a>.</p> |
| Pollutants (air, noise, discharges to water, generation of waste, and release of hazardous materials and chemical pesticides and fertilizers) | No risks identified | <p>Afforestation projects do not generate pollutants. The use of chemical pesticides is minimal, applied only once during the plantation phase within a long-term forestry cycle. There are no significant sources of air or noise pollution, water discharges, waste generation, or hazardous material release associated with the project.</p> <p>Moreover, the use of fertilizers and pesticides, including fipronil for ant control, is not considered a risk because it is applied in a controlled and regulated manner,</p>                                                                                                                                                                         |

|  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  | <p>following international environmental best practices. The project ensures that pesticide application is done in compliance with safety protocols to prevent negative impacts on soil health, water sources, and non-target species.</p> <p>Fipronil is specifically used to control leaf-cutting ants, which can cause significant damage to young plantations. Its application is targeted and localized, minimizing unintended environmental exposure.</p> <p>Regarding fertilizers, their use is in sufficient amounts to support healthy tree growth without causing nutrient runoff or contamination (it would also mean an inefficiency in costs).</p> <p>The project follows FSC standards, which require the responsible use of agrochemicals to minimize environmental risks. Moreover, as said before, the project is FSC certified. This certificate, within its guidelines, created in 2019 an instrument called ERAS (Environmental and Social Risk Assessment), which aims to evaluate the use of pesticides, identify lower-risk alternatives, establish conditions for their use, and develop appropriate mitigation and monitoring measures.</p> |
|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 2.3 Respect for Human Rights and Equity

### 2.3.1 Labor and Work

| Risks identified <sup>3</sup> |                       | Mitigation or preventative measure(s) taken                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Discrimination                | No risk is identified | <p>Cumare ensures non-discriminatory practices in all employment and operational activities. The project follows Colombian labor laws and ILO conventions that prohibit discrimination based on gender, ethnicity, religion, age, disability, or any other protected characteristic.</p> <ul style="list-style-type: none"> <li>Hiring, promotions, and wages are based on skills, qualifications, and experience, ensuring equal opportunities for all workers.</li> <li>A formal grievance mechanism is in place, allowing employees to report any discrimination-related concerns anonymously and without retaliation.</li> <li>Annual audits and internal reviews are conducted to confirm compliance with FSC's Principles and Criteria, which require fair and non-discriminatory labor practices</li> </ul> |
| Sexual harassment             | No risk is identified | Cumare enforces a zero-tolerance policy on sexual harassment and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

<sup>3</sup> The identified risks and commensurate mitigation or preventative measure(s) for forced labor, child labor, and human trafficking, must be inclusive of staff and contracted workers employed by third parties.

|                                 |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 |                       | <p>gender-based violence in the workplace.</p> <ul style="list-style-type: none"> <li>• Clear reporting channels allow employees to file complaints confidentially.</li> <li>• Regular training sessions educate workers on what constitutes harassment, how to prevent it, and how to report it.</li> <li>• Supervisors and managers undergo specialized training to recognize and handle harassment cases appropriately.</li> <li>• The project abides by Law 1257 of 2008 (Colombian legislation addressing violence and harassment against women).</li> </ul> |
| Gender equity in labor and work | No risk is identified | <p>Cumare actively promotes gender equality through policies that ensure fair treatment and inclusion of women in the workforce.</p> <ul style="list-style-type: none"> <li>• Equal pay for equal work is guaranteed, and wage gaps based on gender are not permitted.</li> <li>• Women are encouraged to participate in leadership positions, with training programs designed to support their professional growth.</li> <li>• The project supports maternity and paternity rights, including family-friendly workplace policies.</li> </ul>                     |

|              |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              |                       | <ul style="list-style-type: none"> <li>Women and men have equal access to job opportunities, including field and administrative positions.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Forced labor | No risk is identified | <p>There is no forced or coerced labor in Cumare's operations. The project strictly adheres to ILO Conventions No. 29 and No. 105 on forced labor, ensuring:</p> <ul style="list-style-type: none"> <li>All employment contracts are voluntary and transparent, with clear terms and conditions.</li> <li>Workers are not required to surrender identity documents, deposits, or recruitment fees as a condition of employment.</li> <li>Audits and worker interviews are conducted periodically to verify that no forced labor practices exist.</li> <li>Employees have freedom of movement and can leave their jobs without penalties or threats.</li> </ul> |
| Child labor  | No risk is identified | <p>Cumare strictly complies with Colombian labor laws and ILO Convention No. 138 and No. 182, which prohibit child labor.</p> <ul style="list-style-type: none"> <li>The project does not employ individuals under the legal working age (15 years for non-hazardous work and 18 years for hazardous work).</li> <li>All workers are required to provide proof of age before employment.</li> </ul>                                                                                                                                                                                                                                                            |

|                   |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |                       | <ul style="list-style-type: none"> <li>• The project conducts random inspections and collaborates with local authorities to prevent any involvement of children in work activities.</li> <li>• Awareness programs inform local communities and workers about the importance of eliminating child labor.</li> </ul>                                                                                                                                                                                                                                                                                                                                                   |
| Human trafficking | No risk is identified | <p>Cumare ensures strict compliance with national and international regulations to prevent any form of human trafficking in its supply chain.</p> <ul style="list-style-type: none"> <li>• Employment practices are fully transparent, with direct hiring processes that prevent exploitation by third-party recruiters.</li> <li>• No recruitment fees are charged to workers, and no deceptive practices are used in the hiring process.</li> <li>• Workers are not subject to debt bondage or conditions that limit their freedom.</li> <li>• Regular monitoring and worker interviews confirm that there are no cases of trafficking or exploitation.</li> </ul> |

### 2.3.2 Human Rights

The project does not affect any human rights because it complies with international human rights laws and FSC requirements, respects land tenure and Indigenous rights through FPIC, ensures fair labor conditions and prohibits forced labor and child labor, protects environmental rights and promotes sustainability and provides mechanisms for reporting and resolving human rights concerns.

### 2.3.3 Indigenous Peoples and Cultural Heritage

In the area of influence of the properties included in this project and managed by Campo Forestal (El Porvenir located in the municipality of San Martín de los Llanos- Meta and identified with property registration No. 236-20543; and Caricare located in the municipality of Puerto Gaitán-Meta and identified with property registration No.234-21312), there is no presence of indigenous reserves and/or communities. This was verified through consultation with the Ministry of the Interior in 2013. Reforestadora Cumare conducted a new consultation in 2016.

### 2.3.4 Property Rights

The project area is privately owned by the project proponent and there is no impact to property rights. The project operates only on legally owned or legally managed lands, ensuring that activities do not infringe upon the rights of landowners, Indigenous communities, or other stakeholders.

### 2.3.5 Benefit Sharing

There are no other beneficiaries than the project proponent, given it's the owner of the land, the forest and the carbon rights.

## 2.4 Ecosystem Health

### 2.4.1 Rare, Threatened, and Endangered species

Cumare in Colombia does not affect rare, threatened, or endangered species, as its plantations are designed sustainably, without causing negative impacts on local biodiversity. The species used in the project is adapted to the country's conditions, meaning it does not behave as an invasive species or pose a threat to natural ecosystems. Unlike other exotic species that may displace native vegetation, the trees planted in Cumare are integrated into a responsible management scheme that minimizes any risk of altering the composition of the native flora.

The project also ensures that does not bring diseases that could affect local biodiversity. Monitoring protocols are followed to ensure that the trees are healthy and do not act as vectors for pests or pathogens that could impact rare or vulnerable species. Additionally, regular environmental monitoring is carried out to detect and mitigate any potential unintended effects on the flora and fauna within the project's area of influence.

Cumare respects ecological corridors and conservation areas established in its forest management plan, since the planning phase, allowing for the preservation of the habitat of rare, threatened, or endangered species. The plantations are planned in a way that does not fragment sensitive ecosystems or interfere with the connectivity of wildlife populations.

The project complies with sustainability certification standards, such as FSC criteria, which require an assessment of the impact on vulnerable species and the implementation of mitigation measures when necessary. In this regard, Cumare not only avoids harm to biodiversity but also contributes to its conservation by rehabilitating degraded soils and improving vegetation cover in areas previously affected by other human activities.

### 2.4.2 Introduction of species

There is no species introduction as all species used for this project already exist in the region where the project is taking place. Species include *Eucalyptus pellita*, *Eucalyptus urophylla*, *Eucalyptus urograndis* and *Pinus caribaea*.

### 2.4.3 Ecosystem conversion

The project area was not cleared from existing ecosystems. To prove this, an analysis was conducted to evaluate the situation of the project area before the start date of the project using historic satellite images. This assessment concluded that there was no conversion of native ecosystems in the project area.

## 3 IMPLEMENTATION STATUS

### 3.1 Implementation Status of the Project Activity

Forest plantation to obtain wood and remove carbon dioxide from the atmosphere has been established since 2016. The project will cover a total area of 10,913.00 ha; as of December 2023, 5,667.6 ha had been planted. During the period from 2021 to 2023, the project area increased by 141.3 ha.

The planted area established in the years 2021 to 2023 is located in Colombia in El Porvenir and San José. In 2021, the San José field was acquired through a lease contract, which was planted the same year. The areas are homogeneous in terms of soil types, climate, land use history and socioeconomic conditions.

The forestry project activity is currently in its eighth year after the project start date, and the plantation will be completed by year ten of the project. Forests will be replanted after clear harvest, but management of stump sprouts is also considered, depending on the genetic improvement obtained in the species at the time of a new planting event.

The main objectives of the project activity are timber production, land restoration and carbon sequestration through afforestation. The project accreditation period is 100 years. All practices follow the FSC standard certification as a minimum practical condition, ensuring sustainable forest management, a net positive impact on social, environmental and economic aspects.

The FSC recertification process was successfully completed in June 2021, with no Corrective Action Requests (CARs) identified. The process involved conducting conference calls with Campo Forestal and included comprehensive interviews with stakeholders. Auditors commended the robust training and monitoring system in place, noting significant improvements that ensured full compliance with the FSC standard. Additionally, positive feedback was received from stakeholder interviews, indicating a high level of satisfaction with the project's practices. Furthermore, the project was recognized for its strong community relationships, reflecting its commitment to sustainable forest management and responsible environmental stewardship.

On June 6th to 9th, 2022, the FSC audit conducted by GFA was completed successfully with no Corrective Action Requests (CARs) identified. Campo Forestal has remained dedicated to carrying out all necessary activities to uphold the certification. The audit process involved thorough conference calls with Campo Forestal and comprehensive interviews with stakeholders. Auditors commended the robust training and

monitoring systems in place, noting significant improvements that ensured compliance with the FSC standard. Positive feedback from stakeholder interviews highlighted the project's commitment to sustainable forest management and strong community relationships.

The following is a description of the implementation status of the main tasks in the operating procedures manual:

### **Planning**

During the monitoring period, the objective of planning and designing the 141.3 ha of new plantations was maintained, minimizing the environmental impact.

Environmental measures: Maintain protected areas (according to Decree 1449, of 1977). The following protected areas are considered immutable and permanent:

- Water springs and water sources in a buffer area of at least 100 meters around, measured from its periphery.
- A belt not less than 30 meters wide, parallel to the maximum tide lines. Additionally, on each side of river channels, ravines and streams (whether permanent or not) and around lakes or water tanks.
- land with slopes greater than 100% (45°).
- Protected species of wild flora

The hectares must maintain forest cover for at least 10% of their area. The implementation of the activities is carried out in accordance with soil management techniques in order to protect the soil, avoiding salinization, compaction, erosion, contamination or subsidence and the loss or degradation of soils.

### **Maintenance (Weed Control, Fertilization, Ant Control)**

During 2021, maintenance activities were carried out in 755 ha of forest plantations, completing the weed control and fertilization program of the 128 ha planted in 2020.

For the year 2022, maintenance activities were carried out on 2,370 ha of the project, weed control and fertilization of 93 ha planted in 2021 were completed, pruning management was also carried out on 60 ha of affected plantations from 2018 by wind.

In 2023, weed control and fertilization activities were completed on 36 ha planted in 2022, thus completing maintenance activities on 1,677 ha.

### **Ant control**

Ant control as a maintenance activity deserves a separate chapter; in January 2020, an increase in ant attacks was detected, mainly focused on Eucalyptus plantations. Pellita 2017. Attakill (sulfluamide), the most effective product for ant control is no longer available in Colombia, because this pesticide was subject to global restriction by the Stockholm Convention on persistent organic pollutants (POP), which finally forced most member countries, including Colombia, to ban its use, and it has been replaced since last year by alternative products that are less effective. Consequently, many concretes have spread.

Now, ant control teams have increased and fipronil is used as a pesticide for control, which has shown good results, but requires greater effort to reduce the most affected areas, as well as greater frequency in control tasks.

Ant control was typically a one-time operation at the establishment when sulfluramide was available. However, from now on it will be an annual maintenance activity. The goal of ant control is to prevent damage to young plantings. A worker with knowledge in the use and application of insecticides to control ants walks around the station, applying the product directly to the ground or in a bait holder.

### **Soil preparation**

The tillage was carried out in the period 2021 - 2023 for approximately 141.3 ha only in the planting strips, with a depth of 15 to 20 cm. The stripes carefully follow a perpendicular pattern along the main slope. Subsoiling is carried out with a tractor and single point subsoiler, with the aim of breaking soil compaction.

### **Planting**

During the monitoring period, a total of 141.3 ha was included by manual sowing as follows.

### **Harvesting**

During the monitoring period there were area under harvesting, as part of the management plan applied in the project activity.

Between 2020 and 2023, Reforestadora Cumare implemented a structured process to evaluate and manage areas of low productivity within its plantations, particularly in the El Porvenir farm. Using satellite imagery (Sentinel-2 and Landsat 8) and vegetation indices such as NDVI and EVI, Cumare identified area with low canopy development. From this, approximately 73 ha of the project area were confirmed through field inventory to have an annual mean increment (IMA) of less than 15 m<sup>3</sup>/ha/year. These areas were therefore classified as underperforming and scheduled for early harvest and replanting. As a result, Cumare initiated a planned early harvest and replanting process of 1,300 trees/ha.

These activities strictly adhered to Cumare's forest management strategy and were not improvised responses. The project also made use of leftover biomass for erosion control and infrastructure improvements, aligning environmental and operational efficiency goals.

This process reflects Cumare's commitment to adaptive, evidence-based forest management and is consistent with FSC principles and Verra requirements. It also confirms that the areas replanted were never previously harvested but rather were low-performing plantations maintained within the original project boundaries.

The carbon stock losses from harvesting during the monitoring period do not reflect a loss event and are captured in the forest inventory.

## **3.2 Deviations**

### **3.2.1 Methodology Deviations**

N/A

### **3.2.2 Project Description Deviations**

A new allometric equation will be introduced for the volume estimations. This equation was obtained from on-site measurements and satisfies the third condition stated in the A/R methodological tool "Demonstrating appropriateness of volume equations for estimation of aboveground tree biomass in A/R CDM project activities" as the equation derives from a dataset of more than thirty trees and the

coefficient of determination is above 0.95. The investigation, analysis and documents were prepared by an interdisciplinary group of work integrated by members of different institutions: district University, Campo Forestal and Cambium.

The study was held in farm “El Porvenir,” located in the municipality of San Martín, department of Meta. This property corresponds to the first instance of this project. The work was conducted in fourteen different strata: eight of them correspond to *E. pellita* plantations and six to *E. urograndis*.

This study was focused on obtaining data to estimate the volume of the tree, thickness (percentage) of bark and the formulation of a general volume model from a sample of 420 trees belonging to the species *Eucalyptus pellita* and *Eucalyptus urograndis* in fourteen different strata. The age of these trees is between 4 to 8 years. The remaining percentage of the planted surface is repeated in the variables: species, genetics and type of soil, therefore it is considered that the fourteen strata proposed cover the heterogeneity of sites.

The data collected from dasometric variables are the basis for obtaining the results and that is why the following list of variables must be estimated in the field for each of the tree individuals evaluated in the different strata:

- a. Tree cubing and bark volume estimation. The variables which were measured in the field are the following:
  - Largest diameter of the logs (with and without bark), in mm.
  - Lowest diameter of the last log (with and without bark), in mm.
  - Length of each log, in m.
  - Total height of each tree, in m.
  - Diameter at Breast Height (DBH) (1.3 m), in mm.
- b. Estimation of the general volume model: The necessary variables are (Hernández et al., 2013, p. 36; López et al., 2015, p. 48):
  - Farm, plot, number of trees, species, date and responsible.
  - DBH , in mm.
  - Total height, in m.
  - Diameter (with bark) at different heights of the tree.
  - Height for each tree section in respect to the ground.

On site works were divided in two steps: before and after tree cutting. A protocol was followed for each step, including the selection of plots and trees which were to be measured and the methodology to measure each of them. This protocol will be provided if required.

After on-site measurements, the collected information was processed and analysed, and different equations were applied to estimate the volumes. Results were then adjusted based on different statistical

parameters and in the end the model which adjusted the better was selected. A final report was elaborated which explains the results which were obtained, this report will be provided if required.

The study concluded that the equations to estimate the volumes (with and without bark) in permanent plots of this project are the following:

$$V(CC) = 0,0000695500969644492 \cdot DAP^{1,80136294480371} \cdot Ht^{1,08292976147938}$$

$$V(SC) = 0,0000533444311194183 \cdot DAP^{1,69811514457562} \cdot Ht^{1,19968293115023}$$

Where:

V (CC): Volume with bark, in cubic meters.

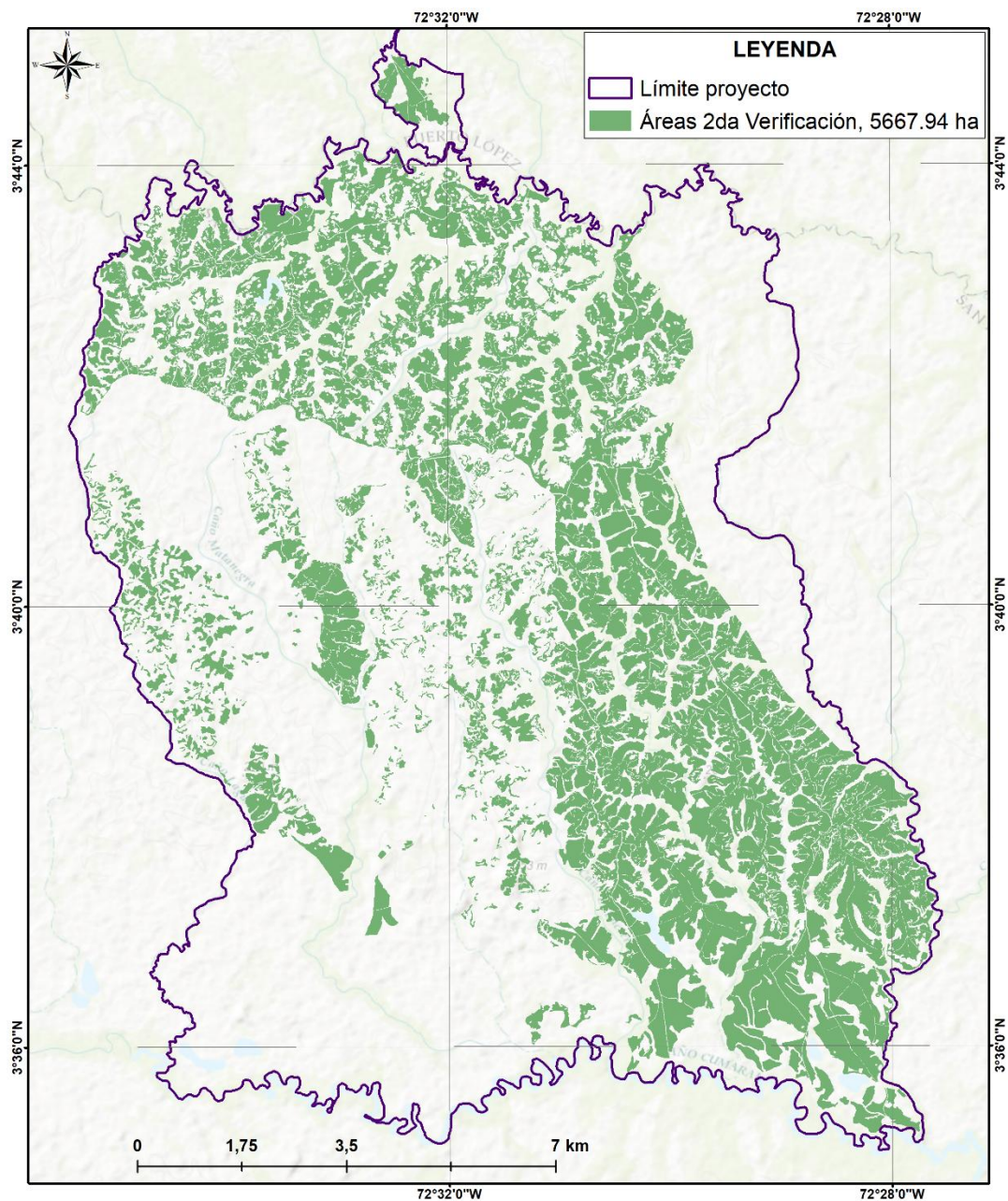
V (SC): Volume without bark, in cubic meters.

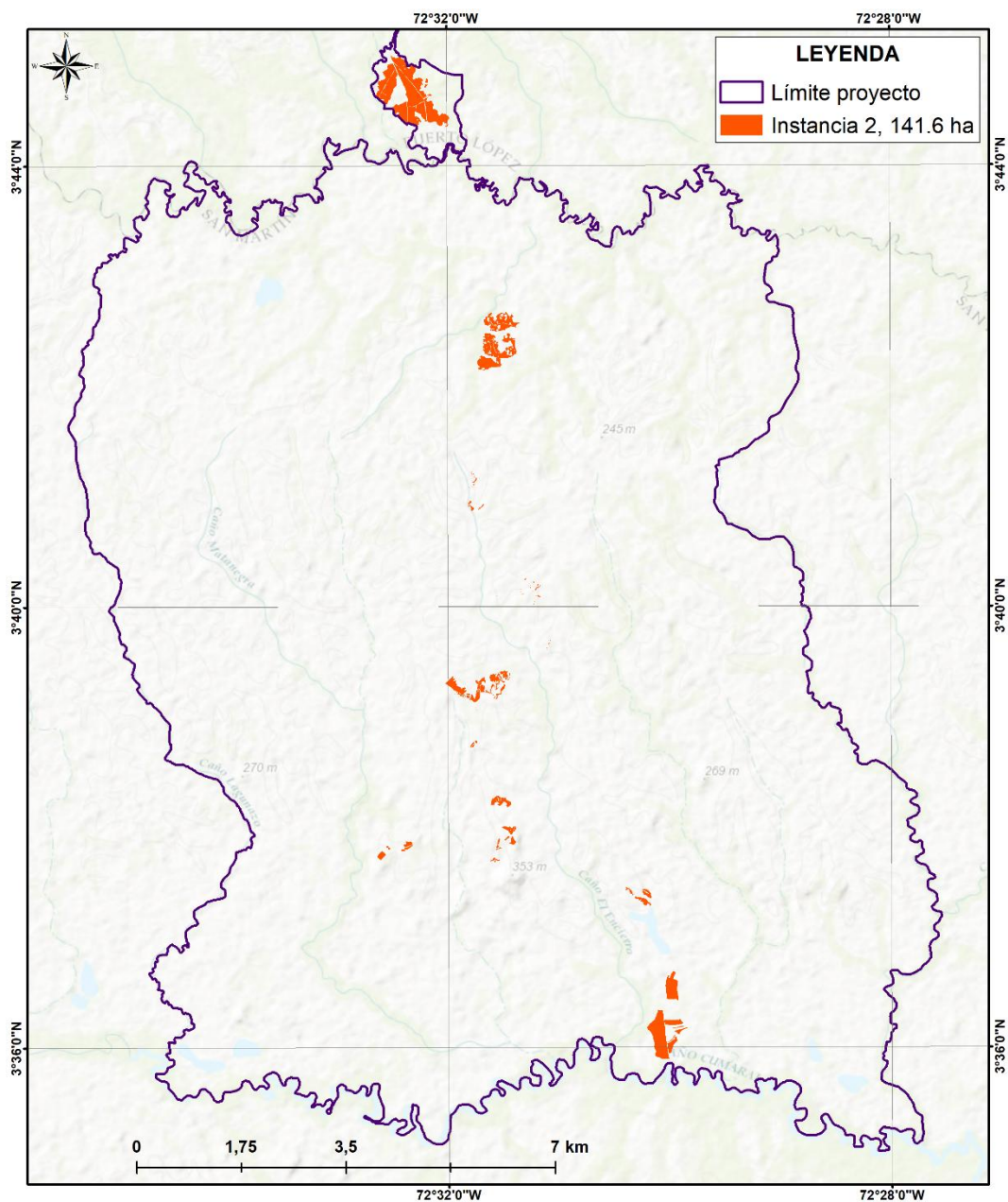
DAP: Breast Diameter Height, in cm.

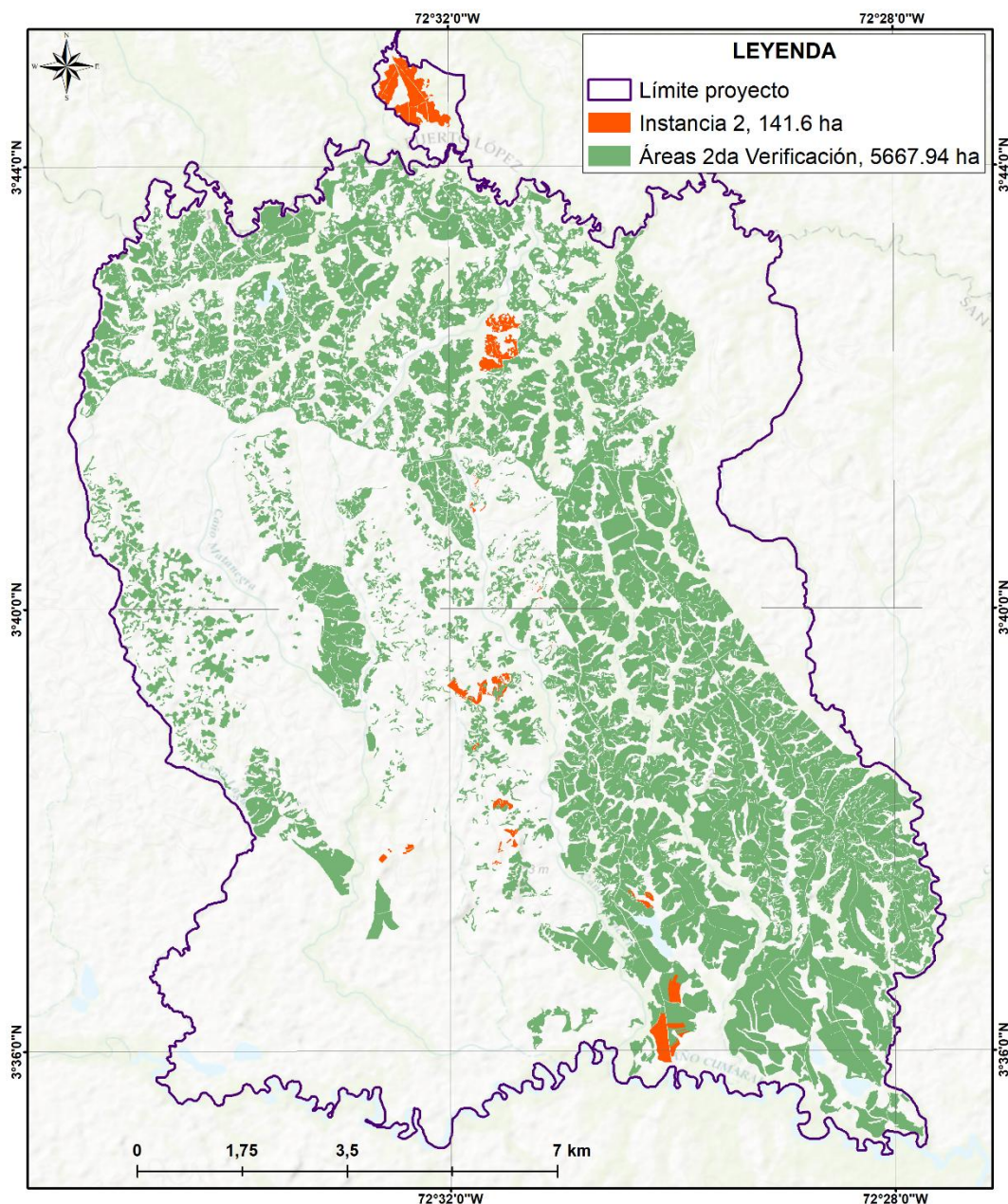
Ht: Total height, in m.

### 3.3 Grouped Projects

There is one project instance added to the group at this verification, a farm called San José and part of El Porvenir. The total area introduced during this monitoring report is 141.3 ha. The area under the first validation/verification, the new area and the total area for this verification is shown in the figures below.







Eligibility criteria for the introduction of new project instances are:

- A. San José and El Porvenir complies with the eligibility, additionality and baseline conditions as it will be proved in the following paragraphs.
- B. San José, as any project that wants to be part of the group project must meet the following conditions.
  1. The project activity implemented in San José consist in the introduction of tree species where there has not been forest before, and applies for AFOLU activity as an Afforestation, Reforestation and Revegetation (ARR) The methodology applied is AR-ACM 0003 "Afforestation and reforestation of lands except wetlands.

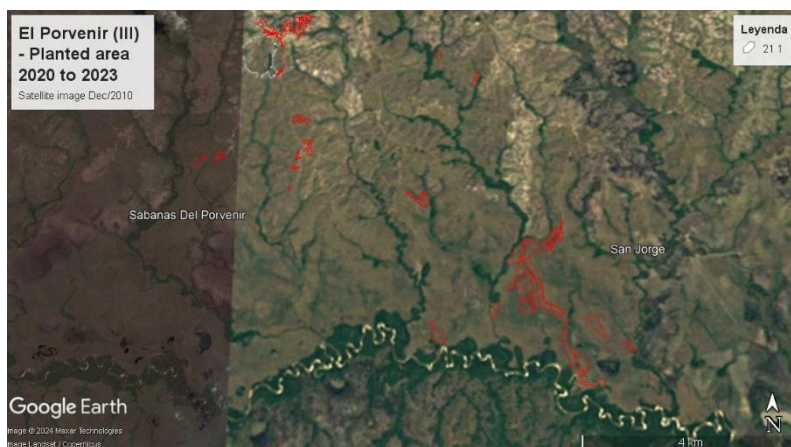
The area included within project boundaries comply with the scope of the methodology, therefore there is no land that falls into the category of wetland. Also, complies with methodology applicability conditions: there is no land containing organic soils, neither land which is subjected to land-use and management practices in the baseline that receives inputs as listed in appendix 2 of the methodology. For an increased transparency and better understanding of the project, the project proponent clarifies there are no other areas to report, such as leakage management areas, or reference areas.

2. Demonstrate that there has not been any forest neither conversion of native ecosystem in the last 10 years since the beginning of the reforestation activities.

The first and second point (above) is demonstrated with the following images:



Cumare forest cover in 2000 and 2010

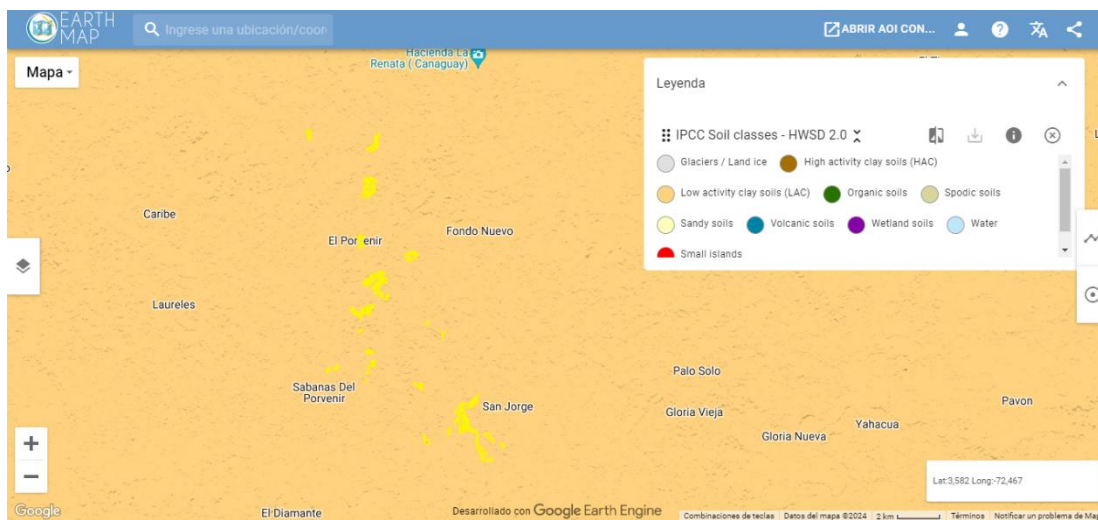


El Porvenir 2020-2023 plantations.



San José 2020-2023 plantations.

3. Systems implemented comply with the national definition of planted forest have a commercial purpose, a short rotation length and the timber produced is delivered to the market. The project must comply with the definition of commercial plantations according to the Ministry of Agriculture and Rural Development of Colombia, that says: *"Crops or forest plantations for commercial purposes. Sowing or planting of forest tree species carried out by human hands, to obtain and commercialization of timber products, with uniform planting density and contemporary individuals. They are synonymous with forest plantations for commercial purposes."* (Article 2.3.3.2)<sup>4</sup>
4. The area of San José is in the department of Meta and does not fall into the category of wetlands.



El Porvenir land falling in LAC soils and not in wetland soils

<sup>4</sup> <https://www.minagricultura.gov.co/Normatividad/Paginas/Decreto-1071-2015/Cultivos-Forestales-con-fines-comerciales.aspx>



San José land falling in LAC soils and not in wetland soils

This new instance complies with the requirements established in VCS Standard 4.6 as it satisfies the following conditions:

1. Occurs within the designated geographic area specified in the project description.
2. Complies with eligibility criteria as presented above.
3. Be included in the monitoring report with sufficient technical, financial, geographic, and other relevant information to demonstrate conformance with the applicable set of eligibility criteria and enable evidence gathering by the validation/verification body.

The new project instances are documented in the monitoring report through geographical information system, integration into the management plan and FSC certification, among others. The technicalities of the new instances are the equal to the rest of the project activity: plantation of Eucalyptus species for timber production. The management system is the same as in the rest of the project: plantation frame, density, rotation cycle, etc.



**Figure 8. San José plantation**

In relation to financial, the new instances did also have similar plantation costs (the plantation year is similar to the rest of the project area) and will also have the same destination: pulp production.

In terms of geography, the location is close to the rest of the project, with identical soil types and climatic conditions, as can be seen through figure 1 to 4.

4. Has evidence of project ownership.
5. Has a start date that is the same as the grouped project start date.
6. Only be eligible for crediting from the later of start date of the project activity instance or the start of the verification period in which they were added to the grouped project, through to the end of the total project crediting period.

All project activity instances are only eligible for the issuance of carbon credits from the beginning of the verification period in which they were included in the grouped project. This ensures that the reported emission reductions are attributable solely to verifiable actions within the project crediting period.

7. Is not enrolled in other VCS project.
8. Adhere to the clustering and capacity limit requirements for multiple project activity instances set out in Verra Standard paragraph 3.6.8 – 3.6.9

The project follows the provisions set forth in sections 3.6.8 and 3.6.9 of the Verra Standard regarding activity grouping and capacity limits. It has been ensured that the organization and distribution of project activity instances do not exceed the allowed thresholds and that the grouping of activities remains consistent in terms of methodology and monitoring. This facilitates the implementation of control measures and guarantees that activities within the project are effectively managed and compliant with regulatory requirements

The project proponent includes in a singular project all project activity instances within ten kilometers of another instance of the same project activity and with the same project proponent (VCS paragraph 3.6.8).

There is no limitation on any quantity in relation to the project imposed by a methodology applied to the project, the GHG program under which the methodology applied to the project was developed, or the GHG program under which the project was developed (VCS paragraph 3.6.9)

### 3.4 Baseline Reassessment

Did the project undergo baseline reassessment during the monitoring period?

☐ Yes

☒ No

## 4 DATA AND PARAMETERS

### 4.1 Data and Parameters Available at Validation

The table below are completed for all data and parameters that are determined or available at validation and remain fixed throughout the project crediting period. The values provided are used to estimate the net GHG emissions and removals for the project crediting period in Section 5 below.

|                                                                                              |                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | $A_i$                                                                                                                                                                                                        |
| Data unit                                                                                    | ha                                                                                                                                                                                                           |
| Description                                                                                  | Area of stratum $i$                                                                                                                                                                                          |
| Source of data                                                                               | Monitoring of strata and stand boundaries is done using a Geographical Information System (GIS) which allows for integrating data from different sources (including GPS coordinates and Remote Sensing data) |
| Value applied                                                                                | Variable according to stratum                                                                                                                                                                                |
| Justification of choice of data or description of measurement methods and procedures applied | N/A                                                                                                                                                                                                          |
| Purpose of data                                                                              | Determination of baseline scenario (AFOLU projects only)<br>Calculation of baseline emissions<br>Calculation of project emissions                                                                            |
| Comments                                                                                     | N/A                                                                                                                                                                                                          |

|                                                   |                                                                                                                          |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                  | BEF <sub>2,j</sub>                                                                                                       |
| Data unit                                         | Dimensionless                                                                                                            |
| Description                                       | Biomass expansion factor for conversion of stem biomass to above-ground biomass for tree species or group of species $j$ |
| Source of data                                    | Tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs" (Version 04.2)                        |
| Value applied:                                    | 1.15                                                                                                                     |
| Justification of choice of data or description of | N/A                                                                                                                      |

|                                            |                                  |
|--------------------------------------------|----------------------------------|
| measurement methods and procedures applied |                                  |
| Purpose of Data                            | Calculation of project emissions |
| Comments                                   | N/A                              |

|                                                                                              |                                                                   |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Data / Parameter                                                                             | CF <sub>j</sub>                                                   |
| Data unit                                                                                    | t C t d.m. <sup>-1</sup>                                          |
| Description                                                                                  | Carbon fraction of tree biomass for species or group of species j |
| Source of data                                                                               | The IPCC default value of 0.47 t C t <sup>-1</sup> d.m.           |
| Value applied:                                                                               | 0.47                                                              |
| Justification of choice of data or description of measurement methods and procedures applied | N/A                                                               |
| Purpose of Data                                                                              | Calculation of project emissions                                  |
| Comments                                                                                     | N/A                                                               |

|                                                                                              |                                                                                                                       |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | CO <sub>2</sub> -e                                                                                                    |
| Data unit                                                                                    | CO <sub>2</sub>                                                                                                       |
| Description                                                                                  | The factor of 3.667 (44/12) is applied to convert the tree carbon sequestered to tree CO <sub>2</sub> -e sequestered. |
| Source of data                                                                               | The IPCC default value                                                                                                |
| Value applied:                                                                               | 3.667 (44/12)                                                                                                         |
| Justification of choice of data or description of measurement methods and procedures applied | N/A                                                                                                                   |
| Purpose of Data                                                                              | Calculation of project emissions                                                                                      |

|          |     |
|----------|-----|
| Comments | N/A |
|----------|-----|

|                                                                                              |                                                                                                                                                                   |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | Dj                                                                                                                                                                |
| Data unit                                                                                    | t d.m. m <sup>3</sup>                                                                                                                                             |
| Description                                                                                  | Basic wood density for species or group of species j                                                                                                              |
| Source of data                                                                               | Local source: MADR (2010) and Arango, B. et al (2001) and Giraldo, D. et al (2014) quoted by "Proyectos sectoriales de mitigación de GEI sector AFOLU (Proclima)" |
| Value applied:                                                                               | 0.48 to 0.53                                                                                                                                                      |
| Justification of choice of data or description of measurement methods and procedures applied | N/A                                                                                                                                                               |
| Purpose of Data                                                                              | Calculation of project emissions                                                                                                                                  |
| Comments                                                                                     | N/A                                                                                                                                                               |

|                                                                                              |                                                                                                   |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | R j                                                                                               |
| Data unit                                                                                    | Dimensionless                                                                                     |
| Description                                                                                  | Root-shoot ratio for species or group of species j                                                |
| Source of data                                                                               | Tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs" (Version 04.2) |
| Value applied:                                                                               | 0.20 to 0.39 depending on the above ground biomass (t dm/ha)                                      |
| Justification of choice of data or description of measurement methods and procedures applied | N/A                                                                                               |
| Purpose of Data                                                                              | Calculation of project emissions                                                                  |
| Comments                                                                                     | N/A                                                                                               |

|                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | V TREE j p i                                                                                                                                                                                                                                                                                                                                                                                                              |
| Data unit                                                                                    | m <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                            |
| Description                                                                                  | Stem volume of trees of species or group of species j in plot p in stratum i                                                                                                                                                                                                                                                                                                                                              |
| Source of data                                                                               | Growth model based on forest inventory (field data measured 2016 to 2022)                                                                                                                                                                                                                                                                                                                                                 |
| Value applied:                                                                               | N/A                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Justification of choice of data or description of measurement methods and procedures applied | N/A                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Purpose of Data                                                                              | Calculation of ex ante project emissions                                                                                                                                                                                                                                                                                                                                                                                  |
| Comments                                                                                     | The growth model is also based on the Mean Annual Increment of species -MAIj (m <sup>3</sup> .ha <sup>1</sup> .yr <sup>1</sup> ). <i>Eucalyptus pellita</i> : 24.7 m <sup>3</sup> .ha <sup>1</sup> .yr <sup>1</sup> ; <i>Eucalyptus urograndis</i> and <i>Eucalyptus urophyla</i> : 27.5 m <sup>3</sup> .ha <sup>1</sup> .yr <sup>1</sup> ; <i>Pinus caribaea</i> : 20.0 m <sup>3</sup> .ha <sup>1</sup> .yr <sup>1</sup> |

|                                                                                              |                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | Bark volume                                                                                                                                                                                                                              |
| Data unit                                                                                    | % of total stem volume                                                                                                                                                                                                                   |
| Description                                                                                  | Bark volume of trees of species                                                                                                                                                                                                          |
| Source of data                                                                               | Specific studies for each tree specie                                                                                                                                                                                                    |
| Value applied:                                                                               | 7.3 to 10.2% for <i>Eucalyptus</i> sp. and 20% for <i>P. caribaea</i>                                                                                                                                                                    |
| Justification of choice of data or description of measurement methods and procedures applied | N/A                                                                                                                                                                                                                                      |
| Purpose of Data                                                                              | Calculation of project emissions                                                                                                                                                                                                         |
| Comments                                                                                     | <p>Stem volume estimations with models results in volume under bark, thus this factor is applied.</p> <p>This parameter is no longer used in the project. The project proponent has formulated a new allometric equation to estimate</p> |

|  |                                                                                                         |
|--|---------------------------------------------------------------------------------------------------------|
|  | tree volume with bark. This allometric equation formulation is presented on section “Project emissions” |
|--|---------------------------------------------------------------------------------------------------------|

|                                                                                              |                                                                                                                                    |
|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | fIN,i                                                                                                                              |
| Data unit                                                                                    | Dimensionless                                                                                                                      |
| Description                                                                                  | Relative stock change factor for baseline input regime (e.g. crop residue returns, manure) in stratum i of the areas of land       |
| Source of data                                                                               | Tables 6 of “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM Project” activities. |
| Value applied:                                                                               | 1                                                                                                                                  |
| Justification of choice of data or description of measurement methods and procedures applied | N/A                                                                                                                                |
| Purpose of Data                                                                              | Calculation of project emissions                                                                                                   |
| Comments                                                                                     | N/A                                                                                                                                |

|                                                                                              |                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | SOC REF                                                                                                                                                                                                                                  |
| Data unit                                                                                    | t C ha <sup>-1</sup>                                                                                                                                                                                                                     |
| Description                                                                                  | Reference SOC stock corresponding to the reference condition in native lands (i.e. non-degraded, unimproved lands under native vegetation. normally forest) by climate region and soil type applicable to stratum i of the areas of land |
| Source of data                                                                               | Table 3 of “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM Project” activities.                                                                                                        |
| Value applied:                                                                               | 60                                                                                                                                                                                                                                       |
| Justification of choice of data or description of measurement methods and procedures applied | Default reference for tropical, wet climate region and soils with low activity clay (LAC)                                                                                                                                                |
| Purpose of Data                                                                              | Calculation of project emissions                                                                                                                                                                                                         |

|          |     |
|----------|-----|
| Comments | N/A |
|----------|-----|

|                                                                                              |                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | fMG,i                                                                                                                                                                      |
| Data unit                                                                                    | Dimensionless                                                                                                                                                              |
| Description                                                                                  | Relative stock change factor for baseline management regime in stratum i of the areas of land; dimensionless                                                               |
| Source of data                                                                               | Table 6 of “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM Project” activities.                                          |
| Value applied:                                                                               | 0.97                                                                                                                                                                       |
| Justification of choice of data or description of measurement methods and procedures applied | Overgrazed or moderately degraded grassland, with somewhat reduced productivity (relative to the native or nominally managed grassland) and receiving no management inputs |
| Purpose of Data                                                                              | Calculation of project emissions                                                                                                                                           |
| Comments                                                                                     | N/A                                                                                                                                                                        |

|                                                                                              |                                                                                                                                    |
|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | fLU,i                                                                                                                              |
| Data unit                                                                                    | Dimensionless                                                                                                                      |
| Description                                                                                  | Relative stock change factor for baseline land-use in stratum i of the areas of land; dimensionless                                |
| Source of data                                                                               | Tables 6 of “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM Project” activities. |
| Value applied:                                                                               | 1                                                                                                                                  |
| Justification of choice of data or description of measurement methods and procedures applied | N/A                                                                                                                                |
| Purpose of Data                                                                              | Calculation of project emissions                                                                                                   |
| Comments                                                                                     | N/A                                                                                                                                |

|                                                                                              |                                                                                                                      |
|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | Dead Wood                                                                                                            |
| Data unit                                                                                    | t C ha <sup>-1</sup>                                                                                                 |
| Description                                                                                  | Conservative default factor expressing carbon stock in dead wood as a percentage of carbon stock in tree biomass     |
| Source of data                                                                               | Tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities” |
| Value applied:                                                                               | 6% of carbon stock in trees biomass                                                                                  |
| Justification of choice of data or description of measurement methods and procedures applied | Default value for biome tropical, elevation <2.000 m and precipitation >1.600 m per year                             |
| Purpose of Data                                                                              | Calculation of project emissions                                                                                     |
| Comments                                                                                     | N/A                                                                                                                  |

|                                                                                              |                                                                                                                      |
|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | Litter                                                                                                               |
| Data unit                                                                                    | t C ha <sup>-1</sup>                                                                                                 |
| Description                                                                                  | Conservative default factor expressing carbon stock in litter as a percentage of carbon stock in tree biomass        |
| Source of data                                                                               | Tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities” |
| Value applied:                                                                               | 1% of carbon stock in trees biomass                                                                                  |
| Justification of choice of data or description of measurement methods and procedures applied | Default value for biome tropical, elevation <2.000 m and precipitation >1.600 m per year                             |
| Purpose of Data                                                                              | Calculation of project emissions                                                                                     |
| Comments                                                                                     | N/A                                                                                                                  |

## 4.2 Data and Parameters Monitored

The tables below are presented for all data and parameters monitored during the project crediting period. The values provided are used to quantify the reductions and removals for the project crediting period in Section 5 below.

|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                | DBH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Data unit                                                       | cm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Description                                                     | Diameter at breast height of tree (DBH)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Source of data                                                  | Field measurements in sample plots                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Description of measurement methods and procedures to be applied | <p>Measurement methods according to Work Manual – permanent plots (2018). All the individuals within the sample plot will be measured.</p> <p>DBH is measured at a height of 1.3 m from the base of the stem (on the ridge). DBH must be measured where the stem has a normal shape (5cm above in case of deformations). If the individuals find a double arrow (fork), the measurement of this variable will be made based on the length at which the bifurcation occurs (below 1.3 m each stem should be measured and listed as different individuals). Calipper and measuring tape will be the monitoring equipment.</p>                                                                                                                                                                               |
| Frequency of monitoring/recording                               | Before every verification event                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Value monitored                                                 | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Monitoring equipment                                            | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| QA/QC procedures to be applied                                  | <p>QA/QC procedures according to Work Manual – permanent plots (2022).</p> <p>Measuring crew from a different contractor will be responsible for cross-checking over 20% of the installed plots. These are selected directly by the planning manager and delivered to the crew based on the following criteria: (1) plots near roads, native forest, water courses; (2) accessibility and proximity to operations center; (3) sector with the highest plot intensity.</p> <p>The following items are reviewed: (1) plot without location error; (2) complies with radius and surface; (3) it has a center and a plot number; (4) clockwise numbering; (5) all Individuals are numbered; (6) missing trees identified with a plate; (7) forked trees marked separately; (8) DBH mark located at 1.3 m.</p> |

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     | <p>Data is recorded in the form: "Quality control format", where is obtained a compliance percentage. A plot is considered installed when it meets the following tolerance ranges:</p> <ol style="list-style-type: none"> <li>1. Tolerance 0 <ul style="list-style-type: none"> <li>• plot with location errors, on tracks, native forest or mix of stands and species.</li> <li>• it does not have the radius (12.62 m) and specific area (500 m<sup>2</sup>).</li> <li>• numbering of individuals within the plot does not follow a defined sense (clockwise)</li> </ul> </li> <li>2. Tolerance 20% <ul style="list-style-type: none"> <li>• individuals are not numbered.</li> <li>• missing trees do not have a plate.</li> <li>• forked trees were not marked separately.</li> <li>• trees with DBH marking outside 1.3 m.</li> </ul> </li> </ol> <p>Cross-checking of data is done following these two parameters:</p> <ol style="list-style-type: none"> <li>1. Differential between years: it applies to those plots that have two measurements, where the measurement of the dendrometer parameters cannot be less than the data of the previous year.</li> <li>2. Outliers: based on the diameter-height relationship, those data that do not represent the trend are tracked (e.g., thick, or tall trees with respect to their age)</li> </ol> <p>Once this information is traced, it is delivered to the measuring crew for verification. Checking is done firstly at a digital level, and then proceed to verify directly in the field.</p> |
| Purpose of the data | <p>Together with height (following parameter), they are used to estimate the stem volume of trees of species j in plot p in stratum i. These variables: H and DBH after being used to estimate the stem volume of trees, are also used, together with other constants (carbon fraction, basic wood density, biomass expansion factor) to estimate the standard deviation of biomass stock in stratum I; t d.m. ha<sup>-1</sup>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Calculation method  | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Comments            | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Data / Parameter    | H                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Data unit           | m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description                                                     | Height of trees                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Source of data                                                  | Field measurements in sample plots                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Description of measurement methods and procedures to be applied | <p>Measurement methods according to Work Manual – permanent plots (2018). All the individuals within the sample plot will be measured.</p> <p>Trees to be measured must meet the following requirements: have its apex and base visible from the measurement point; belong to the plot; and not be strongly deformed or broken.</p> <p>Vertex hypsometer and Suunto clinometer will be the monitoring equipment. The distance from which the equipment is used must be as horizontal as possible. In cases of slope the correction must be made according to the table in Annex 1 of the Work Manual – permanent plots (2018).</p> <p>In the case of the use of a clinometer, it is not allowed to measure from a distance less than that indicated by the band used and then make corrections. It cannot exceed 45° or 100% slope.</p> <p>The observer must be located so that trees are perpendicular to the horizontal line. In sloping terrain, measurements should be prioritized from points that are sloping above the base of the tree.</p> |
| Frequency of monitoring/recording                               | Before every verification event                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Value monitored                                                 | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Monitoring equipment                                            | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| QA/QC procedures to be applied                                  | <p>QA/QC procedures according to Work Manual – permanent plots (2018).</p> <p>Measuring crew from a different contractor will be responsible for cross-checking over 20% of the installed plots. These are selected directly by the planning manager and delivered to the crew based on the following criteria: (1) plots near roads, native forest, water courses; (2) accessibility and proximity to operations center; (3) sector with the highest plot intensity.</p> <p>The following items are reviewed: (1) plot without location error; (2) complies with radius and surface; (3) it has a center and a plot number; (4) clockwise numbering; (5) all Individuals are numbered; (6) missing trees identified with a plate; (7) forked trees marked separately; (8) DBH mark located at 1.3 m.</p>                                                                                                                                                                                                                                           |

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     | <p>Data is recorded in the form: "Quality control format", where is obtained a compliance percentage. A plot is considered installed when it meets the following tolerance ranges:</p> <ol style="list-style-type: none"> <li>1. Tolerance 0 <ul style="list-style-type: none"> <li>• plot with location errors, on tracks, native forest or mix of stands and species.</li> <li>• it does not have the radius (12.62 m) and specific area (500 m<sup>2</sup>).</li> <li>• numbering of individuals within the plot does not follow a defined sense (clockwise)</li> </ul> </li> <li>2. Tolerance 20% <ul style="list-style-type: none"> <li>• individuals are not numbered.</li> <li>• missing trees do not have a plate.</li> <li>• forked trees were not marked separately.</li> <li>• trees with DBH marking outside 1.3 m.</li> </ul> </li> </ol> <p>Cross-checking of data is done following these two parameters:</p> <ol style="list-style-type: none"> <li>1. Differential between years: it applies to those plots that have two measurements, where the measurement of the dendrometer parameters cannot be less than the data of the previous year.</li> <li>2. Outliers: based on the diameter-height relationship, those data that do not represent the trend are tracked (e.g., thick, or tall trees with respect to their age)</li> </ol> <p>Once this information is traced, it is delivered to the measuring crew for verification. Checking is done firstly at a digital level, and then proceed to verify directly in the field.</p> |
| Purpose of the data | <p>Together with DBH (previous parameter), they are used to estimate the stem volume of trees of species j in plot p in stratum i. These variables: H and DBH after being used to estimate the stem volume of trees, are also used, together with other constants (carbon fraction, basic wood density, biomass expansion factor) to estimate the standard deviation of biomass stock in stratum I; t d.m. ha<sup>-1</sup>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Calculation method  | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Comments            | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Data / Parameter    | T                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Data unit           | Year                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

|                                                                 |                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Description                                                     | Time period elapsed between two successive estimations of carbon stock in trees and shrubs                                                                                                                                                            |
| Source of data                                                  | Recorded time                                                                                                                                                                                                                                         |
| Description of measurement methods and procedures to be applied | N/A                                                                                                                                                                                                                                                   |
| Frequency of monitoring/recording                               | N/A                                                                                                                                                                                                                                                   |
| Value monitored                                                 | N/A                                                                                                                                                                                                                                                   |
| Monitoring equipment                                            | N/A                                                                                                                                                                                                                                                   |
| QA/QC procedures to be applied                                  | N/A                                                                                                                                                                                                                                                   |
| Purpose of the data                                             | Calculation of project emissions                                                                                                                                                                                                                      |
| Calculation method                                              | N/A                                                                                                                                                                                                                                                   |
| Comments                                                        | If the two successive estimations of carbon stock in trees are carried out at different points of time in year t2 and t1, (e.g., in the month of April in year t1 and in the month of September in year t2), then a fractional value is assigned to T |

|                                                                 |                                                                        |
|-----------------------------------------------------------------|------------------------------------------------------------------------|
| Data / Parameter                                                | nj                                                                     |
| Data unit                                                       | units                                                                  |
| Description                                                     | Number of sample plots in stratum i                                    |
| Source of data                                                  | Field work                                                             |
| Description of measurement methods and procedures to be applied | Measurement methods according to Work Manual – permanent plots (2018). |
| Frequency of monitoring/recording                               | In every verification event                                            |
| Value monitored                                                 | N/A                                                                    |
| Monitoring equipment                                            | GPS equipment                                                          |
| QA/QC procedures to be applied                                  | N/A                                                                    |

|                     |                                  |
|---------------------|----------------------------------|
| Purpose of the data | Calculation of project emissions |
| Calculation method  | N/A                              |
| Comments            | N/A                              |

|                                                                 |                                                                        |
|-----------------------------------------------------------------|------------------------------------------------------------------------|
| Data / Parameter                                                | N                                                                      |
| Data unit                                                       | units                                                                  |
| Description                                                     | Number of plots to be established in the project area                  |
| Source of data                                                  | Field work                                                             |
| Description of measurement methods and procedures to be applied | Measurement methods according to Work Manual – permanent plots (2018). |
| Frequency of monitoring/recording                               | In every verification event                                            |
| Value monitored                                                 | N/A                                                                    |
| Monitoring equipment                                            | GPS equipment                                                          |
| QA/QC procedures to be applied                                  | N/A                                                                    |
| Purpose of the data                                             | Calculation of project emissions                                       |
| Calculation method                                              | N/A                                                                    |
| Comments                                                        | N/A                                                                    |

|                                                                 |                                                                                                                                 |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                | Ap,i                                                                                                                            |
| Data unit                                                       | ha                                                                                                                              |
| Description                                                     | Area of sample plot                                                                                                             |
| Source of data                                                  | Field measurement                                                                                                               |
| Description of measurement methods and procedures to be applied | Measurement methods according to Work Manual – permanent plots (2018). All the individuals within the sample plot are measured. |
| Frequency of monitoring/recording                               | N/A                                                                                                                             |

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Value monitored                | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Monitoring equipment           | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| QA/QC procedures to be applied | <p>QA/QC procedures according to Work Manual – permanent plots (2018).</p> <p>Measuring crew from a different contractor will be responsible for cross-checking over 20% of the installed plots. These are selected directly by the planning manager and delivered to the crew based on the following criteria: (1) plots near roads, native forest, water courses; (2) accessibility and proximity to operations center; (3) sector with the highest plot intensity.</p> <p>The following items are reviewed: (1) plot without location error; (2) complies with radius and surface; (3) it has a center and a plot number; (4) clockwise numbering; (5) all Individuals are numbered; (6) missing trees identified with a plate; (7) forked trees marked separately; (8) DBH mark located at 1.3 m.</p> <p>Data is recorded in the form: "Quality control format", where is obtained a compliance percentage. A plot is considered installed when it meets the following tolerance ranges:</p> <p>1. Tolerance 0</p> <ul style="list-style-type: none"> <li>• plot with location errors, on tracks, native forest or mix of stands and species.</li> <li>• it does not have the radius (12.62 m) and specific area (500 m<sup>2</sup>).</li> <li>• numbering of individuals within the plot does not follow a defined sense (clockwise)</li> </ul> <p>2. Tolerance 20%</p> <ul style="list-style-type: none"> <li>• individuals are not numbered.</li> <li>• missing trees do not have a plate.</li> <li>• forked trees were not marked separately.</li> <li>• trees with DBH marking outside 1.3 m.</li> </ul> <p>Cross-checking of data is done following these two parameters:</p> <p>1. Differential between years: it applies to those plots that have two measurements, where the measurement of the dendrometer parameters cannot be less than the data of the previous year.</p> <p>2. Outliers: based on the diameter-height relationship, those data that do not represent the trend are tracked (e.g., thick, or tall trees with respect to their age)</p> |

|                     |                                                                                                                                                                                         |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     | Once this information is traced, it is delivered to the measuring crew for verification. Checking is done firstly at a digital level, and then proceed to verify directly in the field. |
| Purpose of the data | Calculation of project emissions                                                                                                                                                        |
| Calculation method  | N/A                                                                                                                                                                                     |
| Comments            | Sample plot location is registered with a GPS and marked on the project map                                                                                                             |

|                                                                 |                                                                                                                                                                                                                                |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                | Ai                                                                                                                                                                                                                             |
| Data unit                                                       | ha                                                                                                                                                                                                                             |
| Description                                                     | Area of each stratum                                                                                                                                                                                                           |
| Source of data                                                  | GIS Database                                                                                                                                                                                                                   |
| Description of measurement methods and procedures to be applied | Total ha for each stratum (specie and planting year)                                                                                                                                                                           |
| Frequency of monitoring/recording                               | Continuously                                                                                                                                                                                                                   |
| Value monitored                                                 | NA                                                                                                                                                                                                                             |
| Monitoring equipment                                            | NA                                                                                                                                                                                                                             |
| QA/QC procedures to be applied                                  | Quality control/quality assurance (QA/QC) procedures prescribed under national forest inventory are applied. In the absence of these, QA/QC procedures from published handbooks, or from the IPCC GPG LULUCF 2003, are applied |
| Purpose of the data                                             | Calculation of project emissions                                                                                                                                                                                               |
| Calculation method                                              | N/A                                                                                                                                                                                                                            |
| Comments                                                        | N/A                                                                                                                                                                                                                            |

### 4.3 Monitoring Plan

The aim of the Monitoring Plan is to record and monitor a number of different parameters in order to ensure that the project followed the corresponding methodology in the validated and registered PD and that the inputs to the carbon calculations are both accurate and up to date. Monitoring was done according to the consolidated CDM methodology AR-ACM0003 "Afforestation and reforestation of lands except wetlands" (version 02.0).

Monitoring stage comprised gathering information, performing calculations, and making estimations of GHG removals. In this monitoring event, it is ensured that commonly established principles of forest inventory and management were put into practice with the elaboration of a Monitoring Plan.

### GHG information system

As this is a grouped project for activities that will be implemented in several sites in department of Meta and Vichada, the controls associated with the multiple project instances and its monitoring is ensured with a central GHG information system.

This centralized GHG information system is directly linked to the forest monitoring plan, as it is the basis for the measurement, registration, calculation and quality control of the standing volume in trees. An additional module is included to it: the variables needed to translate volume in standing trees to carbon stocks in aboveground biomass, belowground biomass, deadwood and litter.

The forest monitoring plan, the core element of the GHG information system is managed and maintained by Campo Forestal. The following paragraphs describes the different elements that forms it: definition of stratum and number of plots (methods and process), data management (archiving), data quality and organizational structure.

### Methods and process

According to the methodology applied, monitoring covered carbon stock changes for living above-ground. Below ground biomass was estimated indirectly based on above-ground biomass measurements and litter and dead wood were estimated as a percentage of carbon stock in tree biomass.

Project boundaries are defined at the beginning of project activity and the same geographic boundary will be maintained, according to VCS AFOLU requirements. However, the project area will be permanently monitored along the crediting period, since new strata may be created due to new plantations in the coming years, and after potential disturbances effects (pests, droughts, fire). Geographic coordinates are established recorded and archived. A Geographic Information System was implemented for the validation and verification.

With the purpose of developing the monitoring plan, the property was stratified into 10 strata, and 219 plots were installed. Stratification was done considering age class (plantation date); and species planted. The location of the plots followed the guidance given by the corresponding methodological tool, as well as IPCC Good Practice Guidance for LULUCF (2002), chapter 4.3, and described in the Work Manual – permanent plots (2018). Permanent sampling plot's location is systematic, with random start.

The number of plots were estimated according to A/R Methodological Tool "Calculation of the number of sample plots for measurements within A/R CDM project activities". In the following table is shown the methodological tool estimation and number of plots installed for the measurement of forest stands.

Table 2. Number of monitored strata

| Stratum                | Area (ha) | Sample plots (n) |
|------------------------|-----------|------------------|
| <i>E. pellita</i> 2016 | 1,673.84  | 50               |
| <i>E. pellita</i> 2017 | 1,383.7   | 42               |
| <i>E. pellita</i> 2018 | 943.9     | 50               |

|                                                          |                 |            |
|----------------------------------------------------------|-----------------|------------|
| <i>E. pellita</i> 2019                                   | 539.0           | 28         |
| <i>E. pellita</i> 2020                                   | 43.1            | 3          |
| <i>E. pellita</i> 2022                                   | 0.58            | 1          |
| <i>E. urograndis</i> 2016                                | 42.05           | 3          |
| <i>E. urograndis</i> 2017                                | 450.1           | 20         |
| <i>E. urograndis</i> 2018                                | 92.56           | 6          |
| <i>E. urograndis</i> 2019                                | 17683           | 9          |
| <i>E. urograndis</i> 2020                                | 37.75           | 4          |
| <i>E. urograndis</i> 2021                                | 50.63           | 4          |
| <i>E. urograndis</i> 2022                                | 34.19           | 7          |
| <i>E. urophylla</i> 2017                                 | 6.46            | 3          |
| <i>E. urophylla</i> 2018                                 | 37.57           | 6          |
| <i>E. urophylla</i> 2020                                 | 45.96           | 3          |
| <i>P. caribaea</i> 2017                                  | 46.55           | 4          |
| <b>TOTAL area included in this monitoring event (ha)</b> | <b>5,604.76</b> | <b>243</b> |
| <b>TOTAL area planted (ha)</b>                           | <b>5,667.6</b>  |            |

\* NE: Not estimated

The total area planted is 5,667.6 ha but the carbon credits claimed are only applicable to the area measured (5,604.76 ha).

By applying BEF method, volume equations are used to convert tree dimensions to stem volume of trees based on DBH and height measurement in each plot. Stem volume of trees is then converted to above-ground and below-ground tree biomass using basic wood density (D) and root-to-shoot ratio (R). Default carbon fraction (CF) value was used in order to estimate the carbon stock. Moreover, above ground carbon pool was measured following the methodology procedures and IPCC Good Practice Guidance for LULUCF (2003) established in the PD and Monitoring Plan. Carbon stocks in above ground biomass of trees are estimated by applying the BEF method, which calculates the biomass of trees of each species per unit area in each stratum at a given point of time, based on the following three dimensions: diameter, basal area, and height, obtained from field measurements.

Prior to the start of the inventory, all equipment used during the field work was checked and calibrated.

New plots were installed when reaching the minimum monitoring age (one year), with an intensity of 1 plot every 25 ha (each with a total area of 500 m<sup>2</sup> - radius of 12.62 m). The remeasuring process of the established plots will continue until the end of the plantation rotation age. The diversity of species, years of planting, genetic origin (seed / clone), soil types (valley, hilly and mountainous area) are represented by this network of plots. The establishment and initial measurement of the plots began in June – July. In addition, monitoring measurements were carried out annually during September – October, in order to match with the annual growth cycles of the plantations. Each plot was geo-referenced. Each tree has been identified either with paint or nameplate (trees with smaller ages and limited developments cannot be identified with paint).

Each plot was installed according to the geo-referenced location and numbering determined by the pdf map (that behold the complete network of permanent plots). The maps in pdf format were generated by the Cartography department (desktop work), based on the strata generated for the distribution of plots. It is necessary for the crew to verify in the field that the location of the plot is associated with a representative sector (otherwise relocate to achieve this objective).

Once located in the plot, the center is marked with a stake (either wood or plastic) with the number indicated on the map (the number must be unique in order to easily relocate and remedy the following years). All trees in the plot should be marked at DBH height with their number from 1 to N (painted or with a metal plate) facing the center of it. A sketch must be made with the location of each tree in the plot, according to the following model:

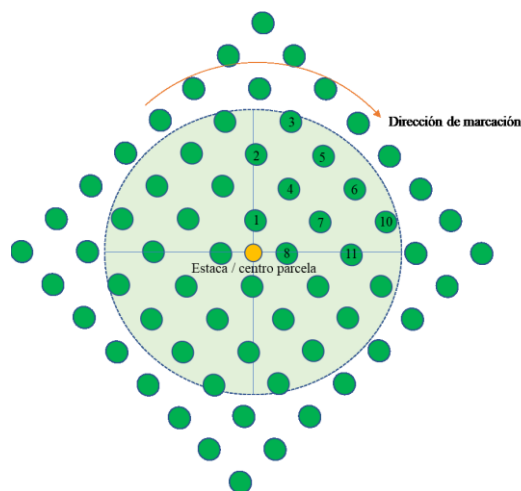


Figure 9. Permanent plots

Once the plot is installed, the qualitative and / or descriptive information of both the plot and the trees are registered according to the form described in Annex No. 1 of the Work Manual – permanent plots (2018). Furthermore, the diameters and heights for each tree is measured, as well as a classification corresponding to the shape and health status of the tree measured. In case of finding specific observations, this comment must be included, both at the plot level and at individual tree.

The processing and analysis of the information is done through databases in Microsoft Excel. The synthesis of the collected information is presented in dynamic tables and graphs that associate frequency distributions of the variables of interest (volume without bark, basal area, number of individuals, diameter - average height). Most of the variables of interest are taken directly in the field, and further analysis corresponds to the application of inferential statistics (volume). All data gathered as part of the

monitoring plan was archived electronically and will be kept at least for two years after the end of the crediting period.

### **Data quality**

A Quality Control System will be implemented for routinely checking for data consistency, correctness, and completeness; for identifying and correcting errors and omissions; and for properly documenting and archiving data and documentation related with the monitoring activities (For more information go to annex 8). Quality Assurance measures will be implemented, in order to verify that data quality objectives are met, and in general, to support the effectiveness of the QC system.

Measuring crew from a different contractor is responsible for cross-checking over 20% of the installed plots. The selection of plots prioritizes following criteria:

- 1) plots near roads, native forest, water courses.
- 2) Accessibility and proximity to operations center.
- 3) Sector with the highest plot intensity.

Also, cross-checking of data is done following these two parameters:

1. Differential between years: it applies to those plots that have two measurements, where the measurement of the dendrometer parameters cannot be less than the data of the previous year.
2. Outliers: based on the diameter-height relationship, those data that do not represent the trend are tracked (e.g., thick, or tall trees with respect to their age)

Once this information is traced, it is delivered to the measuring crew for verification. Checking is done firstly at a digital level, and then proceed to verify directly in the field.

The following items are reviewed in the field:

- 1) plot location.
- 2) complies with radius and surface.
- 3) it has a center and a plot number.
- 4) clockwise numbering.
- 5) all Individuals are numbered.
- 6) missing trees identified with a plate.
- 7) forked trees marked separately.
- 8) DBH mark located at 1.3 m.

Data is recorded in the form: "Quality control format", obtaining a compliance percentage. Installation is considered done when it meets the following tolerance ranges:

#### **1. Tolerance 0**

plot with location errors, on tracks, native forest or mix of stands and species.

it does not have the radius (12.62 m) and specific area (500 m<sup>2</sup>).

numbering of individuals within the plot does not follow clockwise criteria.

#### **2. Tolerance 20%**

individuals are not numbered.

missing trees do not have a plate.

forked trees were not marked separately.

trees with DBH marking outside 1.3 m.

### Organizational structure

Monitoring event took place during 2020, 2021, 2022, ending in December 2023. The correct compliance with the specific guidelines in this document was oversee by Campo Forestal SAS, under the coordination with the technical and planning team of an independent third party (Cambium SA). On the other hand, proper implementation of the monitoring plan in the field is the obligation of the technical team of the contractor, which is under control of Campo Forestal SAS. Carbon estimations and general calculations were developed by CAIA.

### Data archiving

Campo Forestal has a Standard Operational Procedure to archive the data collected. The document specifies the person in charge of archiving, the place the information is kept, and the procedures followed to transfer, archive, and manage all the information obtained in the monitoring events.

## 5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

### 5.1 Baseline Emissions

The baseline net GHG removals by sinks shall be calculated as follows.

$$\Delta C_{BSL,t} = \Delta C_{TREE\_BSL,t} + \Delta C_{SHRUB\_BSL,t} + \Delta C_{DW\_BSL,t} + \Delta C_{LI\_BSL,t}$$

Where:

$$\Delta C_{BSL,t}$$

Baseline net GHG removals by sinks in year t; t CO2-e.

$$\Delta C_{TREE\_BSL,t}$$

Change in carbon stock in baseline tree biomass within the project boundary in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”; t CO2-e.

$$\Delta C_{SHRUB\_BSL,t}$$

Change in carbon stock in baseline shrub biomass within the project boundary, in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”; t CO2-e.

$$\Delta C_{DW\_BSL,t}$$

Change in carbon stock in baseline dead wood biomass within the project boundary, in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”; t CO<sub>2</sub>-e.

$$\Delta C_{LI\_BSL,t}$$

Change in carbon stock in baseline litter biomass within the project boundary, in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”; t CO<sub>2</sub>-e.

Since continuation of an activity that has not trees, shrubs, deadwood, or litter (cattle grazing) and that has been applied without changes for more than 20 years (it is demonstrated to be the baseline scenario), it is assumed, in agreement with IPCC Good Practice Guidance for Land Use, Land Use Change and Forestry (2003) that the net GHG removals by sinks in the baseline equals zero.

This has been demonstrated in the PD and first Monitoring Report and, as per the methodology applied, this analysis is done only once and applied to the rest of the crediting period.

## 5.2 Project Emissions

### Change in the carbon stocks in project: general overview of the calculation process (ex-post)

For expost calculations, the process starts again with the Geographical Information System.

The estimations originate with the collection of data on the field. The sample plots are visited, and the stumpage volume of each tree in the plot is estimated following a standardized method to measure diameter at breast height and total height. With the use of different factors and applying the correspondent allometric equations (see below) this information is translated into volume per tree and carbon stock per tree, as it is described in the exante calculation. The raw data present in this sheet is then grouped by plot and strata using a pivot table which can be seen in “expost accurate” worksheet.

*Exante* estimations are not considered to estimate the real carbon captured, however it is used to contrast the real values against what has forecasted. The real growth curves serve as inputs to recalibrate the volume forecasted to the project.

The Carbon stock changes in different pools are estimated following the procedures described in section 4.2, mutatis mutandis “exante” with “expost”.

The Change in the carbon stocks in project is presented below, step by step:

- 1) Apply the following allometric equation:

$$V = 0,0000695500969644492 * DBH^{1,80136294480371} * H^{1,08292976147938}$$

Where:

V: Volume with bark (m<sup>3</sup>)

DBH: Diameter Breast Height (cm)

H: Total height (m)

The project will use Cumare's allometric equation to estimate Eucalyptus tree volume. This allometric equation is presented in "Resultados de Ajuste de funciones de volumen general para plantaciones forestales del género Eucalyptus ubicadas en predios de Reforestadora Cumare": The allometric equation is obtained from the measurement of 420 trees and 7,742 stems with an R2 above 97%.

In the case of *Pinus caribaea* the equation  $V = 0.002658 + (0.000024 * (d2) * (h))$  is considered, which is provided in the document "ProClima "Sectoral GHG mitigation projects - AFOLU sector" by Lopez 2013. This document by Lopez refers to a study "growth and yield of plantations of *Acacia mangium*, *Eucalyptus pellita* and *Pinus caribaea* in Orinoquía Colombia.

In regards to "Demonstrating appropriateness of allometric equations for estimation of aboveground tree biomass in A/R CDM project activities", the allometric equation complies with "the equation has been used in commercial forestry sector of the host Party for ten years or more" since the equation has been created and used since 2013

2) Using the parameters presented in table 12 (basic density, biomass expansion factor, root-to-shoot ratio and carbon fraction, estimate the carbon stock in aboveground and belowground biomass.

Basic wood density for *Eucalyptus pellita* and *Pinus caribaea* is obtained from: "Proyectos sectoriales de mitigación de GEI sector afolu (proclima)" and for *Eucalyptus urograndis*: "Wood and pulping properties of *Eucalyptus urophylla* and its hybrid grown by silvopastoral and conventional forest production models" (2015) f. m. I. Souza, c. a. Sansígolo, c. h. Pupo and g. c. Sereghetti.

BEF: Tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs" (Version 04.2)

CF: Tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs" (Version 04.2)

3) With Excel, this information is grouped by strata using a pivot table. Automatically, the carbon stock in tree biomass is calculated, together with the uncertainty of the mean tree biomass.

4) Using the default and conservative value of 6% and 1% of carbon stock in tree biomass for dead wood and litter respectively, the total carbon in deadwood and litter is estimated.

5) In the end, the soil organic carbon increase in stock is added, following the equations and parameters presented in section 4.2 and below.

### Ex-post estimation: detailed procedure

Net anthropogenic GHG removals by sinks is estimated as the actual net GHG removals by sinks minus the baseline net GHG removals, minus leakage. The following general formula described in the methodology is used to calculate the net anthropogenic GHG removals by sinks of an A/R project activity, in t CO<sub>2</sub>-e:

$$C_{AR-CDM} = \Delta C_{ACTUAL} - \Delta C_{BSL} - LK$$

Where:

|                     |                                                               |
|---------------------|---------------------------------------------------------------|
| $C_{AR-CDM}$        | Net anthropogenic GHG removals by sinks; t CO <sub>2</sub> -e |
| $\Delta C_{ACTUAL}$ | Actual net GHG removals by sinks; t CO <sub>2</sub> -e        |
| $\Delta C_{BSL}$    | Baseline net GHG removals by sinks; t CO <sub>2</sub> -e      |
| LK                  | Total GHG emissions due to leakage; t CO <sub>2</sub> -e      |

The actual net greenhouse gas removals by sinks were estimated using the following equation described in the methodology:

$$\Delta C_{ACTUAL,t} = \Delta C_{P,t} - GHG_{E,t}$$

Where:

|                       |                                                                                                                                                                                                                                                                                                                                        |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| $\Delta C_{ACTUAL,t}$ | Actual net GHG removals by sinks, in year t; t CO <sub>2</sub> -e                                                                                                                                                                                                                                                                      |
| $\Delta C_{P,t}$      | Change in the carbon stocks in project, occurring in the selected carbon pools, in year t; t CO <sub>2</sub> -e                                                                                                                                                                                                                        |
| $GHG_{E,t}$           | Increase in non-CO <sub>2</sub> GHG emissions within the project boundary as a result of the implementation of the A/R CDM project activity, in year t, as estimated in the tool “Estimation of non-CO <sub>2</sub> GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity”; t CO <sub>2</sub> -e |

The tool for “*Estimation of non-CO<sub>2</sub> GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity*” (Version 04.0.0) has been considered. The use of fire for site preparation and/or to clear the land of harvest residue prior to replanting is specifically excluded from the project management and therefore project emissions are estimated as zero.

### Carbon stock changes

$\Delta C_P$  is the sum of the changes in above-ground and below-ground tree biomass, dead wood, litter, and soil organic carbon stocks in the project scenario. Changes in the carbon stocks in project were estimated using the following equation described in the methodology:

$$\Delta C_{P,t} = \Delta C_{TREE\_PROJ,t} + \Delta C_{SHRUB\_PROJ,t} + \Delta C_{DW\_PROJ,t} + \Delta C_{LI\_PROJ,t} + \Delta SOC_{AL,t}$$

Where:

|                             |                                                                                                                                                                                                                                                                                       |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| $\Delta C_P, t$             | Change in the carbon stocks in project, occurring in the selected carbon pools, in year t; t CO <sub>2</sub> -e                                                                                                                                                                       |
| $\Delta C_{TREE\_PROJ}, t$  | Change in carbon stock in tree biomass in project in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”; t CO <sub>2</sub> -e                                                               |
| $\Delta C_{SHRUB\_PROJ}, t$ | Change in carbon stock in shrub biomass in project in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”; t CO <sub>2</sub> -e. This pool is conservatively dismissed in these estimations. |

|                       |                                                                                                                                                                                                                                                                                                   |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| $\Delta CDW\_PROJ, t$ | Change in carbon stock in dead wood in project in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”; t CO <sub>2</sub> -e                                                                          |
| $\Delta CLI\_PROJ, t$ | Change in carbon stock in litter in project in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”; t CO <sub>2</sub> -e                                                                             |
| $\Delta SOCAL, t$     | Change in carbon stock in SOC in project, in year t, in areas of land meeting the applicability conditions of the tool “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities”, as estimated in the same tool; t CO <sub>2</sub> -e |

### Biomass carbon pools

Above and below ground biomass have been estimated according to the tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activity”. Carbon estimations in trees are based on field measurements of monitored parameters (chapter 6.1). Estimations are archived as part of the project verification.

The aboveground biomass corresponds to tree biomass, no shrubs are considered for estimation. The method used for estimating change in carbon stock in trees is the “stock change method”. Change in carbon stock in trees in two successive points in time is calculated as the difference between the two estimated stocks. Carbon values in every pool is estimated as the sum for the period, and the starting point of the crediting period is zero carbon, since this is the first monitoring report.

According to the chapter “Estimating carbon stock in trees at a point of time” of the tool, the following equation is used in order to estimate ex-post above and below ground biomass:

$$C_{TREE} = \frac{44}{12} \times CF_{TREE} \times B_{TREE}$$

Where:

|        |                                                                                               |
|--------|-----------------------------------------------------------------------------------------------|
| CTREE  | Carbon stock in trees in the tree biomass estimation strata; t CO <sub>2</sub> e              |
| CFTREE | Carbon fraction of tree biomass; t C (t d.m.) <sup>-1</sup> . A default value of 0.47 is used |
| BTREE  | Tree biomass in the tree biomass estimation strata; t d.m.                                    |

### Above ground and below ground biomass

Measurement of fixed area plots of the tool (Appendix 1 -Methods of plot biomass measurement) was applied in order to estimate de biomass of trees:

$$B_{TREE,l,j,p,i} = V_{TREE,j}(x_{1,l}, x_{2,l}, x_{3,l}, \dots) \times D_j \times BEF_{2,j} \times (1 + R_j)$$

Where:

|               |                                                                                        |
|---------------|----------------------------------------------------------------------------------------|
| BTREE j,p,l,t | Biomass of trees of species j in sample plot p of stratum i at late 2019 – early 2020. |
|---------------|----------------------------------------------------------------------------------------|

- VTREE j, Stem volume of tree species using field measurements of tree parameters (DBH and height), default values (allometric equation); m<sup>3</sup>. For ex-post estimation, the allometric equation used derived from on-site measurements The applied allometric equation is  $V = 0,0000695500969644492 * DBH^{1,80136294480371} * H^{1,08292976147938}$ . The equation predicts the stem volume with bark.
- Dj Basic wood density of tree species j. The species j corresponds to the species used in this project: *E. pellita*, *E. urograndis*, *E. urophylla*, *P. caribaea*., with a basic density varying from 0.48 to 0.53 t.d.m./m<sup>3</sup>. This parameter was established as “available at validation” in the Project Design, thus it was not measured or monitored. The value was obtained and corresponds to default value from the local source: “Proyectos sectoriales de mitigación de GEI sector AFOLU (Proclima)”.
- BEF<sub>2j</sub> Biomass expansion factor for conversion of stem biomass to above-ground tree biomass, for tree species j; dimensionless. According to the methodological tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs", for ex-post estimation the conservative default value of 1.15 is used.
- Rj Root-shoot ratio for tree species j; dimensionless. The values applied were taken from the suggested equation from the methodological tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs". The value of Rj is estimated as:

$$R_j = \frac{e^{(-1.085 + 0.9256 \times \ln b)}}{b}$$

where b is the above-ground tree biomass per hectare (in t d.m. ha<sup>-1</sup>).

### Soil organic carbon

Estimations of soil organic carbon (SOC) stocks were done in accordance with the “Tool for the estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activity”. As suggested by the tool, it is assumed that the implementation of the project activity firstly decreases the SOC content of the lands from pre-project level, due to the site preparation.

Afterwards, the SOC increases to the level that is equal to the steady-state SOC content under native vegetation. The increase in SOC content in the project scenario takes place at a constant rate over a period of 20 years from the year of planting. The project meets the ARTTOOL-14ity conditions of this tool as demonstrated in chapter 3.2 Applicability of Methodology. The correspondent carbon sequestration calculation uses parameters in table 14 and is available to the verification team in the total carbon stock estimation worksheet.

Table 3 Parameters used for estimation of SOC

| Parameter             | Symbol               | Value | Source (SOC estimation tool, V01.1.0) |
|-----------------------|----------------------|-------|---------------------------------------|
| Reference SOC (tC/ha) | SOC <sub>REF,i</sub> | 60    | Table 3 LAC soils, tropical moist     |
| Land use factor       | fLU ,i               | 1     | Table 6 All permanent grassland       |

|                   |        |      |                                                                                                                                                                                                                  |
|-------------------|--------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Management factor | f MG,i | 0.97 | Table 6 Moderately degraded grassland Overgrazed or moderately degraded grassland, with somewhat reduced productivity (relative to the native or nominally managed grassland) and receiving no management inputs |
| Input factor      | f IN,i | 1    | Table 6 Grassland without input of fertilizer                                                                                                                                                                    |

Attached below is a screenshot of the IPCC climate zone classification for the 'El Porvenir' establishment, obtained from the Earth Map<sup>5</sup> website.

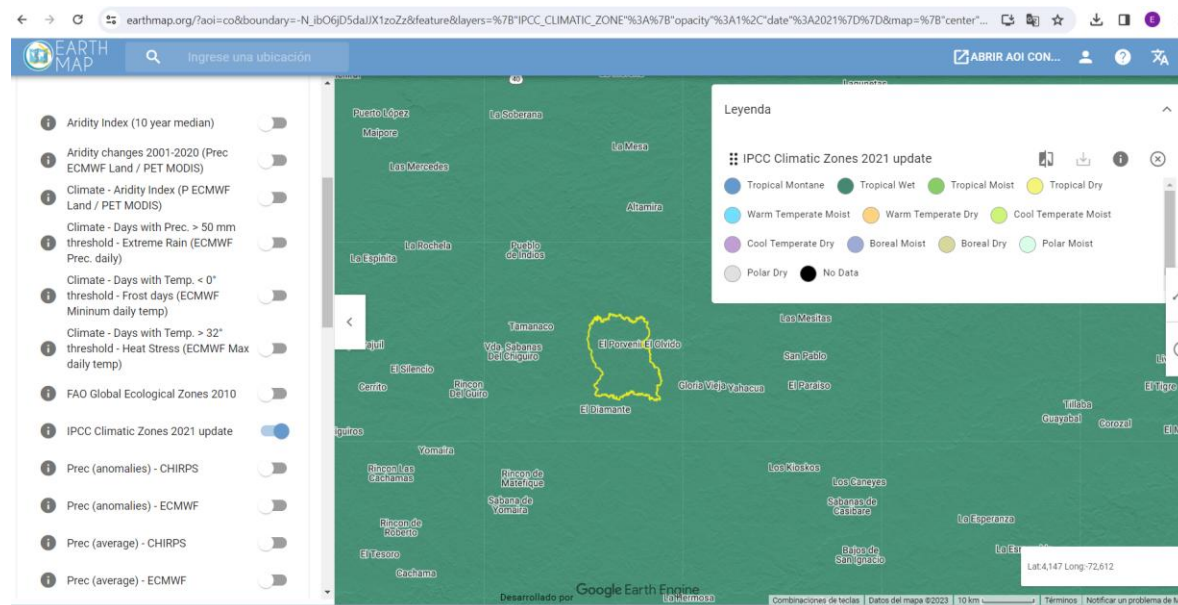


Figure 10. Classification of the climate zone according to IPCC.

## Litter and Dead Wood

Estimations were done in accordance with the tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities” using a default and conservative value of 6% and 1% of carbon stock in tree biomass for dead wood and litter respectively.

## Uncertainty

Appendix 2 of the methodology tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”, there is a procedure to apply an uncertainty discount if estimates have high uncertainty. Since the uncertainty in the estimated mean value of the average carbon stock in trees is less than 10% (5.36%), no uncertainty discount is applied.

## Vcus obtained and their vintage.

<sup>5</sup> Earth map website: <https://earthmap.org/>

The total amount of VCUs (verified carbon units) that REFORESTADORA CUMARE SAS is requesting in this monitoring event is presented in the following table:

Table 4. VCUs requested by Campo Forestal by vintage.

| Vintage | C stocks (tCO <sub>2</sub> e) – cumulative | VCUs    |
|---------|--------------------------------------------|---------|
| 2020    | 530,424                                    | 27,021  |
| 2021    | 812,210                                    | 281,786 |
| 2022    | 1,093,995                                  | 281,786 |
| 2023    | 1,375,781                                  | 281,786 |
| Total   | 1,375,781                                  | 872,377 |

### 5.3 Leakage Emissions

According to the methodology AR-ACM003 v.2.0, section 5.6, leakage emissions shall be estimated as follows:

$$LK_t = LK_{AGRIC,t}$$

Where:

$LK_t$ = GHG emissions due to leakage, in year t; t CO<sub>2</sub>-e

$LK_{AGRIC,t}$ = Leakage due to the displacement of agricultural activities in year t, as estimated in the tool “Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity;” t CO<sub>2</sub>-e

In addition, according to the methodology, the project proponent must carry out the evaluation of the sources of leakage due to the displacement of activity (conversion of grasslands to forestry) with the application of the tool “Estimation of the increase in GHG emissions attributable to the displacement of Pre-project agricultural activities in Project Activity A/R CDM.” The tool estimates the increase in emissions based on changes in carbon stocks in the affected carbon pools in the land receiving the displaced activities. This tool is not applicable if the displacement of agricultural activities is expected to cause, directly or indirectly, some drainage of wetlands or peat bogs”, which is not the case of the REFORESTADORA CUMARE SAS project.

First of all, when doing a forestry project in Meta or Vichada department, there is no displacement since the previous land-use activity may continue to exist in the project area ‘surroundings or the cattle might have been slaughtered. This type of projects (afforestation) has no leakage emissions attributable to the displacement of agricultural activities (cattle production) since there is no decrease in carbon stocks pools of the land receiving the displaced activity, because the receiving land has always been grasslands, as the area where this project is being implemented. Meta Department has a large share of grazing areas and the implementation of a circa 5.500 ha forest project will not have an impact in the carrying capacity

in the department. The carbon stocks in the areas that could receive the cattle which was in the project area, will not be affected.

Despite all, REFORESTADORA CUMARE SAS has started the project with no livestock in it. The previous landowner relocated the cattle in similar farms to “El Porvenir.” The cattle may have ended in slaughterhouse if common practice to these situations have been applied.

In addition to this, it is a possibility that in the future, cattle of the forestry project to finally have a silvopastoral activity.

As per section 6.10 of the “Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity” tool, leakage emission attributable to the displacement of grazing activities is considered insignificant and hence accounted as zero for a given list of specified conditions (from option (a) to (e)). The Motor Verde project does not conform to any of them since these conditions assume that there is a displacement of activities in the project area and there is no agricultural activity carried out in the project area at the baseline. Therefore, the approach of section 6.11 will be followed to estimate the leakage, in which leakage emission resulting from displacement of the activities is estimated as follows (equations 1, 2 and 3 of AR-TOOL15):

$$LK_{AGRIC,t} = \frac{44}{12} \times \Delta C_{BIOMASS,t} + \Delta SOC_{LUC,t}$$

$$\Delta C_{BIOMASS,t} = [1.1 \times b_{TREE} \times (1 + R_{TREE}) + b_{SHRUB} \times (1 + R_S)] \times CF \times A_{DISP,t}$$

$$\Delta SOC_{LUC,t} = SOC_{REF} \times (f_{LUP} \times f_{MGP} \times f_{INP} - f_{LUD} \times f_{MGD} \times f_{IND}) \times A_{DISP,t}$$

Where:

$LK_t$  = Leakage emission resulting from displacement of agricultural activities in year t; t CO<sub>2</sub>-e

$\Delta C_{BIOMASS,t}$  = Decrease in carbon stock in the carbon pools of the land receiving the activity displaced in year t; t d.m.

$CF$  = Carbon fraction of woody biomass; dimensionless.

$A_{DISP,t}$  = Area of land from which agricultural activity is being displaced in year t; ha

$b_{TREE}$  = Mean above-ground tree biomass in land receiving the displaced activity; t d.m. ha<sup>-1</sup>

$R_{TREE}$  = Root-shoot ratio for trees in the land receiving the displaced activity; dimensionless.

$b_{SHRUB}$  = Mean above-ground shrub biomass in land receiving the displaced activity; t d.m. ha<sup>-1</sup>

|                             |   |                                                                                                                                                                                                |
|-----------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| $R_s$                       | = | Root-shoot ratio for shrubs in the land receiving the displaced activity; dimensionless.                                                                                                       |
| $\Delta SOC_{LUC,t}$        | = | Change in soil organic carbon (SOC) stock due to land-use change in the land receiving the displaced activity in year $t$ ; tC ha <sup>-1</sup> .                                              |
| $SOC_{REF}$                 | = | SOC stock corresponding to the reference condition in native lands by climate region and soil type applicable to the land receiving the displaced activity; t C ha <sup>-1</sup>               |
| $f_{LUP}, f_{MGP}, f_{INP}$ | = | Relative SOC stock change factors for land-use, management practices, and inputs respectively, applicable to the receiving land before the displaced activity is received; dimensionless.      |
| $f_{LUD}, f_{MGD}, f_{IND}$ | = | Relative SOC stock change factors for land-use, management practices, and inputs respectively, applicable to the receiving land after the displaced activity has been received; dimensionless. |
| $t$                         | = | 1, 2, 3, ...years elapsed since the start of the A/R CDM project activity.                                                                                                                     |

As there is no current activity on the site where the project is to be implemented, there is no activity to be displaced. The area where the project is implemented has been abandoned since the wildfires that occurred in April and October 2017 and the site has not been productive since, with only wildlife present.

Thus,

$$A_{DISP,t} = 0$$

If the value of displaced area is substituted in each equation, it can be seen that the result of agricultural leakage will be equal to 0, because there is no area of land from which agricultural activity being displaced.

$$\Delta C_{BIOMASS,t} = [1.1 \times b_{TREE} \times (1 + R_{TREE}) + b_{SHRUB} \times (1 + R_s)] \times CF \times 0 = 0$$

$$\Delta SOC_{LUC,t} = SOC_{REF} \times (f_{LUP} \times f_{MGP} \times f_{INP} - f_{LUD} \times f_{MGD} \times f_{IND}) \times 0 = 0$$

$$LK_{AGRIC,t} = \frac{44}{12} \times 0 + 0 = 0$$

Thus,

$$LK_t = 0$$

During this monitoring period, the analysis of leakage is the same as in the first monitoring period.

The Meta Department, where the project is situated, holds a significant proportion of grazing areas and boasts a longstanding tradition and expansive livestock production. As of 2019, the total livestock

grazing area in Colombia stands at 34 million ha<sup>6</sup>, with the Meta Department accounting for 12.8% of this figure. According to the 2023 national census<sup>7</sup>, the Meta cattle stock is recorded at 2,324,613, resulting in a rate of 0.53 head of animals per hectare.

The initiation of a 3,901.2-hectare forest project implies a total value of 2,084 animals mobilized, equivalent to 0.09% of the department's overall stock. This figure aligns with the observed increase in load capacity. Notably, the Meta Department experienced an annual load capacity growth of 3.86% since 2018 when the cattle herd was recorded at 0.44 head of animals per hectare.

Furthermore, considering that the national load capacity is estimated at 0.87 head per grazing hectare based on the national census, it becomes evident that the Meta Department still has room for an increase in load capacity. Therefore, based on the thorough analysis provided by the project developer and in adherence to the applicable conditions of the tool, we can confidently conclude that the implementation of the afforestation project will not result in an exceeding of the carrying capacity in the Meta Department. Additionally, there is no indication of displacement of agricultural activities.

The carbon stocks in the areas that receive the cattle, which originally were in the project area, will not be affected. The carbon stocks should only be in grassland biomass, which is usually considered with a annual balance of zero given the compensation between the dry matter growth and cattle harvesting as feed.

Moreover, it must be said that REFORESTADORA CUMARE SAS has started the project with no livestock in “El Porvenir”. The previous landowner relocated the cattle in similar farms to “El Porvenir” or even more realistic, it may have ended in slaughterhouse if common practice to these situations have been applied. The is no displacement since the previous land-use activity may continue to exist in the project area’ surroundings .

Therefore, based on the conditions provided by the tool, the emissions from the displacement of the pre-project activity are considered to be zero.

## 5.4 GHG Emission Reductions and Carbon Dioxide Removals

| Vintage period             | Baseline emissions (tCO <sub>2</sub> e) | Project emissions (tCO <sub>2</sub> e) | Leakage emissions (tCO <sub>2</sub> e) | Reduction VCUs (tCO <sub>2</sub> e) | Removal VCUs (tCO <sub>2</sub> e) | Total VCUs (tCO <sub>2</sub> e) |
|----------------------------|-----------------------------------------|----------------------------------------|----------------------------------------|-------------------------------------|-----------------------------------|---------------------------------|
| 26-Nov-2020 to 31-Dec-2020 | 0                                       | 0                                      | 0                                      | 0                                   | 27,021                            | 27,021                          |
| 01-Jan-2021 to 31-Dec-2021 | 0                                       | 0                                      | 0                                      | 0                                   | 281,786                           | 281,786                         |
| 01-Jan-2022 to 21-Dec-2022 |                                         | 0                                      | 0                                      | 0                                   | 281,786                           | 281,786                         |

<sup>6</sup> [https://www.giz.de/en/downloads/GIZ\\_CIAT\\_GanaderiaPag\\_sencillas\\_web.pdf](https://www.giz.de/en/downloads/GIZ_CIAT_GanaderiaPag_sencillas_web.pdf)

<sup>7</sup> <https://www.ica.gov.co/areas/pecuaria/servicios/epidemiologia-veterinaria/censos-2016/censo-2018>

|                            |  |   |   |   |         |         |
|----------------------------|--|---|---|---|---------|---------|
| 01-Jan-2023 to 31-Dec-2023 |  | 0 | 0 | 0 | 281,786 | 281,786 |
| <b>Total</b>               |  | 0 | 0 | 0 | 872,377 | 872,377 |

i) Provide the requested information using the table below:

|                                                                                                            |                                                                                                      |
|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <b>State the non-permanence risk rating (%)</b>                                                            |                                                                                                      |
| <b>Has the non-permanence risk report been attached as either an appendix or a separate document?</b>      | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                                  |
| <b>For ARR and IFM projects with harvesting, state, in tCO<sub>2</sub>e, the Long-term Average (LTA).</b>  | 1,729,336                                                                                            |
| <b>Has the LTA been updated based on monitored data, if applicable?</b>                                    | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br>If no, provide justification. |
| <b>State, in tCO<sub>2</sub>e, the expected total GHG benefit to date.</b>                                 | 872,389                                                                                              |
| <b>If a loss occurred (including a loss event or reversal), state the amount of tCO<sub>2</sub>e lost:</b> | N/A                                                                                                  |

| Vintage period             | Baseline emissions (tCO <sub>2</sub> e) | Project emissions (tCO <sub>2</sub> e) | Leakage emissions (tCO <sub>2</sub> e) | Buffer pool allocation (tCO <sub>2</sub> e) | Reductions VCU (tCO <sub>2</sub> e) | Removals VCU (tCO <sub>2</sub> e) | Total VCU issuance (tCO <sub>2</sub> e) |
|----------------------------|-----------------------------------------|----------------------------------------|----------------------------------------|---------------------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------|
| 26-Nov-2020 to 31-Dec-2020 | 0                                       | 0                                      | 0                                      | 3,242                                       | 0                                   | 27,021                            | 23,779                                  |
| 01-Jan-2021 to 31-Dec-2021 | 0                                       | 0                                      | 0                                      | 33,814                                      | 0                                   | 281,786                           | 247,972                                 |
| 01-Jan-2022 to 31-Dec-2022 | 0                                       | 0                                      | 0                                      | 33,814                                      | 0                                   | 281,786                           | 247,972                                 |
| 01-Jan-2023 to 31-Dec-2023 | 0                                       | 0                                      | 0                                      | 33,814                                      | 0                                   | 281,786                           | 247,972                                 |
| <b>Total</b>               | 0                                       | 0                                      | 0                                      | 104,685                                     | 0                                   | 872,377                           | 767,692                                 |

| Vintage period             | Ex-ante estimated reductions/removals | Achieved reductions/removals | Percent difference | Explanation for the difference                                                                                                                                                                                                                                                                                                                            |
|----------------------------|---------------------------------------|------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 26-Nov-2020 to 31-Dec-2020 | 35,301                                | 27,021                       | -23.2%             | Explanation given below                                                                                                                                                                                                                                                                                                                                   |
| 01-Jan-2021 to 31-Dec-2021 | 322,216                               | 281,786                      | -12.5%             | Explanation given below                                                                                                                                                                                                                                                                                                                                   |
| 01-Jan-2022 to 21-Dec-2022 | 255,962                               | 281,786                      | 10.1%              | Explanation given below                                                                                                                                                                                                                                                                                                                                   |
| 01-Jan-2023 to 31-Dec-2023 | 193,439                               | 281,786                      | 45.7%              | Explanation given below                                                                                                                                                                                                                                                                                                                                   |
| Total                      | 806,818                               | 872,377                      | 8.1%               | Year to year differences make no sense explaining since the <i>ex ante</i> estimation is based in a growth model that is a simplification of the reality. And expost values are estimated based on the current (2023) and previous inventories (2020) and interpolated with simple linear regression. Overall, 7.9% difference is a very accurate result. |

# APPENDIX 1: COMMERCIALY SENSITIVE INFORMATION

*Use the table below to describe the commercially sensitive information included in the monitoring report to be excluded in the public version.*

| Section | Information | Justification |
|---------|-------------|---------------|
|         | N/A         | N/A           |
|         | N/A         | N/A           |
|         | N/A         | N/A           |
|         | N/A         | N/A           |

## APPENDIX 2: SUMMARY

### ENVIRONMENTAL IMPACT ASSESSMENT

Cumare Carbon Project does not have an environmental impact assessment as it is not required by any legislation or regulation. Despite this the project developer has conducted several environmental studies and environmental management plans, which are summarized in the following paragraphs.

Forest Protection - Forest Fire Protection Brigade.

The preventive fire protection activities, related to the dry season, begin with the planning and execution of firebreak lines in the perimeter of plantation areas and are executed in their entirety and interconnected to existing roads and natural barriers, they are considered protected areas or barracks.

They do not obey exact areas of division since natural barriers, roads, type of soil and state of the vegetation must be considered. In the sectors where this work could not be carried out mechanically, the firebreaks were anchored to natural barriers (moriches) that remained wet throughout the season.

The fire protection system operates in the driest months of the year, from December to March or April. It is led by the Operations Centre that fulfils the function of maintaining communication with the fire brigade, neighbours and work teams. The Operations Centre plans and directs the activities of the fire control brigade, which is made up of the brigade chief, crew chief, motorized security guard and brigade members.

For the 2019-2020 season, two observation points were implemented that allowed to see the entire perimeter of the property:

- A 45-meter-high structure with a camera that allows a constant 360° observation.
- A 20-meter-high structure that functions as an observation tower



Figure. Fire crew in REFORESTADORA CUMARE SAS

The work of the fire brigade and the Operations Centre is complemented by the prevention actions carried out by Campo Forestal personnel through constant communication with the neighbours, whose objective, in addition to maintaining good relations, is to be informed about the burning execution plans or other risk activities that could lead to fire outbreaks. If necessary, the action of a reinforcement squad that will assist the fire protection squad is considered.

Erosion control program

The erosion control program includes the identification, geo-referencing, categorization, monitoring, and maintenance of active points. Each of the stages consists of:

- Identification and geo-referencing: a tour of the total area of the El Porvenir property is made, including the main roads, slopes, quarries, etc., each point identified is georeferenced and included in a digital database that allows monitoring of evolution.
- Categorization and cartography: erosion points were classified according to their origin; there are then the following categories: Sewers, landslides, roads, and quarries. Culverts and roads are associated with built roads, while landslides are associated with steep slopes and quarries. Erosion points already categorized are included in the general mapping.
- Monitoring and maintenance: conservation works are proposed according to the type of erosion that occurs, mechanical and manual controls are used and / or the installation of a work that allows erosion control. This is complemented with the establishment of some type of vegetation, as a definitive solution.
- For cases of landslides on slopes with high slopes, wooden carvings are used. If there are bare slopes, grass is sown so that a permanent vegetation layer is established.
- The culverts are located on the roads at points of constant water passage that affect the condition of the road they are reinforced with bags filled with soil to protect the pipeline.
- Energy dissipators are installed in cases where the passage of water can form grooves.
- Tree planting is carried out in areas without vegetation; the gullies include plantation of native species.



Figure. Erosion control program in REFORESTADORA CUMARE SAS

#### Natural Environment

In 2015, a characterization of the natural environments and a study of the flora present in the El Porvenir property was carried out;



Figure. Savannah in REFORESTADORA CUMARE SAS



Figure. Riparo forest and a morichal

#### Protected flora

In 2015, a flora survey was carried out in El Porvenir with the aim of determining the status of the natural patches and identifying species under some category of threat at the national and international level, which are now classified as protected species within the project. The species of interest identified in El Porvenir are listed below:

Table. Native species in REFORESTADORA CUMARE SAS farm

| Species                      | Common name   | Category |
|------------------------------|---------------|----------|
| <i>Aniba perutilis</i>       | Comino cresco | Citric   |
| <i>Clitoria hermannii</i>    | Generalá      | Endémic  |
| <i>Guatteria cestrifolia</i> | Palancabueno  | Endemic  |
| <i>Cyathea</i> sp.           | Helecho macho | Veda     |
| <i>Annanas ananasoides</i>   | Piña de Danta | Veda     |

As part of the Endangered Species Protection Strategy, field personnel were trained to identify protected species, which was complemented with an identification card that they use in the execution of operations. If the presence of any of these species is determined in new sectors, the cartographic base will be included and updated.

The endangered species protection strategy, where the identification card is the tool used to achieve their monitoring, contributes to the organization participating actively in the conservation of the protected native flora.

#### Permanent Plots in Native Forest

The El Porvenir property has patches of natural forest that fulfil important ecological functions. It is very important to remark that they are not part of the project area. In addition to containing typical ecosystems of the Orinocense region, the Morichales. Based on the characterization of the natural environments, permanent monitoring plots –PPM- were installed in 2016 in areas with gallery forest cover, with the following objectives:

1. PPM Comino Crespo: Monitor the status and evolution of the *Aniba perutilis* species: Cumin Crespo under the category of critical danger.
2. PPM Natural Forest: Evaluate the influence of the establishment of a eucalyptus plantation in the vicinity of a mature natural forest.
3. PPM Morichal: Monitor regeneration and recovery of morichal after a fire disturbance in summer 2015.

The establishment of PPM and line were carried out at the end of 2016. An annual visual monitoring was proposed to observe the most evident changes in the coverage, the measurement of the dasometric variables will be carried out every four years since the plots are in forest areas mature, so its growth is low and does not show significant changes in a year.

- PPM Comino Crespo: The forest cover is maintained, it has a normal development without any type of natural or anthropic disturbance, the individual of *Aniba perutilis* is in good phytosanitary condition (Image 1.)
- PPM Natural Forest: The plot does not present changes due to interventions, so its original coverage is preserved in a good state of conservation. Mature individuals, although inclined, are in good phytosanitary condition
- PPM Morichal: the ecosystem presents a state of secondary succession, the burned moriches have new leaves, in the understory appear shoots of *Mauritia flexuosa* (moriche), of heliophilic and grass species that show the recovery after the disturbance

In 2018, three PPMs were installed whose objectives follow the line of observation and conservation. Specific areas were chosen, where there is a specific interest in the morichal and the identification of species in a special state of conservation such as *Aniba perutilis*, in critical condition.

1) PPM in Morichal Quemado: observe the recovery of the ecosystem that suffered disturbance by fire in February 2018. Due to the disturbance by fire, there was a loss of coverage of shoots of primary species and had a significant impact on the individuals of *Mauritia flexuosa* that presented a mortality of 35% with 19 individuals.

2) PPM in Morichal No Quemado: area whose floristic composition, without disturbances, will allow to compare the degree of recovery of the previous plot. This plot was characterized by presenting a good state of conservation, it did not show any interventions or disturbances.

3) PPM of Comino cespó: plot that includes the second location on the El Porvenir property of the individual of the cespó cumin (*Aniba perutilis*) in a critical state of threat, it aims to observe the individual and, therefore, its conservation in this area. It corresponds to a gallery forest that presents species of the ecological union of partial sciophytes that are indicators of the degree of maturity of the forest.

4) Visual monitoring 2019: according to the established monitoring frequency, in 2019 a visual monitoring was carried out that included the review of PPM areas. There were no obvious changes in the curly cumin plots and the unburned morichal plot, while in the burned morichal plot the recovery of the area is partial: there are no longer areas of soil without vegetation and there is a presence of regeneration of *Mauritia flexuosa*. Due to the high mortality of mature moriche palms in the fire, several fallen trunks were found that formed clearings of considerable size.



Figure 11. Permanent Plots in Native Forest

#### Wildlife monitoring

Since 2015, a wildlife sighting registry has been implemented that includes the frequency and location of the sighting, these reports are updated by the Operations Centre.

By the end of 2020, a record is kept of 431 sightings and 35 species of fauna, which include mammals, reptiles (14 identified species) and birds in the project area. In addition, species such as puma, jaguar, palm bear and tapir have been reported on few occasions.

In the sightings of the 2015-2020 period, the Saino with 34.4% and the Cajuche with 20.5% correspond to the most identified species, influenced mainly by the habit of living and moving in numerous communities. In second place comes the deer with 17.6% who, thanks to the union between plantation covers and the natural forest, go out to look for food. However, for the last year 2020, the deer occupies the first place with 30% and the Cajuche with 25% of the sightings.

46% of the reports received correspond to fauna associated with areas covered by Savannah, followed by plantations with 34% and then camping with 12% where deer are frequently sighted.



Figure. REFORESTADORA CUMARE SAS's wildlife Water births

Given the extension of the heritage, an annual inspection of the area that will be planted the following year is carried out for the identification and georeferencing of new springs. To date, in the El Porvenir property, 11 water sources have been identified, duly mapped, where a 100-meter buffer has been delimited in which any type of intervention is limited, and whose objective is the conservation and protection of water and the associated natural forest. The points are distributed in 7 sectors of the property, predominating the springs where the water emerges horizontally at various points - hillside and diffuse springs. Associated with the springs, there is a large amount of vegetation that ensures a flow of water is maintained until reaching larger courses; morichales, for example, are indicators of water sources



**Figure12. Water birth**

The protective forest area comprised within a radius of 100 meters in a radius from the periphery of two (2) water sources was selected. The area was reforested with the native Yopo species (*Anadenanthera peregrina* (L.) Speg.). A total of 2,500 individuals from Yopo, covering a total area of 2.3 ha.



**Figure13. Offset plantations**