MONITORING REPORT RESEX RIO PRETO-JACUNDÁ REDD+ PROJECT

Document Prepared by Biofílica Ambipar Environmental Investments S.A.

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Project Title	REDD+ RESEX Rio Preto-Jacundá Project
Project ID	1503
Version	3.1
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Project Location	Brazil, state of Rondônia, municipalities of Machadinho D'Oeste and Cujubim
Project Proponent (s)	Biofílica Ambipar Environmental Investments – Plínio Ribeiro plinio@biofilica.com.br +55 11 3073-0430 Associação dos Moradores de Reserva Extrativista Rio Preto Jacundá e Ribeirinhos do Rio Machado (ASMOREX) – Denise Viana Borges denivianaborges@gmail.com +55 69 3581-2084
Prepared By	Biofílica Ambipar Environmental Investments S.A.
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GHG Accounting/ Crediting Period	The accounting of GHG (CCB) and the credit generation period (VCS) is: October 1, 2012 – September 30, 2042; total term of 30 years
Monitoring Period of this Report	VCS and CCB: October 1, 2015, to August 7, 2020
History of CCB Status	CCB Validation – October 19, 2015
Gold Level Criteria	Compliance with the criteria of "Exceptional Benefits to Communities": The project is led and implemented by the community on the lands where they have use and management rights. The project has generated net positive benefits to the well-being and empowerment of community members in the monitored period through investment in 11 pillars (Governance and Adaptive Management, Health, Income Improvement, Education, Youth and Women, Environment, Social organization, Communication, Infrastructure, REDD+ Jacundá Financial Mechanism, and Zoning). Compliance with the "Exceptional Benefits to Biodiversity" criteria: The Project Zone has a very important role in biodiversity conservation, as it is in the "Rondonia Endemism Center". The vulnerability criterion is met by the regular occurrence of globally threatened species (according to the IUCN Red List), such as *Ateles chamek*, included in the "Threatened" (EN) category. Additionally, during the monitored period, the faunal survey carried out indicated 4 species of fauna in the "Near Threatened" category, 1 species in the "Endangered" category, and 5 in the "Vulnerable" category. In the flora survey, it was observed about 6 species in the "vulnerable" category and 4 species protected by law. It was also possible to verify the existence of about 114 possible rare species (not very abundant) within the RESEX, as well as the existence of indicator species.

Table of Contents

1 SUMMARY OF PROJECT BENEFITS

1.1 Unique Project Benefits

Table 1 – Summary of the benefits achieved in the REDD+ RESEX Rio Preto-Jacundá Project.

Outcome or Impact	Achievements during the Monitoring Period	Section Reference	Achievements during the Project Lifetime
1) Climate: Mitigation of climate change	Total emissions avoided in the monitoring period: 170,563 tCO2e Total deforestation avoided within the project area: 1,035 hectares Total number of inspection missions carried out by CUC/SEDAM: 22 (2020)	3	Total avoided emissions during the lifetime of the project: 1,517,391 tCO2e Total deforestation avoided within the project area: 4,390 hectares Total number of inspection missions carried out by CUC/SEDAM: 22 (2020)
2) Community: Improvement and investment in the conditions and quality of life of impacted communities through incentives to extractive activities, providing technical assistance and quality infrastructure, training and courses in order to improve the techniques used, improve communication channels and ensure better access to environmental education and health.	Number of families affected by the project: 33 Communities affected by the project: 5 Placement affected by the project: 3 Improvement and construction of infrastructure within RESEX: 8 Number of courses offered: 18	4	Number of families affected by the project: 33 Communities affected by the project: 5 Placement affected by the project: 3 Improvement and construction of infrastructure within RESEX: 8 Number of courses offered: 18
3) Biodiversity: maintenance and monitoring of the Project area's forest cover, ensuring the protection and conservation of habitats and local biodiversity, including species with some degree of threat	Number of expeditions for monitoring fauna: 1 (2020) Number of actions for flora survey: 5 (forest management), 1 (diagnosis) Number of species monitored: 42 (fauna); 471 (flora diagnosis) Number of species with some degree of threat monitored: 10 (fauna); 6 (flora diagnosis)	5	Number of expeditions for monitoring fauna: 1 (2020) Number of actions for flora survey: 5 (forest management), 1 (diagnosis) Number of species monitored: 42 (fauna); 471 (flora diagnosis) Number of species with some degree of threat monitored: 10 (fauna); 6 (flora diagnosis)

1.2 Standardized Benefit Metrics.

Table 2 – Estimates of the net benefit for different metrics during the life cycle of the REDD+ RESEX Rio-Preto Jacundá Project.

Category	Metric	Achievements during Monitoring Period	Section Reference	Achievements during the Project Lifetime
GHG emission reductions & removals	Net estimated emission removals in the project area, measured against the without-project scenario	Not applied	-	Not applied
	Net estimated emission reductions in the project area, measured against the without-project scenario	170,563	3.2.2	1,515,303
Forest cover	For REDD projects: Number of hectares of reduced forest loss in the project area measured against the without-project scenario	1,035	3.2.2	4,390
	For ARR projects: Number of hectares of forest cover increased in the project area measured against the without-project scenario	Not applied	-	Not applied
Improved land management	Number of hectares of existing production forest land in which IFM practices have occurred as a result of the project's activities, measured against the without-project scenario	Not applied	-	Not applied
	Number of hectares of non-forest land in which improved land management has occurred as a result of the project's activities, measured against the without-project scenario	Not applied	-	Not applied
Training	Total number of community members who have improved skills and/or knowledge resulting from training provided as part of project activities	125	4.3.1.6 Social organization	125

Category	Metric	Achievements during Monitoring Period	Section Reference	Achievements during the Project Lifetime
	Number of female community members who have improved skills and/or knowledge resulting from training provided as part of project activities of project activities	73	4.3.1.6 Social organization	73
Employment	Total number of people employed in of project activities, expressed as number of full time employees	5	2.3.14	5
	Number of women employed in project activities, expressed as number of full time employees	4	2.3.14	4
Livelihoods	Total number of people with improved livelihoods or income generated as a result of project activities	13 (8 families)	4.3.1.3 Income generation	13 (8 families)
	Number of women with improved livelihoods or income generated as a result of project activities	12 (8 families)	4.3.1.3 Income generation	12 (8 families)
Health	Total number of people for whom health services were improved as a result of project activities, measured against the without-project scenario	142 (33 families)	4.3.1.2 Health	142 (33 families)
	Number of women for whom health services were improved as a result of project activities, measured against the without-project scenario	75 (33 families)	4.3.1.2 Health	75 (33 families)
Education	Total number of people for whom access to, or quality of, education was improved as a result of project activities, measured against the without-project scenario	49	4.3.1.4 Education	49
	Number of women and girls for whom access to, or quality of,	19	4.3.1.4 Education	19

Category	Metric	Achievements during Monitoring Period	Section Reference	Achievements during the Project Lifetime
	education was improved as a result of project activities, measured against the without-project scenario			
Water	Total number of people who experienced increased water quality and/or improved access to drinking water as a result of project activities, measured against the without-project scenario	52 (19 families)	4.3.1.9. Infrastructure	52 (19 families)
	Number of women who experienced increased water quality and/or improved access to drinking water as a result of project activities, measured against the without-project scenario	46 (19 families)	4.3.1.9. Infrastructure	46 (19 families)
Well-being	Total number of community members whose well-being was improved as a result of project activities	142 (33 families)	4.3.1	142 (33 families)
	Number of women whose well-being was improved as a result of project activities	75 (33 families)	4.3.1	75 (33 families)
Biodiversity conservation	Change in the number of hectares significantly better managed by the project for biodiversity conservation, measured against the without-project scenario	94.289	5.1.1 (Table Reduction of unavoidable and unplanned deforestation)	94.289
	Number of globally Critically Endangered or Endangered species benefiting from reduced threats as a result of project activities, measured against the without-project scenario	6 fauna 6 flora	5.1.1 (Table Biodiversity Conservation) and 5.3.1	6 fauna 6 flora

2 GENERAL

2.1 Project Description

2.1.1 Implementation Description

The REDD+ RESEX Rio Preto-Jacundá project is a partnership between Biofílica Ambipar Environmental Investments and the residents of RESEX Rio Preto-Jacundá, represented by the Associação dos Moradores da Reserva Extrativista of the Rio Preto-Jacundá (ASMOREX), with the Centro de Estudos (CES) Rioterra as a third element in the implementing instance of the planning and execution of project activities.

Among the main activities implemented during the monitoring period, we highlight 1. Deforestation monitoring through remote sensing with data from the PRODES project and complementary analysis with high resolution images from the Planet/SCCON Web Platform with data from PLANET and RapidEye satellites; 2. Articulation and contact with the responsible environmental agencies and the Rondônia State Environmental Development Secretariat (SEDAM) for the containment of deforestation agents in the project area; 3. The implementation of community scope activities was structured in 11 pillars (Governance and Adaptive Management, Health, Income Improvement, Education, Youth and Women, Environment, Social organization, Communication, Infrastructure, REDD+ Jacundá Financial Mechanism, and Zoning); 4. Biodiversity monitoring.

The activities foreseen by the Project are characterized by their continuous implementation, with a large part started in this monitoring period. For more details on the implementation status of each project activity, see section 2.2; 4; and 5. In this monitoring period, the only project activity that resulted in GHG emissions was the Forest Management operation, with emissions duly accounted for (3.2.2. Project Emissions).

The RESEX Rio Preto-Jacundá REDD+ Project works with the purpose of promoting the development of activities aimed at mitigating climate change, reducing GHG emissions caused by deforestation and forest degradation, promoting social well-being and conserving biodiversity in the region in which RESEX is located. With this, the total reductions in GHG emissions generated in this monitoring period (Oct/01/2015 to Aug/7/2020) were 170,563 tCO2e.

Actions were taken to prevent events that could impact GHG emission reductions, resulting in leakage and non-permanence of emission reductions. These actions include constant monitoring of the project area and leakage belt, articulation with environmental agencies to assist in monitoring RESEX, the Timber Forest Management and communication procedures with stakeholders through regular and extraordinary meetings. Such actions aim to establish a broad and transparent management of the territory, seeking to avoid as much as possible the occurrence of invasions, disputes and illegal practices, and social tensions. The risks identified by the project are monitored and mitigated as described in section 2.2.6. There were no changes in the project bidders as well as their territorial limits during this monitoring period.

2.1.2 Project Category and Activity Type

- **Sectoral Scope:** 14 – Agriculture, Forestry and Other Land Uses (AFOLU);
- **Project Category:** Reducing Emissions from Deforestation and Forest Degradation (REDD);
- **Activity Type:** Avoided Unplanned Deforestation (AUD);
- **Grouped Project:** No.

2.1.3 Project Proponent (s)

Organization name	Biofílica Ambipar Environmental Investments S.A.
Contact person	Plínio Ribeiro
Title	Chief Executive Officer
Address	Street Vieira de Morais, 420 – Cj. 93 – Campo Belo Zip Code 04617-000, São Paulo/SP – Brazil
Telephone	+55 11 3073-0430
Email	plinio@biofilica.com.br

Organization name	Associação dos Moradores da Reserva Extrativista Rio Preto-Jacundá - ASMOREX
Contact person	Denise Viana Borges
Title	President
Address	Av. Diomero Moraes Borba, 4162 – Bom Futuro Zip Code: 76868-000, Machadinho d'Oeste/RO – Brasil
Telephone	+55 69 3581-2084
Email	denivianaborges@gmail.com

2.1.4 Other Entities Involved in the Project

Organization name	Centro de Estudos da Cultura e do Meio Ambiente da Amazônia - CES Rioterra

Role in the project	Support in carrying out social and economic and environmental studies, planning conservation activities, project validation and verification processes, implementation, and monitoring of REDD+ project activities, guidance, monitoring and administrative, financial and management monitoring of activities inherent to the Project implementation and political articulation.
Contact person	Telva Barbosa Gomes Maltezo
Title	Administrative Coordinator
Address	Street Padre Chiquinho, 1651 - Centro, Zip Code: 76803-786, Porto Velho/RO - Brazil
Telephone	+55 69 3223-6191
Email	telva@rioterra.org.br

Organization name	CDREX
Role in the project	Management-related activities, such as: monitoring and evaluating the implementation of project activities, resolving on the the social, economic and environmental scope, creating guidelines for the preparation of programs, plans and projects aimed at RESEX.
Contact person	Fabricio Pereira de Jesus
Title	Chairman of the Deliberative Council of State Extractive Reserves of Machadinho D'Oeste e Vale do Anari
Address	-
Telephone	+55 69 3581-2786
Email	fabriciofpj_pb@hotmail.com

Organization name	SEDAM - CUC
Role in the project	Manage the RESEX of the municipalities of Machadinho D'Oeste and Vale do Anari; to resolve on social, economic, political, and environmental activities of interest to the reserves and their communities; aim, through agreements and other means, the unit's self-sustainability; define guidelines for the preparation of programs, plans and projects aimed at the reserves; monitor project actions and analyze cost-benefit and results; carry out surveillance operations in the RESEX.
Contact person	Fábio França dos Santos

Title	Conservation Units Coordinator
Address	Palácio Rio Madeira – Av. Farquar, 2986 – Bairro Pedrinhas Zip Codem76.801-470 – Porto Velho, RO
Telephone	+55 69 99207-9938
Email	fabiofrancadireito@gmail.com

Organization name	MADREX
Role in the project	Maintain activities related to timber forest management at RESEX.
Contact person	Avalone Sossai de Farias
Title	Responsible for Low Impact Forest Management
Address	Av Vereador José Damasceno S/N, Lt 981-B, qd 29, bairro Setor 02, Vale do Anari - RO
Telephone	+55 69 99970-3434
Email	madrex.mad@gmail.com

Organization name	ECOPORÉ
Role in the project	Monitoring of biodiversity
Contact person	Paulo Henrique Bonavigo
Title	President of ECOPORÉ and responsible for monitoring bidodiversity
Address	Av. Rafael Vaz e Silva, 3335 – Liberdade Zip Code: 76803-847, Porto Velho/RO - Brazil
Telephone	+55 69 9 9262-8215
Email	pbonavigo@gmail.com

Organization name	Pacto das Águas
Role in the project	Diagnosis of production chains
Contact person	Plácido Costa Júnior
Title	Institutional Articulator
Address	Rua Antonio Lopes do Nascimento,109 – Terra Nova Zip Code: 76909-434, Ji-Paraná/RO - Brazil
Telephone	+55 65 9 9603-9377

Email	placidocosta@pactodasaguas.org.br

2.1.5 Project Start Date (G1.9)

The start date of the REDD+ RESEX Rio Preto-Jacundá Project is October 1, 2012, the date on which the partnership contract between Biofílica and ASMOREX was signed.

2.1.6 Project Crediting Period (G1.9)

The crediting period for the REDD+ RESEX Rio Preto-Jacundá project is from October 1, 2012, to October 1, 2042, a total period of 30 years.

2.1.7 Project Location

The Project Zone and the Project Area are located in the Rio Preto-Jacundá Extractive Reserve, located in the municipalities of Machadinho D'Oeste and Cujubim (Figure 1), State of Rondônia, with latitude 8°56'10.41 "S and longitude 62°16'28.02 "Was its centroid. Next to RESEX Rio Preto-Jacundá, and consequently to the Project Area, we have the state of Amazonas (to the north), as well as Porto Velho, the capital of the state of Rondônia is approximately 350km away. In addition, the rivers Machado or Ji-Paraná (north-northeast) and Curica (west) border the RESEX, and the Juruá river crosses part of the area. The geodetic coordinates that define the project boundaries are shown in the table below.

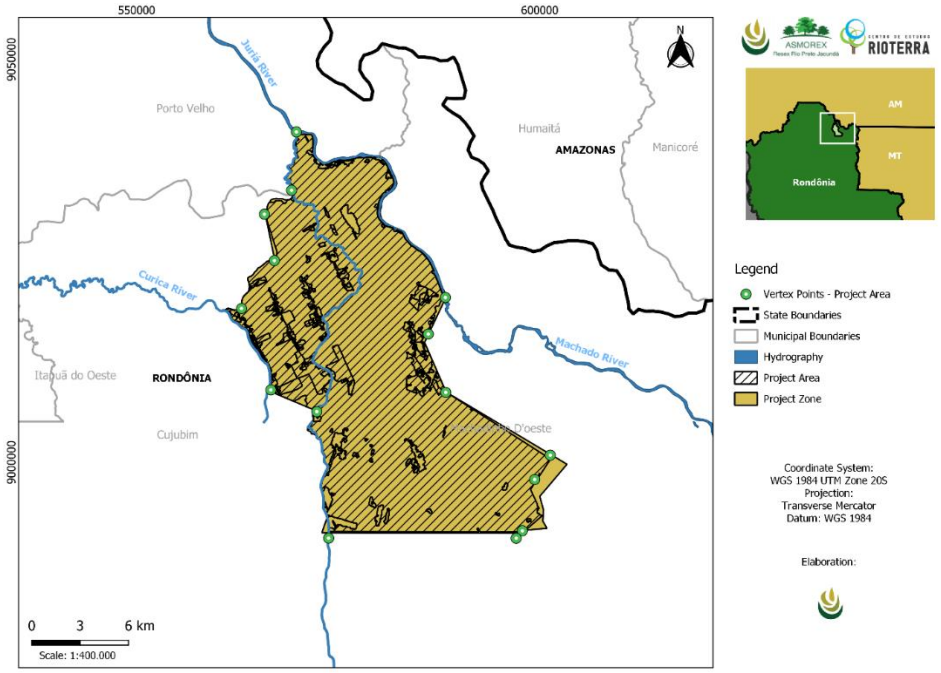


Figure 1 - Location of the Zone and Project Area of the REDD+ RESEX Rio Preto-Jacundá Project

Table 3 – Vertices and geodetic coordinates of the REDD+ RESEX Rio Preto-Jacundá Project Area. Coordinate System: UTM – Zone 20S, Datum WGS 1984.

Vertex	X	Y
1	573,935.50	8,991,425
2	572,415.20	9,006,347
3	566,723.60	9,009,158
4	563,071.80	9,019,840
5	567,419.50	9,026,129
6	565,914.50	9,030,841
7	569,478.50	9,033,404
8	569,860.60	9,040,776
9	581,004.10	9,036,959

Vertex	X	Y
10	587,997.20	9,020,661
11	585,611.60	9,014,878
12	588,375.60	9,008,740
13	601,342.80	9,000,416
14	598,869.10	8,996,643
15	597,637.30	8,991,372
16	597,913.50	8,991,709
17	598,466	8,991,777
18	600,300.30	8,993,383

2.1.8 Title and Reference of Methodology

For this monitoring report, the VCS (Verified Carbon Standad) and CCB (Climate, Community and Biodiversity) standards were used, both in their third version. The methodology used was the approved VCS Standard VM0015 for Avoiding Unplanned Deforestation, version 1.1.

Project additionality was analyzed in accordance with approved VCS tool VT0001 – for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities, version 3.0. And, through the AFOLU Non-Permanence Risk Tool, version 4.0, the probable natural and human-induced risks for the climate benefits for the monitored period were verified.

2.1.9 Other Programs (G5.9)

The Rio Preto-Jacundá REDD+ Project does not hold or wish to generate any type of environmental credit related to the reduction of GHG emissions or removal claimed beyond the VCS Program.

2.1.10 Sustainable Development

One of the purposes of the REDD+ RESEX Rio Preto-Jacundá Project is to promote sustainable development in the region, and ASMOREX and CES Rioterra are facilitating and encouraging agents of the project, making the activities happen in a participatory manner.

CES Rioterra was created in 1999 with the purpose of contributing to the formation of a critical society, aware of its social and economic and environmental context, capable of proposing a development model for the Amazon region that combines conservation and sustainability with the improvement of the

population's quality of life with respect to their cultural differences, needs and the natural potential of the environments they use. Its mission is also to defend the Amazonian identity, value culture and the sustainable use of the environment, and contribute to a fair, democratic, and participatory society.

ASMOREX is a non-profit civil association, whose purpose is to manage the RESEX Rio Preto Jacundá together with the Rondônia State Environmental Development Secretariat – SEDAM. Thus, ASMOREX represents extractivists, their families and other residents residing in RESEX and is liable for developing and implementing the REDD+ project in a participatory manner.

Based on this support and in accordance with the expected impacts, the project contributes to seven UN sustainable development goals. For monitoring the actions that assisted to contribution to the UN Sustainable Development Goals, a follow-up was carried out through activity reports produced at least once a year by CES Rioterra, monthly activity reports produced by resident and former president of ASMOREX José Pinheiro (from 2008 to 2011, from 2014 to 2018 and from 2018 to 2020), as well as minutes of meetings and community assemblies, the approved annual Work Plans, presence lists of each course held, and others approaches depending on the activities.

Table 4 – Contribution to the UN Sustainable Development Goals.

Sustainable Development Goals	Application in the Project
	The project enables and encourages access to education through technical and professional courses aimed at the areas of financial, administrative and social organization management, in addition to having implemented an educational center for young people and adults, allowing access to training that enable achieve better employment conditions and income diversification, especially for women and young people. The Project also facilitated access to information, through the acquisition of computer equipment and training in this area. In addition, activities aimed at sustainable practices, such as extractivism and sustainable forest management and environmental education, reduce the occurrence of illegal activities by the community and promote the appreciation of cultural diversity, contributing to the sustainable development of RESEX.
	All project activities are open and encouraged for the participation of all residents of the active communities, especially women and young people. The project has a Life Plan, where activities promote the empowerment of women to participate in decision-making by the residents' association (ASMOREX). In addition, the project's Life Plan

	promotes activities focused on women and young people such as workshops for leadership training, training at all levels of education and training in productive processes for income generation, cooperativism, gender social relations and public policies, increasing equality of opportunity at all decision-making levels. In addition, the project encourages the structuring of the internal commission formed by women, thus increasing access to public policies and ensuring rights, strengthening a solid policy to ensure the applicability of gender equality and women's empowerment at all levels.
	As a method to complement the availability of energy at RESEX, the installation of 9 photovoltaic panels ensured an increase in the share of renewable energy in the Project Area, and it was possible to bring clean and sustainable energy to the families at RESEX. In this regard, riverside communities, with greater difficulty in accessing energy, were granted access to alternative energy. Thus, relying on the conventional and alternative energy system, 100% of the local community currently has access to energy.
	Within its activities, the project helps to increase access to technologies and information through the acquisition of computer equipment and construction of an internet tower, enabling greater contact with current affairs. The project works to improve local infrastructure, to support human development through the implementation of the educational center for young people and adults, construction of the community center, with the presence of an outpatient clinic, space for interaction between residents, and the maintenance of roads and extensions within project boundaries, facilitating locomotion and access. The project also operates in the establishment of agribusinesses, providing support for the necessary materials and inputs. Additionally, the company Pacto das Águas carried out the structuring and proposals for strengthening the production chains as an environmental and territorial management strategy and as an alternative to generate income for the population that lives in RESEX.

	The Project has a Multiple Use Management Plan which describes rules and procedures for extractivism and low impact forest management, which encourage the responsible exploitation of natural resources, low carbon agriculture and the recovery of degraded areas combined with socioeconomic development. Some of the Project's main components are related to the extractive productive chains of cassava flour, Brazil nuts and açaí, being carried out in order to ensure the efficient use of natural resources and their sustainable management. In addition, the project works to disseminate knowledge, training and capacity building focused on the efficient use of natural resources, aiming at a greater integration between the parties involved in the project and focusing on sustainable business chains, generating income and well-being for communities, and aligning to the extractive lifestyle, to sustainable development.
	All activities developed by the project aim to take actions to combat climate change and its impacts through monitoring and, consequently, reducing deforestation in the project area. As a result, reducing the emission of greenhouse gases, directly collaborating with the Brazilian emission reduction target, the project has the potential to reduce 12,428,713 tCO2e of GHG emissions in 30 years. During the monitoring period, the project achieved a reduction of 170,563 tCO2e.
	The project area is extremely important for the permanence of natural environments within and outside its limits, in addition to promoting the conservation of biodiversity, ensuring the maintenance of ecosystem services, through the implementation of training for the population, stimulating and improving knowledge about the local biodiversity, through studies with the monitoring of flora and fauna. With the activities, the project aims to mitigate future global climate change and significantly improve the living standards of local populations. The fauna diagnosis also shows the importance of RESEX for the maintenance of faunal diversity, preserving endangered species, with approximately 19% of the species found having some degree of threat. It is important to highlight that the residents' traditional lifestyles help preserve the quality of the area. The project monitors biodiversity and deforestation, so it is possible to control and prevent environmental degradation and excessive use of natural resources.

2.2 Project Implementation Status

2.2.1 Implementation Schedule (G1.9)

The main dates and milestones in the development and implementation of the REDD+ RESEX Rio Preto-Jacundá Project are shown as follows. More details about these and other actions developed by the project can be found throughout the report.

Table 5 – Summary of milestone(s) in project development and implementation.

Date	Milestone(s) in project development and implementation
Project Design Management and Activities	
October/2012	Signing of the Partnership Agreement for the development of the REDD+ RESEX Rio Preto-Jacundá Project
October/2012	Identification of players and institutions for establishing partnerships
Completed between October/2013 and May/2014	Preparation of technical studies: Forest carbon stock estimation; Deforestation baseline determination; Social and Economic and Environmental Diagnosis;
December/2012 to January/2014	Workshops with researchers and bidders to present the results of technical studies
July/2015	Preparation of the Project Design Document according to VCS and CCB standards.
November/2015 to June/2016	Monitoring of the audit process for validation of the Project in VCS and CCB standards and for the first VCS verification.
Management & Monitoring	
Started in 2013	Carrying out Low Impact Forest Management activities
October/2013	Community workshop to present terms related to REDD+, regulations and steps
February 2014	Returning the results of technical studies to the community
February/2014 to May/2014	Participatory construction of: i) Zoning of the RESEX and the Usage Plan; ii) “Life Plan” of the Project; iii) Benefit sharing mechanism; and iv) Dispute resolution procedure
July/2014	Community workshop to build concepts related to the Project, such as avoided deforestation, public consultation, auditing and validation and verification
Started in 2017	Beginning of the construction of annual Work Plans
Started in 2017	Articulation with environmental agencies to strengthen the REDD+ Project and surveillance against invasions and deforestation within RESEX.
July/2017 to August/2020	Training and capacity building with residents of RESEX Rio Preto-Jacundá
August/2017	Amendment to ASMOREX's Bylaws

Started in 2018	Start of Annual Rendering of Accounts
April/2018	Approval of the first Annual Work Plan
June/2018	Construction of a memorandum of understanding for the practice of management, control and transparency
May/2019	Inauguration of the Community Complex (Computer Room, Auditorium, Bathrooms and Refectory), in addition to 7 houses and an internet tower
September/2019 to May/2020	Construction of Clinic, Accommodation and 5 houses
September/2019 to June/2020	Diagnosis of Productive Chains (cassava, açaí and Brazil nuts)
2018, 2019 and 2020	Biodiversity Monitoring

2.2.2 Methodology Deviations

Not applied.

2.2.3 Minor Changes to Project Description (*Rules* 3.5.6)

RESEX Rio Preto-Jacundá Fund

During the monitoring period, precisely during the activities that comprised the theme named in the PD as "RESEX Rio Preto-Jacundá Fund", legal and bureaucratic issues were raised with the RESEX management bodies (SEDAM and CDREX), about the impossibility of the tool being named "Fund". This name would bring certain legal and financial obligations, which did not fit the objective proposed in the tool. Thus, the proponents decided to rename the tool as "Jacundá REDD+ Financial Mechanism".

For this reason, throughout this document, all actions linked to this tool will be named "Financial Mechanism", and not "Fund", as foreseen in the PD. This change had no impact on the results obtained in the monitored period, nor on the additionality of the project, and since it is mainly in the "community" scope, it was considered a minor change to project description.

2.2.4 Project Description Deviations (*Rules* 3.5.7 – 3.5.10)

In the previous project verification, for the period 2013 to 2015, there were no project description deviations, so they are not added in this section. Below are described only the deviations for the current monitored period.

Project Proponent – New Partner

In July 2021, Ambipar Participações e Empreendimentos S.A. completed the acquisition of 53.6% of the capital stock of Biofílica Ambipar Environmental Investments S.A. The main objective of this transaction was to accelerate the company's growth, leveraged by the Ambipar Group, and as a consequence, to expand its portfolio of available environmental services.

As a consequence of this acquisition, the company underwent a nominal change, decided in an extraordinary general meeting, and is now named Biofílica Ambipar Environment Investments S.A. The entrance of a partner (Ambipar) in Biofílica did not change the company's social objective, which is still strongly related to the promotion and financing of activities related to the environment and environmental conservation. A detailed description of this objective can be found in Article 3 of the company's updated Bylaws, made available to the VVB. The entry of a new partner will have a positive effect in that the contribution of resources, expertise, and gains in scale will allow Biofilica to advance more consistently and rapidly in its activities related to the environment and environmental conservation.

Additionally, there are no contractual or other legal implications in the contract of the REDD+ RESEX Rio Preto-Jacundá Project, or any other project implemented by Biofílica prior to this transaction, because of the entrance of a new partner of Biofílica. The main investment objectives of this transaction are the development of technology and expertise regarding Nature Based Solutions techniques.

COOPEREX Participation

COOPEREX (Cooperative of Extractivists of the Rio Preto Jacundá Reserve), formed by the communities of the RESEX, had its participation considered, through the actions of its members, in some activities described in the PD of the Project, focusing mainly on processes of improvement of administrative and financial management, and social organization. In this sense, the idea was that the residents would be formally represented by ASMOREX (residents' association) and, in commercial matters, as of 2013, by COOPEREX (cooperative), which would have separate boards.

However, during the monitored period, COOPEREX went through legal and financial problems, which directly influenced the performance of its management board, and culminated in the temporary paralysis of its activities during these monitored years.

Anyway, in view of the need for community members to be represented in the decision-making processes, especially about commercial and financial issues, and by common agreement with CUC/SEDAM (the manager of the conservation unit), the responsibilities previously attributed to COOPEREX were transferred to ASMOREX.

Consequently, when demonstrating the results achieved during the monitoring period, the main institution representing community members was ASMOREX. Regardless of the paralysis of COOPEREX, the results of the project and its additionality were not affected, since the project implemented actions and tools that allowed for the participation of all RESEX community members, regardless of the organization to which they were linked. In addition, some community members who make up the management board of

COOPEREX also participate in the management board of ASMOREX, so that no community members were excluded from receiving the benefits generated by the project.

Furthermore, when ASMOREX's statute had its last update in 2017, ASMOREX was allowed to institute its organizational constitutive rules, discipline the greatest internal and external relationship, giving autonomy in the management of the territory by the association, ensuring its authenticity as co-manager of RESEX Rio Preto-Jacundá.

Community monitoring indicators

During the monitored period, the activities carried out by the project were guided mainly by the implementation of the Annual Work Plans developed by the Executive Secretariat of the REDD+ Financial Mechanism (composed by Biofílica, ASMOREX and CES Rioterra).

The Annual Work Plans are tools established by the Financial Mechanism that show the actions, the composition of investments, and the activities prioritized annually by the community members. These priorities are based on the "Life Plan" and the "Benefit Sharing and Conflict Resolution Mechanism", designed based on workshops held with the communities in 2014, which culminated in the decision about the mission, characteristics, form of conflict resolution and governance of a mechanism that should guide the distribution of benefits from the REDD+ project to the communities within the Rio-Preto Jacundá RESEX.

Every Annual Work Plan that is prepared goes through the approval of the community by means of a General Assembly and, after 6 (six) months of its approval, it can be evaluated and reviewed, and adjustments can be made; if necessary, the review is submitted to the community's deliberation, via a General Assembly to be set up extraordinarily. Consequently, all the activities contemplated in this report and that resulted in impacts to the communities were elaborated and implemented through this procedure, that is, with the community members being the decision makers on what should be implemented through the investments of the project's resources.

The results presented in section 4.3, relate the 11 axes of action of the project in the community scope, with their respective indicators associated with the results achieved. However, of the 10 indicators established in the PD for community monitoring, 7 were contemplated by the activities carried out. The indicators "Gross revenue from each use of land within RESEX", "Family income" and "Agricultural production" were not monitored. Although these indicators were not monitored, the Project has been seeking to initiate some activities related to improving community income through investments in agricultural production, given demand coming from community.

Thus, although indicator “Agricultural production”, for example, was not mapped, during the monitored period, the activities carried out focused on improving the processes, so that later (in the next verifications) the results of these indicators will be raised. For example, the food security benefit, presented in section 4.1.1, 4.1.3 and 4.4.1, was achieved with initial project activities, such as harrowing procedures

- enable with acquisition of agricultural inputs - and training in agricultural themes, enabling better the community in their productions. With the advancement of activities aimed at improving agricultural production, it will be possible to map these indicators. Despite this occurring in this monitoring period, the non-accounting for these indicators did not negatively influence the implementation of the project, nor its additionality, nor the generation of benefits to community, since all the other indicators were answered, demonstrating mainly improvements in quality of life and well-being of the community members. Thus, although some indicators have not been covered in this monitored period, the activities implemented so far by the project have managed to generate short-, medium- and long-term benefits as pointed out in section 4.1.1, 4.1.3, and 4.4.1, the latter situated in the section that meets Gold Level GL2. Additionally, for the coming years and consequently in the next verifications, the proponents assume the responsibility to carry out the monitoring of all the project indicators defined in the PDD, reinforcing all the benefits generated to the communities through the activities carried out in all the action axes.

Governance and Adaptive Management - Management Board

Initially, during the elaboration of the project, and aiming for a participatory and transparent management, the community living in the Rio Preto-Jacundá RESEX chose to create a management/deliberation instance called " Management Board". In view of this, the main attributions of the Management Board were planned to be linked to the monitoring of project goals and results, to manage the resources according to the life plan, respecting the collective priorities, and to mediate conflicts that were not resolved in the first instance among the community members. In this way, the Management Board would be directly related to the RESEX governance system, which, thinking of the best way to manage the project, was divided into a management/deliberative instance and another implementing instance.

Regarding the management and deliberative instance, represented by an individual and his supplement, the following institutions were listed to compose it: Biofílica, CES Rioterra, CDREX, State Secretariat of Environmental Development (SEDAM), Federal University of Rondônia (UNIR) and the RESEX Rio Preto Jacundá. The implementing instance, which would be responsible for the execution and implementation of conservation activities, has only ASMOREX, Biofílica and CES Rioterra as responsible institutions. Such entities were defined in participatory workshops, and, during this definition process, it was stipulated that the most participatory representative would be the RESEX itself, which would have a representative from each community (at the time Cabeça-de-boi, Jatuarana and Jatobá), plus a member of the ASMOREX director.

Given this context, the activity "Conducting quarterly meetings of the Management Board " was proposed, and an additional document that would better define the criteria governing the Management Board and its procedures was planned to be developed after validation-verification of the project.

However, during the life cycle of the project, and in view of the difficulties encountered in the beginning of the proposed activities, the consolidation of the Management Board never occurred, and the formalization of the parties involved in the Management Board was not made official. In reality, the parties

that would institute the implementing instance ended up being encompassed in the Executive Secretariat of the REDD+ Financial Mechanism and, consequently, are in charge of all the management, governance, execution and implementation of the project.

It is important to emphasize that ASMOREX represents the interests of the community, but that there is no representative from each community acting directly in the deliberations in support of the association, as was foreseen for the composition of the management board. In any case, participation in ASMOREX is widely encouraged among all RESEX community members. Furthermore, the proposed additional document was also not carried out since it was not possible to put into effect the existence of the Management Board within the RESEX.

It is also worth mentioning that, in practice, the other entities expected to be part of the Management Board, more specifically referring to SEDAM and CDREX, are very important entities for the strengthening of governance in the RESEX, operating as deliberative and resolutive councilors and, as far as activities are concerned, are extremely notable parts in the fulfillment and progress of the project's commitments, this, regardless of the non-formalization of the Management Board.

Finally, although the Project did not implement the Management Board, during the monitoring period another tool was defined with the objective of collegiate management, representative and committed to the community's desires, which was the REDD+ Financial Mechanism, which has the participation of all the actors mentioned above (Biofílica, ASMOREX, CES Rioterra, SEDAM, and CREX), which have great importance for the strengthening of the RESEX. Thus, even though it is not possible to account for this activity in the proposed indicator, the non-formation of the Management Board did not impact the execution of the project activities or its additionality.

Biodiversity Monitoring

Realization of monitoring of the project impact in key taxa/species conservation indicators in the area and Realization of monitoring of natural pits in the area of RESEX

In view of all the activities planned in the project and the priorities listed for the investment of resources, during this monitoring period, it was decided to prioritize the activities associated with community development. In other words, the activities related to biodiversity monitoring entered the Project's schedule in 2019, when a Term of Reference was launched to hire an outsourced team for fauna monitoring, which was carried out in 2020.

Thus, the activity "Realization of monitoring of the project impact in key taxa/species conservation indicators in the area", planned to occur annually, starting with the first verification, was initiated in 2020. And the activity " Realization of monitoring of natural pits in the area of RESEX ", planned to occur every two years, starting with the first verification, was not initiated during this monitoring period. Strategies to include this activity in future monitoring will be worked on by Biofílica, ASMOREX, and CES Rioterra.

Realization of monitoring of *Ateles Chameck* (Spider Monkey), comparing areas with and without forest management

In 2020, in a context of global pandemic, isolation and restriction of face-to-face activities, it was decided in agreement with ASMOREX, CES Rioterra and SEDAM that the fauna monitoring, prepared by Ecoporé, would be carried out on the same transects installed by SEDAM for the Monitora Program. In view of this, the monitoring of the primate was only possible in managed areas (transects already installed) due to the context of the time (beginning of the pandemic in Brazil) which made it difficult to install sampling units in sites that had not undergone interventions or had not been managed. Thus, in order not to lose the ideal interval for data collection, it was decided to use only the stations already open. In addition, the choice was also based on the bias of installing plots in locations that had interference from unplanned deforestation, since there are several points in the RESEX that have been suffering invasions.

Thus, the monitoring of the *Ateles chameck*, established through the activity " Realization of monitoring of *Ateles Chameck* (Spider Monkey), comparing areas with and without forest management" was carried out only in the Zones that are focused for Forest Management activities (Multiple Use Zone and Forest Management Zone). However, even though the activity was not carried out entirely inside the RESEX, the transects represented the "worst" scenario, because they are already exploited sites and, even so, the sighting rates of the species presented an adequate level, evidencing the maintenance of the status of the species and the conservation of the forest as a habitat for the primate, even in areas that have already undergone forest management. Therefore, not performing the activity in unmanaged areas did nothing to impact spider monkey monitoring.

It is important to emphasize that, as described in section 5.4 of this document, the monitoring of primates in the RESEX was based on a protocol of primate data collection in protected areas, ensuring that the methodology for collecting these sighting rates was following technical and scientific premises appropriate for the species.

For the next verifications, the sampling in the Restricted Use Zone will be considered to be able to compare the data and understand, in a more refined way, how the occurrence and abundance of the species is given in areas where forest management activities are allowed and carried out, and in areas of restricted use within the RESEX.

Accounting for the Monitoring of *Ateles chameck* (spider monkey) indicator

It was foreseen that during the project's life cycle, the monitoring of the *Ateles chameck* (spider monkey), which represents a indicator of the project, would have its measurement and procedures to be applied by the survey conducted periodically of the local community throughout the year, and once a year by a specialist team.

However, although the local communities were involved in the biodiversity monitoring conducted by Ecoporé, they did not collect data regarding the monitoring of the spider monkey at any time on their

own, nor the entire year. Furthermore, as mentioned in item 5.3.1 of this document, the biodiversity monitoring, which includes the *Ateles chameck*, was realized only in 2020. This implies that, considering the period checked, the monitoring of the spider monkey was not carried out every year by a specialist team.

It is worth noting that monitoring involving biodiversity entered the scope of prioritization of project investments only in 2019, as mentioned above. Given this, for the next verifications, the proponents commit to carrying out activities that encourage not only the participation of communities in these processes, but also other institutions with an interest in knowing more about the local biodiversity, stimulating the conservation of biodiversity in the RESEX.

Accounting for the Diversity of plant community in permanent plots indicator

Permanent plots are an important tool for forest management, since they function as areas within the forest where periodic collection of quantitative and qualitative data involving temporal changes in tree vegetation is carried out. This means that any variation in the vegetation community can be compared to the values obtained from these locations, being a species of "control plot" extremely important in the surveillance and maintenance of a healthy and sustainable forest. It is important to say that the project foresaw, as a medium/long term activity, the adjustment of sustainable forest management to the premises of the Forest Stewardship Council (FSC). Thus, this parameter was thought so that over time it would be possible to compare the values of the areas where forest management occurs with the values derived from permanent plots and, depending on the repercussions, seek mitigation measures.

With this in mind, and because of this predictability, the frequency of the established parameter was designed to occur one year before harvesting and at intervals of one, three and five years after harvesting of the Annual Production Units (APUs). This frequency is in accordance with the rules and principles of forest certification, that is, in order to obtain the FSC certification seal it is necessary to adapt to a series of procedures and, until now, the forest management that takes place within the RESEX has not focused on adapting to the premises of the certification.

Thus, currently, the forest inventory of the permanent plots and, consequently, the accounting of the diversity of the plant community were only carried out one year before the harvesting of the APUs, and in the subsequent intervals, were not carried out.

This is explained because this frequency in the activity is mandatory for certified forest management, when we talk about low impact forest management that follows the laws and regulations in force in the state of Rondônia, it is mandatory to evaluate the plots before the implementation of management activities, and the subsequent monitoring of permanent plots is only done after harvesting if, and only if, any visible change caused by the exploration of the APUs is verified, since, according to the company responsible for forest management, MADREX, it considers the resilience of the conservation unit extremely high.

Given this, MADREX does not carry out the forest inventory of the permanent plots at the frequency stipulated in the parameter, making it impossible, at the present time, to compute the plant diversity at the frequency defined. Although the frequency was not performed as provided for in the Project Description, the indicator can be counted one year before the UPA's explorations and the project proponents understand that only the frequency associated with the indicator is being reported as a deviation in this section.

It is important to remember that the adaptation of forest management to FSC premises will still be discussed in the future (depending on the priorities of the community members) and may be in force by the next monitoring report.

2.2.5 Grouped Projects

Not applied, because this is not a bundled project.

2.2.6 Risks to the Project (G1.10)

The risk assessment was carried out through the application of the tool approved by the VCS "AFLOU Non-Permanence Risk Tool, v. 4.0". The result of the risk tool was presented as an attachment to the MR in this monitored period and will be reported to the VVB through the Risk Report and the Risk Calculation Tool. With the new assessment, the project risk has changed to 11%. In addition, other risks to the benefits of the project were identified, as well as their respective mitigation measures. These risks are listed below:

Risk: Illegal activities such as invasion and theft of wood are rampant in RESEX causing degradation, loss of forest cover and eviction from communities.

Mitigating Measures: The mitigation of this risk was linked to the involvement and efforts of the proponents to increase interaction with the enforcement agency (Rondônia State Environmental Development Secretariat - SEDAM), specifically focused on strengthening the confrontation of illegal activities occurring in the RESEX. Throughout the monitoring period, annual (PRODES) and quarterly (PLANET) deforestation bulletins were produced using satellite images. Thus, through the analysis of the bulletins, it was possible for the proponents to make more complaints to the competent agencies (item detailed in section 3.1), demonstrating the need for more active patrolling in the RESEX. Additionally, through the complaints, and with the financial support of the project, several operations were carried out in the RESEX to contain the agents of deforestation. In addition, the progress of the project's activities, reinforcing governance and local presence, starting in 2017 and due to a growing interest and participation of SEDAM in the area, which brought a greater physical presence, together with the improvement of social organization, the command and control actions in the RESEX have been bringing significant results, this

was demonstrated mainly by the low rate of deforestation identified in 2020, after the high rates of previous years.

Risk: The non-involvement of timber management in the REDD+ Project, where its planning and execution activities negatively impact the benefits of the project.

Mitigating Measures: At the beginning of the project, the involvement of timber management was discreet and permeated the project's issues indirectly, such as in the RESEX community zoning and in the carbon stock estimation. During the project, there were training, and capacity building activities linked to the management empowerment of the community on this activity, in addition to improvement through the adoption of best practices in management, both in the planning and harvesting phases. In addition, forest management today constitutes part of the income received by ASMOREX, which demonstrates the increasing importance of this activity in the area. These actions allow community members and ASMOREX to have greater influence and management over sustainable forest management activities, enabling the control and reduction of the environmental impacts of this activity on the forest and, consequently, on carbon stocks in line with the main climate objectives of the project.

Risk: Problems in the trading of carbon credits, due to variations in the price of credits and the absence of a regulated market, and consequent lack of resources to finance the proposed activities.

Mitigating Measures: Biofílica, the project's bidder, has a commercial sector exclusively responsible for developing project dissemination materials, participating in national and international events related to REDD+ and carbon credits in order to publicize, establish and expand the network of commercial contacts with potential stakeholders in the purchase of carbon credits. In addition, Biofílica is always looking for financing alternatives, such as donations and partnerships for the direct implementation of project activities (not necessarily linked to the sale of credits).

Risk: The non-involvement and empowerment of the community, maintaining the current state of lack of technical capacity of the residents to manage the project and financial resources, and insufficient governance and exploitation of the community.

Mitigating Measures: During the monitored period, there were significant and routine investments in training to internally strengthen governance and train residents in project-related issues and administrative and financial management, described in more detail in items 2.3.14 and 4.3.1. of this document. In addition, there are internal alignments between bidders and CES Rioterra, as well as general and extraordinary meetings in which they are used as a space for articulation and, consequently, improvement of adaptive management in line with the project results (presentation of available financial resources, the annual work plans and the rendering of accounts for the previous year are carried out not only to the residents of RESEX, through the Meetings, but also to CDREX, in the general meetings). In

addition, through the REDD+ Financial Mechanism, the proponent ASMOREX, along with the other members of the Executive Secretariat, receives support for the management of financial resources from the sale of credits, which provides credibility and confidence to the institution in the search for transparency and equitable sharing of benefits. It is noteworthy that these spaces (meetings) serve to collect feedbacks about the project. Furthermore, another point that deserves to be highlighted is the leading role among extractive communities that ASMOREX started to play, being perceived by other extractivist associations of the region as an entity capable of managing its own resources economically and efficiently.

Risk: The non-involvement of the managing public agencies and the agencies responsible for the surveillance of the area.

Mitigating measures: These agencies were involved in all the actions related to the surveillance processes of the RESEX. Because it is a state conservation unit, the project proponents made several attempts at coordination with SEDAM and, eventually, with IBAMA. In this sense, by sending letters, letters, complaints and meetings, support was sought for the mitigation and containment of illegal deforestation in the RESEX, especially after the identification of large areas of deforested areas within the limits of the RESEX (as demonstrated in section 3.1)

Risk: It is expected that in the scenario with the project there is increasing interest in participating in generating the entry of outsiders to the extractive reserve.

Mitigating measures: As a mitigation measure, two main mechanisms were implemented: choice of new families, evaluating whether the productive profile is compatible with the current in RESEX and implementation of a process for approval of these families by the communities already present at RESEX. These mechanisms are addressed through AMOREX's Bylaws, specifically in Article 7 of Chapter 3, which states that on occasions when external people intend to residence in RESEX, they must undergo consideration and approval by all partners through the Meeting General, space in which all community members have the right to assess decisions involving the management of RESEX. After approval by the community, the entry of these new community members or families is analyzed by SEDAM, and after its approval, the new residents are incorporated into the communities of the RESEX. This last step of the process was confirmed by the responsible for the Coordination of Conservation Units of the state of Rondônia, in a meeting with the auditors.

2.2.7 Benefit Permanence (G1.11)

To maintain and enhance climate, community and biodiversity benefits beyond the project duration, the following mechanisms are listed:

REDD+ Financial Mechanism: The structuring, implementation, and monitoring of the Mechanism began November 8, 2016, with the holding of a meeting attended by ASMOREX, Biofílica, CES Rioterra, and SEDAM; thereafter, several other meetings were held in 2017 to carry out a collective construction and to validate the terms of the agreement between the parties. These meetings resulted in a mechanism guided by collegiate management, representative and committed to the community's wishes, by transparency and publicity of all its acts, by the application of benefits and resources exclusively directed to the RESEX community collectivity, by the representative participation of the community members, by credibility and legality, and by environmental conservation. With the objective of financially supporting the RESEX, being the instrument indicated for the distribution of benefits coming, mainly, from the resources of the REDD+ Project. The implementation of the resources of the Jacundá REDD+ Financial Mechanism for the first cycle have already been carried out, and since the implementation of the actions, the mechanism has proven to be a successful tool in the process of management and sharing of benefits. Currently, even though the activities of the mechanism are already working since the beginning of carbon credit sales, the document that celebrates the agreement for the constitution of the Jacundá REDD+ Financial Mechanism is in its final stage of preparation, just a few steps away from its signature and legal effectiveness, in fact this documentation will only serve to legally formalize the good practices that are already applied by the project proponents and that should be continued until the end of the project.

Increased scientific knowledge on Biodiversity and Maintenance of High Conservation Value Attributes: The first biodiversity study conducted during project design served as a foundation for the implementation of the long-term monitoring plan for Biodiversity and HCVAs, which began in 2018. In the monitoring conducted in 2020, it was shown that the forests in the Project Area have a high degree of conservation and balance, even in areas where Sustainable Forest Management has occurred, demonstrating their conserved forest status. In this survey not all species found in the initial biodiversity study were found, due to methodological differences. However, this does not mean that the species do not occur there anymore, just that they were not found in the survey (see sections 5.1.1 and 5.1.4). Focusing on covering these differences between the studies, the continuous monitoring of biodiversity, proposed since the project's design, establishes the performance of annual biodiversity monitoring, for the occurrence of this activity at this frequency, the proponents understand that two paths are possible: the formalization of agreements with educational institutions that can contribute to the effectiveness of this monitoring, and the encouragement of community members to act as biodiversity monitoring agents, given the training that has been done. The decision for this process will be made jointly with all interested parties, understanding the priorities for this activity.

Improvement in procedures for patrimonial surveillance: The patrimonial surveillance actions, mainly associated with the monitoring of areas through satellite images, have been taking place since the validation of the project. This long period of activities has generated the need to improve these actions,

especially with regard to the effectiveness of patrolling in the RESEX. The proponents understand that in order to make these activities feasible, directly influencing the maintenance of the REDD+ project in the area, strategies must be developed with the RESEX management body (SEDAM/CUC), so that the project can contribute with the necessary infrastructure to the surveillance agents of SEDAM and, when necessary, the police force or other competent bodies, to inhibit the action of invaders in an increasing and effective way. These negotiations have already begun with SEDAM, and the proponents of the project have a clear position of support for these actions, since it is understood that without the constant physical presence in the region, the area can be extremely damaged.

2.3 Stakeholder Engagement

2.3.1 Stakeholder Access to Project Documents (G3.1)

During this monitoring period, the REDD+ RESEX Rio Preto-Jacundá Project implemented three methods of communication with the parties involved, aiming to ensure access to documents and all other Project information through oral, written, and virtual methods, as described below.

Writing: a printed and digital version of each document related to the project, such as the project design document and the summary, as well as project dissemination material, was made available for consultation at the RESEX experience center. It is important to highlight that all material has an accessible language that is applicable to the local reality.

Virtual: documents related to the Project were available via virtual means on the websites Verra and Biofílica. News about the Project were published in the Biofílica Newsletter through social media and can be accessed here.

Oral: information and news about the Project are transmitted orally at internal alignment meetings held by ASMOREX and at annual and extraordinary meetings held with residents of RESEX, as well as other opportunities for contact between interested parties and project bidders.

2.3.2 Dissemination of Summary Project Documents (G3.1)

Documents related to the Project were made available through virtual means on the Verra and Biofílica websites. On the CES Rioterra website, it is also possible to access information regarding the project. News about the project were published in the Biofílica Newsletter through social media Facebook and LinkedIn. In addition, all information and news about REDD+ was reported orally through cross-community meetings and at assemblies through the project bidders and other stakeholders.

All relevant information and evidence on the dissemination of project documents was made available for VVB review.

2.3.3 Informational Meetings with Stakeholders (G3.1)

The Project Proponents (ASMOREX and Biofílica Ambipar Environmental Investments S/A) and partners (more precisely CES Rioterra) hold internal meetings to monitor and plan activities and actions related to the Project. In addition, ASMOREX, in accordance with its mission and following the attributes set forth in its Bylaws, informs and raises awareness of its members and the general public, through communication vehicles, lectures, training sessions and other means, on the rights and duties of citizens, especially regarding the effective performance of their activities. In this regard, its entire operation is guided by its internal regulations and by normative orders, issued through general meetings. Therefore, all internal articulation and transfer of relevant information to interested parties are carried out through annual and extraordinary general meetings. It is noted that meetings with the participation of residents of RESEX, especially with regard to information related to the Project, are conducted in an appropriate language and consistent with the participating public and using mediation techniques (advisory to hold community assembly is one of the various roles performed by the CES Rioterra in the Project).

Ordinary general meeting are conducted by the president of the association, being assisted by the secretary of such meetings, preparing minutes, and publishing all the news of the activities. In essence, ordinary meetings aim to elect and swear in the members of ASMOREX's board of directors, decide on the convenience of their assets and discuss and ratify their accounts and the association's financial statement. Necessary and sufficient administrative management practices are also adopted, to restrict, individually or collectively, personal benefits and advantages, as a result of participation in decision-making processes. In order for it to take place, it is necessary to establish a notice with the agenda for the meeting at the institution's headquarters and/or publish in the local press or in a large-circulation newspaper, at least fifteen days in advance.

In relation to extraordinary general meetings, these are held whenever the interests of ASMOREX require a statement from the members or for a new election, when there is a resignation due to an inadequate office. Such meeting must also contain a call notice to be published in a newspaper with wide circulation and/or posted at the association's headquarters fifteen days in advance. It should be noted that this meeting may be convened by the board of directors or supervisory board and/or by a fifth of the members in good standing with their social obligations, pursuant to article 60 of Law 10.406/2002. Thus, such assemblies are considered a space for interested parties to dialog and propose possible clarifications on any information, activity or subject, ensuring that the construction of the project is participatory and over time. A tangible example of these spaces, described in this document, was the public consultation process with community members held on 2021/09/10, recorded in detail in section 2.3.7.

In addition, such assemblies take place, at first call, with the majority of members and, at second instance, with any number. That said, the meetings are strong tools for collaborative construction between bidders and the community, where appropriate and relevant information about costs, risks and potential

benefits to communities is provided, remembering that participation in the project is voluntary and the decision to participate, or not, is not definitive or results in some kind of restriction.

Another way to make information available to interested parties is linked to informal communication mechanisms. In this regard, ASMOREX works as a central pivot in the dialog between the parties, being a physical and accessible support to collect *feedbacks* and suggestions, measuring dissatisfactions and managing any discontents and dislikes related to the personal issues of the parties involved and/or project activities.

2.3.4 Community Costs, Risks, and Benefits (G3.2)

Prior and informed consultation to extractivists is dealt with both under international law, in the ILO Convention No. 169 on Indigenous and Tribal Peoples, and in the Brazilian standard, Law No. 9985, of July 18, 2000, which established the National System of Conservation Units (SNUC). Thus, from the beginning, a process of generating knowledge and expression about the project was sought, based on a transparent and independent process, seeking to reveal the real interest of the residents of RESEX.

These actions are reinforced throughout the monitoring period, as described in previous topics, by conducting certain strategies to address potential risks, costs and benefits with communities and other stakeholders, ensuring effective involvement in the process and prior free and informed consent.

The assemblies, as well as the informal communication channels, are the main methods of participation, involvement, consent, and approval of actions by the community.

The community elects in the Ordinary General Meeting as pointed out in section 2.3.3) ASMOREX's Board of Directors and Audit Committee, which act directly in the implementation of the REDD+ Project. The board of ASMOREX, together with Biofílica and CES Rioterra, hold frequent meetings for planning and carrying out activities, which are guided by the Life Plan prepared by the community themselves in the Project design phase. In view of this Life Plan, therefore, Work Plans are created annually, which include the activities (and respective budgets) to be developed in a period of one year. This Work Plan is presented to the community at the Ordinary Meeting and needs to be unanimously approved. At the end of the period of implementation of this Work Plan, the Rendering of Accounts for the previous year (which also needs to be unanimously approved) is presented to the community, also in the Assembly.

It is also during the Meeting that the suppliers who will provide the service included in the Work Plan are discussed and approved. It is important to point out that all outsourced suppliers undergo participation in public notices, sending their proposals and budgets.

Thus, that information is passed, questions are resolved, opinions are given, and activity, accountability and service plans are approved at the Assemblies. It is a space for dialog, joint construction, and engagement between stakeholders.

The communication channels, on the other hand, aimed to preserve and encourage quick dialogue (without waiting for the Meetings to be held), being a space for consultation, complaints, suggestions and

for all interested parties. The communication carried out in person is the most common and based on transparency among residents and on "face-to-face" dialogue. Another communication strategy implemented was the creation of a group with residents in a chat app (via internet).

Therefore, project stakeholders have open channels for dialog, construction, and adaptation, based on transparency and collectivity.

2.3.5 Information to Stakeholder on Verification Process (G3.3)

After the 2016/2020 Monitoring Report is fully finalized, it can be found on the Verra e Biofílica website. A print and digital version of these documents will be sent to ASMOREX and CDREX. For SEDAM, an official letter on the public consultation process will be sent and, subsequently, the report in its entirety.

The REDD+ Project adopted different strategies for communicating the verification process.These strategies were aimed at contemplating local partners and institutions, the players involved in the project's activities and society in general. Thus, considering all interested parties, three main ways of communication were created, two remote and one face-to-face. The planned actions are described below:

Remote (communication with partners and local institutions): The verification process is expected to be publicized online via social networks, websites and e-mail from Biofílica, CES Rioterra and ASMOREX. Project Folders will be sent in order to communicate and contextualize the verification process. All RESEX communities, families and residents will be communicated through different communication channels (newspaper and *Whatsapp*). The entire process will be conducted by ASMOREX with the aim of informing the parties, providing the opportunity to express themselves about the project. Complementarily, contact will be made with other interested parties (other community members and main leaders of the surrounding RESEX, those responsible for Forest Management in the project and surrounding areas, through letters to CUC/SEDAM, Audit office and Town Hall.

Remote (communication with society in general): The public consultation process and the guidelines related to the process were publicized in the Diário da Amazônia newspaper with wide circulation in the state. The disclosure was made 17 days before the day of the event. In addition, invitations were sent directly to all parties involved, in other words, to universities and researchers in the area, to the actors who live around the project area, and to other institutions that are interested in learning more about the project and the activities carried out. Suggestions, questions, and other notes about the project were collected from the actors involved.

In person (communities in the project area and stakeholders): The face-to-face visit (public consultation) was conducted with all the resident communities of the RESEX, where folders and other promotional materials were handed out with information about the activities developed by the project. In addition, during the face-to-face visit, feedback, questions and suggestions were collected. The visit was attended by other interested parties as described in section 2.3.7. In this way, the community complex of RESEX functioned as a place for the public consultation (auditorium) and a reference point for the collection

of this information (ASMOREX's office), where all the material produced for dissemination was also available in print and in Portuguese. In addition to these tools, the project documents (draft monitoring report and project description document) were available for consultation. It is important to remember that the public consultation was carried out following all the protocols of social distancing and health guidelines due to the pandemic of COVID-19.

2.3.6 Site Visit Information and Opportunities to Communicate with Auditor (G3.3)

Prior communication with the stakeholders about the visit of the auditors to the project area took place during the public consultation process through the three main channels mentioned in section 2.2.5. In order to facilitate communication between the interested parties and the auditors, the proponents provided the auditors with a list of the main actors who are in the area of influence of the project or who may have an interest in the project.

In this sense, during the face-to-face public consultation, more detailed in section 2.3.7, all stakeholders were informed about the audit process and site visit by the auditors. During the public consultation, the current context in which the project finds itself was explained, referring to the public consultation process and the reason why it is necessary to carry it out, as well as the explanation about the audit activities, the field visit by the auditors, and its importance for the continuity of the project. It was also informed about the possibility of communication by the auditors with the interested parties. In addition, prior to the consultation, ASMOREX was informed about the auditing activities, as it is the main means of communication with community members, and ASMOREX is responsible for hiring the auditors.

2.3.7 Stakeholder Consultation (G3.4)

The processes related to decision-making and implementation, as well as the various activities related to the project, are open to community participation. As already mentioned, involvement in the design, implementation, monitoring and evaluation of the project takes place through annual and extraordinary meetings and internal and/or partner meetings (SEDAM, CDREX, CES Rioterra) in which all interested communities have the opportunity to participate, being democratic spaces and open to the public of interest.

The main communication tool and the official space for dialog and articulation of the project between the communities and other interested parties are, in general, linked to ASMOREX itself, since, in addition to being the project's bidder, it is composed of residents and extractivists that live at RESEX and literally understand the reality and context of the place because they live there. Through this, all information and demands related to the activities and impacts of the projects can be discussed during the meetings or reported directly to the ASMOREX board of directors, which is always available at its headquarters or via social networks through the *Whatsapp app*

The results of all other project activities are also disseminated and discussed through these environments, facilitating the collection of *feedbacks* and comments that should also be addressed. Thus, meetings are the most direct adaptive management tools proposed by the project. In addition, another important communication channel, where ASMOREX and interested parties have the opportunity to discuss ideas and proposals for activities, are the workshops and training offered by CES Rioterra, which will be better described in item 2.3.13 of this document.

In this sense, the face-to-face public consultation process, which took place on September 10, 2021, in the RESEX auditorium, in the format of an Extraordinary General Assembly, was publicized 17 days in advance (August 24, 2021) in the Diário da Amazônia newspaper, of wide statewide circulation, in addition to the disclosure in a letter posted in a proper place at the ASMOREX headquarters, thus respecting ASMOREX's Social Statute, which requires at least 15 days in advance for disclosure. At the event in question, which was attended by the community members, the Rioterra representative, representatives from SEDAM and the Rondonia Court of Audit, and other stakeholders, the main results and impacts of the project during the monitored period were presented within the three main scopes: climate, community, and biodiversity. The Assembly was chaired by Denise Borges, current president of ASMOREX, and delivered by Luana Cordeiro, current project coordinator at Biofilica.

The Assembly began by explaining the REDD+ context and where the project is inserted, as well as explaining the current process that the RESEX Rio Preto-Jacundá REDD+ Project is going through. Within this scope, the public consultation and auditing process was explained, as well as the field visit of the auditors, as presented in section 2.3.6.

In a later moment, the main results of the project and their impacts within the 3 main scopes were presented, as mentioned. During this moment, a conversation circle model was adopted to stimulate the participation, mainly, of the community members, giving them a space to speak, presenting their doubts, suggestions, and discussion about the positive and negative impacts of the project. This format was adhered to for all three scopes.

In addition, during the public consultation, folders were distributed to all those present at the event, and posters were put up at the site. Both the folders and the posters presented a summarized description of the main results, impacts, and benefits achieved by the project activities during the monitored period, thus facilitating the dissemination of relevant information in the surroundings. In addition, a printed version of the monitoring report was made available for consultation by anyone interested. Thus, the oral and written communication format was adopted during the public consultation process.

2.3.8 Continued Consultation and Adaptive Management (G3.4)

The main channel for continuous consultation and adaptive management were the assemblies, internal and informal meetings directly to the ASMOREX board of directors, which is the official space for dialog and articulation between communities and other interested parties.

However, it was identified, during the monitored period and by the project bidders, that there is a need to strengthen communication channels, as community members still have doubts and often demonstrate shyness in reporting their opinions.

Thefreore, currently it is being discussed which adaptations are necessary to establish a more robust consultation and communication process between the interested parties, adapting and, mainly, in the form of registration.

It is noteworthy that, currently, all RESEX resident families, whether from the mainland or riverside, have access to electricity, and are able to access the internet in the strategic areas of the RESEX. This structure will make it possible to improve communication channels in the long term, being an important ally in the necessary adaptations that will be investigated in the future.

A first step in this direction has already been taken by ASMOREX, which started a WhatsApp group with the residents of the RESEX. The invitation to participate in the group was open to all residents who have access to the channel, which, so far, has been used to exchange information and warnings, and does not have a total adherence of RESEX residents.

2.3.9 Stakeholder Consultation Channels (G3.5)

The project activities are designed and implemented considering the desires, characteristics and limitations of each community as defined and verified during the internal meetings and assemblies already mentioned.

This communication and accessibility for discussion about the progress of project activities between stakeholders and proponents occurs continuously throughout the duration of the project, especially after the implementation of the guidelines established by the REDD+ Financial Mechanism, which focuses on a collegiate management, representative and committed to community desires.

Additionally, these spaces cited above, added to the holding of external coordination meetings with the RESEX management institution (SEDAM) and the participation in CDREX meetings, demonstrate, with regard to the implementation of activities and decision-making, the transparency and credibility of the project and the proponents involved. These spaces for exchange are the main channels for consultation with stakeholders outside of the RESEX and have a decisive role when it comes to the application of project resources in the area.

2.3.10 Stakeholder Participation in Decision-Making and Implementation (G3.6)

The processes related to decision-making and implementation, as well as the various activities related to the project, are open to community participation with the help of informational meetings described in item 2.3.3. in which all communities have the opportunity to participate. It is valid to state that the

involvement of RESEX residents has grown over time, and great engagement efforts were necessary, a natural fact since REDD+ and its concepts are complex issues and require continuous adaptation by all players. Local engagement is done through ASMOREX, which in turn communicates with other residents and government players.

In this regard, it is valid to describe that the engagement of residents only increases with each monitored period, and it is important to emphasize the peculiarity of the project which is, in addition to being located in a public area, ASMOREX is part of the implementing instance of the project and, consequently, it is made up of residents who represent the extractive and cultural interests of the local community.

Additionally, when it comes to the participation of other players that influence decision making within the RESEX, mainly SEDAM and CDREX, the main spaces for information exchange and decision making are the external meetings, ordinary and extraordinary assemblies. The participation of proponents in these spaces, representing the communities, was reinforced mainly with the institution of the REDD+ Financial Mechanism, which has these external actors as one of the focuses for influencing decision making in the use of project resources.

2.3.11 Anti-Discrimination Assurance (G3.7)

CES Rioterra, a non-profit civil entity, is respected for its performance in the state of Rondônia, developing projects for the sustainable use of the forest with traditional communities. It is governed by specific legislation and statute, which mentions the observance of its activities to the principles of legality, impersonality, morality, publicity, economy, and efficiency, as well as non-discrimination based on race, color, gender or religion.

ASMOREX, governed by the 2017 Bylaws, has rules for its operation, including political, social, racial, or religious discrimination, as well as the rights and duties of its members. The number of members is unlimited, as far as the maximum is concerned, and cannot be less than 10 individuals and not more than 70% of the same gender. It is foreseen the role of the Fiscal Council acting in the inspection of the operations, activities, and services of the association. It is worth noting that, currently, the current president of ASMOREX is a woman, showing, in practice, such anti-discrimination actions.

Biofílica Ambipar Environmental Investments S/A, founded in 2008 and, according to its norms and conducts, do not allow any kind of driscrmination, whether of race, color, nationality, ethnical origin, age, religion, sex, secual orientation, marital status, political orientation, and physical or mental disability, humiliating atitudes, moral or secual harassment, intimidations, persecutions, and physical or psychocogical agression.

2.3.12 Grievances (G3.8)

At the beginning of the project, in an appropriate workshop, the residents of RESEX Rio Preto-Jacundá resolved on the procedure for resolving conflicts, which was in line with the traditional methods practiced, in which the space of the ASMOREX meetings served for dialog and exhibition of dissatisfaction and accountability.

During the project and during the period monitored with respect to this document, such complaints and conflicts are mediated by ASMOREX and, for the most part, are exposed in person by the people involved. In addition, it is worth remembering that there are communication channels such as Whatsapp groups that are used to report possible complaints. As a counterpart to such unwanted situations, whenever possible, discontents are addressed and resolved in the best manner as possible, promoting the well-being and satisfaction of all existing communities in the project area.

2.3.13 Worker Training (G3.9)

As established in the Project Management Plan, many of the activities foreseen in the Project are associated with training of the residents of RESEX Rio Preto-Jacundá. The purpose of these trainings is to create or improve skills regarding the extractive and riverside lifestyle and the governance of the area.

The idea of the community itself is that special attention should be given to women and young people, as they have great potential for development in the community but are still underrepresented in positions of direction and management at ASMOREX and COOPEREX.

During this monitoring period, courses and training in social strengthening with an emphasis on associativism, administrative and financial management (six modules), social management and organization, and fauna monitoring were carried out. In addition to these, the ASMOREX board (the Project's technical team) received specific courses and training in administrative and financial management, such as preparing cash flows. Additionally, in September 2019, computer classes were started in the computer room built in the Community Complex through the Project's actions. There are two existing courses: the basic, with 7 modules, and the advanced, with 8 modules. This course was created with the main focus on training young people at RESEX, but older residents have also taken the course.

2.3.14 Community Employment Opportunities (G3.10)

The non-discrimination of any kind is among the principles of the implementing entities of the Project. However, it is known that the structural model of society was built in an unrepresentative way, leaving the man to leadership positions, as well as opportunities for study and work. In view of the recognition of the necessary change in this model of society and gender equity, as well as the need to offer opportunities to the younger residents of RESEX, these groups have been included and encouraged to

participate in courses and training, to be elected in board positions, as well as participating in paid activities linked to the Project.

During the monitoring period (October 2015 to August 2020), residents were able to participate in various paid activities, such as: opening of tracks for fauna monitoring; field monitoring of fauna biodiversity; cutting and sawing wood for the construction of houses and the community shed. Residents of the RESEX also participate in the forest inventory activities carried out in Sustainable Forest Management.

Besides these specific activities, 5 (five) residents have developed continuous activities in the project, in management positions, implementation and advisory activities, financial management, and teaching computer classes, through formalized hiring via ASMOREX. Of these permanent positions, 4 were or are being held by women.

2.3.15 Relevant Laws and Regulations Related to Worker's Rights (G3.11)

It is guaranteed that all employees belonging to ASMOREX, Biofílica and service providers are legally hired, in accordance with Brazilian labor legislation. In addition, international agreements ratified by Brazil and issues related to workers' well-being are met.

Annually, compliance with the labor standards and laws applied by Biofílica is verified through an audit, since the company is a limited liability company. Furthermore, the financial statements are published on the website of Jus Brasil, the largest open and legal community in Latin America.

After hiring and before the start of the worker's activities, there is training and qualification on technical procedures and the promotion of empowerment in relation to their rights and applicable laws. In addition, employees are instructed to join the institution responsible for their rights, the respective unions for the work area.

The relevant laws and regulations that protect the rights of workers in Brazil, as well as international agreements ratified by Brazil on labor matters, are listed below.

Federal legislation and regulations

- Decree-Law No. 5.452, of May-01-1943: Approved by the Consolidation of Labor Laws.
- Law No. 6.514, of December 22, 1977; Amends Chapter V of Title II of the Consolidation of Labor Laws, relating to occupational safety and medicine and other measures.

International agreements ratified by Brazil

- Convention of the International Labor Organization No. 29 of 1930, ratified by Brazil on Apr-25-1957: Provides for the abolition of forced labor.
- International Labor Organization Convention No. 87 of 1940: Provides for freedom of association.
- Convention of the International Labor Organization No. 97 of 1949, ratified by Brazil on Jun-18-1965: provides for migrant workers.

- Convention of the International Labor Organization No. 98 of 1949, ratified by Brazil on Nov-18-1952: provides for the right to unionize and collective bargaining.
- Convention of the International Labor Organization No. 100 of 1951, ratified by Brazil on Apr-25-1957: Provides for equal pay for men and women.
- International Labor Organization Convention No. 105, ratified by Brazil on Jun-18-1965: Provides for the abolition of forced labor.
- International Labor Organization Convention No. 111 of 1958, ratified by Brazil on Mar-01-1965: Provides for discrimination in terms of employment and occupation.
- Convention of the International Labor Organization No. 131 of 1970, ratified by Brazil on May-04-1983: Provides for defining the minimum wage, especially in developing countries.
- Convention of the International Labor Organization No. 138 of 1973, ratified by Brazil on Jun-28-2001: Provides for the minimum age for admission.
- International Labor Organization Convention No. 142 of 1975, ratified by Brazil on Nov-24-1981: Provides for the development of human resources
- International Labor Organization Convention No. 143 of 1975: Provides for immigrations carried out under abusive conditions and the promotion of equal opportunities for migrant workers.
- Convention of the International Labor Organization No. 155 of 1981, ratified by Brazil on May-18-1992: Provides for the safety and health of workers.
- Convention of the International Labor Organization No. 169 of 1989, ratified by Brazil on Jul-25-2002: Provides for indigenous and tribal rights.
- Convention of the International Labor Organization No. 182, ratified by Brazil on Feb-02-2000: Provides for the prohibition of the worst forms of child labor and immediate action for its elimination.

2.3.16 Occupational Safety Assessment (G3.12)

Forestry activities, together with activities related to agriculture and hunting, are highlighted in the generation of accidents in the Amazon (NOGUEIRA et al., 2010).

Considering the activities proposed by the Project, the greatest risks to health and safety are associated with agricultural extractive activities (traditionally conducted), forest management and technical extension activities. It was considered in the Project PD, based on the studies by Goés (2013), that the main occupational risks are linked to chemical, physical, biological, and ergonomic risks:

- Chemical risks: related to the use of possible chemical inputs, such as fertilizers and herbicides. Residents, as noted in the project design, do not use chemical fertilizers and/or herbicides. In order to carry out the forest reforestation activities carried out at RESEX in 2021, the residents of RESEX who provided services were trained n occupational safety and first aid (described in more detail in section 4.3.1).

- Physical risks: related to the flow of energy, such as noise, vibration, temperature, and radiation. This risk remains absent at RESEX, which only relies on conventional and alternative electricity, via photovoltaic panels (installed during this monitoring period).

- Biological risks: related to living forms or products and substances derived from living forms, such as insects, viruses, bacteria, fungi, protozoa, poisons, and animal hair. The main actions taken to minimize these risks are done informally, through the passing on of local knowledge among community members, not only among RESEX residents, but also to visitors.

- Ergonomic risks: related to inadequate postures during the performance of tasks, improper furniture, inappropriate or excessive working hours, incorrect and unsafe storage of products and equipment. The activities promoted by the Project take into account occupational health and safety standards and labor laws. In this regard, courses, and training, as well as meetings and assemblies, were always held in spaces with appropriate furniture, in appropriate days and with meal breaks. The Project's technical team, hired by ASMOREX, also works under appropriate conditions, as do the outsourced workers who are hired to provide services. The community complex built during this monitoring period contributes to the well-being not only of the residents, but also the service providers and visitors to the RESEX, with accomodation, bathrooms, auditorium, computer room, cafeteria, and ambulatory. In addition, In Low Impact Forestry Management activities, residents and other employees use personal protective equipment (PPE) throughout the working day.

2.4 Management Capacity

2.4.1 Required Technical Skills (G4.2)

All areas of knowledge and technical skills required to successfully implement the project and activities are described below, as well as the bidder in charge for each area.

Biofílica Ambipar Environmental Investments is a Brazilian company that promotes the management of forest areas in the Amazon biome. The company was created in 2008 with the purpose of creating pioneering alternatives and making the preservation of the environment an economically attractive activity for forest owners, communities, and investors. Biofílica's mission is to reduce deforestation and carbon emissions into the atmosphere, preserve biodiversity and water resources, promote social inclusion and development of communities living in the Amazon biome through the sale of credits for environmental services and development and financing of scientific research activities and development of sustainable business chains.

Project Responsibilities: overall coordination of social and economic and environmental diagnostics (DSEA), baseline studies and carbon stock studies; development and financing of the PDD/DCP (Project Design Document); remote monitoring of forest cover and implementation/coordination of complementary actions aimed at reducing/mitigating greenhouse gas emissions; validation/verification

and commercialization of the generated credits; Project co-management throughout its duration and support in the implementation of conservation activities.

Associação dos Moradores da Reserva Extrativista Rio Preto-Jacundá – ASMOREX is a non-profit civil association, headquartered in the municipality of Machadinho do Oeste, state of Rondônia, which aims to manage the RESEX Rio Preto Jacundá together with the Rondônia State Environmental Development Secretariat – SEDAM. Thus, ASMOREX represents extractivists, their families and other residents residing in RESEX.

Project Responsibilities: ASMOREX is liable for developing and implementing, in a participatory manner, the REDD+ project, as well as ensuring the project's implementation and maintaining all the documentation necessary for the project to happen. Additionally, it is liable for monitoring and co-managing the REDD+ project.

Conselho Deliberativo das Reservas Estaduais Extratibistas de Machadinho D'Oeste e Vale do Anari – CDREX has the purpose to manage the RESEX in the municipalities of Machadinho D'Oeste and Vale do Anari; to resolve on social, economic, political and environmental activities of interest to the reserves and their communities; aim, through agreements and other means, at the unit's self-sustainability; define guidelines for the preparation of programs, plans and projects aimed at the reserves; monitor project actions and analyze cost-benefits and results.

Project Responsibilities: RESEX management and evaluation and monitoring of activities implemented at RESEX.

Centro de Estudos da Cultura e do Meio Ambiente da Amazônia – CES Rioterra is an OSCIP created in 1999 with the purpose of contributing to the formation of a critical society, aware of its social and economic and environmental context, capable of proposing a development model for the Amazon region that combines conservation and sustainability with the improvement of the population's quality of life with respect to their cultural differences, needs and the natural potential of the environments they use. Its mission is to defend the Amazonian identity, value culture and the sustainable use of the environment, and contribute to a fair, democratic, and participatory society.

Responsibilities in the project: coordination of social and economic and environmental studies; planning of conservation activities; support in project validation/verification; execution and monitoring of REDD+ project activities; guidance, follow-up, and administrative, financial and managerial monitoring of activities inherent to the implementation of the Project; supervision of accounting reporting; support for political articulation.

2.4.2 Management Team Experience (G4.2)

Plínio Ribeiro – Biofílica (Executive Director)

Plínio Ribeiro has a degree in Business Administration from the Teaching and Research Institute - INSPER and a Master's Degree in Public Administration and Environment from Columbia University and the Earth Institute (USA). He has participated in several conservation projects on Rio Negro, through the Ecological Research Institute – IPÊ since 2005, and was one of the producers of the documentary "Retorno à Amazônia [Return to the Amazon]", by Jean Michel Cousteau. He has been working at Biofílica since 2008, where he has led Projects, Operations and Business Management. He is currently executive director and shareholder of the company.

Cláudio Pádua – Biofílica (Scientific Director)

Cláudio Pádua has a degree in Business Administration and Biology, a Master's Degree in Latin American Studies and a Ph.D. in Ecology from the University of Florida in Gainsville (USA). A retired professor at the University of Brasília, Padua is currently dean of the Superior School of Conservation and Sustainability and vice president of the Ecological Research Institute (IPÊ). He is also a senior research associate at the Center for Environmental and Conservation Studies at Columbia University (USA) and international conservation director for the Wildlife Trust Alliance, as well as an advisor to the Brazilian Biodiversity Fund (FUNBIO) and WWF Brasil. Pádua represents Brazil before the International Consultative Group (GCI) of the G7 Pilot Program. In 2003, together with his wife Suzana Pádua, he was named by Time Magazine as "Hero of the Planet" for his activities in favor of biodiversity conservation. From 1997 to 2007, he won six conservation awards, three national and three internationals. Pádua has published two books and more than 30 articles in national and international scientific journals. Since 2008 he directs the involvement and scientific production of Biofílica as scientific director and advisor.

Paula Conde - Biofílica (Financial Administrative Manager)

Paula Conde has a degree in Business Administration from São Luís - PUC and a postgraduate degree in Accounting and Financial Management from FAAP. She has extensive experience, mainly in one of the largest media and education groups in Latin America - Abril, where she worked with Financial Reporting and Control, Treasury, Accounting and Financial Reconciliation, Accounts Payable and Receivable and Royalties. At Biofílica, she is responsible for administrative and financial activities, logistical support for the team and projects.

Caio Gallego – Biofílica (Operating Director)

Caio Gallego is a Forestry Engineer graduated from ESALQ-USP. Specialist in geoprocessing and remote sensing focused on environmental preservation area, mapping, and analysis of changes in land use. His knowledge is focused on Sustainable Forest Management, environmental modeling and use of

GIS for forestry and agribusiness. He has advanced knowledge in the use of GIS software and analysis of changes in land use and land cover in software such as ArcGIS, QuantumGIS and DinâmicaEGO.

Luana Cordeiro - Biofílica (Project Coordinator)

Luana Cordeiro is a Forestry Engineer graduated from USP - University of São Paulo (Campi ESALQ) and an Environmental Technician graduated from the State Technical School of São Paulo. During her graduation, she worked in the planning, implementation and monitoring of restored areas and in the development of social projects in Piracicaba (SP) through the Enactus network. At the end of graduation, she developed a Solid Waste Management Plan Model for Sawmills of Native Species, with a focus on sustainable production in the wood sector in the Amazon.

Susane Rasera - Biofílica (Project Analyst)

Susane Rasera is a Forestry Engineer with a Masters in Forest Resources, both from the University of São Paulo (Campus ESALQ). She has experience in the area of Forest Ecosystem Conservation, mainly in Forest Restoration and forest biomass and carbon allocation. She is currently a Project Analyst.

Aline Ribeiro - Biofílica (Project Analyst)

Aline Ribeiro is an Environmental Engineer, graduated from the University of São Paulo (Poli-USP). She has experience in the field of Conservation, with an emphasis on Economic Valuation of Ecosystem Services, Remote Sensing and Geoprocessing. She has also developed research projects in the area of greenhouse gas emissions and erosion control. At Biofílica, she works as a Project Analyst.

Shaxahmary de M. C. dos Santos – Biofílica (Project Analyst)

Forestry Engineer, graduated from the University of São Paulo (USP/ESALQ). In her last professional experiences and, during her graduation, she worked with themes of natural resource conservation, climate change, payments for environmental services, geoprocessing, restoration and forest hydrology. Currently, she works as a Project Analyst at Biofílica and specializes in Project Management.

Camilla Paulino - Biofílica (Project Analyst)

Graduated in Forestry Engineering from UFG (Campus Samambaia). She is studying for an MBA in Forest Management at UFPR (PECCA) and carries out research focused on REDD+, its challenges and opportunities. During graduation, she worked with edge effect analysis in forest fragments and forest restoration. She has experience in planning forest routes and roads, environmental education, and environmental projects for the implementation of wind and solar parks.

Denise Viana Borges – ASMOREX (Director)

Denise is a geographer, graduated in geography from the University of Northern Paraná (UNOPAR). In her last professional experiences and during her graduation, she worked with themes of environmental education, sustainability, climate change and also as a school transport monitor. She currently represents the families of the communities of RESEX Rio Preto Jacundá (president of ASMOREX) and acts as a professor of the computer course in the community complex of the conservation unit. She has worked in the organization's management support area (ASMOREX) since 2019, has experience in basic computer education and forestry inventory. She is currently a director and associate of ASMOREX.

José Pinheiro Borges – ASMOREX (Technical and Financial Assistant)

Self-employed, with experience in social organization and working in associativism since 2005 in the same sector (extractivism). Currently, he is responsible for the forest inventories of the RESEX Rio Preto Jacundá (forest technician). He was president of the association of residents of the RESEX Rio Preto Jacundá for three mandates, comprising the managements: 2008-2011; 2014-2018; 2018-2021. He has a curriculum with various courses such as: forest inventory, biodiversity monitoring, productive chains of açaí, Brazil nut and cassava, social organization, among others. He is also active as technical and financial assistant to ASMOREX for the REDD+ Project RESEX Rio Preto-Jacundá.

Telva Barbosa Gomes Maltezo – CES Rioterra (Administrative Coordinator)

Bachelor's Degree in Economics from the Federal University of Rondônia (2003), Specialization in Higher Education Methodology, Curriculum Innovations and Specialization in People Management, currently President of the Rioterra Studies Center, developing political/institutional role and administrative project manager of the Studies Center Rioterra. She started her career working as a manager and university professor and consultant in the field of management. Over the past 12 years, she has worked in the development and implementation of projects and actions for the promotion and social, economic and environmental strengthening in the State of Rondônia, always with pillars of cooperation, involving social players such as traditional populations, indigenous peoples, family farmers, entities governmental and non-governmental, contributing to social, environmental and human transformations in the southwest of the Brazilian Amazon.

Alexis Bastos – CES Rioterra (Project Coordinator)

PhD in Geography from the Federal University of Paraná-UFPR. Post Doctorate in carbon dynamics in tropical soils carried out through the Agrarian Sciences Sector together with the Graduate Program in Forest Engineering/UFPR. Member of the Geosciences/UNIR research group. Program coordinator at the Amazon Center for the Study of Culture and Environment – RIOTERRA. Bachelor's and Master's Degree in Geography from the Federal University of Rondônia-UNIR. Research regional dynamics

of anthropization, relating its effects to the stability of environmental systems in the Amazon. He worked for more than 20 years on issues related to social and environmental development and territorial management in the Amazon. He coordinated several projects for the elaboration of instruments of territorial management and social organization with family farmers and traditional populations. Extensively experienced in drafting, project management and fundraising in the country and abroad. Journalist (cinematographic reporter) working in communication processes for grassroots associations and production of documentaries about the Amazon.

2.4.3 Project Management Partnerships/Team Development (G4.2)

Paulo Bonavigo – Guaporé Ecological Action – ECOPORÉ (Biodiversity Monitoring)

Paulo Henrique Bonavigo has a degree in Biological Sciences and a Master's Degree in Regional Development and Environment, both from UNIR (Federal University of Rondônia). He is currently president of Ação Ecológica Guaporé - ECOPORÉ, categorized as a Brazilian private, non-profit, nonpartisan organization, adverse to any form of discrimination, created on June 25, 1988, and qualified as OSCIP since December 2017, with headquarters in the state of Rondônia. The area of activity is linked to harmonizing human-nature relations, in order to reconcile socioeconomic interests with the conservation of Amazonian biodiversity, guided by the Sustainable Development Goals. Furthermore, Paulo Bonavigo is a researcher at Ipê - Instituto de Pesquisa Tecnológicas, where he works as a local Analyst to support protected areas in the implementation and development of monitoring of biodiversity, with the application of basic, advanced, regional, and local protocols in Flona do Jamari, Federal RESEX Rio Ouro Preto, Federal RESEX Rio Cautário and Federal RESEX Lago do Cuniã.

Plácido Costa – Pacto das Águas (Diagnosis of Productive Chairs)

Biologist, Master in Ecology and Biodiversity Conservation, working for 28 years with indigenous and traditional peoples in environmental and territorial management processes, structuring sociobiodiversity product chains and bioeconomy. He is currently Inter-institutional articulator of Pacto das Águas - RO Program.

Fábio França dos Santos - SEDAM (Coordinator of Protected Areas)

Bachelor of Law, graduated from FARO College in Porto Velho - RO, Postgraduate student in Environmental Law from the School of Magistracy of Rondonia, Postgraduate in Management of Public Institutions. Sergeant of the Environmental Police of the State of Rondônia with entry in 2007, State Coordinator of Environmental Education 2018-2019. Currently, State Coordinator of Conservation Units.

Diogo Martins Rosa - CUC/SEDAM (Geosciences Coordinator)

Diogo Martins Rosa Geosciences Coordinator at the State Secretariat of Environmental Development of Rondônia (SEDAM/RO). Graduated in Forest Engineering (FARO), Master in Tropical Forest Sciences (INPA) and specialist in Forest Management (UFPR), Topography, Remote Sensing and Geoprocessing (UCAM). Professor of higher education at the Faculdade de Educação e Meio Ambiente (FAEMA). Has experience in Remote Sensing, Geoprocessing, Ecosystem Management, Forest Ecology, Planning using GIS tools, Forest Mapping with satellite images, LiDAR (Light Detection And Ranging) to measure forest attributes and Geostatistics.

Avalone Sossais de Farias – MADREX (Community Forest Management)

Entrepreneur and responsible for implementing the sustainable forest management plan prepared by ASMOREX within RESEX Rio-Preto-Jacundá in compliance with current environmental legislation.

2.4.4 Financial Health of Implementing Organization(s) (G4.3)

Biofílica Ambipar Environmental Investments Ambientais is a Brazilian company with 10 years of experience in the environmental assets market, with a diversified business line and investors that support the company's business.

ASMOREX is a social organization created in 2001 to legally represent the residents of the Rio Preto-Jacundá Extractive Reserve. It fights for its public in the sense of supporting them with public policies, besides seeking resources through projects that provide a more dignified life and assure the rights of those it represents. ASMOREX is a reference in the Extractive sector of the region where it is based.

The documents that prove the financial health of both bidders are classified as Confidential Commercial Information and were shared with the audit team on a confidential basis.

2.4.5 Avoidance of Corruption and Other Unethical Behavior (G4.3)

Biofílica Ambipar Environmental Investments S/A supports annual financial audit processes ensuring that its resources are allocated responsibly and free from corruption. The financial statements and minutes of meetings related to the company are published on the JusBrasil website, the largest open and legal community in Latin America.

In relation to the Association of Residents of the Rio Preto-Jacundá Extractive Reserve (ASMOREX) and according to its current bylaws, registered in a notary's office on 09/2017 and in its article 3, it has mechanisms to prevent corrupt acts and unethical conduct:

“Art. 3. When carrying out its activities, ASMOREX shall meet the principles of legality, impersonality, morality, publicity, economy, and efficiency, and will not discriminate on the basis of race, color, gender or religion.”

In this regard, the association does not tolerate any type of embezzlement in its activities, and practices that do not comply with these principles are considered illegible and, consequently, are associated with unethical and corrupt conduct.

CES Rioterra, as well as Biofílica, bases its activities on the highest standards of integrity, preventing any act of bribery, corruption, and conflicts of interest. As a result, it has a “Code of Ethics” in which it is publicly available and can be found on the website. Thus, the Rioterra Study Center, according to its article 13:

"Art. 13 Wherever it acts, it repudiates the practice of corruption and bribery, actively or passively, either through acts or omissions, or through the creation and/or maintenance of situations of favoritism through facilitation payments or other irregularities.”

In this regard, the institution will develop, together with its employees, suppliers, partners and beneficiaries, a program covering meetings, training, workshops, and the development of communication materials that are disseminated through its website and social networks, in order to promote alignment and aggregation of these principles by the players mentioned and by the community. In addition, CES Rioterra provides effective and confidential reporting channels +55 69 3223-6191 or ombudsman@rioterra.org.br”.

2.4.6 Commercially Sensitive Information (*Rules* 3.5.13 – 3.5.14)

Some information required by the VCS and CCB standards is considered confidential or commercially sensitive and cannot be published by the project bidders. All of this information will be provided to auditors during the verification process. These will be attached to the monitoring report but will not be included in the public version. The list of information that will be made available only to VVB:

The information below is considered commercially sensitive and has been made available only to auditors, being confidentially handled and not being made publicly available:

- Project Budget;
- Financial projections;
- ASMOREX financial statements;
- Biofílica's financial statements;
- Agreements and contracts signed between the parties involved;
- Service provider contracts.
- All documentation referring to forest management activities;
- All documentation referring to the patrolling operations carried out by SEDAM
- Protocol of the REDD+ Financial Mechanism.

2.5 Legal Status and Property Rights

2.5.1 Recognition of Property Rights (G5.1)

Art. 18 of Law No. 9.985 of 2000, sets forth that the subsistence of traditional extractive populations is based on extractivism and, in addition, on subsistence agriculture and the creation of small animals, and that the commercial exploitation of wood resources will only be allowed in sustainable bases and in special situations and complementary to the other activities developed in the extractive reserve (§ 7), not mentioning environmental services.

However, free enterprise, as the foundation of the Brazilian economic order, is the freedom of initiative within which it is up to extractive communities to choose the development of the economic activity they see fit, subject to the constitutional and legal limits imposed on them, especially those relating to the environment and conservation units.

Thus, any intervention in the context of extractive reserves, whether economic or environmental, must involve the participation of the local community, especially when it directly or indirectly affects their way of life. Individually, the extractivists who inhabit extractive reserves are the holders of the rights to use environmental resources and services. Thus, in the process of defining, implementing and executing any intervention acts, there must be community integration as a means of strengthening participatory democracy and giving legitimacy to the decisions taken.

Free choice and prior and informed consultation of extractivists is a point exhaustively addressed in ILO Convention No. 169 on Indigenous and Tribal Peoples. In this regard, it is forbidden for the private sector and the State, although the latter is the founder of conservation units and holder of lands, which are in the public domain, to impose the means to be used for the maintenance and improvement of the living conditions of the residing population. This can be seen from the literalness of Articles 7 and 8 of ILO Convention No. 169 on Indigenous and Tribal Peoples.

Respect for community interests, participation and traditional livelihoods leads to the implementation of another transnational provision: the Convention on Biological Diversity - CBD, which determines that each contracting party (signatory countries) must:

> j) In accordance with its national legislation, respect, preserve and maintain the knowledge, innovations and practices of local communities and indigenous populations with traditional lifestyles relevant to the conservation and sustainable use of biological diversity and encourage their broader application with approval and the participation of holders of this knowledge, innovations and practices; and encourage the equitable sharing of benefits arising from the utilization of that knowledge, innovations and practice; (art. 8).

It is noteworthy, therefore, that it is not up to others to impose, limit or decide on the economic activities to be developed in extractive reserves, and it is imperative for any initiative that affects the livelihoods of such communities to prior and informed consultation, observing whether their right to free enterprise and participation.

2.5.2 Free, Prior and Informed Consent (G5.2)

Prior and informed consultation to extractivists is dealt with both under international law, in the ILO Convention No. 169 on Indigenous and Tribal Peoples, and in the Brazilian standard, Law No. 9.985, of July 18, 2000, which established the Sistema Nacional de Unidades de Conservação (SNUC). Thus, from the beginning, a process of generating knowledge and expression about the project was sought, based on a transparent and independent process, seeking to reveal the real interest of the residents of RESEX.

From ASMOREX's expression of interest, which voluntarily sought Biofílica, with the intermediation of CES Rioterra, several meetings for understanding and passing on information about REDD+ projects were held prior to the signing of the partnership agreement, the first meeting with entire community in September 2011. At the time, there was an initial presentation about Biofílica and what would be a REDD+ project (carbon in language facilitation).

From then on, ASMOREX, with the support of CDREX and the mediation of CES Rioterra, gave due publicity to the matter among the residents of RESEX, aiming to understanding and acceptance of the possible project. It is correct to state, however, that after signing the partnership contract, the understanding of the aspects of the REDD+ project significantly improved among community members, a process in which the project was based and built.

Some moments prior to signing the contract were formalized by the following documents:

1. Cooperation agreement: aims to join efforts for the implementation of conservation and sustainable development actions at RESEX Rio Preto-Jacundá, signed in March 2012;
2. Memorandum of Understanding: aims to regulate the terms, assumptions and general conditions that will guide the development and implementation of the Carbon project by the Parties, signed in May 2012.

On May 15, 2012, the residents of RESEX Rio Preto Jacundá consented to a partnership for the development of the carbon project in the area. Later, in October 2012, the contract between the parties was signed formalizing the partnership and regulating the various aspects of the project. After signing the contract, it was forwarded to the Public Prosecutor's Office for the Environment of the state of Rondônia, aiming to provide maximum transparency to the process and inform the next steps.

From then on, the entire communication and decision-making process regarding the project is carried out only with the participation and consent of all parties involved in the project. Prior Informed Consent (from the communities present at RESEX where the project is located and government representatives in all areas) has been applied since the implementation period of the REDD+ RESEX Rio Preto-Jacundá Project. With respect to social and biodiversity monitoring activities, no activity was carried out without the free, prior and informed consent of the parties involved.

No project-related activities resulted in the involuntary removal or relocation of community members from their land or territories, nor did it force them to relocate activities important to their culture or livelihood, as no part was affected by the project, no restitution or compensation of any kind was required. . In addition, all players that could be directly or indirectly affected in any way by the REDD+ RESEX Rio Preto-Jacundá Project were consulted. These consultations will continue throughout the Project's lifecycle. In addition, all information about the Project can be acquired through virtual channels, such as the Biofílica website and the newsletter through social media, such as Facebook and LinkedIn.

2.5.3 Property Right Protection (G5.3)

The right to the land they inhabit, guaranteed by Convention No. 169, of the ILO, and by the SNUC Law, based on the Constitution of the Republic, must be interpreted together with issues inherent to the fulfillment of the social function of ownership of the properties that makes up the extractive reserves. The destination of land that extractivists traditionally inhabit gives them the right to carry out activities aimed at their sustainable development, including the sale of environmental services.

The Individual and Collective Rights and Duties, provided for in art. 5 of the Constitution of the Republic are the foundation of the right of local communities to access land. The institution of extractive reserves aims to contribute to the implementation of such rights, as well as the determination explained in art. 4 of ILO Convention No. 169 on Indigenous and Tribal Peoples, according to which “the special measures necessary to safeguard the persons, institutions, property, cultures and environment of the peoples concerned shall be adopted.”

The institution and assignment of land use in sustainable use conservation units is highlighted in terms of ownership, in art. 14 and 15 of the same Convention, in the following terms:

> Article 14
>
> 1. Ownership rights and property rights over the lands they traditionally occupy must be recognized by the peoples concerned (...). Furthermore, in appropriate cases, measures should be taken to safeguard the right of interested peoples to use land that is not exclusively occupied by them, but to which they have traditionally had access for their traditional and subsistence activities. In this regard, special attention should be given to the situation of nomadic peoples and itinerant farmers.
>
> 2. Governments should adopt measures that are necessary to determine the lands that the peoples concerned traditionally occupy and ensure the effective protection of their property and possession rights (Article 14).
>
> 3. Appropriate procedures should be instituted within the national legal system to resolve land claims made by interested peoples.
>
> Article 15

> 1. The rights of interested peoples to the natural resources existing on their lands must be specially protected. These rights encompass the right of these peoples to participate in the use, administration, and conservation of the aforementioned resources.

Regarding the land rights of extractive communities, Decree No. 6.040, of February 7, 2007, which deals with the National Policy for the Sustainable Development of Traditional Peoples and Communities (PNPCT), in its art. 3, sets out among its specific purpose the guarantee to peoples and traditional communities of their territories and access to natural resources that they traditionally use for their physical, cultural and economic reproduction."

The Property Right, excepted above and specified in art. 5 of the Constitution of the Republic, as individual freedom, is limited by its social function. Such limitation is imposed on both private and public owners. The Constitution addressed the social function of property as a fundamental right (item XXIII of article 5) and also as a fundamental principle of economic activity (item III of article 170), to be fulfilled in urban and rural property (articles 182 and 184).

In the specific case of extractive reserves, the social function will only be achieved when the properties that make up these conservation units are destined for the sustainable development of the communities that inhabit them. In this regard, the fulfillment of the social function of the lands included in extractive reserves stems from its own conception as an instrument for the sustainable development of local communities.

The dominion of the extractive reserves is treated in article 18, § 1o, of Law n. 9,985, of 2000, it is provided that the Extractive Reserve is "public domain, with use granted to traditional extractive populations pursuant to article 23 of this Act and in specific regulations, with the private areas included in its boundaries must be expropriated, according to what the law provides".

Art. 23 of the aforementioned Law sets forth that the possession and use of areas occupied by traditional populations in extractive reserves will be regulated by contract, as provided for in the Law. The management of extractive reserves for environmental purposes is also addressed in art. 23 of Law No. 9.985, of 2000, in its paragraph 1, local communities "must participate in the preservation, recovery, defense and maintenance of the conservation unit". In the same regard, on par. 2, in addition to prohibiting actions contrary to environmental conservation, sets out that the use of natural resources by local populations will comply with the rules set forth in the legislation, in the conservation unit management plan and in the real rights concession contract of use.

Decree No. 4.340, of August 22, 2002, which regulates Law No. 9.985, of 2000, however, does not bring news or further information regarding the use of natural resources in extractive reserves, and restricts itself to establishing, in its art. 13, that the contract for the concession of real right of use and the commitment deed signed with traditional populations in extractive reserves must be in accordance with the Management Plan.

The concession of use is a real right, which can be granted to local communities, under the following terms:

> The concession of remunerated or free use of public or private land is established, for a fixed or indefinite period, as a resolvable right in rem, for specific purposes of land regularization of social interest, urbanization, industrialization, building, land cultivation, sustainable use of floodplains, preservation of traditional communities and their livelihoods or other forms of social interest in urban areas.

In the case of extractive reserves, it is an administrative contract for the transfer of ownership from the Government, owner of the property to local communities, free of charge, limited to the use for which it was intended, with termination clauses for cases of: (a) damage to the environment; or (b) the transfer of the concession inter vivos.

Ownership is understood to be the exercise, in full or not, of any of the powers inherent to property, such powers being the use and disposition of the thing, bound to the right to recover it from the power of anyone who unjustly owns or holds it (art. 1.228). It is in this regard that the ownership of the properties that make up the extractive reserves, which is public, can be separated from their use, which is guaranteed to local communities.

The period of validity of the real right of use concession agreement (CDRU) to be signed with the local community residing in extractive reserves was not regulated in its own standard, which is why the period specified in similar standards must apply.

In the specific case of RESEX Rio Preto-Jacundá, the CDRU has not yet been signed and its formalization is very important for the project's implementation. SEDAM, as the managing body of the State Extractive Reserves, expressly recognizes the legitimacy of ASMOREX as a representative of the RESEX communities.

In relation to the removal of the Instituto de Terras de Rondônia – ITERON, in 2000 (Law No. 882/00), and regarding the institution responsible for granting the actual concession of use agreement, it should be noted that according to the certificate issued by the Instituto National de Colonização e Reforma Agrária - INCRA, in response to Official Letter no. 008/07/GAB/ASSEJUR/SEDAM, of May-16-2007, the Rio Preto Jacundá Extractive Reserve created by Decree 7336/96, was subject to waiver of use by the Federal Government, with the right of management being attributed to the competence of SEDAM of the lands that make up the referred RESEX.

In addition, pursuant to Decree No. 8982, of January 31, 2000, which provides for the basic structure and establishes the powers of the State Environmental Development Secretariat - SEDAM, it is responsible, among other attributions, to carry out the land tenure policy, promoting the discrimination of vacant lands; carry out land regularization and colonization projects, in addition, through the Conservation Unit Group (art.13): carry out implementation, administration and management activities of the Conservation Units.

Thus, according to the above-mentioned standard, the competence of SEDAM in carrying out the regularization of issues related to RESEX Rio Preto Jacundá, both environmental and land tenure, is evident. In view of the above, both the rights of community members and the competent body to carry out

their regularization are duly supported and protected by legislation, with only part of the formal procedures for its conclusion being pending.

Additionally, the development of the activities of the REDD+ RESEX Rio Preto-Jacundá Project during the monitored period did not lead to the involuntary removal or relocation of any community from their lands or territories, as well as important activities for the culture and livelihood of the communities living within Project Area boundaries were respected and supported by the Project.

2.5.4 Identification of Illegal Activity (G5.4)

Illegal deforestation is the main illegal activity that can negatively impact the development of the REDD+ RESEX Project Rio Preto-Jacundá, making possible the predatory hunting and exploitation of other species of fauna and flora. This illegal deforestation is caused by loggers, land squatters and small, medium, and large farmers for agricultural crops, pasture and demarcation of property boundaries. From 2000 to 2012, 134, 444 hectares were deforested in the Project Reference Region for the deployment of these activities. For the next 30 years, it was projected that a loss of 216,103 hectares would occur in the absence of the project, of which 35,398 hectares are expected to be deforested in the project area.

The control and combat of these illegal activities commonly found in the region covered by the Project occurred through mitigation measures such as strengthening relations with SEDAM and environmental agencies responsible for acting in land inspection, as well as encouraging the engagement of other players and stakeholders, social inclusion, and regional social and economic development through the generation of economic alternatives to deforestation. With this, it was expected an improvement in the well-being of the communities without generating a burden on the native forest and the local biodiversity, in addition to strengthening community governance at RESEX.

2.5.5 Ongoing Disputes (G5.5)

In the territory of RESEX Rio Preto-Jacundá there are two irregular occupations with extensive agricultural activity on the banks of the Rio Machado, northeast of the reserve, totaling approximately 23 hectares. The history shows that the Public Ministry has acted in order to issue measures against farmers, requesting the eviction of the area within the limits of RESEX.

A land issue presented in the territory of RESEX are uncompensated titles of the so-called “Rubber Soldiers”. Rubber soldiers were drawn to the region during World War II and after the decline of the rubber cycle many remained in the old rubber plantations. With the official policy of occupation and modernization of the Amazon from the 1960s onwards, rubber soldiers were expelled from rubber plantations, which were made available for official colonization projects. Later, after much demand, rubber soldiers were recognized as "heroes of the motherland", and the settlement in old rubber plantations was part of the compensation policy aimed at this group, however, in the area defined by INCRA there was a high incidence of malaria,

which caused the abandonment of the area and/or the sale of lots (Nobrega, 2008). According to data from PLANAFLORO, these titles add up to a total of 25.400 ha at RESEX and are under the responsibility of the state of Rondônia for regularization, with INCRA having certified the right to manage SESAM.

Thus, the bidders closely monitor the actions of SEDAM and facilitate the dialog between the land regularizing agency and the parties involved. The project is supported by the Organização dos Seringueiros de Rondônia (OSR), which advocates for the rights of rubber soldiers and their descendants.

2.5.6 National and Local Laws (G5.6)

Within the monitored period, there were two changes at national level laws and regulations that are relevant to the REDD+ Project:

• Ordinance No. 115/2017/GAB/SEDAM, which approves the **Multiple Use Management Plan (PMUM) of RESEX Rio Preto-Jacundá**. The PMUM defines two relevant points for the Project: Zoning and Usage Plan. Zoning is an instrument for managing a territory that considers homogeneous portions considering its characteristics and establishes terms of appropriate use for each zone, favoring the territory conservation and minimizing conflicts. The Usage Plan is a tool that applies rules for use and the rights and duties of residents, with the aim of serving as a guide for residents to take care of nature's resources. The Zoning and Utilization Plan are relevant to REDD+ RESEX Rio Preto-Jacundá Project as they address some important points to the Project.

In Zoning, for example, a Sacred Zone is established, consisting of an old chapel and an old cemetery site, to preserve the cultural and historical value existing with the community. These historic and sacred sites are one of the High Conservation Value Attributes (HCVA), as discussed in section 4.1.4, and the norms of this Sacred Zone given by the Zoning are in line with the precautions that must be taken by the Project so so that there is no damage to these HCVA. In addition to the community HCVA, Zoning also works directly with mitigation actions with possible negative impacts on biodiversity, while one of the Zoning functions was to ensure the preservation of natural environments and biodiversity through the norms applied to each zone.

Thus, like the Zoning, the Utilization Plan is in line with the REDD+ RESEX Rio Preto-Jacundá Project, for aiming the area conservation. The Plan provides guidance on extractive and agro-pastoral practices, interventions in the forest, fauna, and in the common use area, inspections and penalties, as described in sections 4.1.4 and 5.1.2. Based on its guidelines and norms, the Utilization Plan provides mitigation measures regarding the possible negative impacts, both to HCVAs for communities and to biodiversity aspects. In this way, the PMUM is characterized as an important tool to support the Project's management.

• Decree nº 10.088, of november 5, 2019, which revoked Decree No. 5,051, of April 19, 2004. Decree 5,051 promulgated the Convention 169 of the **Internacional Laber Organization** [**Organização Internacional do Trabalho] (OIT) about Indigenous and Tribal Peoples**, adopted in Geneva on June 27, 1989, and approved by the National Congress through Legislative Decree no. 143, of June 20, 2002. However, despite

the revocation of Decree 5,051, it was reproduced in its entirety in Annex LXXII, with no changes in its interpretation. The Project is in accordance with Decree 10,088 because its activities contribute to the protection of the rights of the traditional populations present in the Project Area, in line with Art. 2, it does not forcibly employ the participation of those involved, as discussed in section 2.5.2, in accordance with Art. 3, and it respects the requirements of work opportunities and occupational safety for the workers, as pointed out respectively in sections 2.3.14 and 2.3.16, thus being in line with Art. 20, among other points of agreement.

The Project is following other national laws and regulations that are relevant to the Project's activities, and that within the monitored period have not changed. The following is a list of these:

Applicable Federal Legislation:

• Law nº 9.985, of july 18, 2000, which established the **National System of Conservation Units (SNUC)**. The Project is in accordance with law 9.985, since it contributes to the objectives of SNUC - Art. 4 - by protecting endangered species, natural landscapes, water resources, and promoting the sustainable development of natural resources, among others. It is in accordance with Art. 18, which establishes one of the categories of Conservation Units, specifically an Extractive Reserve, as it protects the livelihoods and culture of traditional extractivist populations and assists in the sustainable use of natural resources.

• Law nº 11.284, of March 2, 2006, provides for the **management of public forests for sustainable production** and establishes the allocation of public forests to local communities, pursuant to art. 6. The Project is in line with law 11.284, because its activities contribute to the effectiveness of the principles of public forest management, while developing activities that promote the efficient use and conservation of forests, contributing to the achievement of sustainable development goals locally, regionally and throughout the country.

• Decree nº 6.040, of 2007, which established the **National Policy for Sustainable Development of Traditional Peoples and Communities**. The Project contributes to this National Policy due to the fact that the activities developed are in harmony with the objectives - Art. 3 - such as the guarantee of adequate infrastructure to the socio-cultural realities and demands of the traditional communities.

• Law nº 12.187, of December 29, 2009, which established the **National Policy on Climate Change**. The Project contributes to this National Policy because the activities developed are in harmony with the objectives: the Project helps to reduce the impacts from anthropic actions on the climate system, in line with Art. 3, contributes to the reduction of anthropic emissions of greenhouse gases and the conservation of environmental resources, in line with Art. 4, among others.

• Law nº 5.197, of janurary 03, 1967, provides on the **protection of fauna and other provisions**. The project, in the biodiversity scope, contributes to this National Policy once the activities developed in the project help protect the local fauna, through the conscious use of natural resources, conserving the natural habitat of the species present in the project area. Furthermore, with the zoning, it was possible to discourage hunting and predatory fishing, implementing a specific zone for hunting and fishing.

• Law nº 9.605, of feberary 12, 1998, provides for **criminal and administrative sanctions derived from conducts and activities that are harmful to the environment**. Through the project's activities, such as the patrimonial vigilance, this National Policy is fulfilled from the moment that the necessary legal measures are taken regarding environmental crimes, illegal exploitation of natural resources and predatory hunting and fishing and/or fishing outside the specific zone within the project area.

• Decree nº 6.514, of july 22, 2008, provides on **infringements and administrative penalties to the environment**. As proposed in Law 9.605/98, the project, through surveillance activities and the assistance of community members in these activities, takes the necessary legal steps in the scope of illegal activities of exploitation of natural resources.

• Normative Instruction nº3/2017/GABIN/ICMBIO, of September 04, 2017, which institutes on the **National Biodiversity Monitoring Program of Instituo Chico Mendes (ICMBio)**. The project is in line with this normative instruction since the biodiversity monitoring carried out (Ecoporé monitoring in 2020) was based on this normative instruction.

Some applicable state legislation is linked to the federal legislation, which was mentioned above. These are:

• Law Decree nº 1.144, de 2002, which provides for the State System of Nature Conservation Units of Rondonia - SEUC/RO and makes other provisions.

• State Decree nº 7.336, de 1996 – creation of the Rio Preto-Jacundá extractive reserve (RESEX Rio Preto-Jacundá);

• State Decree nº 11.016, de 2004, creates the Deliberative Council of the Extractive Reserve of Machadinho D'Oeste and Vale do Anari.

3 CLIMATE

3.1 Monitoring GHG Emission Reductions and Removals

3.1.1 Data and Parameters Available at Validation

Data / Parameter	Deforestation
Data unit	Hectare (ha)
Description	Maps of forest cover areas converted to non-forest cover areas.
Source of data	Measured using data from the PRODES/INPE project.
Value applied	2.1%/year on average (2000-2012)

Justification of choice of data or description of measurement methods and procedures applied	Data from the PRODES Digital program (Official Mapping Satellite of Deforestation in the Brazilian Amazon) were used to map deforestation and produce the Forest Coverage Excellence Mark Map. A total of 33 Landsat images were used during the analyzed period. The ISOSEG unsupervised classification method was used in the classification of images to map forest classes, non-forest vegetation, hydrography, and deforestation.
Purpose of the data	• Baseline scenario determination • Calculation of baseline emissions • Calculation of project emissions • Calculation of leakage
Comments	View documents - Câmara *et al*. 2006. *Methodology for calculating the annual deforestation rate in the Legal Amazon* *- Determination of the Baseline and Dynamics of Deforestation for the RESEX Rio Preto-Jacundá project*

Data / Parameter	Ctot
Data unit	$tCO_2e\ ha^{-1}$
Description	Average carbon stock per hectare across all carbon pools in the forest class used in the baseline scenario.
Source of data	Calculated by allometric equations, literature expansion factors, and field-measured data.
Value applied	476.8 $tCO_2e\ ha^{-1}$
Justification of choice of data or description of measurement methods and procedures applied	Above and below ground biomass estimates were performed using forest inventory data, allometric equations developed in areas similar to the project area (SILVA, 2007). The dead wood reservoir was estimated based on forest inventory data and Silva equations (2007).
Purpose of the data	• Baseline scenario determination • Calculation of baseline emissions • Calculation of project emissions • Calculation of leakage
Comments	View document: - Forest Carbon Stock Estimate for the Rio Preto-Jacundá RESEX project

Data / Parameter	DBH
Data unit	cm

Description	Diameter to Chest Height (130 cm) for each tree with DBH equal to or greater than 15 cm in each forest inventory plot
Source of data	Measured in the field by Hdom
Value applied	See spreadsheet with field data
Justification of choice of data or description of measurement methods and procedures applied	Requirement of VCS Methodology VM0015. Forest inventory data collected less than 10 years ago in multiple plots located in wide spatial distribution
Purpose of the data	• Baseline scenario determination • Calculation of baseline emissions • Calculation of project emissions • Calculation of leakage
Comments	Main variable for carbon stock estimation

Data / Parameter	$\boldsymbol{BGBfw}$**= 0,0469x**$\boldsymbol{DAP^{2,4754}}$ **x**$\boldsymbol{fc1}$ $AGBfw$=2,2737$xDAP^{1,9156}$ $xfc1$
Data unit	kg (fresh weight of biomass)
Description	Equation to convert DBH to fresh biomass
Source of data	SILVA, 2007
Value applied	$BGBfw$= 0,0469x$DAP^{2,4754}$ x$fc1$ $AGBfw$=2,2737$xDAP^{1,9156}$ $xfc1$
Justification of choice of data or description of measurement methods and procedures applied	Equation developed for forests with characteristics similar to forests in the reference region.
Purpose of the data	• Baseline scenario determination • Calculation of baseline emissions • Calculation of project emissions • Calculation of leakage
Comments	-

Data / Parameter	CF
Data unit	t
Description	Carbon content in dry biomass
Source of data	Nogueira, E.; Fearnside, P.; Nelson, B., et al., 2008. Forest biomass estimates in the Brazilian Amazon: New allometric

	equations and biomass adjustments of wood volume inventories. Forest Ecology and Management, 256 (11), pp.1853-1867
Value applied	0.485
Justification of choice of data or description of measurement methods and procedures applied	Value found in scientific literature
Purpose of the data	• Baseline scenario determination • Calculation of baseline emissions • Calculation of project emissions • Calculation of leakage
Comments	-

Data / Parameter	44/12
Data unit	tCO_2e
Description	Carbon mass to CO2e mass conversion factor
Source of data	From scientific literature: 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 4 AFOLU.
Value applied	44/12
Justification of choice of data or description of measurement methods and procedures applied	Default value of IPCC
Purpose of the data	• Baseline scenario determination • Calculation of baseline emissions • Calculation of project emissions • Calculation of leakage
Comments	-

Data / Parameter	Area opening for management infrastructure
Data unit	Percentage
Description	Open area for the construction of infrastructure necessary for sustainable forest management activities, such as patios, primary and secondary roads.
Source of data	Post-Exploratory Report and Expert Opinion
Value applied	8%

Justification of choice of data or description of measurement methods and procedures applied	Data are collected in the field after harvesting activity. Post-exploratory reports
Purpose of the data	• Baseline scenario determination • Calculation of baseline emissions • Calculation of project emissions
Comments	-

3.1.2 Data and Parameters Monitored

3.1.2.1 Climate

Data / Parameter	Deforestation in the Project Area and Leakage Belt
Data unit	Hectare (ha)
Description	Forest cover areas converted to non-forest cover areas within the Project Area and in the Leakage Belt of the REDD+ RESEX Rio Preto-Jacundá Project.
Source of data	Calculated using LANDSAT8 satellite images used by PRODES, corresponding to the orbits/points: • 2016 – 2020: 231/66 and 231/67 (Aug-07-2020).
Description of measurement methods and procedures to be applied	The monitoring of forest cover in the monitored areas was carried out by overlaying PRODES vector data with the limits of the Project Area and the Leakage Belt of REDD+ RESEX Rio Preto-Jacundá Project . Polygons mapped as deforestation in the years 2016 to 2020 were selected for quantification of the deforested area and subsequent field verification activities.
Frequency of monitoring/recording	Annual
Value monitored	
Monitoring equipment	Digital processing program remote sensing images, geographic information systems and navigational GPS.

	$ABSLPA_{icl,t}$ (ha)	$ABSLLK_{icl,t}$ (ha)
2016	954	194
2017	1,177	615
2018	361	254
2019	2,276	75
2020	725	91

QC/CG procedures to be applied	Images with a spatial resolution of 30m or more were used in the mapping, with a minimum mapping unit of 1ha. The minimum accuracy of the land use and land cover classification map was 88%.
Purpose of the data	• Calculation of project emissions • Calculation of leakage
Calculation method	Where unplanned deforestation was detected, the Forest Cover Benchmark Map was updated by the map algebra.
Comments	PRODES Project: http://www.dpi.inpe.br/prodesdigital/prodes.php More information on quality control and assurance available at: Câmara et al. 2006. Methodology for calculating the annual deforestation rate in the Legal Amazon.

Data / Parameter	*Ctot*
Data unit	$tCO_2e\ ha^{-1}$
Description	Average carbon stock per hectare across all carbon pools in the forest class used in the baseline scenario.
Source of data	Calculated by allometric equations, expansion factors contained in the scientific literature and data obtained in the field by the inventory team.
Description of measurement methods and procedures to be applied	Above and below ground biomass estimates were developed using forest inventory data, allometric equations developed in areas similar to the project area (SILVA, 2007).
Frequency of monitoring/recording	Forest inventory data collected over periods of up to 10 years, in multiple plots.
Value monitored	Not applicable
Monitoring equipment	Not applicable
QC/CG procedures to be applied	Mandatory monitoring according to Methodology VM0015. Forest inventory data collected over periods of up to 10 years in multiple plots.
Purpose of the data	• Calculation of baseline emissions • Calculation of project emissions • Calculation of leakage
Calculation method	Comparisons between the average value of total carbon stock contained in the forest class used in the

	baseline scenario, according to *Forest Carbon Stock Estimate for the REDD+ RESEX Rio Preto-Jacundá Project.*
Comments	Mandatory requirement of the VM0015 Methodology for areas with logging, which must be carried out at least every 10 years. It was not applied to this monitoring period.

Data / Parameter	DBH
Data unit	cm
Description	Diameter at Chest Height (diameter of the tree at 130cm from the ground). Measured in all trees with DBH above 15cm, in all forest inventory plots.
Source of data	Calculated from the circumference at breast height (CAP) measured in the field by the inventory team.
Description of measurement methods and procedures to be applied	From each tree measured in the field, the circumference at chest height is taken. DBH is obtained by transforming the circumference into diameter, through mathematical calculation.
Frequency of monitoring/recording	Forest inventory data collected over periods of up to 10 years, in multiple plots.
Value monitored	Values available in pre-exploratory forest inventory worksheets of UPAS 14, 15, 16, 17, 18 and 19
Monitoring equipment	Calculated from the circumference at breast height (CBH) data, measured in the field using a measuring tape.
QC/CG procedures to be applied	Mandatory monitoring according to Methodology VM0015. Forest inventory data collected over periods of up to 10 years, in multiple plots.
Purpose of the data	• Calculation of baseline emissions • Calculation of project emissions • Calculation of leakage
Calculation method	DBH is calculated from the circumference at breast height (CBH) data of each tree measured in the field. The calculation consists of dividing the CBH value obtained by the constant “Pi (π)”.
Comments	-

Data / Parameter	Planned deforestation for infrastructure of Forest Management

Data unit	Hectare (ha)
Description	Survey and mapping of forest cover areas converted into non-forest cover areas due to the construction of roads, trails, and patios necessary for sustainable forest management.
Source of data	Post-exploratory reports from UPAS 14, 15, 16, 17, 18 and 19
Description of measurement methods and procedures to be applied	Based on the calculation methodology applied in the project description, the information on the effective areas of the UPAs, identified in the post-exploratory reports, was used and these were multiplied by the rate of 8%, which is a reasonable percentage of openness accepted in conventional forest management in extractive reserves in the Amazon, according to previously consulted experts.
Frequency of monitoring/recording	During the management year of each UPA (Annual Production Unit).
Value monitored	
Monitoring equipment	Post-exploration reports and Annual Operation Plan
QC/CG procedures to be applied	The mapping of planned deforestation areas for the implementation of sustainable forest management infrastructure was carried out using forest management documents.
Purpose of the data	• Calculation of project emissions
Calculation method	UPAs effective areas, identified in post-exploratory reports, were multiplied by the 8% rate. Where there has been planned deforestation, the Forest Cover Benchmark Map has been updated by the map algebra.
Comments	-

	UPA	$APDPA_{icl,t}$ (ha)
2016	14	33,8
2016	15	41,3
2017	16	46,8
2018	17	38,3
2019	18	42,0
2020	19	43,6

Data / Parameter	$\Delta CabBSLLK_t$
Data unit	tCO_2e
Description	Changes in total carbon stock in the leakage belt area.
Source of data	Calculated

<table>
<tr><td>Description of measurement methods and procedures to be applied</td><td>Listed leakage prevention activities;
Prepared the map showing intervention areas and the type of intervention;
Identified the areas in which leakage prevention activities impact the carbon stock
Identified the non-forest cover classes existing in these areas in the case of the baseline;
Measured carbon stock in the identified classes;
Reported in Table 30.b of Methodology VM0015 the changes in carbon stock of the leakage management areas under the project scenario;
Calculated the net changes in carbon stock caused by the leakage prevention measures during the fixed baseline period and, alternatively, during the project crediting period;
Calculation results reported in Table 30.c of methodology VM0015.</td></tr>
<tr><td>Frequency of monitoring/recording</td><td>Annual</td></tr>
<tr><td>Value monitored</td><td><table><tr><th></th><th>$\Delta CabBSLLK_t$ (tCO_2e)</th></tr><tr><td>2016</td><td>0</td></tr><tr><td>2017</td><td>104,633</td></tr><tr><td>2018</td><td>0</td></tr><tr><td>2019</td><td>0</td></tr><tr><td>2020</td><td>0</td></tr></table></td></tr>
<tr><td>Monitoring equipment</td><td>Remote sensing images from the digital processing program and calculation tables.</td></tr>
<tr><td>QC/CG procedures to be applied</td><td>Images with a spatial resolution of 30m or more were used in the mapping, with a minimum mapping unit of 1ha. The evaluation of the classifications was made through data collected in the field, using GPS navigation. The minimum accuracy of the land use and land cover classification map was 80%.</td></tr>
<tr><td>Purpose of the data</td><td>• Calculation of leakage</td></tr>
<tr><td>Calculation method</td><td>Evaluation of ex-post estimates in the Leakage Belt in relation to the project's ex-ante estimate (Table 35 of VM0015).</td></tr>
<tr><td>Comments</td><td>-</td></tr>
</table>

3.1.3 Monitoring Plan

3.1.3.1 Organizational structure, responsibilities, and competencies

The monitoring plan for the Rio Preto-Jacundá REDD+ RESEX Project is a combination of three components: climate, community, and biodiversity.

Biofílica is responsible for coordinating the monitoring processes during the project's life cycle. In addition, it was also responsible for monitoring climate aspects, with the support of ASMOREX, SEDAM and CES Rioterra.

Climate monitoring was conducted mainly by Biofílica, through the annual monitoring of deforestation in the project's areas of interest (project area, leakage belt and reference region). In a complementary manner, quarterly monitoring of the project area and leakage belt was carried out, with the use of high resolution images. SEDAM also carried out patrolling and monitoring activities, as well as the support received by the communities themselves for inspection and denunciations of invasions and illegal activities.

The monitoring of community attributes was carried out mainly by ASMOREX and CES Rioterra (details in section 4, regarding Community). Also mentioned is the diagnosis of the production chains of Brazil Nuts, Açaí and Cassava Flour in the RESEX carried out by Pacto das Águas (section 4.3). The Multiple Use Management Plan was carried out by CES Rioterra, while the activities of the Sustainable Forest Management Plan (SFMP) were carried out by the company MADREX.

Biodiversity monitoring, in turn, was conducted by RESEX community members and by Ecoporé, which was hired to train the community members, provide field support, and develop the report. Flora information resulting from forest management activities was also (further detailed in section 5.3).

Competences and responsibilities:

Biofílica: a Brazilian company focused on the management and conservation of forest areas in the Amazon biome. The company was created in 2008 with the purpose of creating pioneering alternatives and making the preservation of the environment an economically interesting activity for forest owners, communities and investors. Along with such purposes, Biofílica's mission is to reduce deforestation and carbon emissions into the atmosphere, preserve biodiversity and water resources, promote social inclusion and development of communities living in the Amazon biome through the sale of credits for environmental services and development and financing of scientific research activities and development of sustainable business chains.

Responsibilities: overall coordination of the social and economic and environmental diagnosis (DSEA) and baseline and carbon stock studies; development and financing of the PDD (Project Design Document); remote monitoring of forest cover and implementation/coordination of additional actions aimed

at reducing/mitigating greenhouse gas (GHG) emissions; validation/verification and commercialization of credits; Project co-management for its entire duration.

Associação dos Moradores da Reserva Extrativista Rio Preto-Jacundá – ASMOREX: is a non-profit civil association, headquartered in the municipality of Machadinho d'Oeste, state of Rondônia, which aims to manage the RESEX Rio Preto Jacundá together with the Rondônia State Environmental Development Secretariat – SEDAM. Thus, ASMOREX represents extractivists, their families and other residents residing in RESEX. As a project developer, it manages the financial resources and ensures the proper use of these resources and the impacts generated by the Project activities.

Responsibilities: ASMOREX is liable for developing and implementing, in a participatory manner, the REDD+ project, as well as ensuring the project's implementation and maintaining all the documentation necessary for the project to happen. Additionally, it is liable for monitoring and co-managing the REDD+ project.

Center for Studies of Culture and the Environment of the Amazon – CES Rioterra: is an OSCIP created in 1999 with the purpose of contributing to the formation of a critical society, aware of its social and economic and environmental context, capable of proposing a development model for the Amazon region that combines conservation and sustainability with the improvement of the population's quality of life with respect to their cultural differences, needs and the natural potential of the environments they use. Its mission is to defend the Amazonian identity, value culture and the sustainable use of the environment, and contribute to a fair, democratic, and participatory society.

Responsibilities: coordination of social and economic and environmental studies; planning of conservation activities; support in project validation/verification; execution and monitoring of REDD+ project activities.

3.1.3.2 Internal audit/Procedures for addressing internal audit and non-conformities

Biofílica Ambipar Environmental Investments supports annual financial audit processes ensuring that its resources are allocated responsibly and free from corruption. The financial statements and minutes of meetings related to the company are published on the JusBrasil website, the largest legal community in Latin America.

ASMOREX does not tolerate any kind of bribery or embezzlement against the popular economy, and people who practice this type of act are considered illegible for management positions.

CES Rioterra, as well as Biofílica, bases its activities on the highest standards of integrity, preventing any act of bribery, corruption, and conflicts of interest. CES Rioterra also has a "Code of Ethics". Furthermore, a communication channel is provided, called "Internal Ombudsman", which, among other

functions, receives reports and complaints. Complaints are forwarded and resolved correctly (see Section 2.4.5 for further details).

3.1.3.3 Climate Impact Monitoring Plan

The Climate Impact Monitoring Plan contains the essential aspects for demonstrating the reduction of emissions from deforestation and degradation due to avoided unplanned deforestation (according to the applied methodology VM0015). Thus, it provides for information from the monitoring of greenhouse gas (GHG) emission reductions and changes in the carbon stock over the lifetime of the project resulting from changes in land use within the Project Area and in the Leakage Belt.

There are two tasks covered in the Climate Impact Monitoring Plan: 1) Monitoring of carbon stock changes and GHG emissions for periodic verifications; and 2) Revisiting baseline projections established for the future fixed period. During this monitoring period, only Task 1 was performed.

Task 1: MONITORING CHANGES IN CARBON STOCKS AND GHG EMISSIONS FOR PERIODIC CHECKS

1. Monitoring current changes in carbon stock and GHG emissions within the project area

a) Technical description of monitoring tasks

The monitoring of carbon stock changes and GHG emissions within the project area was carried out through the analysis of unplanned deforestation avoided. Thus, in order to avoid unplanned deforestation, Biofílica Ambipar Environmental Investmentss acted in monitoring REDD+ activities, verifying forest cover areas by satellite images, while SEDAM carried out field checks in the Project Area

b) Data to be collected

Table 6 – Data collected to monitor changes in carbon stock and GHG emissions for periodic verifications.

Parameter	Description	Unit	Source	Frequency
$AUDPA_{icl,t}$	Areas of unplanned deforestation in the *icl* forest class in the *year t* in the Project Area	Hectares (ha)	Calculated through remote sensing images, technical maps and data, field and post-exploratory management information	Annual

$\Delta CUDdPA_t$	Total decrease in carbon stock due to unplanned and unavoided deforestation within the Project Area in the year *t*	Ton of carbon dioxide equivalent tCO_2-e)	Calculated	Annual
$APDPA_{icl,t}$	Areas of planned deforestation in the icl forest class in the year *t* in the Project Area	Hectares (ha)	Calculated	Annual
$\Delta CPLdPA_t$	Total decrease in carbon stocks due to planned harvest activities in the year *t* in the Project Area	Ton of carbon dioxide equivalent tCO_2-e)	Calculated	Annual
$ACPA_{icl,t}$	Annual area within the Project Area affected by catastrophic events in the *class icl* in the year *t*	Hectares (ha)	Not applicable	Every time a catastrophic event occurs
$\Delta CUCdPA_t$	Total decrease in carbon stocks due to the occurrence of catastrophic events in the year *t* in the Project Area	Ton of carbon dioxide equivalent tCO_2-e)	Not applicable	Every time a catastrophic event occurs
$AUFPA_{icl,t}$	Annual area within the Project Area affected by forest fires in the *class icl* in the year *t*	Hectares (ha)	Calculated	Every time a forest fire event occurs
$\Delta CUFdPA_t$	Total decrease in carbon stocks due to the occurrence of forest fires in the year *t* in the Project Area	Ton of carbon dioxide equivalent tCO_2-e)	Calculated	Every time a forest fire event occurs
$\Delta CPSPA_t$	Total change in project carbon stock in the Project Area in the year *t*	Ton of carbon dioxide equivalent (tCO_2-e)	Calculated	Annual

c) Brief description of data collection procedures

Monitoring of land use and land cover changes:

The monitoring of unplanned deforestation in the project area was based on data processed by the PRODES project, identifying the land use conversion areas. The procedures performed for data collection and processing were described in item 1.1 of this section.

The monitoring of planned deforestation caused by forest management activities used information considered in the calculation of the project's baseline, where the information of the effective areas of the APUs, identified in the post-exploitation reports, was used and these were multiplied by the rate of 8%, which is a reasonable percentage of openness accepted in conventional forest management in extractive reserves in the Amazon, according to experts previously consulted.

Monitoring of carbon stocks and non-CO2 emission:

The monitoring of non-CO2 emissions from forest fires was done through satellite image mapping, identifying the affected area, and calculations were performed according to the methodology described in VM0015 (Section 6.2 - Baseline non-CO2 emissions from forest fires). Details in item 1.4 of this section.

d) Quality control and assurance procedures

In order to validate the information obtained from satellite images, the mapped information on the occurrence of deforestation was checked through data collected in the field with a navigation GPS. Thus, field checks and surveillance reports were considered validation tools for the deforestation areas identified by PRODES.

Another methodology used in validation is the achievement of accuracy. The minimum accuracy in land use and land cover classification is 80%. The analysis was performed using the Planet satellite image, with 3 meters of spatial resolution, and for areas with cloud cover, the LandSat-8 image with a spatial resolution of 30m and a minimum unit of 1ha, with good visualization and low cloud cover was used as support.

e) Data archiving

All data and reports produced by the REDD+ RESEX Rio Preto-Jacundá Project are stored by Biofílica Ambipar Environmental Investments through digital files during the life cycle of the project. The original reports and collected field sheets produced by the forest management activity are stored by ASMOREX and MADREX. All documents relating to Project monitoring are gathered in physical and/or virtual files and made available to the verification body at each verification event.

1.1. Project Implementation Monitoring

When it comes to the "climate" component, the actions contemplated for monitoring the activities of the REDD+ RESEX Rio Preto-Jacundá Project have as main objectives to avoid deforestation and GHG emissions to the atmosphere. In this way, the description of the activities below contemplates these objectives.

The implementation of REDD+ activities are monitored through financial spreadsheets, annual plans, social management reports, vegetation cover maps, monitoring meetings, minutes/reports of meetings, quarterly and annual monitoring bulletins, letters and reports of encroachments on the property and other relevant documents.

Policy Articulation with environmental governmental institutions

In order to avoid risks to the climate benefits foreseen by the project scenario and as a way to avoid unplanned deforestation, attempts were made by the project proponents to articulate with SEDAM and, eventually, with IBAMA, within the scope of the activity of political articulation with environmental and inspection governmental institutions. In this sense, through letters, crafts, complaints and meetings, support was sought to mitigate and contain illegal deforestation. The negotiations became more frequent in 2019, when deforestation took alarming proportions and led to a loss event.

ASMOREX, together with Biofílica Ambipar Environmental Investments, requested from CUC/SEDAM, on June 19, 2020, evidence related to the inspection operation and combat of deforestation in the area of RESEX Rio Preto-Jacundá and surroundings in the period from July 2018 to mid-2020. However, there were no responses to the requests.

Some actions were taken to try to contain deforestation. On May 28 and 30, 2018, ASMOREX requested from the Secretary of the State of Rondonia, SEDAM, and also the Environmental Military Police, support for supervision and permanent patrolling throughout the RESEX area, referring to the intense increase in illegal deforestation in the years 2016 and 2017.

On August 13, 2018, Biofílica, together with CES Rioterra and ASMOREX, participated in a meeting at IBAMA-DF with the goal of drawing attention to RESEX and strengthening enforcement in the area, if it were possible, since it is a state conservation unit. However, the agency has a performance problem and scarce resources, where it would be necessary, in order to act locally with greater intensity, to have an agreement with local actors, such as the Environmental Military Police of Rondonia (BPA).

Finally, the representative of IBAMA reinforced the need to prepare a formal letter, which reported the direction of the activities for the RESEX region and also contextualize the negotiations with SEDAM that did not yield results. Thus, an official letter was sent to the General Coordination of Environmental Inspection (CGFIS/IBAMA) on September 19, 2018, where ASMOREX requests support to contain the illegal activities of exploitation of natural resources and land grabbing, in order to guarantee its conservation, in addition to ensuring the safety of families legally residing in the RESEX.

Seeing the change of the Brazilian government in 2019, representatives of Biofílica, ASMOREX and CES Rioterra, in a meeting on February 22, 2019, understood that it was not the strategic moment to charge SEDAM regarding the fight against deforestation in the RESEX. Also, to avoid tension of rapprochement with the new government, it was agreed that it was also not the time to file a complaint with the Public Ministry. It was decided that, in a more favorable moment, it would be interesting to bring the government closer to the project, bringing political awareness and the importance of this Conservation Unit, and thus finalize the elaboration of the Financial Mechanism and elaborate a Cooperation Agreement, the latter including SEDAM's commitment to act in the containment of deforestation and the advancement of land issues in the reserve.

On July 10, 2019, still as an attempt to receive support from public agencies, Biofílica, along with CES Rioterra held a meeting with CUC/SEDAM to discuss alternatives to combat deforestation in the RESEX. The meeting highlighted the concern with the increase in deforestation in the project area and its surroundings, and how this impacts the project's activities. The representative from SEDAM pointed out that resources are scarce and that it would be necessary to carry out planning so that the inspection activities could be well allocated.

In view of this, the public agencies that are responsible for supporting patrolling and surveillance have gone through moments of financial instability, making it unfeasible to allocate resources and formalize, by the end of the monitoring period of the present MR, a cooperation agreement on the part of SEDAM. In addition, the agencies are responsible for other conservation units, making it difficult to provide exclusive support for the RESEX Rio Preto-Jacundá. Despite this, SEDAM supported the activities at strategic moments, and the patrols that were done by the agency were done sporadically. IBAMA, on the other hand, has a performance problem and scarce resources, where it would be necessary, in order to act locally with greater intensity, to have an agreement with local actors, such as the Rondônia Environmental Military Police (BPA).

During the preparation of this monitoring report, the proponents contacted CUC/SEDAM, through official letters, requesting proof of all the operations carried out in the RESEX within the monitored period. However, after a waiting period, a previous response was returned informing us of the impossibility of the full transfer of information due to the existence of personal data relating to the infraction reports, which are protected by the General Law of Data Protection, established in Law 13.709/2018.

In a conversation with the CUC coordinator, we agreed to receive summarized information regarding the operations for the years 2020 and 2021, since it was not possible to collect the previous years due to difficulties in archiving and registering past documentations. In any case, the CUC has already sent a formal letter to its partner agencies, which have a database for previous years, with complementary information. Thus, during the monitored period, 22 inspection missions were carried out, both by CUC employees and by military personnel. Those responsible for CUC have made clear the possibility of demonstrating the data collected to the VVB, on a confidential basis.

Because the RESEX is a public area, it is susceptible to invasions and illegal logging, the support of SEDAM and other public actors, both in strategies for carrying out patrols, and in patrolling activities effectively, avoided many invasions and illegal activities, and consequently, unplanned deforestation. The presence of public entities in the area scares off deforestation agents. Furthermore, the social activities brought as one of the benefits, the empowerment of the communities, thus increasing the engagement of the community, the communication with public agencies, and the consequent proximity and support of these agencies.

Deforestation monitoring by satellite images

As a way to contemplate the activity of monitoring deforestation by satellite imagery, Biofílica Ambipar Environmental Investments conducted regular monitoring by satellite imagery in the project area and areas of interest (leakage belt and reference region) through PRODES data. Data were available in vector format (shapefile) and matrix (raster) with spatial resolution of 30 meters. According to the methodology of PRODES Câmara et al. (2006), these images undergo geometric correction with a displacement error of less than 1 pixel (30 x 30 m). These images cover the reference period (2016 to 2020) and can be located through four Orbit/Point in the Landsat scene: 231/66 and 231/67. This monitoring resulted in annual bulletins where the deforestation rates of the period are reported, as well as fire outbreaks. The monitoring activity aims to understand the context of deforestation and invasions, and consequently improve the agility of physical patrols for the maintenance of forest cover. The monitoring activity aims to understand the context of deforestation and invasions, and consequently improve the agility of field patrols for the maintenance of forest cover.

The activites of monitoring deforestation with satellite images assists the patrols, since coordinate points of the areas affected by deforestation are generated. The frequent survey of this information helps in the monitoring of "warning points" of invasions since invaders have a tendency to act incisively in the same points. This has made it possible for the patrimonial surveillance to act in those areas that have higher concentrations of illegal activities, acting in a faster and more accurate way, preventing the advance of deforestation. Also, it is important to highlight the alignment between the activities of the stakeholders and the exchange of information: Biofílica performs the monitoring, where the products (bulletins) are passed on to ASMOREX, CES Rioterra and SEDAM; ASMOREX and Rioterra brings the reality in the field, in addition to assisting in reports and complaints to the other parties of suspicious activities on site; and SEDAM complies with the field operations. This alignment between the parties has brought greater effectiveness to monitoring and surveillance activities. The main activities carried out by the PRODES system to monitor the forest cover of the Brazilian Amazon will be detailed below.

Preprocessing: The procedures of imagery preprocessing performed by the PRODES Project are constituted in the following steps (CÂMARA et al., 2006):

- Selection of images with lower cloud cover and acquisition date closer to dry season in the Amazon and with adequate radiometric quality.

- Georeferencing of 30-meter spatial resolution images in 1:100,000 scale maps and NASA Ortho-rectified MrSID format images.

Interpretation and classification: The method of classification of satellite images used by PRODES follows four main steps. First a spectral mixing model is generated identifying the components of vegetation, soil and shade. This technique is known as a linear spectral mixture model (MLME) that aims to estimate the percentage of vegetation, soil and shade components for each cell (pixel) of the satellite image. The second step is the application of the segmentation technique, which identifies in the satellite image spatially adjacent regions (segments) with similar spectral characteristics. After segmentation, the segments are categorized individually to identify the forest, non-forest vegetation, hydrography, and deforestation classes (anthropic vegetation). Finally, the result of classified segmentation is submitted to the process of editing or auditing the classification, performed by a specialist, and ending with the creation of state mosaics.

Map accuracy assessment: The PRODES data were validated by comparing the PLANET images with the 10-meter resolution. 225 points were randomly distributed in the monitored area (Project Area and Leakage Belt). For each point, a visual interpretation was made of the predominant class in the point (classes: Forest, Non-forest, Water and Deforestation). Figure 2 demonstrates the methodology adopted to execute the evaluation of the accuracy of the PRODES mapping.

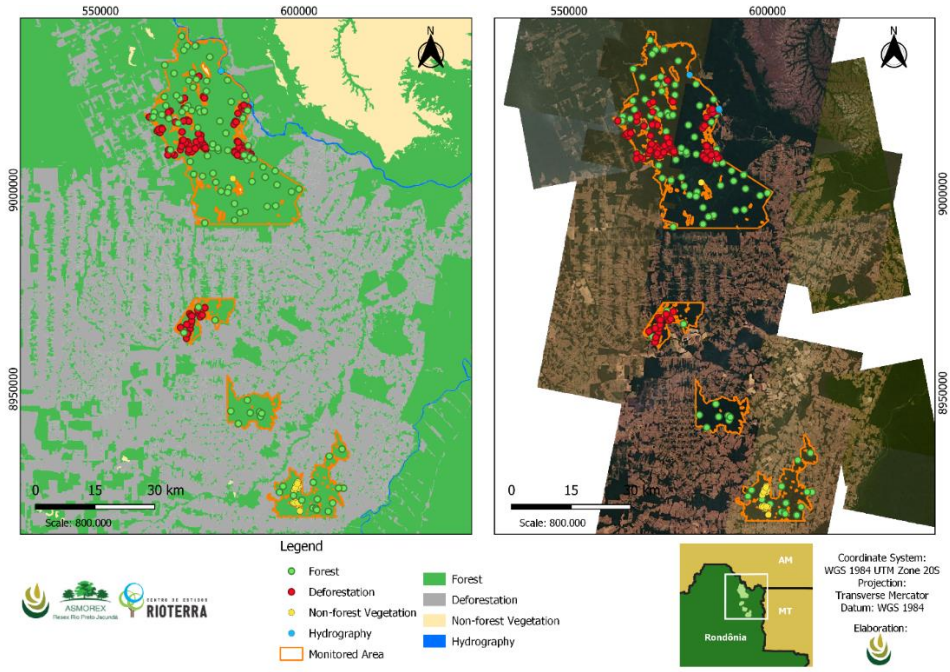


Figure 2 - Map accuracy assessment points. Fonte: Biofílica, 2021.

With the reference points and the land use and land cover map of the monitoring period, it was possible to evaluate the performance of the monitoring process through the analysis of the confusion matrix

(Table 7) according to Congalton and Green (2008). The overall accuracy of the monitoring process for the land use and land cover classes in the monitored area showed values above 80%, being 88%.

Table 7 - Confusion matrix of the monitoring period

		PRODES x PLANET						
		Reference				**Total**	**User accuracy**	**Ommission Error**
		Forest	Deforestation	Non-Forest	Water			
Classified	Forest	**92**	3	5	0	100	92%	8%
	Deforestation	6	**94**	0	0	100	94%	6%
	Non-Forest	7	1	**10**	0	18	56%	44%
	Water	0	0	0	**3**	3	100%	0%
Total		105	98	15	3	**225**		
Producer accuracy		88%	96%	67%	100%			
Omission Error		12%	4%	33%	0%			
Map Accurancy								**88%**

The confusion matrix was made based on a stratified random point allocation to sample all classes of land use and land cover. A total of 225 points were used in the accuracy evaluation, being 100 points randomly distributed in the Forest class, 100 points randomly distributed in the Deforestation class, 18 points randomly distributed in the Non-Forest class and 3 points randomly distributed in the Water class.

During the monitoring period, Biofílica generated annual monitoring bulletins, which include the coordinates of the deforested areas during the year analyzed. The monitoring bulletins for 2017, 2018, 2019, and 2020, were produced in 2018, 2019, 2020, and 2021, respectively. The time deficit is due mainly to the fact that PRODES data takes about a year to be published for the retroactive year.

Within the same scope, quarterly monitoring was performed with PLANET data that is generated daily, enabling constant monitoring. The license for the PLANET images was acquired in July 2018, for this reason, quarterly bulletins were prepared as of that date. The license to use the Orbital images was provided by Santiago & Cintra Consultoria (SCCON), exclusive distributor of Planet products in Brazil. In total, 8 bulletins were prepared in the monitored period.

The methodology used for monitoring with PLANET images will be detailed below:

the location of historical deforestation is done based on the PRODES data by downloading the consolidated and recent vector and matrix data corresponding to orbit/point 231/66 and 231/67 of the LANDSAT 8 satellite, with 30 meter resolution, which cover the monitored area. The data are clipped and extracted for the monitored area (project area and leakage belt), and in this way it is possible to know the location of historical deforestation in the area, thus making it possible to avoid double counting an area already deforested in previous years.

By accessing the Planet/SCCON Web Platform the data updated for the analysis period is obtained. The images with the best quality and visibility within the observed month are selected, a filter is applied for cloud cover (maximum coverage of 10% - for the rainy months this index can be higher) and then the WMS links are downloaded for access to the matrix images generated by the Planet sensor through the plugins of the geoprocessing software ArcGis or QGis.

In the geoprocessing software, the mosaic of images obtained is assembled and the mosaic is cut in the limits of the monitored areas, with this, a composition of bands is made, brightness and contrast adjustment are made for better visualization of the images.

After selecting the images, the process of classifying the deforested areas begins. A vector file is created with the identification of the month monitored, and with the support of the historical mapping done by PRODES and the mapping done on Planet images from previous months, polygons are demarcated where it is possible to locate the change in land use in the period analyzed.

After the mapping is completed, the areas are calculated in the software and spreadsheets are generated with the data collected. Finally, the deforestation data are merged to generate a history of the monitored areas.

From this, in each quarterly bulletin, an individual analysis was made of the deforestation results generated monthly, both in the project area and in the leakage belt. Additionally, central coordinates are generated for the identified deforestation polygons that are larger than 2 hectares, for further support in patrolling activities in the RESEX. All issued bulletins were shared with ASMOREX, CES Rioterra and SEDAM.

Physical Patrolling

In order to improve the efficiency of patrols in the RESEX, several contacts were made with public agencies to provide the necessary support for the activities. In this sense, it is important to mention that SEDAM already carried out patrols in the region and in other protected areas in an unsystematic and sporadic way.

The REDD+ RESEX Rio Preto-Jacundá Project, through denunciations and inspection assistance from the residents themselves, has patrolled the area with support from SEDAM, in order to contain illegal deforestation, invasions, maintain the forest cover and, consequently, maintain the climate benefits. In this sense, several inspection and patrolling activities were carried out during the monitored period.

On July 19 and 20, 2017, an inspection was conducted in order to verify illegal activities on the perimeter of the RESEX, with the presence of five state officials: 3 from SEDAM and 2 from the Special Operations Group (GOE).

In January 2019, an inspection visit was conducted in the neighbouring region the RESEX, bordering the Juruá River. In July 2019, by means of a denunciation of illegal logging in its initial phase, an inspection of the area in the limits of the RESEX was carried out, together with SEDAM servers, where the

requests for taking action by the inspection body were forwarded. Between November 9 and 11, 2019, an inspection was carried out with the support of some residents of the RESEX, in the northern perimeter of the reserve to verify the existence of illegal logging actions.

In January and April, 2020, there were also inspections of areas within the RESEX where, supposedly, there were illegal activities. The January inspection was carried out by the community members and residents of the RESEX, while the April inspection was carried out under the supervision of SEDAM and the Environmental Police.

As described in the above activities, through physical patrolling of the area in conjunction with the annual monitoring bulletins prepared, it is possible to prevent illegal activities and take appropriate action in case of unusual occurrences. The good relationship with stakeholders, aligned with the activities carried out by Biofílica, ASMOREX, Rioterra and SEDAM, the monitoring by satellite images that help in the effectiveness of the patrols and even the residents themselves making complaints and giving support for the patrol activities, it inhibits possible invaders and consequently, avoid unplanned deforestation in the project area.

Improving forest management pratices

As described in the PDD (section 2.2 and 6), although the REDD+ RESEX Rio Preto-Jacundá Project does not effectively carry out management activities, the project proponents understood that supporting the already existing activities in the area, bringing an improvement in practices, improves the governance of the area, consequently helping in forest conservation. Also, according to the Project Developer's Guidebook to VCS REDD Methodologies (CI, 2013), under a scenario where “the project developer engages the communities in authorized sustainable forest management for commercial timber production in the forest area as an alternative livelihood activity compatible with forest conservation”, like the project case, forest management activities should be allowed.

In this sense, forest management activities, when carried out within a sustainable regime, are recognized by many experts as a tool to conserve forest cover, maintain forest carbon stocks and reduce deforestation rates (PORTER-BOLLAND et al., 2012; VERÍSSIMO et al., 1992; BARRETO et al., 1998; HOLMES et al., 2002 apud SABOGAL et al., 2006; PUTZ et al., 2008; SPATHELF et al., 2004), in this view, emissions due to planned logging activities were not considered, being calculate emissions due to planned deforestation (patios or terraces, camping, dragging trails and roads). Therefore, the project is aligned with the VM0015 methodology since it accounts for emissions due to planned deforestation (section 3.2.2.1). Moreover, most importantly, in the scope of benefits generated to the climate, the presence of management activities in an area contains the entry of invaders and consequent illegal logging activities and deforestation.

Therefore, the Sustainable Forest Management Plan (SFMP), has as its main objective to manage the renewable natural resources available in the forest, enhancing its use and conserving the productive capacity, maximizing its power of self-establishment. In this sense, the management activities were based

on the Annual Operation Plans (AOP), since the original SFMP was under the domain of SEDAM, and until the completion of this report it was not possible to get a copy of the document, anyway, the AOPs are based according to the original SFMP. Additionally, the project monitors the impact of forest management, since the Forest Management Areas (FMAs) are within the REDD+ project area, and its monitoring is necessary.For all the Annual Production Units (APUs) the AOPs, pre-exploitation reports and post-exploitation reports were prepared. In all AOPs, guidelines are defined for planning the Timber Harvesting System, with planning for opening roads, storage yards, as well as felling of trees, hauling and tracing of logs. In the AOPs the Plan for pre- and post-harvest silvicultural treatments were prepared, with guidelines for cutting vines before harvesting, in addition to the orientation of the tree felling, to avoid the formation of clearings, with the felling being oriented in the direction of the skidding tracks, thus reducing damage.

The results obtained by the post-exploration reports for each APU, bring data from the patios or terraces, camping, dragging trails and roads opened for the activity in question. With this, it is possible to use such data to make the planned deforestation calculations addressed in the VM0015 methodology (section 7.1.1). Thus, section 6.1 presents the results obtained by the exploration in the forest management activities. AOP

Strategic physical occupation of territory

As a way to contain deforestation, the strategic allocation of some communities and families living in the RESEX was planned. Given the instability and violence of the locations that suffer great pressure from invasion and actions of illegal loggers, it was understood that, for the safety of the families, the relocation of existing communities would be unfeasible, so it did not occur. More details are described in section 4.3.1.

In this sense, the new community members stay in places closer to each other to avoid risks. The maintenance of the community members, as well as the strategic location of the new community members, and the activities carried out by both, increase the governance of the area and inhibit the entrance of invaders, thus decreasing the risks of emissions, since the area is kept conserved, increasing the climatic benefits.

Multiple and sustainable use of forest products

In 2017, as a way to bring benefits to the climate, SEDAM approved the Multiple Use Management Plan (PMUM), prepared by CES Rioterra, in conjunction with Ecoporé and ASMOREX and with financial support from FUNBIO. The PMUM includes a series of procedures with the objective of minimizing the negative impacts associated with biodiversity, avoiding, as well, overexploitation

The approval of the PMUM brought a spatial organization of the territory (zoning) and also guidelines for sustainable exploitation of natural resources, empowering RESEX residents to consciously use non-timber forest products and care for the forest. The PMUM, brings as its main benefit the

conservation of biodiversity and maintenance of forest cover, preventing deforestation, consequently. In this sense, the PMUM guidelines for the use of natural resources, as well as the activities that were carried out based on these guidelines, bring the maintenance of climate benefits. The activities for the preparation of the PMUM began in July 2015, including the fauna and flora inventories, environmental characterization, and the socioeconomic study of the RESEX. From this, a participatory planning process was defined with the community, with the goal of systematizing the demands and needs of community residents in the RESEX. In this sense, the zoning of the RESEX areas was carried out, guaranteeing the preservation of natural environments and biodiversity. Programs and sub-programs were also defined, aimed at the effective management and improvement of the socio-economic and environmental conditions of the RESEX.

In the PMUM, specifically in insert IV (portuguese: encarte IV), the RESEX Utilization Plan was elaborated, which contains rules of use and the rights and duties of the residents, with the purpose of serving as a guide for the residents to take care of nature's resources. In this way, extractive and agropastorialist interventions were dealt with, as well as new interventions in the forest, providing guidance on the extraction of forest products and their subsequent commercialization. In addition, there were guidelines about fauna interventions, focusing on hunting and fishing for commercial purposes and interventions in the common use area. Finally, there were guidelines on inspections and penalties for non-compliance with the Utilization Plan.

The PMUM products were delivered in four parts: booklets I, II, III and IV. All documents referring to the PMUM were delivered to the VVB. Sections 4 and 5.1.2 have more details about the zoning.

Leakage management activities

As described in the PDD, although the activities that occur outside the project area boundaries are not under the domain of the proponents, monitoring with satellite images was carried out in the leakage belt and in the leakage management areas, with consequent generation of quarterly bulletins, as described above.

This activity is one of the main ones carried out to contain the deforestation drives identified in the PDD represented by three groups (Group 1 - illegal loggers and squatters; Group 2 - squatters and small farmers; Group 3 - medium and large farmers), which act illegally in these areas. The analysis of satellite images is the main source of inputs for the surveillance rounds carried out by the responsible environmental agencies, making it possible to survey the "warning area" of invasions inside the RESEX and helping proponents and partners to make denunciations and complaints to the responsible agencies.

On the other hand, the activities that were carried out inside the RESEX Rio Preto-Jacundá brought the engagement of other associations of Extractive Reserves in the region, thus stimulating good practices and the interest for the maintenance of forest cover for the elaboration of REDD+ projects by the community members of these other RESEX to bring benefits as well as those achieved by the RESEX Rio Preto-Jacundá.

1.2. Monitoring of land use and land cover changes within the Project Area

Monitoring of planned and unplanned deforestation was carried out by mapping the forest cover of the Project area using data provided annually by PRODES. Subsequently, the mapping was validated based on the accuracy assessment with a mosaic of images with good visualization and low cloud cover, from the PLANET satellite.

The monitoring of deforestation for infrastructure implementation of forest management activities was carried out through information on the effective areas of the APUs contained in the post-exploitation reports of the exploited APUs, which, following the assumptions considered in the calculation of the project baseline, were multiplied by the 8% rate, which is a reasonable percentage of openness accepted in conventional forest management in extractive reserves in the Amazon, according to previously consulted specialists.

Data referring to deforestation events were compared to baseline scenarios. Values of reduced emissions in the deforestation period were derived from the comparison between predicted and actual deforestation.

1.3. Monitoring of carbon stock changes

Within the Project Area:

Although the ex-ante carbon stock estimate by forest class was not expected to change during the baseline period, VCS Methodology VM0015 requires monitoring of the carbon stock in the Project Area when it is subject to significant reduction of the carbon stock in the project scenario – with reference to the ex-ante assessment. This reduction can occur in areas subject to planned deforestation, arising from planned forest management activities, or in areas subject to unplanned reduction in carbon stock, such as in cases of catastrophic events or forest fires.

The total change in carbon stock due to unplanned and unavoided deforestation within the Project Area was calculated by the following equation:

$$\Delta \text{CUDdPA}_t = \sum_{y=1}^{t} \left(\sum_{icl=1}^{icl} AUDPA_{icl,y} * \Delta Ctot_{icl,t-y} - \sum_{fcl=1}^{fcl} AUDPA_{fcl,y} * \Delta Ctot_{fcl,t-y} \right) \quad (1)$$

Where:

ΔCUDdPAt: Total decrease in carbon stock due to unplanned and unavoided deforestation within the Project Area in year t.

AUDPAicl,y: Unplanned deforested area in the initial icl forest class in year t within the Project Area in the scenario with the project.

ΔCtoticl,Ac: Carbon stock loss in the initial forest class icl at the time of change Ac (number of years after change in land use and land cover (LU/LC)).

AUDPAfcl,y: Final non-forest fcl class area at time t within the Project Area after unplanned deforestation in the scenario with the project.

ΔCtotfcl,Ac: Carbon stock gain in the final non-forest class fcl at time of change Ac (number of years after change in land use and land cover (LU/LC)).

All reductions in carbon stock from forest management activities were reported in the verification processes by Table 29 of VCS Methodology VM0015.

Within the Leakage Management Areas:

In the Project scenario, no area is subject to the planned depletion of carbon stock within the Leakage Management Areas, whether located within or outside the boundaries of RESEX Rio Preto-Jacundá.

1.4. Monitoring non-CO_2 emissions due to forest fires

Emissions from biomass burning are not computed in this Project. According to the VM0015 Methodology, non-CO2 emissions can be conservatively omitted since, as demonstrated by scientific research, the occurrence of natural fires is rare in the Amazon region, with a predominance of anthropogenic fires related to human occupation (SCHROEDER et al, 2009). Furthermore, besides the project not stimulating activities associated with fire, the project promotes mitigation actions against deforestation caused by these agents, represented mainly by strengthening patrimonial vigilance actions and with the support of the communities themselves which, in addition to being inserted in strategic locations within the RESEX and, by their physical presence, scare away the agents of deforestation, are great allies in reporting complaints and avoid focus on the extensions corresponding to the project area.

However, during the monitoring period of this document, very high rates of deforestation were identified in 2017 and 2019. Given such rates and during the photointerpretation of PLANET images from the quarterly monitoring of deforestation in the RESEX, it was decided to further verify the existence of forest fires in the project area in order to understand the dynamics of use and occupation of these areas, as well as to help identify priority areas and strategies to control and combat invasions and deforestation within the RESEX.

The burning of biomass directly affects the carbon cycle and can cause emissions and losses for the project, corroborating such high rates and, as a result, an analysis of burned areas within the project limits was conducted. Initially, data was collected from the Burning/Forest Fire Monitoring Program of INPE (National Institute for Space Research) which, among other monitoring activities, provides data regarding the scars of forest fires. Thus, the existence of possible forest fire scars in the monitoring period (2015/10/01 to 2020/08/07) was verified. By checking the data during the interval, it was possible to recognize the

existence of scars resulting from fires during 2017 and 2019, coinciding with the times of highest rates of deforestation in the RESEX.

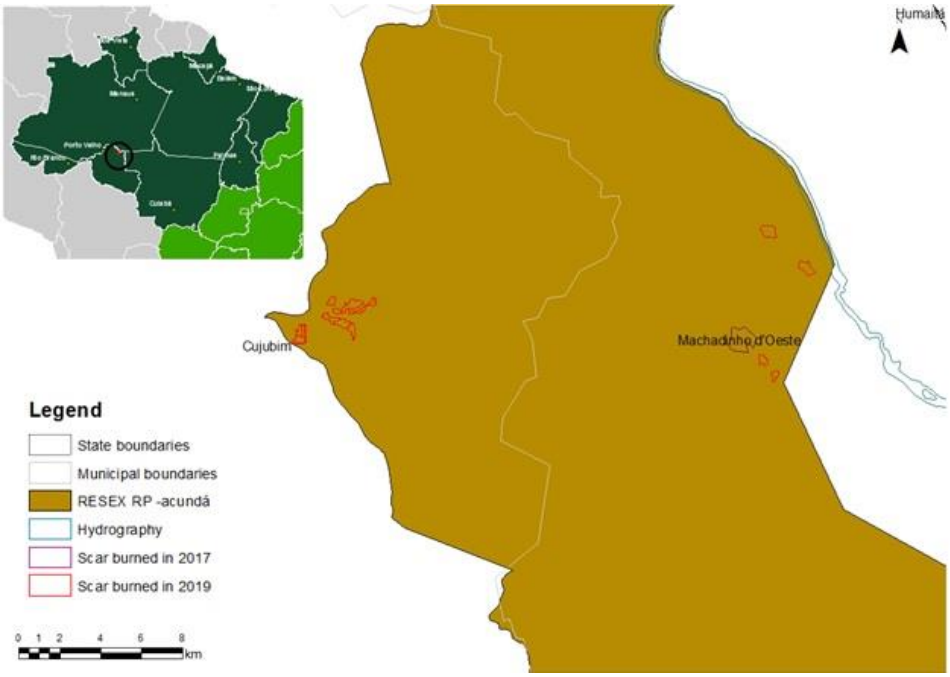


Figure 3 - Location of forest fire scars mapped by DETER in the monitoring period for analysis of non-CO2 emissions. Source: Adapted from INPE, 2021

Following the detection of these burned areas (which resulted in fire scars), the calculation of non-CO2 emissions associated with these fires was performed, as well as the calculation of significance of these emissions. The result of these calculations indicated that non-CO2 emissions in 2017 were not significant. However, since in 2019 the deforestation that occurred was higher than predicted in the baseline, resulting in negative net emissions for the year, the non-CO2 emissions had to be considered in the total annual net emissions calculation. being presented in section 3.2.2.9 of this document. The calculation spreadsheet was made available to VVB.

The following formulas presented in VM0015, version 1.1 (Section 6.2) were used to calculate non-CO2 emissions from forest fires:

$$EBBtoticl,t = EBBN2Oicl,t + EBBCH4icl,t \ (2)$$

Where:

EBBtoticl,t: Total GHG emission from biomass burning in forest class icl at year t (tCO2-e.ha-1);

EBBN2Oicl,t: N2O emission from biomass burning in forest class icl at year t (tCO2-e.ha-1);

EBBCH4icl,t: CH4 emission from biomass burning in forest class icl at year t (tCO2-e.ha-1);

$$EBBN2Oicl,t = EBBCO2icl,t * 12/44 * NCR * ERN2O * 44/28 * GWPN2O \quad (3)$$

$$EBBCH4icl,t = EBBCO2icl,t * 12/44 * ERCH4 * 16/12 * GWPCH4 \quad (4)$$

Where:

EBBCO2icl,t: Per hectare CO2 emission from biomass burning in slash and burn in forest class icl at year t (tCO2-

e.ha-1);

EBBN2Oicl,t: Per hectare N2O emission from biomass burning in slash and burn in forest class icl at year t

(tCO2-e.ha-1);

EBBCH4icl,t: Per hectare CH4 emission from biomass burning in slash and burn in forest class icl at year t

(tCO2-e.ha-1);

NCR: Nitrogen to Carbon Ratio (IPCC default value = 0.01) (dimensionless);

ERN2O: Emission ratio for N2O (IPCC default value = 0.007);

ERCH4: Emission ratio for CH4 (IPCC default value = 0.012);

GWPN2O: Global Warming Potential for N2O (IPCC default value = 310 for the first commitment period);

GWPCH4: Global Warming Potential for CH4 (IPCC default value = 21 for the first commitment period);

$$EBBCO2icl,t = Fburnticl * \sum (Cp,icl,t\ p\ p{=}1 * Pburntp,icl * CEp,icl) \quad (5)$$

Where:

EBBCO2icl,t: Per hectare CO2 emission from biomass burning in slash and burn in forest class icl at year

t (tCO2-e.ha-1);

Fburnticl: Proportion of forest area burned during the historical reference period in the forest class icl (%);

Cp,icl,t: Average carbon stock per hectare in the carbon pool p burnt in the forest class icl at year t (tCO2-

e.ha-1);

Pburntp,icl: Average proportion of mass burnt in the carbon pool p in the forest class icl (%);

CEp,icl: Average combustion efficiency of the carbon pool p in the forest class icl; dimensionless;

p: Carbon pool that could burn (above-ground biomass, dead wood, litter);

icl: 1, 2, 3, …icl (pre-deforestation) forest classes;

t: 1, 2, 3 … t, a year of the proposed project crediting period (dimensionless).

In addition to the emission calculations, it was decided to calculate the NDVI (Normalized Difference Vegetation Index) to further verify possible damage and biomass loss at these sites. It is important to emphasize that the analysis was done only for the sites in which after the occurrence of the fire was not accounted for by the PRODES program as deforestation. The extensions in which the PRODES program, after identifying the fire scar, identified as deforested areas, lost their biomass and, therefore, the equivalent emissions will already be accounted for in the project's total emissions. As for the areas that were not processed as deforested, the NDVI calculation was incorporated in order to verify the behavior of the sites over time and confirm whether the forest has been regenerating.

The NDVI calculation is done from the difference between the reflectances of the near infrared and red (visible) bands, divided by the sum of the reflectances of these two bands. The result is a raster image that presents values ranging from -1 to 1, so that areas that are closer to 1 indicate greater health of the vegetation, while values closer to -1 indicate the presence of bare soil in degraded areas (MEDEIROS, n.a.), or in this case, the confirmation of the occurrence of degradation by fire.

In this way, an analysis was made for the polygons of burned scars that did not become deforestation for the years 2017 and 2019. The analysis used images from the Landsat 8 satellite with OLI (Operational Land Imager) sensor available in the EarthExplorer and Land Viewer image catalog.

For the verified years, three NDVI analyses were performed with differentiated dates, being:

- The first, in both years, has of the date April 2015, as it covers the period prior to the identification of the scars in 2017 and 2019;

- The second image has a differentiated date, to contemplate the period right after the last fire scar was recorded for each year analyzed. Thus, in 2017 an image from April 2018 was used, and in 2019 an image dated April 2020 was used;

- Finally, the last analysis, like the first, was performed with images from similar dates, July 2020, depicting the situation of the areas after the scarring has occurred.

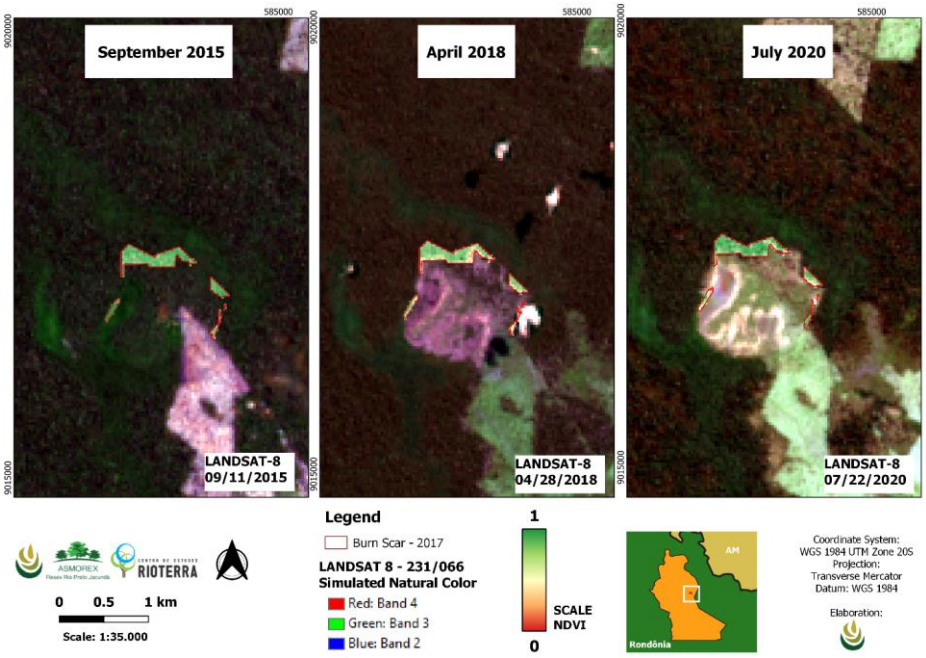


Figure 4 - NDVI calculation for the 2017 fire scars, which were not identified by PRODES as deforestation, in 2015, 2018 and 2020.

In the areas affected in 2017, it was found that the 2018 image (just after the fire scar) showed values close to zero, while the images from 2015 (before) and 2016 (after) the possible fire, exhibited NDVI values close to one, as illustrated in Figure 4.

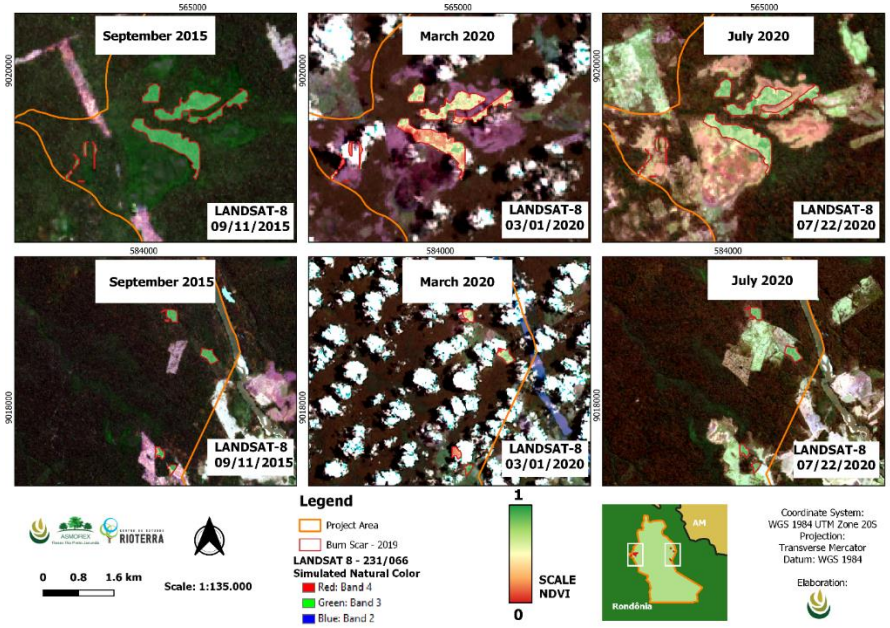


Figure 5 - NDVI calculation for 2019 fire scars, which were not identified by PRODES as deforestation, in 2015 and in two periods in 2020.

In the areas affected in 2019, a similar pattern was observed, that is, in 2015 (before) and in 07/2020 (after) the scars detected, the NDVI values were closer to 1, but, already, in the image right after the scars, date of April 2020, the values are close to zero, as illustrated in Figure 5.

The main interpretation of these results is the effective demonstration of the occurrence of fires in these locations. This statement is possible, mainly because the NDVI values of the dates close to the registration of the scars are, in both years analyzed, close to zero. Thus, we can affirm that in 2017 and 2019 forest fires occurred in RESEX being considered significant in the calculations of emissions only in 2019, as previously mentioned.

Another statement derived from this analysis, is the fact that the values found of NDVI in the periods after the fire scars, increased, reaching close to 1. This shows, that despite having reached large areas, especially in 2019, the fire did not cause great damage.

However, there is a difference in the analyses. In 2017, the site where the fire scar was recorded is inserted in a forest context without major interventions having, still, some patches characterized as "non-forest vegetation" nearby. Thus, the NDVI values after the fires are very close to values found in a healthy forest, making clear the recovery of biomass due, probably, to the closure of the canopy and plant occupation of the lower stratum.

In the analysis in 2019, taking into account the local context, the conclusion is different. The detected areas are located in regions bordering deforestation, with constant pressure from external threats and surrounded by areas characterized as pastureland and with exposed soil. Although the NDVI analysis has been relevant also for these sites, showing the increase of the index after the fire record, it is important to say that the values are recent (2020) and, over time, these sites too sensitive to human action may not recover so well, and even suffer new fires due to the strong pressure for deforestation in the area. It is evident that by analyzing these results, the REDD+ project will continue its activities in order to minimize and diminish these consequences for these sites.

1.5. Monitoring the impacts of natural disturbances and other catastrophic events

The reduction in carbon stock and increase in GHG emissions caused by natural disturbances or catastrophic events were verified through the monitoring of forest cover by satellite using the same methods applied for monitoring forest cover in the Project Area.

Emissions caused by natural disturbances or catastrophic events are estimated by multiplying the mapped area of forest loss by the average forest carbon stock. During this monitoring period no significant reductions in carbon stock due to natural disturbances or catastrophic events were identified during forest cover monitoring.

2. Leakage Monitoring

a) Technical description of monitoring areas

The REDD+ RESEX Rio Preto-Jacundá Project involves two activities to monitor leakage sources:

i. Monitoring the reduction in carbon stocks and/or the increase in GHG emissions associated with leakage prevention measures if the project bidders implement activities such as tree planting, agricultural intensification, fertilization, forage production and/or other improvement measures in agricultural areas and cattle raising.

When these activities cause a reduction in carbon stocks and/or an increase in GHG emissions in the Leakage Management Areas, these changes in the carbon stock and/or GHG emissions are estimated by Biofílica Ambipar Environmental Investments.

During the monitored period, the project bidders did not carry out any of the mentioned interventions. Therefore, changes in carbon stock and GHG emissions associated with prevention and leakage activities were not accounted for.

ii. Monitoring of forest cover in the Leakage Belt through satellite images, carried out by Biofílica Ambipar Environmental Investments.

Biofílica Ambipar Environmental Investments monitored the forest cover in the Leakage Belt through satellite images to account for the reduction in carbon stock and the increase in GHG emissions due to the displacement of leaks.

b) Data Collected

Table 8 – Data collected for monitoring leakage in the REDD+ RESEX Rio Preto-Jacundá Project.

Parameter	Description	Unit	Source	Frequency
$ABSLLK_{fcl,t}$	Final area of the forest class *fcl* (post deforestation) deforested in the year *t* within the Leakage Belt in the case of the baseline	Hectare (ha)	Calculated	Annual
$\Delta CLPMLK_t$	Decrease in carbon stock due to leakage prevention measures	Ton of carbon dioxide equivalent tCO_2-e)	Not applicable	Annual
$EgLK_t$	Emissions from grazing animals in the area of leakage management in year t	Ton of carbon dioxide equivalent tCO_2-e)	Not applicable	Annual
$ELPMLK_t$	Total annual increase in GHG emissions due to leakage prevention measures in the year *t*	Ton of carbon dioxide equivalent tCO_2-e)	Not applicable	Annual

$\Delta CabBSLLK_t$	Total changes in carbon stock in the Leakage Belt area	Ton of carbon dioxide equivalent tCO_2-e)	Calculated	Annual

c) Brief description of data collection procedures

Monitoring of carbon stock changes and GHG emissions associated with leakage prevention activities:

There was no decrease in carbon stock due to activities carried out in the Leakage Management Areas, since no activity to improve cultivation or pasture management that could change carbon stocks and increase GHG emissions, in relation to the scenario of baseline, were implemented or stimulated during the monitored period.

However, if it is decided that these activities are necessary, then ex-ante changes in carbon stock and associated GHG emissions will be estimated through step 8 of methodology VM0015. Sequentially, if significant, emissions will be monitored and data will be provided to the verification body at each verification event through tables 30b, 30c, 31, 32 and 33 of methodology VM0015, version 1.1.

In case leakage prevention activities are implemented at AMV, some main activities will be carried out to collect and process data to monitor changes in carbon stock:

- Leakage prevention activities will be listed;
- A map showing the areas and type of intervention will be prepared;
- Areas where leakage prevention activities impact the carbon stock will be identified;
- Non-forest classes existing within these areas in the baseline case will be identified;
- Carbon stocks will be measured in the identified classes or estimates from conservative literature will be used;
- Changes in carbon stock in the leakage management areas under the project scenario will be reported using table 30b of VM0015;
- The changes in the net carbon stock that the leakage prevention measures cause during the fixed baseline period and, optionally, the project crediting period will be calculated;
- The results of the calculations will be reported in table 30.c of VM0015.

Monitoring the decrease in carbon stock and increase in GHG emissions due to leakage displacement:

Activity data for the Leakage Belt area were determined using the same methods applied to monitoring deforestation in the Project Area (item 1.1).

If during the monitoring process a deforestation event higher than expected for the baseline scenario is identified in the leakage belt, being greater than zero, and such deforestation is attributed to deforestation agents in the Area of Project, carbon stock losses will be accounted for and reported using Tables 22c and 21d as recommended by VCS VM0015 item 1.2 – Leakage Monitoring.

d) Quality control and assurance procedures

Monitoring of carbon stock changes and GHG emissions associated with leakage prevention activities: During the monitored period, no leakage prevention activities were implemented. If any activity takes place, the specific procedures for the activity will be determined.

Monitoring of carbon stock decrease and increase in GHG emissions due to leakage displacement: Procedures used for quality control and assurance were the same applied to monitoring deforestation in the Project Area (item 1).

e) Data archiving

All data and reports produced by the Project REDD+ RESEX Rio Preto-Jacundá are stored by Biofílica Ambipar Environmental Investments through digital files during the project's life cycle. All documents related to the monitoring of the Project are gathered in physical and/or virtual files and made available to the verification body at each verification event.

2.1. Monitoring of carbon stock changes and GHG emissions associated with leakage prevention activities

There was no decrease in the carbon stock associated with activities carried out in the Leakage Management Areas, since no activity to improve agricultural techniques, or the management of pasture areas, which could alter carbon stocks and increase GHG emissions in comparison to the baseline scenario, were implemented during this monitoring period.

However, if it is decided that these activities are necessary, the ex-ante changes in carbon stock and GHG emissions associated with these activities will be estimated through Step 8 of the VM0015 methodology. If significant, the activities and associated emissions will be monitored and the data will be made available to verifiers through tables 30b, 30c, 31, 32 and 33 of methodology VM0015, version 1.1.

The following activities can lead to a reduction in carbon stock or an increase in GHG emissions in Leakage Management Areas:

- Changes in carbon stock due to activities implemented in the Leakage Management Areas;
- Nitrous oxide emissions (N2O) arising from nitrogen fertilization are always considered insignificant, according to the latest version of the VCS standard –VM0015. The consumption

of fossil fuels is always considered insignificant in the AUD of project activities and should not be considered.

Furthermore, as noted above, no activities were carried out that caused a significant increase in CH4 and N2O emissions. Therefore, Tables 31 and 32 of VM0015 were not applied.

2.2. Monitoring of carbon stock decrease and increase in GHG emissions due to leakage displacement

Activity data for the Leakage Belt area were determined by the same methods applied to monitoring deforestation in the Project Area (item 1). The total change in carbon stock due to unplanned and unavoided deforestation within the Leakage Belt area was calculated as follows:

$$\Delta CBSLLK_t = \sum_{y=1}^{t}\left(\sum_{icl=1}^{icl} AUDLK_{icl,y} * \Delta Ctot_{icl,t-y} - \sum_{fcl=1}^{fcl} AUDLK_{fcl,y} * \Delta Ctot_{fcl,t-y}\right) \quad (2)$$

Where:

ΔCBSLLKt Total change in carbon stock due to unplanned and unavoided deforestation within the Leakage Belt area in year t.

AUDLKicl,y Area of unplanned deforestation in forest class icl in year t within the Leakage Belt area in the scenario with the project.

ΔCtoticl,Ac Loss in carbon stock in the initial forest class icl at time of change Ac (number of years after change in land use and land cover (LU/LC)).

AUDLKfcl,y Non-forest fcl class area at time t within Leakage Management Belt area after unplanned deforestation in the project scenario.

ΔCtotfcl,Ac Gain in carbon stock in the final non-forest class fcl post-deforestation in the change period Ac (number of years after change in land use and land cover (LU/LC)).

2.3. Estimated total leakage ex-post

The results were presented to the verification body through Table 35 of Methodology VM0015.

3. Ex-post net GHG reductions

a) Technical description of monitoring tasks

In the verification processes, the results were presented using Table 36 of the Approved Methodology VM0015 version 1.1, together with the spatial data (deforestation maps).

b) Data Collected

Table 9 – Data collected to monitor net ex-post GHG reductions for the REDD+ RESEX Rio Preto-Jacundá Project.

Parameter	Description	Unit	Source	Frequency
$\Delta REDD_{,t}$	Reduction of net GHG emissions attributable to Project activities at AUD in the year *t*	Ton of carbon dioxide equivalent tCO_2-e)	Calculated	Annual
$VCU_{,t}$	Number of Verified Carbon Units (VCUs) to be made available for sale in the year *t*	Ton of carbon dioxide equivalent tCO_2-e)	Calculated	Annual

c) Brief description of data collection procedures

The calculation of the number of Verified Carbon Units (VCUs) that were produced by the activities of the REDD+ RESEX Rio Preto-Jacundá Project in 2016, 2017, 2018, 2019 and 2020 was done using equations 19 and 20 of the VM0015 Methodology version 1.1.

d) Quality control and assurance procedures

All tasks and tools indicated in part 2 of the Approved Methodology VM0015 have been used to ensure that the data is adequate for the verification process and the number of Verified Carbon Units is reliable.

e) Data archiving

All data and reports of the REDD+ RESEX Rio Preto-Jacundá Project are stored by Biofílica Ambipar Environmental Investments in digital files throughout the project. All documents relating to Project monitoring are compiled and made available to the verification body at each verification event.

3.1.4 Dissemination of Monitoring Plan and Results (CL4.2)

As already described in section 2.3.1, the REDD+ RESEX Rio Preto-Jacundá Project implemented three methods of communication – oral, writen, and virtual -, aiming to ensure access to documents and all other Project information to communities and other players.

The results were disseminated in a printed version, where each document related to the project design and monitoring was made available for consultation at ASMOREX's headquarters and at CUC/SEDAM (in the city of Porto Velho), in a virtual version where the documents related to monitoring were made available through Verra's site and website, Biofílica's newsletter and social media, and orally,

through the internal alignment meetings held by ASMOREX and in the Ordinary and Extraordinary Meetings held with the residents of RESEX.

3.2 Quantification of GHG Emission Reductions and Removals

3.2.1 Baseline Emissions

Estimates of surface and belowground carbon stocks considering the average values calculated for managed forest and primary forest were 114,196 tC/ha for the aboveground biomass reservoir and 15.84 tC/ha for the belowground biomass reservoir of soil considering a confidence level of 5% and 7% respectively for each reservoir. For carbon credit calculation purposes, this stock was multiplied by the carbon dioxide equivalent (CO2e). Methodological details can be obtained from the Final Technical Report document (Hdom Engenharia e Projetos Ambientais LTDA, 2013).

Table 10 presents average carbon stock values per hectare across all use and land cover classes of the baseline scenario present in the Project Area, Leakage Belt and Leakage Management Areas.

Table 10 – Carbon stocks per hectare for the initial class icl existing in the Project Area and in the Leakage belt.

Initial forest class *icl*							
Name:	Forest						
ID_{icl}	1						
Average carbon stock per hectare + 90% CI							
Cab_{icl}		Cbb_{icl}		Cdw_{icl}		$Ctot_{icl}$	
C stock	± 95% CI	C stock	± 95% CI	C stock	± 95% CI	C stock	± 95% CI
$tCO_2e\ ha^{-1}$	$tCO_2e\ ha^{-1}$	$tCO_2e\ ha^{-1}$	$tCO_2e\ ha^{-1}$	$tCO_2e\ ha^{-1}$	$tCO_2e\ ha^{-1}$	$tCO_2e\ ha^{-1}$	$tCO_2e\ ha^{-1}$
418.7	21	58.1	4	0.0	0.0	476.8	24.6

Where:

Cabicl = Average carbon stock per hectare in the above-ground biomass carbon pool of class icl; tCO2-e ha-1

Cbbicl = Average carbon stock per hectare in the below-ground biomass carbon pool of class icl; tCO2-e ha-1;

Cdwicl = Average carbon stock per hectare in the dead wood biomass carbon pool of class icl; tCO2-e ha-1;

Ctoticl = Average carbon stock per hectare in all accounted carbon pools of LU/LC icl; tCO2-e ha-1

To calculate the baseline, the number of hectares of each forest class that could be deforested in the absence of the project were extracted from the land use and cover maps. The results of the baseline

projections show a deforestation, between 2014 and 2020, of 6,527 hectares in the Project Area (Table 11) and 1,933 hectares in the Leakage Belt (Table 12).

Table 11 – Baseline annual areas of unplanned deforestation in the Project Area for the monitored period 2016-2020.

Area established after deforestation per zone within the Project area		Total baseline deforestation in the project area	
ID_{icl}>	1	$ABSLPAt_t$	ABSLPA
Name>	Zone 1		
Project $year_t$	ha	ha	ha
2016	1,291	1,291	1,291
2017	1,425	1,425	2,716
2018	1,209	1,209	3,925
2019	1,314	1,314	5,239
2020	1,288	1,288	6,527

Table 12 – Baseline annual areas of unplanned deforestation in the Leakage Belt for the monitored period 2016-2020.

Area established after deforestation per zone within the leakage belt		Total baseline deforestation in the leakage belt	
ID_{icl}>	1	$ABSLLK_t$	ABSLLK
Name>	Zone 1		
Project $year_t$	ha	ha	ha
2016	289	289	289
2017	374	374	663
2018	430	430	1,093
2019	393	393	1,486
2020	447	447	1,933

For the calculation of the baseline changes in carbon stock in the Project Area (Table 13) and Leakage Belt (Table 14) for year t was used Method 1 of VM0015 version 1.1, according to Equation 10 (page 72 of this VM0015), and which was also used in the project description (VCS – p. 111) to calculate the total change in the baseline carbon stock in the project area and the leakage belt, presented below:

$$\Delta CBSLPA_t = \sum_{p=1}^{P}\left(\sum_{icl=1}^{Icl} ABSLPA_{icl,t} * \Delta Cp_{icl,t=t*} - \sum_{z=1}^{Z} ABSLPA_{z,t} * \Delta Cp_{z,t=t*} + \sum_{icl=1}^{Icl} ABSLPA_{icl,t-1} * \Delta Cp_{icl,t=t*+1} - \sum_{z=1}^{Z} ABSLPA_{z,t-1} * \Delta Cp_{z,t=t*+1} + \sum_{icl=1}^{Icl} ABSLPA_{icl,t-2} * \Delta Cp_{icl,t=t*+2} - \sum_{z=1}^{Z} ABSLPA_{z,t-2} * \Delta Cp_{z,t=t*+2} + \cdots + \sum_{icl=1}^{Icl} ABSLPA_{icl,t-19} * \Delta Cp_{icl,t=t*+19} - \sum_{z=1}^{Z} ABSLPA_{z,t-19} * \Delta Cp_{z,t=t*+19}\right) \quad (7)$$

Where:

ΔCBSLPAt: Total baseline carbon stock change within the project area at year t (tCO2-e);

ABSLPAicl,t: Area of initial forest class icl deforested at time t within the project area in the baseline case (ha);

ABSLPAicl,t-1: Area of initial forest class icl deforested at time t-1 within the project area in the baseline case (ha);

ABSLPAicl,t=t-19: Area of initial forest class icl deforested at time t-19 within the project area in the baseline case (ha);

ΔCpicl,t=t*: Average carbon stock change factor for carbon pool pin the initial forest class icl applicable at time t (as per Table 20.a) (tCO2-e.ha-1);

ΔCpicl,t=t*+19: Average carbon stock change factor for carbon pool pin the initial forest class icl applicable at time t=t*+19 (20thyear after deforestation, (as per Table 20.a) (tCO2-e.ha-1);

ABSLPAz,t: Area of the zone z "deforested" at time t within the project area in the baseline case (ha);

ABSLPAz,t-1: Area of the zone z "deforested" at time t-1 within the project area in the baseline case (ha);

ABSLPAz,t-19: Area of the zone z "deforested" at time t-19 within the project area in the baseline case (ha);

ΔCpz,t=t*: Average carbon stock change factor for carbon pool pin zone z applicable at time t = t* (as per Table 20.b) (tCO2-e.ha-1);

ΔCpz,t=t+1: Average carbon stock change factor for carbon pool pin zone z applicable at time t = t*+1 (2nd year after deforestation, as per Table 20.b) (tCO2-e.ha-1);

ΔCpz,t=t*+19: Average carbon stock change factor for carbon pool pin zone z applicable at time t = t*+19 (20th year after deforestation, as per Table 20.b) (tCO2-e.ha-1).

Total emissions in the baseline scenario in the Project Area for the years 2016, 2017, 2018, 2019 and 2020 were 539,099 tCO2e; 594,764 tCO2e; 203,949 tCO2e; 547,506 tCO2e; and 536,221 tCO2e, respectively, as presented in Table 13. The total emissions from the baseline scenario in the leakage belt for the years 2016, 2017, 2018, 2019 and 2020 were 120,606 tCO2e; 156,080 tCO2e; 179,394 tCO2e; 163,780 tCO2e; and 186,252 tCO2e, respectively, as presented in Table 14.

Table 13 – Total changes in the Project Area baseline scenario carbon stock (table 21.b. VM0015).

Carbon stock changes per initial forest class *icl*	Total carbon stock change of initial forest class in the project area	Carbon stock changes per post-	Total carbon stock change of post-deforestation zones in the project area	Total net carbon stock change of the project area

				deforestation zone z					
ID_{icl}>	1	$\Delta CBSLPA_{icl,t}$	$\Delta CBSLPA_{icl}$	ID_{iz}>	1	$\Delta CBSLPA_{z,t}$	$\Delta CBSLPA_{z}$	$\Delta CBSLPA_{t}$	$\Delta CBSLPA$
Name>	Forest	annual	cumulative	Name>	Zone 1	annual	cumulative	annual	cumulative
Project $year_t$	tCO_2-e	tCO_2-e	tCO_2-e	Project $year_t$	tCO_2-e	tCO_2-e	tCO_2-e	tCO_2-e	tCO_2-e
2016	567,763	567,763	567,763	2016	28,664	28,664	28,664	539,099	539,099
2017	632,145	632,145	1,199,907	2017	37,380	37,380	66,044	594,764	1,133,863
2018	548,725	548,725	1,748,632	2018	44,776	44,776	110,820	503,949	1,637,812
2019	600,319	600,319	2,348,951	2019	52,813	52,813	163,634	547,506	2,185,318
2020	596,913	596,913	2,945,864	2020	60,692	60,692	224,326	536,221	2,721,538

Table 14 – Total carbon stock changes in the Leakage Belt baseline scenario (Table 21.c. VM0015).

Carbon stock changes per initial forest class *icl*		Total carbon stock change of initial forest class in the leakage belt area		Carbon stock changes per post-deforestation zone z		Total carbon stock change of post-deforestation zones in leakage belt area		Total net carbon stock change of the leakage belt area	
ID_{icl}>	1	$\Delta CBSLLK_{icl,t}$	$\Delta CBSLLK_{icl}$	ID_{iz}>	1	$\Delta CBSLLK_{z,t}$	$\Delta CBSLLK_{z}$	$\Delta CBSLLK_{t}$	$\Delta CBSLLK$
Name>	Forest	annual	cumulative	Name>	Zone 1	annual	cumulative	annual	cumulative
Project $year_t$	tCO_2-e	tCO_2-e	tCO_2-e	Project $year_t$	tCO_2-e	tCO_2-e	tCO_2-e	tCO_2-e	tCO_2-e
2016	128,515	128,515	128,515	2016	7,909	7,909	7,909	120,606	120,606
2017	166,277	166,277	294,792	2017	10,197	10,197	18,106	156,080	276,686
2018	192,221	192,221	487,013	2018	12,827	12,827	30,933	179,394	456,080
2019	179,012	179,012	666,025	2019	15,231	15,231	46,164	163,780	619,860
2020	204,217	204,217	870,242	2020	17,965	17,965	64,130	186,252	806,112

3.2.2 Project Emissions

3.2.2.1 Emissions due to planned deforestation

The sustainable forest management carried out by the company MADREX since 2016, is not directly part of the scope of the project, however, there is an impact on the reduction of carbon stock related mainly to deforestation in Annual Production Units (APU) for the implementation of infrastructure such as trawling trails and patio.

The data for calculating these areas were obtained from the information contained in the post-exploration reports of the APUs. To arrive at the area deforested annually for these structures, the information on the areas effectively exploited in the APUs, identified in the post-exploitation reports, was used multiplied by the rate of 8%, which is a reasonable percentage of openness accepted in conventional forest management in extractive reserves in the Amazon, according to previously consulted specialists, as described in the PD.

Table 15 shows carbon stock decrease due to planned deforestation in the Project Area, the total emissions related to the planned deforestation is 117,173 tCO2e. These values were obtained by multiplying the annual open infrastructure areas, identified as described above, by the average change in carbon stock, as shown in the equation below:

$$\Delta CPDdPAt = (APDPAicl,t \times Ctoticl,t) \quad (8)$$

Where:

ΔCPDdPAt: Total decrease in carbon stock due to planned deforestation at year t in the project area;

APDPAicl,t: Areas of planned deforestation in forest class icl at year t in the project area;

Ctoticl,t: Average carbon stock of all accounted carbon pools in forest class icl at time t.

Table 15 - Carbon stock decrease due to planned deforestation in the Project Area (Table 25.a. VM0015)

Project Year *t*	Areas of planned deforestation x Carbon stock change (decrease) in the project area		Total carbon stock decrease due to planned deforestation	
	ID_{cl} =	1	annual	cummulative
	$APDPA_{icl,t}$	$Ctot_{icl,t}$	$\Delta CPDdPA_t$	ΔCPDdPA
	ha	$tCO_2e\ ha^{-1}$	tCO_2e	tCO_2e
2016	75	477	35,795	35,795
2017	47	477	22,336	58,131
2018	38	477	18,270	76,401
2019	42	477	20,006	96,407
2020	44	477	20,766	117,173

3.2.2.2 Emissions due to planned logging activities

As already expected in the PD, the low impact forest management in the Project Area did not realize emissions associated with the logging activities from 2016 to 2020. In addition, logging was primarily directed at obtaining long-lived timber products, and based on the fact that VM0015 considers it conservative to disregard these products from the calculations, all logging activities were excluded.

Table 16 - Carbon stock decrease due to planned logging activities in the project area (Table 25.b. VM0015)

Project $year_t$	Areas of planned logging activities x	Total carbon stock decreases due to

	Carbon stock change (decrease) in the project area		planned logging activities	
	ID_{cl} =	1	annual	cumulative
	$APLPAi_{icl,t}$	$Ctot_{icl,t}$	$\Delta CPLdPA_t$	$\Delta CPLdPA$
	ha	tCO_2e ha^{-1}	tCO_2e	tCO_2e
2016	0	0,0	0,0	0,0
2017	0	0,0	0,0	0,0
2018	0	0,0	0,0	0,0
2019	0	0,0	0,0	0,0
2020	0	0,0	0,0	0,0

3.2.2.3 Emissions due to fuel-wood and charcoal activities

No emissions associated to planned fuel-wood and charcoal activities were developed in the Project Area.

Table 17- Carbon stock decrease due to planned fuel-wood collection and charcoal production in the Project Area (Table 25.c. VM0015)

Project year t	Areas of planned fuel-wood & charcoal activities x Carbon stock change (decrease) in the project area		Total carbon stock decreases due to planned fuel-wood and charcoal activities	
	ID_{cl} =	1	annual	cumulative
	$APFPA_{icl,t}$	$Ctot_{icl,t}$	$\Delta CPFdPA_t$	$\Delta CPFdPA$
	ha	tCO_2e ha^{-1}	tCO_2e	tCO_2e
2016	0	0,0	0,0	0,0
2017	0	0,0	0,0	0,0
2018	0	0,0	0,0	0,0
2019	0	0,0	0,0	0,0
2020	0	0,0	0,0	0,0

3.2.2.4 Removals due to carbon stock increase of planned activities

Carbon stock increase due to planned activities in areas that would be deforested in the baseline case was omitted.

Table 18- Total ex post carbon stock decreases due to planned activities in the Project Area (Table 25.d. VM0015)

Project Year t	Total carbon stock decrease due to planned deforestation		Total carbon stock decrease due to planned logging activities		Total carbon stock decrease due to planned fuel-wood and charcoal activities		Total carbon stock decrease due to planned activities	
	annual	cumulative	annual	cumulative	annual	cumulative	annual	cumulative
	$\Delta CPDdPA_t$	$\Delta CPDdPA$	$\Delta CPLdPA_t$	$\Delta CPLdPA$	$\Delta CPFdPA_t$	$\Delta CPFdPA$	$\Delta CPAdPA_t$	$\Delta CPAdPA$
	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e
2016	35,795	35,795	0.0	0.0	0.0	0.0	35,795	35,795
2017	22,335.9	58,131	0.0	0.0	0.0	0.0	22,335.9	58,131
2018	18,270.0	76,401	0.0	0.0	0.0	0.0	18,270.0	76,401
2019	20,006.3	96,407	0.0	0.0	0.0	0.0	20,006.3	96,407
2020	20,766.1	117,173	0.0	0.0	0.0	0.0	20,766.1	117,173

3.2.2.5 Total ex post carbon stock decrease in the Project Area

No carbon stock decrease associated to Project activities has occurred in the Project Area in the monitored period.

Table 19 - Total Ex post estimated net carbon stock decrease in the Project Area (Table 27 VM0015)

Project Year t	Total carbon stock decrease due to planned activities		Total carbon stock increase due to planned activities		Total carbon stock decrease due to unavoided unplanned deforestation		Total carbon stock change in the project case	
	annual	cumulative	annual	cumulative	annual	cumulative	annual	cumulative
	$\Delta CPAdPA_t$	$\Delta CPAdPA$	$\Delta CPAiPA_t$	$\Delta CPAiPA$	$\Delta CUDdPA_t$	$\Delta CUDdPA$	$\Delta CPSPA_t$	$\Delta CPSPA$
	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e
2016	35,795	35,795	0.0	0.0	404,914	404,914	440,709	440,709
2017	22,335.9	58,131	0.0	0.0	499,279	904,193	521,615	962,324
2018	18,270.0	76,401	0.0	0.0	152,555	1,056,747	170,825	1,133,148
2019	20,006.3	96,407	0.0	0.0	965,405	2,022,152	985,411	2,118,560
2020	20,766.1	117,173	0.0	0.0	306,162	2,328,314	326,928	2,445,488

3.2.2.6 Emissions due to unplanned and unavoided deforestation

The total unplanned deforestation in the Project Area during this monitoring period is 5,492 hectares, according to PRODES (2020) data. The accuracy of PRODES (2020) data for land use and land cover classes in the monitored area was 88 %, higher than the 80% established by VM0015. The methodology and results of this analysis are described in section 3.1. The data for the Years 2016, 2017, 2018, 2019 and 2020 were presented in Table 20.

Table 20 – Deforested areas observed annually in each zone within the Project Area (Table 13.b. VM0015).

Area establiseh after deforestation per zone within the project area		Total monitored deforestation in the project area	
IDz>	1		
Name>	Zone 1	Annual	Cumulative
Project year$_t$	ha	ha	ha
2016	954	954	954
2017	1,177	1,177	2,131
2018	361	361	2,492
2019	2,276	2,276	4,768
2020	725	725	5,492

3.2.2.7 Emissions due to forest fires and catastrophic events

During the monitored period, in the year 2019, significant emissions from forest fires were considered because deforestation occurred in that year was higher than predicted in the baseline, resulting in negative net emissions for the year. Thus, non-CO2 emissions had to be considered in the total calculation of annual net emissions. The analysis performed was made available to VVB and Table 21 presents the data.

Table 21 - Ex post actual carbon stock decrease due to forest fires in the project area (Table 25.e. VM0015)

Project Year *t*	Areas affected by forest fires x Carbon stock change (decrease)		Total carbon stock decrease due to forest fires	
	ID_{cl} =	1	annual	cummulative
	$AUFPA_{icl,t}$	$Ctot_{icl,t}$	$\Delta CUFdPA_t$	$\Delta CUFdPA$
	ha	$tCO_2e\ ha^{-1}$	tCO_2e	tCO_2e
2016	0	0.0	0.0	0.0
2017	0	0.0	0.0	0.0
2018	0	0.0	0.0	0.0

2019	0	0.0	0.0	0.0
2020	0	0.0	0.0	0.0

There were no significant emissions from catastrophic events in the Project Area in the monitored period (Table 22).

Table 22- Carbon Stock decrease due to catastrophic events in the Project Area (Table 25.f. VM0015)

Project Year *t*	Areas affected by catastrophic events x Carbon stock change (decrease)		Total carbon stock decrease due to catastrophic events	
	ID_{cl} =	1	annual	cummulative
	$ACPA_{icl,t}$	$Ctot_{icl,t}$	$\Delta CUCdPA_t$	$\Delta CUCdPA$
	ha	tCO_2e ha^{-1}	tCO_2e	tCO_2e
2016	0	0,0	0,0	0,0
2017	0	0,0	0,0	0,0
2018	0	0,0	0,0	0,0
2019	0	0,0	0,0	0,0
2019	0	0,0	0,0	0,0

3.2.2.8 Ex post estimated net carbon stock change in the Project Area

The calculation of the total change in carbon stock (ex-post) in the Project Area used the same methods described in items 6.1.2 and 6.1.3 of the approved VCS methodology VM0015, considering the changes observed in the monitoring period. The total change in carbon stock due to unavoidable unplanned deforestation in the Project area was calculated follows Equation 9.

$$\Delta \text{CUDdPA}_t = \sum_{y=1}^{t} \left(\sum_{icl=1}^{icl} AUDPA_{icl,y} * \Delta Ctot_{icl,t-y} - \sum_{fcl=1}^{fcl} AUDPA_{fcl,y} * \Delta Ctot_{fcl,t-y} \right) \quad (9)$$

Where:

ΔCUDdPAt: Total carbon stock changes due to unavoidable unplanned deforestation in the Project Area in year t;

AUDPAicl,y: Unplanned deforestation area in the initial forest class icl in year t in the Project Area in the Project scenario;

ΔCtoticl,Ac: Loss of carbon stock in the initial forest class icl at the age of change Ac (number of years after the change of use and soil cover);

AUDPAfcl,y: Post deforestation non-forest class area fcl in year t in the Project Area after unplanned deforestation in the Project scenario;

ΔCtotfcl,Ac: Gain in carbon stock in the final post deforestation non-forest class fcl at the age of change Ac (number of years after change of use and soil cover).

Total ex post estimated carbon stock change in Project area under the Project scenario in this monitoring period is presented in Table 23.

Table 23 – Change in ex-post carbon stock in the Project Area (Table 21.b.2. VM0015).

Carbon stock changes per initial forest class *icl*		Total carbon stock change of initial forest class in the project area		Carbon stock changes per post-deforestation zone z		Total carbon stock change of post-deforestation zones in the project area		Total net carbon stock change of the project area	
ID_{icl}>	1	$\Delta CBSLPA_{icl,t}$	$\Delta CBSLPA_{icl}$	ID_{iz}>	1	$\Delta CBSLPA_{z,t}$	$\Delta CBSLPA_{z}$	$\Delta CBSLPA_{t}$	$\Delta CBSLPA$
Name>	Forest	annual	cumulative	Name>	Zone 1	annual	cumulative	annual	cumulative
Project Year *t*	tCO_2-e	tCO_2-e	tCO_2-e	Project Year *t*	tCO_2-e	tCO_2-e	tCO_2-e	tCO_2-e	tCO_2-e
2016	405,158	405,158	405,158	2016	244	244	244	404,914	404,914
2017	505,358	505,358	910,516	2017	6,079	6,079	6,323	499,279	904,193
2018	165,832	165,832	1,076,348	2018	13,277	13,277	19,600	152,555	1,056,747
2019	980,890	980,890	2,057,238	2019	15,485	15,485	35,085	965,405	2,022,152
2020	335,569	335,569	2,392,807	2020	29,407	29,407	64,493	306,162	2,328,314

3.2.2.9 Non-CO_2 emissions from forest fires

Following the guidelines of item 6.2 of VM0015 (pg. 81), Non-CO2 emissions from fires used to clear forests in the baseline were omitted. According to item 1.1.4 of VM0015 v 1.1 (page 112) these events are subject to monitoring and should be accounted for in the project scenario, when significant.

During the monitoring period, forest fires that occurred were monitored and the result of the calculation of non-CO2 emissions indicated that emissions were not significant for 2017, but had to be accounted for 2019, as set ou above and in section 3.1. Therefore, non-CO2 emissions from forest fires for 2019 have been reported in Table 24 below.

Table 24 - Total ex post estimated actual net carbon stock changes and emissions of non-CO2 gasses in the project area (Table 29 VM0015)

Project Year t	Total ex post carbon stock	Total ex post carbon stock	Total ex post carbon stock		Total ex ante estimated actual

	decrease due to planned activities		increase due to planned activities		decrease due to unavoided unplanned deforestation		Total ex post net carbon stock change		non-CO2 emissions from forest fires in the project area	
	annual $\Delta CPAdPA_t$ tCO_2e	cumulative $\Delta CPAdPA$ tCO_2e	annual $\Delta CPAiPA_t$ tCO_2e	cumulative $\Delta CPAiPA$ tCO_2e	annual $\Delta CUDdPA_t$ tCO_2e	cumulative $\Delta CUDdPA$ tCO_2e	annual $\Delta CPSPA_t$ tCO_2e	cumulative $\Delta CPSPA$ tCO_2e	annual $EBBBSLPA_t$ tCO_2-e	cumulative $EBBPSPA$ tCO_2-e
2016	35,795	35,795	0.0	0.0	404,914	404,914	440,709	440,709	0.0	0.0
2017	22,335.9	58,131	0.0	0.0	499,279	904,193	521,615	962,324	0.0	0.0
2018	18,270.0	76,401	0.0	0.0	152,555	1,056,747	170,825	1,133,148	0.0	0.0
2019	20,006.3	96,407	0.0	0.0	965,405	2,022,152	985,411	2,118,560	855	855
2020	20,766.1	117,173	0.0	0.0	306,162	2,328,314	326,928	2,445,488	0.0	855

3.2.3 Leakage

As defined in the VCS VM0015 methodology, deforestation detected above the baseline in the Leakage Belt area was considered as leakage displacement. Thus, leakage due to displacement activity was monitored by mapping forest cover change in the Leakage Belt. The activity data for the Leak Belt area was determined using the same methods applied in mapping deforestation in the Project Area.

3.2.3.1 Total decrease in carbon stock (ex-post) in the Leakage Belt

Total deforestation in the Leakage Belt was 1,225 hectares in the monitored period, according to PRODES data. As mentioned for the Project Area, the PRODES data used for monitoring the Leakage Belt also had its accuracy analyzed, the methodology and results of this analysis are described in section 3.1. The data for the years 2016, 2017, 2018, 2019 and 2020 are presented in Table 25.

Table 25 – Areas deforested annually in each zone within the monitored Leakage Belt (Table 13.c. VM0015).

Area estabiliseh after deforestation per zone within the leakage belt		Total monitored deforestation in the leakage belt	
IDz>	1		
Name>	Zone 1	Annual	Cumulative
Project yeart	ha	ha	ha
2016	194	194	194
2017	615	615	808
2018	254	254	1.062
2019	75	75	1.137
2020	91	91	1.228

Total carbon stock change due to unavoidable unplanned deforestation within the leakage belt area is calculates the following way:

$$\Delta CBSLLK_t = \sum_{y=1}^{t}\left(\sum_{icl=1}^{icl} AUDLK_{icl,y} * \Delta Ctot_{icl,t-y} - \sum_{fcl=1}^{fcl} AUDLK_{fcl,y} * \Delta Ctot_{fcl,t-y}\right) \quad (10)$$

Where:

ΔCBSLLKt: Total carbon stock changes due to unavoidable unplanned deforestation in the area of the Leakage Belt in year t;

AUDLKicl,y: Unplanned deforestation area in the initial forest class icl in year t in the area of the Leakage Belt in the Project scenario;

ΔCtoticl,Ac: Loss in the carbon stock in the initial forest class icl at the age of change Ac (number of years after the change of LU/LC);

AUDLKfcl,y: Post deforestation non-forest class area fcl in year t in the Leakage Belt after unplanned deforestation in the Project scenario;

ΔCtotfcl,Ac: Gain in carbon stock in the final post deforestation non-forest class fcl at the age of change Ac (number of years after the change of LU/LC).

Table 26 – Change in ex-post carbon stock in the Leakage Belt area (table 21.c.2. VCS VM0015).

Carbon stock changes per initial forest class *icl*		Total carbon stock change of initial forest class in the leakage belt area		Carbon stock changes per post-deforestation zone z		Total carbon stock change of post-deforestation zones in leakage belt area		Total net carbon stock change of the leakage belt area	
ID_{icl}>	1	$\Delta CBSLLK_{icl,t}$	$\Delta CBSLLK_{icl}$	ID_{iz}>	1	$\Delta CBSLLK_{z,t}$	$\Delta CBSLLK_{z}$	$\Delta CBSLLK_{t}$	$\Delta CBSLLK$
Name>	Forest	annual	cumulative	Name>	Zone 1	annual	cumulative	annual	cumulative
Project Year *t*	tCO_2-e	tCO_2-e	tCO_2-e	Project Year *t*	tCO_2-e	tCO_2-e	tCO_2-e	tCO_2-e	tCO_2-e
2016	85,115	85,115	85,115	2016	3,028	3,028	3,028	82,087	82,087
2017	264,926	264,926	350,041	2017	4,213	4,213	7,241	260,713	342,800
2018	115,237	115,237	465,277	2018	7,973	7,973	15,214	107,264	450,064
2019	40,859	40,859	506,136	2019	9,524	9,524	24,738	31,335	481,398
2020	48,146	48,146	554,283	2020	9,983	9,983	34,720	38,164	519,562

3.2.3.2 Estimated total ex-post leakage

Total ex post carbon stock changes in the Leakage Belt due to displacement activities in this monitored period are presented in Table 27. Leakage was calculated as the difference between ex post and ex ante analyses.

In this case, as a result, the value of carbon stock changes in the monitoring period for the years 2016, 2018, 2019 and 2020 were less than zero (<0). Thus, ex post leakage was defined as zero in these monitored years, as recommended by item 1.2 – Leakage Monitoring, of VCS VM0015.

For 2017, the deforestation that occurred in the leakage belt was above what was predicted by the baseline calculation and resulted in total ex-post carbon stock changes above what was recommended by VM0015. Thus, the total ex-post carbon stock changes in 2017 resulted in 104,633 tCO2-e.

Table 27 – Total ex-ante and ex-post carbon stock changes from baseline in the Leakage Belt.

Total net carbon stock change of the leakage belt area			Total net carbon stock change of the leakage belt area		Total ex-post Leakage	
ID_{iz}>	ΔCBSLLKt	ΔCBSLLK	ΔCBSLLKt	ΔCBSLLK	ΔCBSLLKt	ΔCBSLLK
Name>	annual	cumulative	annual	cumulative	annual	cumulative
Project Year *t*	tCO2-e	tCO2-e	tCO2-e	tCO2-e	tCO_2-e	tCO_2-e
2016	120.606	120.606	82.087	82.087	0	0
2017	156.080	276.686	260.713	342.800	104.633	104.633
2018	179.394	456.080	107.264	450.064	0	104.633
2019	163.780	619.860	31.335	481.398	0	104.633
2020	186.252	806.112	38.164	519.562	0	104.633

3.2.4 Net GHG Emission Reductions and Removals

Anthropogenic GHG emission reductions were calculated according to equations 19, 20 and 21 of the VCS VM0015 version 1.1 methodology (equations 5, 6 and 7). The risk factor was revised in this monitored period and estimated using the Non-Permanence Risk Report, resulting in a VCS credit buffer (VBC) of 11%.

REDDt = (CBSLPAt + EBBBSLPAt) – (CPSPAt + EBBPSPAt) – (CLKt + ELKt) (11)

Where:

ΔREDDt: Ex post estimated net anthropogenic greenhouse gas emission reduction attributable to the AUD project activity at year t (tCO2e);

ΔCBSLPAt: Sum of baseline carbon stock changes in the project area at year t (tCO2e);

EBBBSLPAt: Sum of baseline emissions from biomass burning in the project area at year t (tCO2e);

ΔCPSPAt: Sum of ex post actual carbon stock changes in the project area at year t (tCO2e);

EBBPSPAt: Sum of ex post actual emissions from biomass burning in the project area at year t (tCO2e);

ΔCLKt: Sum of ex post leakage net carbon stock changes at year t (tCO2e);

ELKt: Sum of ex post leakage emissions at year t (tCO2e);

t: 1, 2, 3 ... T, a year of the proposed project crediting period (dimensionless).

VCUt = REDDt – VBCt (12)

VBCt = (CBSLPAt - CPSPAt) * RFt (13)

Where:

VCUt: Number of Verified Carbon Units that can be traded at time t (tCO2e);

ΔREDDt: Ex post net anthropogenic greenhouse gas emission reduction attributable to the AUD project activity at year t (tCO2e);

VBCt: Number of Buffer Credits deposited in the VCS Buffer at time t (t CO2-e);

ΔCBSLPAt: Sum of baseline carbon stock changes in the project area at year t (tCO2e);

ΔCPSPAt: Sum of ex post actual carbon stock changes in the project area at year t (tCO2e);

RFt: Risk factor used to calculate VCS buffer credits (%);

t: 1, 2, 3 ... T, a year of the proposed project crediting period (dimensionless)

The calculated ex-post GHG emission reductions are presented in Table 28.

Table 28 – Ex-post reduction of anthropogenic GHG emissions (ΔREDDt) and Verified Carbon Units (VCUt) (Table 36 VM0015).

Project Year t	Baseline carbon stock changes		Ex post project carbon stock changes		Ex post project GHG emissions		Ex post leakage carbon stock changes		Ex post net anthropogenic GHG emission reductions		Ex post VCUs tradable		Ex post buffer credits	
	annual	cumulative	annual	cumulative	annual	cumulative	annual	cumulative	annual	cumulative	annual	cumulative	annual	cumulative
	$\Delta CBSLPA_t$	ΔCBSLPA	$\Delta CPSPA_t$	ΔCPSPA	$EBBPSPA_t$	EBBPSPA	ΔCLK_t	ΔCLK	$\Delta REDD_t$	ΔREDD	VCU_t	VCU	VCB_t	VCB
	tCO_2-e	tCO_2-e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e	tCO_2e
Oct-01-2015 – Sep-30-2016	539.099	539.099	440.709	440.709	0	0	0,0	0	98.390	98.390	87.567	87.567	10.823	10.823
Oct-1-2016 – Sep-30-2017	594.764	1.133.863	521.615	962.324	0	0	104.633	104.633	-31.484	66.906	-28.021	59.546	-3.463	7.360
Oct-1-2017 – Sep-30-2018	503.949	1.637.812	170.825	1.133.148	0	0	0,0	104.633	333.124	400.030	296.481	356.027	36.644	44.003
Oct-1-2018 – Sep-30-2019	547.506	2.185.318	985.411	2.118.560	855	855	0,0	104.633	-438.760	-38.730	-390.496	-34.470	-48.264	-4.260
Oct-1-2019 – Aug-07-2020	536.221	2.721.538	326.928	2.445.488	0	855	0,0	104.633	209.292	170.563	186.270	151.801	23.022	18.762

3.3 Optional Criterion: Climate Change Adaptation Benefits

Not applied.

4 COMMUNITY

4.1 Net Positive Community Impacts

4.1.1 Community Impacts (CM2.1)

The implementation of the REDD+ Rio Preto-Jacundá Project was able to contribute with several benefits to the communities belonging to the Project Area. The positive impacts were achieved thanks to the project activities, basically divided into 11 main axes, as described in section 4.3. Considering the monitored period, 33 families were positively impacted, 30 of these being divided into 5 communities, one riverside - Jatobá - and 4 located on mainland - Cabeça de Boi, Jatuarana, Campo Novo, and Chibé. Of the 33 residing families in the RESEX, 3 are more distant and therefore do not consider themselves to belong to the existing communities, these being a riverside - Bom Futuro - and two located on mainland – placement Manaus and placement Seringal Redonda.

For a better understanding of the impact caused individually in the communities, tables were structured with the benefits acquired by all the communities, considering all the results surveyed, as well as specific tables for the 3 remote placement and the 5 communities according to the specific positive impacts of each community. The community tables show how many family members there are in each community in 2020, which is the most current year of the monitoring period. The understanding of the impacts considering a broader approach and a more specific approach according to the main theme, were described respectively in sections 4.1.3 and 4.3.1.

Community Group	All community members of RESEX
Impact	1. Community empowerment 2. Increased possibilities for improving income and strengthening the extractive culture 3. Capacitation of the community members 4. Improvement of the spaces within the RESEX
Type of Benefit/Cost/Risk	Direct actual benefit
Change in Well-being	1. There has been an empowerment of the community members as they have taken an active role in deciding the activities to be developed within the RESEX. The empowerment has occurred both through the role of ASMOREX managers, who are positions held by the community members, and through the individual role of each community member by voting in the appropriate forums, such as the General Meetings. 2. An important initiative that contributed to the improvement of community income was the diagnosis of productive chains. This study proposed recommendations to strengthen existing community enterprises and the processes of production, marketing, and decision-making

	regarding the management of the business and the territory. Once the guidelines of the diagnosis are put into practice in conjunction with the two agro-industries (built via SEDAM's investment), these will further strengthen the generation of income by the community, once the agro-industries start operating. The two initiatives could be implemented due to the Multiple Use Management Plan that provided guidelines about the use and occupation of the land within the RESEX, the investments to improve the infrastructure of the RESEX that provided an adequate space, making it a reference within the territory for the implementation of the agro-industry, and the project's investment in actions that encourage the extractivist culture in the communities. Furthermore, these actions increase the possibility of strengthening the extractive culture as they are involved with the practice of collecting non-timber forest products. 3. The construction of a telecenter and an auditorium within the RESEX, together with the acquisition of equipment such as computers, made it possible for the community members to take several courses. The courses were open to all RESEX community members and covered different themes, such as information technology, administrative and financial management, good practices in the processing of açaí and cassava flour, biodiversity monitoring, social management and organization, among others. 4. The community members have benefited from the infrastructure built inside the RESEX, among which are the auditorium, the outpatient clinic, the telecenter, the cafeteria, the accomodation, the office for ASMOREX's board of directors, the shed to house the association's vehicles and agricultural implements, and the bathrooms.

Community Group	Jatobá – consisting by 8 families
Impact	1. Improved communication and internet access 2. Improved housing conditions 3. Energy access
Type of Benefit/Cost/Risk	Direct actual benefit
Change in Well-being	1. The families were benefited with the construction of an internet tower, making it possible to improve communication and access to the internet and, consequently, improving the quality of life and access to knowledge given the possibilities of internet use. 2. Five families from the Jatobá community were benefited with the construction of a new residence, ensuring an improvement in their housing quality and, consequently, in their quality of life.

	3. Some families in the Jatobá community received photovoltaic kits, enabling access to electricity and all uses that depend on energy. Consequently, the new improvements have provided quality of life to all beneficiaries.

Community Group	Cabeça de Boi – consisting by 7 families
Impact	1. improvement of income for the family of the community member João Mendonça dos Santos 2. Improved internet access 3. Improved housing conditions and access to improved sanitation 4. Energy access
Type of Benefit/Cost/Risk	Direct actual benefit
Change in Well-being	1. The family of the community member João Mendonça dos Santos was benefited with a house for flour production in 2017. The construction of infrastructure allowed the family income to increase, ensuring, consequently, improvement in the quality of life of the family and empowerment of the community through the development of their own business. 2. The families were benefited with the installation of internet equipment, making it possible to improve access to the internet and, consequently, improving the quality of life and access to knowledge given the possibilities of internet use. 3. Two families from the Cabeça de Boi community were benefited with the construction of a new residence, ensuring an improvement in the quality of their housing and, consequently, in their quality of life and health, since the new residence made access to the improvements made by SEDAM effective through the construction of a hydraulic network allowing water distribution throughout the community. 4. The families belonging to the Cabeça de Boi community were benefited with the extension of the distribution lines, guaranteeing access to electric energy and all uses that depend on energy. Consequently, the new improvements have provided quality of life for all the beneficiaries.

Community Group	Jatuarana – consisting by 6 families
Impact	1. Community José Pinheiro Borges Capacity Building 2. Improved internet access 3. Improved housing conditions and access to improved sanitation 4. Facilitating the transportation of Community members 5. Increased food safety and facilitation in production processes

Type of Benefit/Cost/Risk	Direct actual benefit
Change in Well-being	1. The Community member José Pinheiro Borges, during his term as director of ASMOREX, he underwent different training courses that broadened his knowledge on different themes, such as the productive chain of açaí, manioc, and fruit farming, botanical identification, biodiversity monitoring, and management of socioenvironmental conflicts 2. The families were benefited with the installation of internet equipment, making it possible to improve access to the internet and, consequently, improving the quality of life and access to knowledge given the possibilities of internet use. 3. A family from the Jatuarana community benefited from the construction of a new residence, ensuring an improvement in the quality of their housing and, consequently, in their quality of life and health, since the new residence made the access to the improvements made by SEDAM effective through the construction of a hydraulic network allowing water distribution throughout the community. 4. The families of the Jatuarana community benefited from the repair of a bridge in 2020 that gave access to the Campo Novo community. In this way, the community members were benefited by promoting improved transportation logistics. 5. The families have benefited from field assistance, helping agricultural production through practices such as soil harrowing. These benefits were made possible thanks to the acquisition of agricultural inputs such as a lime spreader, a tractor-mounted harrow for mechanization, and a tractor trailer.

Community Group	Campo Novo – consisting by 5 families
Impact	1. Improved communication and internet access 2. Improved housing conditions and access to improved sanitation 3. Facilitating the transportation of Community members 4. Energy access 5. Increased food safety and facilitation in production processes
Type of Benefit/Cost/Risk	Direct actual benefit
Change in Well-being	1. The families were benefited with the construction of an internet tower, making it possible to improve communication and access to the internet and, consequently, improving the quality of life and access to knowledge given the possibilities of internet use. 2. Four families from the Campo Novo community have benefited from the construction of a new residence, ensuring

	an improvement in the quality of their housing and, consequently, in their quality of life and health, since the new housing has made access to improvements made by SEDAM effective through the construction of a hydraulic network allowing water distribution throughout the community. 3. The families of the Campo Novo community benefited from the repair of a bridge in 2020 that gave access to the Jatuarana community. In this way, the community members were benefited by promoting improved transportation logistics. 4. The families belonging to the Campo Novo community were benefited with the extension of the distribution lines, thus guaranteeing access to electric energy and all uses that depend on energy. Consequently, the new improvements have provided quality of life for all the beneficiaries. 5. The families have benefited from field assistance, helping agricultural production through practices such as soil harrowing. These benefits were made possible thanks to the acquisition of agricultural inputs such as a lime spreader, a tractor-mounted harrow for mechanization, and a tractor trailer.

Community Group	Chibé – consisting by 4 families
Impact	1. Energy access
Type of Benefit/Cost/Risk	Direct actual benefit
Change in Well-being	1. The families belonging to the Chibé community were benefited with the extension of the distribution lines, thus guaranteeing access to electric energy and all uses that depend on energy. As a result, the new improvements have provided quality of life for all the beneficiaries.

Community Group	Placement Manaus
Impact	1. Energy access
Type of Benefit/Cost/Risk	Direct actual benefit
Change in Well-being	1. The family received a photovoltaic kit, allowing access to electricity and all uses that depend on energy. Consequently, the new improvements have provided quality of life for all beneficiaries.

Community Group	Placement Seringal Redonda
Impact	1. Energy access

Type of Benefit/Cost/Risk	Direct actual benefit
Change in Well-being	1. The family received a photovoltaic kit, allowing access to electricity and all uses that depend on energy. Consequently, the new improvements have provided quality of life for all beneficiaries.

Community Group	Placement Bom Futuro
Impact	1. Energy access
Type of Benefit/Cost/Risk	Direct actual benefit
Change in Well-being	1. The family received a photovoltaic kit, allowing access to electricity and all uses that depend on energy. Consequently, the new improvements have provided quality of life for all beneficiaries.

4.1.2 Negative Community Impact Mitigation (CM2.2)

Although the project's actions aim to promote positive impacts for the social players in the project zone, some negative impacts may occur. Thus, as a mitigation measure, some points were worked on during the verified period, based on the potential negative impacts raised during the design and structuring process of the REDD+ RESEX Rio Preto-Jacundá Project – section 6.2 of the PD.

One of the potential negative impacts for the community is the entry of external people into the extractive reserve due to the benefits generated by the project. The improvement in the living conditions of the community members present at RESEX can be an attraction for other people outside the project zone. The population increase in RESEX, although foreseen and desired due to the strategic occupation of some points in the territory, when uncontrolled and unplanned can trigger negative impacts. As a mitigation measure, two main mechanisms were implemented: choice of new families, evaluating whether the productive profile is compatible with the current in RESEX and implementation of a process for approval of these families by the communities already present at RESEX. These mechanisms are addressed through AMOREX's Bylaws, specifically in Article 7 of Chapter 3, which states that on occasions when external people intend to residence in RESEX, they must undergo consideration and approval by all partners through the Meeting General, space in which all community members have the right to assess decisions involving the management of RESEX. After approval by the community, the entry of these new community members or families is analyzed by SEDAM, and after its approval, the new residents are incorporated into the communities of the RESEX. This last step of the process was confirmed by the responsible for the Coordination of Conservation Units of the state of Rondônia, in a meeting with the auditors.

Due to population growth and the occupation of new regions within the project zone, there may be an overhunting and overfishing of natural resources by the community. Furthermore, through greater access to information, community members gain knowledge of more invasive hunting and fishing techniques, which could corroborate the negative impact. Mitigation of this potential impact was

contemplated through the Multiple Use Management Plan, which proposed species monitoring activities and measures, as presented and described in section 5.1.2. This section also describes the approach adopted to mitigate another possible negative impact on the project zone, which is the increased pressure on low-abundance species, especially flora.

Complementarily, all activities that were developed were monitored to monitor other negative impacts that could arise for communities and for HCVs. The follow-up process was linked to the conflict resolution procedure – described in section 2.3.12 - allowing the implementing agency to be aware of the impacts and to follow up When necessary.

4.1.3 Net Positive Community Well-Being (CM2.3, GL1.4)

The socioeconomic conditions of the communities impacted by the execution of the REDD+ RESEX Rio Preto-Jacundá Project are positive when compared to a scenario without the project. The positive impacts, which occurred within the monitored period, are related to the various activities developed and structured into 11 main axes: Governance and adaptive management, Health, Income generation, Education, Youth and women, Environment, Social organization, Communication, Infrastructure, RESEX Rio Preto-Jacundá Fund, and Zoning. All the activities carried out were previously designed in the Life Plan, in which the perspectives and demands of each community were considered. Considering the Project's resources, the highest priority activities were chosen according to the community's vision. These choices were made through informal meetings and formal meetings at the Extraordinary General Meeting level.

In this way, the execution of different activities aimed at meeting the needs and demands of the community provided several positive impacts, of which the following stand out:

- Empowerment of community members promoted by the various possibilities provided, such as: participation of community members in RESEX decisions linked to General Meetings, increased social participation offered by access and use of new infrastructure, training of community members in various courses to increase their knowledge and skills, among others;
- Improved quality of life achieved through improved income and investments in health, sanitation, housing, infrastructure, training, communication, among others;
- Improved health of the residents and increased life expectancy related to investments in the infrastructure of na clinic that enabled its use for medical care to all community members, as well as improvements in housing conditions with the construction of new houses
- Increased food security provided by agricultural insums, such as a lime spreader, a harrow attached to a tractor for mechanization, and a trailer, which allowed the improvement of agricultural production;
- Maintenance of the benefits offered by ecosystem services through responsible use, obtained through the knowledge and skills acquired in the trainings, as well as through the improvement of agro-extractive practices;

- Increased skills and knowledge of community members through various training courses on topics such as information technology, administrative and financial management, good practices in the processing of açaí and cassava flour, biodiversity monitoring, management and social organization, among others. In addition, the possibilities of expanding knowledge through access to the Internet;
- Encouraging the maintenance of young people in the RESEX, decreasing the exodus to the city due to improvements in infrastructure, the availability of courses providing training to these young people and access to the Internet;
- Promotion of gender equality in management positions given the occupation of leadership positions by women in ASMOREX management;
- Improved management of RESEX resources due to the training in administrative and financial management courses, and the implementation of the practices described in the REDD+ Jacundá Financial Mechanism, focusing on better planning and organization of resources and investments linked to the RESEX;
- Maintenance of residents in the RESEX, reducing the rural exodus promoted by investments in infrastructure, training, and other improvement opportunities, which also contributed to an organized occupation of the territory.

Positive impacts have been achieved by the communities due to the implementation of the REDD+ RESEX Rio Preto-Jacundá Project. Through the implementation of various activities financed by the Project, positive results were obtained that would not have occurred in the "business as usual" scenario. In this scenario, without the Project, the strong pressure of occupation by land grabbers and invaders would continue, which could lead to the expulsion of the communities and, consequently, a rural exodus.

The risk of marginalization of these people could also be linked to the maintenance of the status quo, as shown in the field diagnosis conducted in 2013, i.e., the infrastructure would remain precarious, considering the residences, since during the monitored period all the complementary infrastructure was built, most community members would remain deficient in terms of access to electricity and internet; small-scale farming practices would remain unsupported due to the absence of agricultural implements; and community members would not have the skills and knowledge acquired through the courses offered during the monitored period, which would lead to the perpetuation of inefficient practices in production processes, as well as low efficiency in the management of natural resources.. These and other contexts, as shown in the 2013 diagnosis, would continue to affect the lives of the residents of the RESEX if the project were not implemented.

Some strategies to assist local communities in climate adaptation can be considered:

- Strengthening of community organization through the centralization of management by ASMOREX, improvements such as the training of managers in administrative and financial management, and the empowerment of community members over RESEX decisions linked to

the Extraordinary General Meeting, and the social participation offered by the new infrastructure;

- Empowerment of community members through courses and access to new information through internet access, allowing a diversification of livelihood strategies;
- Training for community members in biodiversity monitoring and botanical identification, enabling them to become increasingly more knowledgeable about their territory and to protect the forest;
- Access to clean water through investments in the houses of the communities that provided the basis for receiving the adequacy of the sanitary structure as well as the water distribution (the initial proposal was that these activities would be linked to the Project's resources, however, due to an opportunity for environmental compensation that appeared to benefit the RESEX, the managers chose to use the resources of this compensation to invest in these improvements of water distribution);
- Access to electric energy through investments in photovoltaic kits, decreasing the need to search for other sources of polluting energy that are common in the context of remote communities in the Amazon.

4.1.4 Protection of High Conservation Values (CM2.4)

The Workshop II of Zoning, conducted in Feberary 2014 by the Project (section 2.6.2 of the PD) served as a guideline for pointing out the potential High Conservation Value Attributes (HCVAs) related to the communities present in the Project Zone, and two main HCVAs were raised at the end.

One of the main aspects raised by the community members was the areas that are important for subsistence, especially hunting, fishing and the extraction of natural resources (non-timber forest products), which was represented as HCVA 5 - forest areas that are fundamental for guaranteeing the basic needs of local communities (e.g. subsistence, health, etc.). The other aspect raised by the communities consisted of two sacred areas considered to be ancient rubber tapper cemeteries, and these were represented by HCVA 6 - forest areas critical to the cultural identity of traditional communities (e.g. areas of cultural, ecological, economic or religious significance).

The measures to protect the HCVAs are primarily linked to the contain of deforestation itself, since both attributes are dependent on the presence of forest cover for their maintenance and improvement. In this way, the protection of HCVAs is directly linked to the Project's activities considering the three main scopes - climate, community, and biodiversity - and especially to climate actions that act directly to combat deforestation, such as satellite monitoring of deforestation and surveillance patrols. As can be observed in section 3.2.4, the Project has achieved results in relation to the containment of deforestation expected to occur within the RESEX.

Another very important measure for the protection of the HCVAs was the development of the Multiple Use Management Plan (PMUM), especially Insert IV (encarte IV, in Portuguese), which dealt with the planning of the conservation unit. The Zoning of the Rio Preto-Jacundá RESEX, aimed at delimiting zones within the RESEX with specific management objectives and norms, in order to provide the means and conditions so that all the objectives of the RESEX can be achieved in a harmonious and effective way.

One of the established zones comprises the Sacred Zone, where the delimitation of what is referred to as the area contemplated by HCVA 6 was established. The document presents the objectives and norms, such as allowing only scientific research, monitoring, and protection activities.

In relation to HCVA 5, there are three Zones that include these areas: the traditional use and multiple use zones that have specific norms for hunting and fishing actions, as well as oil extraction, seed and fruit collection, as long as they are carried out with low impact and medium intensity and executed following specific management plan, and the forest management zone that is destined for forest exploration with the purpose of generating income and improving the quality of life of the community, from the sustainable use of biodiversity and, although the focus is forest management, this zone allows hunting, fishing, and seed and fruit collection.

In addition to the Traditional Use, Multiple Use and Forest Management Zones that were determined in the PMUM, there is a Restricted Use Zone, which has as its main objective the preservation in order to guarantee the reproduction of the fauna and flora of the RESEX. It is the place where nature remains as preserved as possible, where no human alterations that cause medium or great impact are tolerated, and which functions as a matrix for the repopulation of the other zones. It is an area that contains numerous springs, natural reservoirs, and different vegetation types, because of the difficulty of access, it also has scientific knowledge, its uses are limited to scientific research, monitoring, and the protection, collection, and extraction of non-timber products.

Another achievement presented in the PMUM refers to the updated Utilization Plan, which contains rules of use and the rights and duties of RESEX residents, with the purpose of serving as a guide for the residents to take care of nature's resources in order to guarantee the protection of the RESEX for future generations. The design and structuring of the plan counted on the participation of the residents of the RESEX, based on their own knowledge and discussions. In it were treated the extractivist and agropastoralist interventions, new interventions in the forest, in the fauna and in the area of common use. Furthermore, the plan contains guidelines about inspections and penalties for non-compliance. Thus, the project activities were essential to promote the maintenance of the HCVAs, also contributing, in a complementary way, with the development of mechanisms to mitigate possible impacts on the HCVAs.

4.2 Other Stakeholder Impacts

4.2.1 Mitigation of Negative Impacts on Other Stakeholders (CM3.2)

By considering the actions implemented in the REDD+ RESEX Rio Preto-Jacundá Project, negative impacts on other players were not expected. However, despite the project's actions aimed at promoting positive impacts, a measure was implemented to monitor any negative impacts that might arise.

The measure adopted consisted of the dispute resolution procedure, described in the section 2.3.12. Considering the cutout for external players, they can contact the channel that accesses the Project Implementing Instance, formed by ASMOREX, CES Rioterra and Biofílica, either by email, telephone or in person. Moreover, in addition to this channel, the meetings involving external actors, for example with CDREX, are spaces to raise criticisms that may arise, since the presence of the ASMOREX manager at these meetings enables this bridge with other actors.

4.2.2 Net Impacts on Other Stakeholders (CM3.3)

The main focus of the REDD+ RESEX Rio Preto-Jacundá Project was the residents of the Project Zone. However, it was noticed that through the development of the Project's activities there was the promotion of positive impacts to other actors. The benefits that have occurred consist of five main points:

- Income generation provided by contracting people and companies to build the infrastructure located inside the RESEX, such as the community houses, the clinic, the telecenter, among others;
- Encouragement of management improvements for other RESEXs in the surrounding area as the Rio Preto-Jacundá RESEX has become a model to be followed within the scope of its administrative and financial management - perception acquired through the participation of the former director of ASMOREX José Pinheiro in meetings with CDREX because the managers of the other RESEXs are interested in the good results and want to learn;
- Increased interest from other surrounding RESEX in developing a REDD+ project, since there is recognition by them of the positive results of the project, and especially by the encouragement of CUC/SEDAM for these actions. This is directly linked to the openness in the participation of other actors in the events that take place inside the RESEX, such as courses and training, public consultations, actions to demonstrate the results of the project, such as the inauguration of infrastructure, among others (detailed description in section 2.3.3). Consequently, there is a spread of appreciation for the importance of maintaining the standing forest;
- Maintenance of governmental resources due to the collection of taxes and tributes paid to the union, state, and municipality generated by the forest management activity in the area;

- Besides the maintenance of the benefits of ecosystem services, such as maintenance of the microclimate, water purification, pollination, among others, that have been promoted by the conservation of forests and biodiversity.

4.3 Community Impact Monitoring

4.3.1 Community Monitoring Plan (CM4.1, CM4.2, GL1.4, GL2.2, GL2.3, GL2.5)

Community monitoring allows to assess whether project activities are being effective in terms of anticipated impacts on communities. Furthermore, with the monitoring of established indicators, necessary adjustments are made possible to obtain the desired objectives and impacts. However, during the monitored period, some activities were not accomplished, impacting directly the monitoring of some indicators. The justifications of these deviations were mentioned in section 2.2.4 of the present document.

Regardless of these deviations, during the monitored period, the focus of monitoring were the communities that are placed within the Project Zone (total area of the RESEX). These are communities ribeirinhas and of mainland (non-flooded areas) originally extractivist, which in recent years have undergone na oscillating migration, no longer having the traditional extractive character and moving towards timber forest management activities.

In addition, families belonging to these communities have exclusively family agricultural production systems for their own subsistence. Mainly in riverside areas, due to the difficulty of accessing an adequate infraestructure to carry out production, fires are used to prepare the areas.

Currently, the RESEX is formed by 5 communities and 3 placements (locations formed by only one family), resulting in 33 families within the RESEX. Among these, 1 community is located in the Ribeirinho sector, further away, and 4 in the Terra-firma sector.

The description of monitoring presented below was structured based on the activities that had been planned for development with the communities and that were implemented during the monitored period. The implemented actions can be divided into 11 main pillars: Governance and Adaptive Management, Health, Income Generation, Education, Youth and Women, Environment, Social Organization, Communication, Infrastructure, REDD+ Jacundá Financial Mechanism, and Zoning.

During the monitoring period, no community participation risks (GL2.3) in the project were identified, since there are no restrictions on land use developed by the communities, nor for the execution of timber forest management activities, and furthermore, the process of choosing and carrying out activities for the communities is related to the actions foreseen according to the Life Plan. As described in section 2.2 of the PD, the construction of the Life Plan took place in a participatory manner among Community members during a workshop structured in different dynamics to survey actions that would benefit them and that could be carried out linked to the REDD+ RESEX Rio Preto-Jacundá Project. Two dynamics were fundamental to define the activities to be carried out: the SWOT dynamic (strenghts, opportunities, weaknessess and

threats), which made it possible to identify the focal problems of the communities, and the dynamics of the Action Plan, in which community members were motivated to build a set of activity proposals, with objectives, persons in charge, partnerships, results and budget estimates, considering the local reality, beliefs, values and community principles.

Every year, prior to the current year, a decision process is carried out to choose activities considered to be priorities according to the community's vision, based on the Life Plan and other suggestions or demands that arise from the communities. The process is structured in several meetings that take place between ASMOREX, CES Rioterra and Biofílica to understand the current situation, considering the needs and social context of the community and the project's financial context, to list the priority activities to be carried out in a given year. As a result of this process, the Work Plan is created, which consists of prior planning on the project activities.

For monitoring both the actions and the indicators, a follow-up was carried out through activity reports produced at least once a year by CES Rioterra, monthly activity reports produced by resident and former president of ASMOREX José Pinheiro (from 2008 to 2011, from 2014 to 2018 and from 2018 to 2020), as well as minutes of meetings and community assemblies and the approved annual Work Plans. Depending on the activities, other resources were used to contemplate the monitoring of the actions carried out. When necessary, these have been described in each activity discussed below. All documents were made available to the VVB team.

4.3.1.1 Governance and adaptive management

The activities related to governance and adaptive management aimed to promote the continuous improvement of the project and its management. Among the planned activities are: the holding of quarterly meetings of the management collegiate, in which it was not held, being reported as a deviation from the project in section 2.2.4 of this document, holding meetings with residents collecting feedback on the effectiveness of the activities and holding meetings to prioritize community investments. The indicator related to the actions taken is “Strengthening governance”.

With regard to the relevant commitments to holding meetings with residents of RESEX, collecting feedback on the effectiveness of activities and holding meetings to prioritize community investments, it is reliable to say that both activities are contemplated, in practice, through the General Ordinary and Extraordinary Assemblies and through the meetings of the Executive Secretariat of the REDD+ Jacundá Financial Mechanism (Best described in the item "Financial Mechanism").

Assemblies are the main space for exchange between all RESEX community members, since their presence is essential for decision-making on any and all activities or actions that will be carried out by the REDD+ project. It is a space not only for strengthening this management, but also for exchanging and discussing the actions taken, raising feedback from community members. The meetings of the Executive Secretariat of the Financial Mechanism are mainly focused on preparing the annual Work Plan, defining priorities, actions, composition of investments and activities, which will be discussed and approved by the

community. The definitions and guidelines governing these spaces can be consulted and viewed in item 2.3.3 of this document, in ASMOREX's Bylaws and in the REDD+ Jacundá Financial Mechanism in which it was made available to VVB.

Specifically with regard to meetings to gather feedback from residents, this activity was designed to increase the empowerment of community residents in RESEX Rio Preto-Jacundá, in addition to being powerful spaces to gather the opinions, suggestions and needs of residents. Such meetings were expected to start being held from the first project check and to be ongoing every six months. However, throughout the project cycle, the meetings became the ideal environment for such activity and the frequency was not strictly followed, as the agendas of the meetings need to be defined in advance and published in the local newspaper, causing bureaucracy to maintain them every semester. Despite this, any community can trigger the need and call for this space.

In reference to the activities of holding meetings to prioritize community investments, it was conjectured that such activity would bring empowerment to the community, being linked to commitments that meet the community life plan. Expected to take place at each beginning of the verification, such meetings took place throughout the life of the project, mostly made through meetings for discussions linked to the project work plan, as it is an ongoing and necessary matter in other periods, not just in times of verification of the project, as well as through meetings held by the Executive Secretariat of the REDD+ Jacundá Financial Mechanism, composed of ASMOREX (representing community members), Biofílica and Rioterra.

To account for the indicator, the minutes of the General Meetings and meetings held that covered discussions on investments were considered. It is important to highlight that the General Assemblies constitute favorable spaces for discussion about the Project's resources with all the community members, in which the Work Plans are evaluated and approved. Within the monitored period, there were around 14 meetings involving the discussion of investments.

Data / Parameter	**Strengthening governance**
Data unit	Number of implemented governance initiatives
Description	Records of activities that took place in the minutes of assemblies and meetings
Source of data	Minutes of ordinary and extraordinary assemblies, and meetings of the Executive Secretariat of the REDD+ Jacundá Financial Mechanism
Description of measurement methods and procedures to be applied	The survey was carried out by recording the minutes of the meetings and assembly where investments were discussed within RESEX, being separated by the type of meeting held and by the months that took place.
Monitoring/recording frequency	Monthly and Annual

Monitored value	
Monitoring Equipment	Reading the minutes of the meetings
QC/CG procedures to be applied	Validation of systematized information with ASMOREX and CES Rioterra.
Data purpose	Understand the dynamics of specific meetings aimed at community investments and collecting feedback from residentes
Calculation method	Counting in meeting minutes
Comments	Throughout the project lifecycle, several meetings took place internally and externally on project activities. In such meetings, it was possible to identify discussions and deliberations regarding investments, finances, cash flow, etc. The first stage for discussing investments occurs at the level of the meetings of the Executive Secretariat of the REDD+ Jacundá Financial Mechanism, where considerations are made on which investments are more pertinent to be prioritized given the community's needs, and thus the Work Plans are established. Subsequently, the plans are evaluated and voted on by the community at the ordinary and extraordinary general meetings.

Year	Month	Ordinary Meeting	Extraordinary Meeting	Executive Secretariat Meetings Financial Mechanism
2016	11			1
2017	03			1
	09			1
	12			1
2018	01			1
	03		1	1
	04	1		
2019	02			1
	06	1	1	
	10			1
	12			1
2020	01			1

4.3.1.2 Health

Linked to six main activities, the actions related to the health theme were aimed at improving the health of the community by increasing the quality of life and increasing the life expectancy of the community. Among the activities that were planned are: the rescue of popular medicine through training and booklets, training and maintenance of at least one health agent per community, monitoring the quality of water consumed at RESEX, offering courses on disease prevention and family planning, the acquisition and maintenance of an ambulance and ambulance, and the training and maintenance of a microscopist. The actions taken are in line with the indicators “Family benefited by the REDD+ project”, “Participants in courses”, and “Number of courses and training”.

Regarding the “rescue of folk medicine through training and booklets”, it was expected to achieve natural solutions for low-complexity diseases and to increase the availability of medicinal plants through the rescue of folk medicine from the forest. Within the scope of the activity, a master's research at the Federal University of Rondônia (UNIR) was carried out by Master Leandro Ribas Amaral, where he characterized and described the ecological knowledge of RESEX community members about non-timber forest products used or of potential use , permeating the hypothesis that traditional communities, as they have a historical context with forest areas, have a broad knowledge of plant resources, combined with their conservation and sustainable use (RIBAS, 2018).

In that research, interviews were conducted with 20 residents of RESEX to understand their knowledge of non-timber forest products with different potentials, including medicinal use, being characterized species used in the treatment of diseases or illnesses classified in the Intentional Classification of Diseases (ICD10). The research showed that the ethnobotanical knowledge at RESEX Rio Preto-Jacundá is concentrated in people aged between 41 and 60 years and is evidently greater about medicinal plants than in relation to other categories of use of the species. All informants reported that their knowledge of non-timber forest products was passed from generation to generation, mainly through their parents and grandparents.

376 citations were made, identifying uses for 107 species, among them, 72 different species were mentioned for medicinal uses, with greater emphasis on Copaíba (Copaifera sp.), Jatobá (Hymenaea courbaril L.), Brazil nut (Bertholletia excelsa Bonpl.) and Carnation vine (Tynnanthus fasciculatus Miers) Based on this research, the expected result of recovering popular forest medicine and natural solutions for low-complexity diseases was achieved. Among the indications for the uses of these species are: infections, anti-inflammatory, healing, flu, fighting anemia and soothing.

Data / Parameter	**Families benefiting from the REDD+ Project**
Data unit	Number of families
Description	Number of families benefited by the survey carried out by the study on the ecological knowledge of RESEX community members about the non-timber forest products used or of potential use
Source of data	Since the study was carried out within the RESEX, with the direct participation of the community members, and the results are available for their access, it was considered that all RESEX families can benefit from this survey, from the year it was carried out of the research.
Description of measurement methods and procedures to be applied	The count of families residing in RESEX who have access to the results raised in the survey was carried out.
Monitoring/recording frequency	Annual

Monitored value	Year / Number of Families: 2016: 0; 2017: 0; 2018: 33; 2019: 0; 2020: 0
Monitoring Equipment	Master's Dissertation Leandro Ribas (2018)
QC/CG procedures to be applied	Validation of systematized information with ASMOREX and CES Rioterra.
Data purpose	Provide information about the families benefiting from a study that has as its main reference the rescue of popular medicine within RESEX.
Calculation method	Spreadsheet count of the list of families and residents of RESEX
Comments	-

Regarding the activity of "maintenance of a health agent per community", the maintenance of a health agent in RESEX was not established, however, as a way to provide medical care to the community, some visits by external teams were carried out, using as a location infrastructures built with the investment of the REDD+ Project.

The initial step of these actions was in May 2019, when a municipal health team was received that provided outpatient medical care to all residents of RESEX. In these situations, ASMOREX provides logistical assistance to the community, and the fuel allowance comes from the Project's resources. The visit took place on the premises of the community complex of the Jatuarana Community, with the main objectives of improving the health of residents and increasing the life expectancy of the community.

Furthermore, to improve medical care conditions for RESEX community members, a medical clinic was built, as part of the other infrastructure built (more details in the infrastructure section below), located in the Community Complex. The clinic has a space for care and a bathroom (Figure 6), and was inaugurated on May 23, 2020, becoming an appropriate space for the care of all families at RESEX Rio Preto-Jacundá.

Thus, in line with the indicator “Families benefiting from the REDD+ Project”, 33 families benefited from the activities listed above.

Figure 6 - Medical clinic, located in the Community Complex.

Data / Parameter	**Families benefiting from the REDD+ Project**
Data unit	Number of families
Description	Number of families benefiting from investments in infrastructure to support actions aimed at the health and well-being of the Project's community
Data source	Project activity reports and list of Project families and residents
Description of measurement methods and procedures to be applied	Accounting of community benefited by the assistance aimed at the health area carried out within the RESEX in the infrastructures invested by the Project.
Monitoring/recording frequency	Annual
Monitored value	Year / Number of Families: 2016: 0; 2017: 0; 2018: 0; 2019: 33; 2020: 33
Monitoring equipment	Spreadsheet listing families and residents of RESEX
QC/CG procedures to be applied	Validation of systematized information with ASMOREX and CES Rioterra.
Data purpose	Provide information on the benefits generated to the community through the REDD+ Project.

Calculation method	Spreadsheet count of the list of families and residents of RESEX
Comments	-

Regarding the activities of monitoring water quality, offering courses on disease prevention, purchasing and maintaining an ambulance and ambulance, and training and maintaining a microscopist, these were not carried out in the monitored period analyzed as they were not considered priorities by the community comparing with other activities listed for receiving investments. Within the priorities for the use of resources, other activities were carried out, as can be seen in this section, as they were considered more urgent and strategic within the socioeconomic context of the communities and their needs.

4.3.1.3 Income generation

In the scope of income generation, the main activities were planned: implementation and operation of a fruit pulp agribusiness (including infrastructure, training and market access), adequacy of sustainable forest management in accordance with FSC standards, implementation and operation carpentry for the sale of furniture, training and adaptations in relation to health and safety at work, provision of technical and sanitary assistance in the production of cassava flour and fruit pulp, and acquisition of a tractor for mechanization of the swidden. The planned activities had the general objective of promoting the increase in the income of families within the RESEX in order to ensure an improvement in their quality of life.

The implementation and operation of a fruit pulp agribusiness (including infrastructure, training and access to the market) had the purpose of improving the income of the families present at RESEX through the perpetuation of the extractive culture and the responsible use of biodiversity resources, also contributing to the food security of these families. As the activities related to this indicator have not yet effectively started, due to delays caused by the COVID-19 pandemic, no direct indicators of results were listed, only the actions already carried out are described below.

In 2019, due to the good results that RESEX Rio Preto Jacundá had been showing in carrying out economic activities, such as forest management, improved management and investments in infrastructure, through an investment action by the State Government, through CUC, from an environmental compensation process, RESEX was chosen to receive the infrastructure of two agro-industries for processing açaí and cassava flour. The construction of these infrastructures was carried out in the vicinity of the community complex, located in the Jatuarana community.

Based on these improvements made by the State Government and aiming to expand the possibilities of collective investments and, consequently, improve the lives of populations, on May 27, 2019, a notice was launched for hiring a specialized company to carry out diagnoses on production chains (Brazil nut, açaí and cassava), with the aim of getting to know the potential existing in RESEX for the implementation of actions within the scope of the project. In this sense, among the proposals received, the

company Pacto das Águas became the legitimate holder of the contractual concession to carry out the diagnoses with funding via the REDD+ RESEX Rio Preto-Jacundá Project.

Then, the contracted company prepared, as the first product of the study, the work plan, based on the Socioeconomic and Environmental Diagnosis of the REDD+ RESEX Rio Preto-Jacundá Project, carried out by Rioterra e Biofílica, in partnership with UNIR (Federal University of Rondônia) between 2012 and 2013. The initial objective was to articulate the forms of social and political representation of extractivists, the institutions involved (SEDAM and Rioterra), for the construction of alternatives for income generation based on the structuring of the chains of non-timber forest products, in addition to strengthening social structures and maintaining the forest standing.

Finally, as a second product, the company Pacto das Águas produced a diagnostic report on the production chains. In the document in question, means were proposed to strengthen these chains as an environmental and territorial management strategy and as an alternative to generate income for RESEX community members. However, due to the COVID-19 pandemic, the activities to present results to the community and for later use of these analyzes were postponed and, until the end of this monitored period, it has not yet been carried out.

The activity of providing technical and sanitary assistance in the production of cassava flour and fruit pulp proposed an increase in the income of families within RESEX and access to more demanding markets, by adapting production to sanitary rules and obtaining quality and inspection seals. The various technical assistance actions carried out were accounted for through the construction of infrastructure, offering courses on agricultural and production themes, and support in the mechanization and distribution of community products. Indicators related to activities are represented by the “Number of courses and training” and “Families benefited by the REDD+ project”.

Regarding the acquisition of a tractor for mechanization of the swidden, it was expected that the equipment would help with the responsible use of biodiversity resources by reducing the use of fire in agricultural practices and making more efficient use of the already open areas and scrub. It was also expected that this investment would contribute to the increase in family income and the empowerment of residents promoted by the mechanization of agricultural production.

A tractor was purchased in 2016 through a parliamentary amendment from a state deputy through an application. As the management of the project's resources was being developed, at the time this acquisition was not directed through the REDD+ Rio Preto Jacundá Project, so the tractor financing was not made via REDD+ Project. Thus, after the consolidation of knowledge about management among the entities of AMOREX, there were improvements using the resources of the REDD+ RESEX Project Rio Preto-Jacundá, such as agricultural inputs and harrowing procedures. In 2018, agricultural implements were acquired, consisting of a limestone spreader, a tractor-coupled harrow for mechanization, and a tractor trailer, in order to improve the soil where cassava and other crops were planted.

Another important initiative implemented for the main activity consisted of assistance both in relation to field procedures and logistical support, highlighting the activities of grating the ground. In

September 2018, two families from the Jatuarana community (José Raimundo de Oliveira Carril and Raimunda Ferreira de Oliveira) benefited from the grating of the soil for planting cassava, in June 2019, a family from the Cabeça de Boi community, specifically the Dr. Joao Mendonça, also received support for the use of cassava production, and in May 2020, the residents of the Campo Novo community also benefited from the practice. Regarding logistical support, various supports were provided by the former director of ASMOREX, José Pinheiro.

<table>
<tr><td>Data / Parameter</td><td>Families benefiting from the REDD+ Project</td></tr>
<tr><td>Number of families</td><td>Number of families</td></tr>
<tr><td>Description</td><td>Number of families benefited by the Project's social investments in the acquisition of tractor implements for the mechanization of the plantation</td></tr>
<tr><td>Data source</td><td>Project activity reports and list of Project families and residents</td></tr>
<tr><td>Description of measurement methods and procedures to be applied</td><td>Analysis of the actions carried out by the Project and the beneficiary communities</td></tr>
<tr><td>Monitoring/recording frequency</td><td>Annual</td></tr>
<tr><td>Monitored value</td><td><table><tr><td>Year</td><td>Number of Families</td></tr><tr><td>2016</td><td>0</td></tr><tr><td>2017</td><td>0</td></tr><tr><td>2018</td><td>2</td></tr><tr><td>2019</td><td>1</td></tr><tr><td>2020</td><td>5</td></tr></table></td></tr>
<tr><td>Monitoring equipment</td><td>Project activity reports and Spreadsheet listing families and residents of RESEX</td></tr>
<tr><td>QC/CG procedures to be applied</td><td>Validation of systematized information with ASMOREX and CES Rioterra.</td></tr>
<tr><td>Data purpose</td><td>Provide information about the benefits generated to the community through the REDD+ Project with regard to the families benefiting from the mechanization of the plantation.</td></tr>
<tr><td>Calculation method</td><td>RESEX Families and Residents Counting Based on Evidence</td></tr>
<tr><td>Comments</td><td>-</td></tr>
</table>

The holding of training courses for community members was another initiative adopted during the monitored period, reaching a total of 4 courses. Even though the courses were not directly funded by the project, the participation of community members in these activities is essential for the application of good

production practices, which are widely encouraged by the project. In relation to the indicator "Participants in courses" this was not possible to map due to the loss of attendance lists for the courses given.

The Coordination of Conservation Units (CUC/SEDAM) programmed courses related to productive chains that were given by the company IAPERON, with financial support from the Amazon Region Protected Areas program (ARPA), aimed at assisting the extractivists of the region's Conservation Units. Between September 17 and 21, 2018, the course on the productive chain of Açaí was held, while the course on the productive chain of Cassava was held between the 22nd and 26th. In October 2018, between the 19th and 23rd, the course on productive chains of Fruits was held. Also, between March 10 and 12, 2020, the course on good practices in the processing of acai and cassava flour was held, promoted by SEDAM and conducted by professionals in the area and SEAGRI (Secretary of State for Agriculture) servers.

<table>
<tr><td>Data / Parameter</td><td>Number of courses and training</td></tr>
<tr><td>Data unit</td><td>Number</td></tr>
<tr><td>Description</td><td>Number of courses and training complementary to technical assistance activities</td></tr>
<tr><td>Data source</td><td>Project activity reports</td></tr>
<tr><td>Description of measurement methods and procedures to be applied</td><td>The courses and training carried out with the residents of RESEX Rio Preto-Jacundá were recorded in an activity report (all made available to the VVB team), as well as having an attendance list and a photographic record.</td></tr>
<tr><td>Monitoring/recording frequency</td><td>Annual</td></tr>
<tr><td>Monitored value</td><td><table><tr><td>Year</td><td>Number of Courses</td></tr><tr><td>2016</td><td>0</td></tr><tr><td>2017</td><td>0</td></tr><tr><td>2018</td><td>3</td></tr><tr><td>2019</td><td>0</td></tr><tr><td>2020</td><td>1</td></tr></table></td></tr>
<tr><td>Monitoring equipment</td><td>Attendance list and photographic records</td></tr>
<tr><td>QC/CG procedures to be applied</td><td>In all courses, workshops and trainings carried out, an attendance list was passed (containing space to fill in the name, CPF, telephone number, Institution/Entity belonging and signature).</td></tr>
<tr><td>Data purpose</td><td>Provides information on the benefits generated to the community through the REDD+ Project.</td></tr>
<tr><td>Calculation method</td><td>Count of courses taken</td></tr>
<tr><td>Comments</td><td>-</td></tr>
</table>

In relation to activities related to the adaptation of sustainable forest management in accordance with FSC standards, the implementation and operation of carpentry for the sale of furniture, and training and adaptation in relation to occupational health and safety, these were not carried out during the period under analysis because they were not considered priorities by the community members, compared to other activities listed for receiving investments. Among the priorities for the use of resources, other activities were carried out, as can be seen in this section, because they were considered more urgent and strategic within the socioeconomic context of the communities and their needs.

4.3.1.4 Education

The activities related to education, have as their main objectives the reduction of the illiteracy rate, improve the self-esteem of the residents, besides increasing contact with current issues that can favor the project, training and diversification of skills, and the promotion of the maintenance of young people in the RESEX, reducing the exodus to urban centers. Three activities were planned: the implementation of an educational center for young people and adults, the acquisition of computer equipment, and the facilitation of access to courses and distance learning. All activities applied to the scope of Education were financed via the REDD+ RESEX Rio Preto-Jacundá Project.

As a way to improve the living conditions of the residents of the RESEX, the construction of several infrastructures was planned. Among them, encompassing the activity "implementation of an educational center for youth and adults", the "telecenter" (computer room) was built in 2019, along with other infrastructures, giving the community members the opportunity to access technology and serving as support for conducting school research and computer courses, meeting the indicator "Families benefited by the REDD+ Project". In addition to the telecenter, other courses are held in the auditorium of the Community Complex, such as the 6th module of the administrative and financial management course and the training course for the formation of monitors for biodiversity monitoring. Both the telecenter and the auditorium are located in the Jatuarana Community along with the other infrastructure of the Community Complex, and are open for use by all RESEX community members. No indicator was accounted for in this activity because the telecenter was accounted for in the "Infrastructure" item.

Regarding the activity "acquisition of computer equipment", and meeting the indicator "Families benefited by the REDD+ Project", in 2019 four computers were installed in the telecenter (Figure 7), thus improving access to the internet for the entire RESEX, especially for residents in the school phase, in order to develop studies, school research, among other activities, and to serve as support to researchers from partner universities and other agencies. A server, Win10PRO programs, Office 2016 package, and antivirus were installed on each of the 4 computers, and they were configured on the terminal in an interconnected way.

Figure 7 - Installation of computers at the Telecentre in the RESEX Rio Preto-Jacundá Community Complex

<table>
<tr><td>Data / Parameter</td><td>Families benefited by REDD+ Project</td></tr>
<tr><td>Data unit</td><td>Number of families</td></tr>
<tr><td>Description</td><td>Number of families benefited by the Project's investments in the construction of the telecenter and the acquisition of IT materials</td></tr>
<tr><td>Data source</td><td>Project activity reports and list of Project families and residents</td></tr>
<tr><td>Description of measurement methods and procedures to be applied</td><td>Analysis of the actions carried out by the Project and the community benefited, such as: infrastructure, obtaining equipment, equipment maintenance and software installation.</td></tr>
<tr><td>Monitoring/recording frequency</td><td>Yearly</td></tr>
<tr><td>Monitored value</td><td><table><tr><td>Year</td><td>Number of Families</td></tr><tr><td>2016</td><td>0</td></tr><tr><td>2017</td><td>0</td></tr><tr><td>2018</td><td>0</td></tr><tr><td>2019</td><td>33</td></tr><tr><td>2020</td><td>33</td></tr></table></td></tr>
<tr><td>Monitoring equipment</td><td>Spreadsheet listing families and residents of RESEX</td></tr>
<tr><td>QC/CG procedures to be applied</td><td>Validation of systematized information with ASMOREX and CES Rioterra.</td></tr>
<tr><td>Data purpose</td><td>Provide information on the benefits generated to the community through the investments made by the REDD+ Project in the construction of the telecenter and in the acquisition of computer materials.</td></tr>
</table>

Calculation method	Spreadsheet count of the list of families and residents of RESEX
Comments	-

Regarding the activity "facilitating access to courses and distance learning", which meets the indicator "Number of courses and training" and "Participants in courses", courses and training were held that permeate various topics in order to expand skills and knowledge, in addition to promoting the training of RESEX residents about issues that are of interest to the community and that can favor the project.

In 2019 a computer course was purchased for the community members by the company Smart Machine. The course, which is held in the RESEX, takes place in the telecenter of the Jatuarana community, is offered free of charge to the entire community and is planned to attend students of all age groups from 8 years old and up and who can read. The course came about as a way to offer residents opportunities to occupy administrative positions in the city or in the association that require computer skills. The classes are weekly, 4 hours long, where the student has access to interactive videos, teaching simulators, and lessons that cover two modules: basic and advanced. The basic module refers to the introduction to computer science, comprising the learning of typing, interacting with the computer, and knowledge about Windows, Basic Office Package (Word, Excel, and PowerPoint), and interacting with social networks. The advanced module comprises the teaching of more complex web development and creation software.

Also in 2019, a computer technician was hired, who, among her activities described in the service contract made available to the VVB team, coordinates the actions of ASMOREX's telecenter, supervises the use of computers, supports community demands regarding the need to use the equipment for studies and research, and provides assistance, including training and guiding the correct use of equipment for those who will have access to the telecenter structure, allowing residents to have greater access to communication and learning tools.

Within the scope of biodiversity monitoring, basic training in botanical identification was conducted on July 2, 2020. The activity was important to avoid errors in the identification of species and genera explored in the RESEX Forest Management Plan. And, in order to prepare the residents for biodiversity monitoring, a training course for monitors was held on August 5, 2020. This demand is the result of the REDD+ Rio Preto-Jacundá RESEX Project and was executed by the company Ecoporé, with support from the extractivists of the RESEX.

As a result of the progress of the investments of the REDD+ Project within the RESEX, José Pinheiro participated in some training, in order to take knowledge of external courses for the improvement of the activities in the RESEX, such as the course Management of Socio-Environmental Conflicts taught by WWF (World Wildlife Fund), on June 26, 2018, in the city of Pirenópolis-GO. The same judged the participation important because it is the daily reality of the RESEX. Also, at the invitation of WWF Brazil and as a board member of the Mosaic of the Southern Amazon (MAM), Pinheiro participated in the II National Workshop of the Network of Mosaics of Protected Areas (REMAP), which took place in Brasilia/DF,

between June 10 and 14, 2019 and brought together several Brazilian institutions to discuss the theme of mosaics of areas protected by law.

Thus, 3 activities were held between courses, training and workshops, which contemplated 48 people.

Data / Parameter	**Number of courses and training**
Data unit	Number
Description	Number of courses and training within the project's thematic axes
Data source	Project Activity Reports and Attendance Lists
Description of measurement methods and procedures to be applied	The courses and training carried out with the residents of RESEX Rio Preto-Jacundá were recorded in an activity report (all made available to the VVB team), as well as having an attendance list and a photographic record.
Monitoring/recording frequency	Yearly
Monitored value	Year: Number of Courses 2016: 0 2017: 0 2018: 1 2019: 1 2020: 3
Monitoring equipment	Attendance list and photographic records
QC/CG procedures to be applied	In all courses, workshops and trainings carried out, an attendance list was passed (containing space to fill in the name, CPF, telephone number, Institution/Entity belonging and signature).
Data purpose	Provide information on the benefits generated to the community through the REDD+ Project.
Calculation method	Count of courses taken
Comments	-

Data / Parameter	**Course participants**
Data unit	Number
Description	Number of people who participated in the courses offered within the thematic axes
Data source	Project Activity Reports and Attendance Lists

<table>
<tr><td>Description of measurement methods and procedures to be applied</td><td>The courses and training carried out with the residents of RESEX Rio Preto-Jacundá were recorded in an activity report (all made available to the VVB team), as well as having an attendance list and a photographic record.
From attendance lists, it was possible to count the number of participants in each course.</td></tr>
<tr><td>Monitoring/recording frequency</td><td>Yearly</td></tr>
<tr><td>Monitored value</td><td><table><tr><td>Year</td><td>Number of Course Participants</td></tr><tr><td>2016</td><td>0</td></tr><tr><td>2017</td><td>0</td></tr><tr><td>2018</td><td>1</td></tr><tr><td>2019</td><td>22</td></tr><tr><td>2020</td><td>26</td></tr></table></td></tr>
<tr><td>Monitoring equipment</td><td>Attendance lists and photographic records</td></tr>
<tr><td>QC/CG procedures to be applied</td><td>In all courses, workshops and trainings carried out, an attendance list was passed (containing space to fill in the name, CPF, telephone number, Institution/Entity belonging and signature).</td></tr>
<tr><td>Data purpose</td><td>Provide information on the benefits generated to the community through the REDD+ Project.</td></tr>
<tr><td>Calculation method</td><td>Counting in spreadsheets and/or directly in attendance lists</td></tr>
<tr><td>Comments</td><td>-</td></tr>
</table>

4.3.1.5 Environment

The activity focused on the environment theme, represented by workshops and the elaboration of booklets on environmental education aimed at the incorporation of different skills and capacities by the residents about the themes of solid waste, composting, recycling, agro-ecological techniques and organic production.

Several other actions were contemplated considering the scope of this activity, such as courses on the productive chain of açaí, manioc, and fruit farming, previously mentioned in the theme "Improving income", as well as courses focused on the environmental area, for example, basic training in botanical identification, which are related to biodiversity monitoring, as mentioned in the theme "Education". As these activities have already been accounted for in other themes, they were not scored in the indicator for this section.

4.3.1.6 Social organization

The activities related to social organization have as principles to guarantee the improvement of the managed resources, to increase the abilities and capacities of the residents benefiting the community as a whole, to progressively decrease the dependency on external agents, to reduce social conflicts and to provide a better management of these. Two main activities were planned: the promotion of capacity building workshops in management and finance for the ASMOREX and COOPEREX board members, and the structuring of internal commissions to empower all residents and decentralize the Association.

The actions taken are in line with the indicators "Number of courses and training", "Participants in courses", and "Strengthening governance". To complement the monitoring of both actions and indicators, the attendance lists of the courses offered were used.

Regarding the "promotion of capacity building workshops in management and finance for the ASMOREX and COOPEREX board members" it is expected, besides disseminating skills and knowledge in management and finance, to promote the organization and strengthening of the communities. All courses given were funded by the REDD+ Project. From January 9 to 13, 2017, the Social Strengthening workshop was promoted with an emphasis on associativism and the elaboration of ASMOREX's financial application plan. The course was held in the Rio Preto-Jacundá RESEX and aimed to promote awareness among residents and directors of the association and cooperative about the importance of strengthening their representative entities, in addition to preparing the financial application plan based on the work plan for the year 2017.

During the monitoring period, a course on administrative and financial management was given through 6 modules. The course started in 2017, in which four workshops took place in April, August, September, and October. In April, on the 26th and 27th, training took place at Rioterra's headquarters, focusing on ASMOREX board members, with the participation of José Pinheiro and Sandra Neves. In August, on the 10th and 11th, a course on administrative and financial management was started, focusing on the associations present in the RESEX (Module 1), which was applied in SEDAM's auditorium. Fifteen extractivists participated in this course, 8 women and 7 men. On August 30 and 31, and September 1, Module 2 of the course was taught at the Rioterra headquarters, and finally, on October 17, 18 and 19, Module 3 took place, also involving 15 extractivists. The 6th and last module was taught on June 3, 2019, in the community complex in the Jatuarana community, with the participation of 15 community members. Due to the loss of some reports that recorded the activities within the RESEX, module 4 and 5 could not be mapped.

Figure 8 - Second part of the training workshop on administrative and financial management given to ASMOREX extractivists.

On November 3 and 4, 2018, in the auditorium of SEDAM in Machadinho D'Oeste and taught by CES Rioterra, the course on Social Management and Organization was held to meet the demands of ASMOREX, where 15 RESEX residents effectively participated. In 2019, on March 26 and 27, another Social Organization course was held in the CES Rioterra auditorium in Porto Velho, with the participation of 15 RESEX residents. In the opportunity were dealt with strategies for the use of the space of the community complex. In addition, between November 5 and 7, 2019, a member of ASMOREX (Sandra Neves) received cash flow update training and financial training.

Thus, attending the RESEX community members, 9 activities were carried out, among courses, training and workshops, reaching a total of 125 people.

<table>
<tr><td>Data / Parameter</td><td>Number of courses and training</td></tr>
<tr><td>Data unit</td><td>Number</td></tr>
<tr><td>Description</td><td>Number of courses and training within the thematic axes of the project for training in management and finance for ASMOREX board members</td></tr>
<tr><td>Data source</td><td>Project Activity Reports and Attendance Lists</td></tr>
<tr><td>Description of measurement methods and procedures to be applied</td><td>The courses and training carried out with the residents of RESEX Rio Preto-Jacundá were recorded in an activity report (all made available to the VVB team), as well as having an attendance list and a photographic record.</td></tr>
<tr><td>Monitoring/recording frequency</td><td>Annual</td></tr>
<tr><td>Monitored value</td><td><table><tr><td>Year</td><td>Number of Courses</td></tr><tr><td>2016</td><td>0</td></tr></table></td></tr>
</table>

	2017: 5 2018: 1 2019: 3 2020: 0
Monitoring equipment	Attendance list and photographic records
QC/CG procedures to be applied	In all courses, workshops and trainings carried out, an attendance list was passed (containing space to fill in the name, CPF, telephone number, Institution/Entity belonging and signature).
Data purpose	Provide information on the benefits generated to the community through the REDD+ Project.
Calculation method	Count of courses taken
Comments	-

Data / Parameter	**Course participants**
Data unit	Number
Description	Number of people who participated in courses offered within the thematic axes for training in management and finance to ASMOREX board members
Data source	Project Activity Reports and Attendance Lists
Description of measurement methods and procedures to be applied	The courses and training carried out with the residents of RESEX Rio Preto-Jacundá were recorded in an activity report (all made available to the VVB team), as well as having an attendance list and a photographic record. From the lists, it was possible to count the number of participants in each course.
Monitoring/recording frequency	Annual
Monitored value	Year / Number of Course Participants 2016: 0 2017: 79 2018: 15 2019: 31 2020: 0
Monitoring equipment	Attendance lists and photographic records
QC/CG procedures to be applied	In all courses, workshops and trainings carried out, an attendance list was passed (containing space to fill in the name, CPF, telephone number, Institution/Entity belonging and signature).

Data purpose	Provide information on the benefits generated to the community through the REDD+ Project.
Calculation method	Counting in spreadsheets and/or directly in attendance lists
Comments	-

With regard to the activity of structuring internal committees for the empowerment of all residents and the decentralization of the Association, this was not carried out within the monitored period, because the management of the RESEX was not decentralized, considering the main actors responsible for its management.

The current centralized configuration of ASMOREX benefits the community members, while the centralization in a single actor allows for a better forwarding of the demands and interests of the community members. Furthermore, the very constitution of ASMOREX aims at strengthening the community members as a whole, given that its functions correspond to the good management of the RESEX and the interests of all community members, as stated in Article 2 of ASMOREX's bylaws. All persons over the age of eighteen who are engaged in sustainable extractive activities, and/or residents of the RESEX, according to Article 7 of these Statutes, are considered members and, therefore, have the rights to vote and to be voted for elective positions, to take part in the General Assemblies, and to vote on agendas proposed by the board of directors. Therefore, the current organizational mechanism allows every community member the possibility to participate in ASMOREX's decisions, both as an elective position to participate in the ASMOREX board of directors, and to vote on decisions.

4.3.1.7 Youth and Women

The activities related to the scope of youth and women had as main objective to promote gender equality in management and production positions, enabling women with leadership and management roles within the family and community. Within this scope, two activities were planned: the promotion of workshops for leadership training, focusing on young people and women, and the structuring of an internal commission formed by women to access public policies and guarantee rights.

In relation to the promotion of leadership training workshops, focusing on young people and women, several training courses related to management and finances were held, as described in the topic "Social Organization" above, where detailed information about the actions that took place is included. The trainings were attended by both ASMOREX's board of directors and other community members of the RESEX who were interested in participating and acquiring management and financial skills. Furthermore, for the courses given through Rioterra, 50% of the vacancies were reserved for women and young people, in order to maintain equity. As the actions have already been detailed and accounted for in the theme "Social Organization", these data have not been presented again to avoid double counting. Other descriptions that are related to the impact of the projects on women are found in section 4.4.3.

In relation to the activity of structuring an internal commission formed by women to access public policies and guarantee their rights, this was not carried out within the monitored period because there was no decentralization of the management of the RESEX considering the main actors responsible for its management. Even so, the participation of women in the administrative structure of ASMOREX has always been widely stimulated, since the current board of directors of ASMOREX has a significant participation of women in various positions, including the presidency. More details are found in the above theme of "Social Organization", specifically in the activity of structuring internal commissions for empowerment of all residents and decentralization of the Association.

4.3.1.8 Communication

The actions developed regarding communication aimed to promote an improvement in the quality of life of the residents, an increase in access to different subjects that could favor the project and, consequently, the community members, by creating agility in communication and access to the internet. Two main activities were planned: the acquisition of 4 amateur radios (1 for each community and 1 in the Association's urban headquarters) and the acquisition of 2 antennas with internet and phone. The activities are in line with the indicator "Families benefited by the REDD+ project". To complement the monitoring of both actions and indicators, the invoice for the purchase of equipment for the maintenance of the amateur radios was used.

Regarding the activity "acquisition of 4 amateur radios", 4 radios amateur already existed in the following locations and that serve the entire RESEX: ASMOREX headquarters in Machadinho D' Oeste (1), Community Jatobá (1), Community Cabeça de Boi (1) and Community Jatuarana (1). Due to the existence of these radios amateur in the RESEX, only maintenance was done in 2018 with the purchase of batteries, photovoltaic modules and other necessary equipment, which were funded by the REDD+ Project.. Since the internet and telephone are used on a larger scale, new amateur radios were not purchased, giving priority and allocating financial resources to the purchase and maintenance of these two other means of communication.

Thus, in line with the indicator "Families benefited by the REDD+ Project", 33 families were benefited by the activities listed above.

Data / Parâameter	**Families benefited by REDD+ Project**
Unity of data	Number of families
Description	Number of families benefited from social investments of the project in the maintenance of the radios amateur
Source of data	Project activity reports, list of families and residents of the Project

<table>
<tr><td>Description of measurement methods and procedures to be applied</td><td>Analysis of the actions carried out by the Project and the benefited community members, such as equipment maintenance.</td></tr>
<tr><td>Frequency of monitoring/recording:</td><td>Annual</td></tr>
<tr><td>Value Applied:</td><td><table><tr><td>year</td><td>Number of Families</td></tr><tr><td>2016</td><td>0</td></tr><tr><td>2017</td><td>0</td></tr><tr><td>2018</td><td>33</td></tr><tr><td>2019</td><td>0</td></tr><tr><td>2020</td><td>0</td></tr></table></td></tr>
<tr><td>Monitoring equipment</td><td>Spreadsheet with the list of families and residents of RESEX</td></tr>
<tr><td>GQ/CQ procedures to be applied</td><td>Validation of the systematized information with ASMOREX and CES Rioterra.</td></tr>
<tr><td>Purpose of data</td><td>Provide information about the benefits generated to the community through the REDD+ Project in maintaining amateur radios in the communities.</td></tr>
<tr><td>Calculation Method</td><td>Counting the families and residents of RESEX based on evidence</td></tr>
<tr><td>Comments</td><td>-</td></tr>
</table>

Due to the difficulty of communication by some communities of the Rio Preto-Jacundá RESEX, the activity "acquisition of 2 antennas with internet and phone" was designed to meet the need of some family members regarding the improvement of means of communication. Thus, in 2019, a kit for satellite internet was installed in the Jatobá community, since it was no longer possible to communicate through rádios amateur. Furthermore, in 2020, the installation of a radio internet tower was carried out in the Campo Novo community. In this installation, there was a problem of transporting the materials for fixing the tower, which were solved by sluicing from the Jatuarana community to the Campo Novo community, where the tower was installed. Acquisitions took place through resources from the REDD+ Project.

In addition to the two internet towers mentioned above, on the 11th and 12th of 2020, internet equipment was installed in attendance to the Federal Government's digital inclusion program, the Governo Eletrônico em Serviço de Atendimento ao Cidadão (GESAC). The equipment was installed in the Jatuarana and Cabeça de Boi communities.

In this way, in line with the indicator "Families benefited by the REDD+ Project", 8 families from the Jatobá community, 5 families from the Campo Novo community, 6 families from the Jatuarana community, and 7 families from the Cabeça de Boi community benefited from the activities listed above. In all, during

the monitored period, 26 families were positively contemplated with improvements in internet access and communication.

<table>
<tr><td>Data / Parameter</td><td>Families benefited by REDD+ Project</td></tr>
<tr><td>Unity of data</td><td>Number of families</td></tr>
<tr><td>Description</td><td>Number of families benefited from social investments of the project in internet and phone antennas</td></tr>
<tr><td>Source of data</td><td>Project activity reports, list of families and residents of the Project</td></tr>
<tr><td>Description of measurement methods and procedures to be applied</td><td>Analysis of the actions carried out by the Project and the benefited community members, such as equipment maintenance.</td></tr>
<tr><td>Frequency of monitoring/recording:</td><td>Annual</td></tr>
<tr><td>Value Applied:</td><td><table><tr><td>Year</td><td>Number of Families</td></tr><tr><td>2016</td><td>0</td></tr><tr><td>2017</td><td>0</td></tr><tr><td>2018</td><td>0</td></tr><tr><td>2019</td><td>8</td></tr><tr><td>2020</td><td>18</td></tr></table></td></tr>
<tr><td>Monitoring equipment</td><td>Spreadsheet with the list of families and residents of RESEX</td></tr>
<tr><td>GQ/CQ procedures to be applied</td><td>Validation of the systematized information with ASMOREX and CES Rioterra.</td></tr>
<tr><td>Purpose of data</td><td>Provide information about the benefits generated to the community through the REDD+ Project in implementation of internet and phone antennas</td></tr>
<tr><td>Calculation Method</td><td>Counting the families and residents of RESEX based on evidence</td></tr>
<tr><td>Comments</td><td>-</td></tr>
</table>

4.3.1.9. Infrastructure

The infrastructure activities were structured into four main activities: housing construction serving housing needs of communities and improving health conditions in existing homes, building of a community space in the riverside part of Resex and improve the structure in the space on the mainland, Implementation of 3 communities in strategic locations, settling a total of 12 families and maintenance of roads and branches within RESEX. The activities are in line with the indicator “Families benefited from the REDD+”. To

complement the monitoring of both the actions and the indicators, the terms of reference and closed contracts were used.

The first proposed activity, which contemplates the housing construction serving housing needs of communities and improving health conditions in existing homes, had the objective of promoting improvements in the quality of life and health of the residents, allowing, in a complementary way, the maintenance of the residents in the RESEX. All houses built were financed through the REDD+ Project. Regarding the construction of houses, in October 2018, a contract was closed with J.J. Construções e Montagens Industriais Ltda for the construction of 8 houses, and 1 house was later removed from the contract due to technical problems that the company had. In May 2019, the works of 5 houses were completed, serving a family from the Jatuarana community, two families from the Campo Novo community and two families from the Cabeça de Boi community, and in March 2020, 2 more house works were completed serving community members from Campo Novo. In September 2019 and October 2019, two more contracts were closed for the construction of 1 and 4 houses, respectively.

Thus, in December 2019, 5 riverside families from the Jatobá community were benefited with the construction of 5 houses. In this way, throughout the verified period, 12 families were benefited with the construction of houses, ensuring the improvement in housing and quality of life for RESEX residents who were contemplated with these actions.

<table>
<tr><td>Data / Parâameter</td><td>Families benefited by REDD+ Project</td></tr>
<tr><td>Unity of data</td><td>Number of families</td></tr>
<tr><td>Description</td><td>Number of families benefited from social investments of the project in housing construction, for housing improvement</td></tr>
<tr><td>Source of data</td><td>Project activity reports, list of families and residents of the Project</td></tr>
<tr><td>Description of measurement methods and procedures to be applied</td><td>Analysis of the actions carried out by the Project and the benefited community members, such as building houses and other improvements in sanitary conditions</td></tr>
<tr><td>Frequency of monitoring/recording:</td><td>Annual</td></tr>
<tr><td>Value Applied:</td><td>
<table>
<tr><td>Year</td><td>Number of Families</td></tr>
<tr><td>2016</td><td>0</td></tr>
<tr><td>2017</td><td>0</td></tr>
<tr><td>2018</td><td>0</td></tr>
<tr><td>2019</td><td>10</td></tr>
<tr><td>2020</td><td>2</td></tr>
</table>
</td></tr>
</table>

Monitoring equipment	Spreadsheet with the list of families and residents of RESEX
GQ/CQ procedures to be applied	Validation of the systematized information with ASMOREX and CES Rioterra.
Purpose of data	Provide information about the benefits generated to the community through the REDD+ Project in housing construction, for housing improvement
Calculation Method	Counting the families and residents of RESEX based on evidence
Comments	-

Contemplating the scope of improving sanitary conditions in the houses, several actions were carried out during the monitored period. The families could be contemplated with these improvements thanks to the Project's investment in new houses, which thus paved the way for other improvements such as access to water. The investments in sanitary structures, such as artesian wells, water distribution networks, and water tanks are made by SEDAM, through environmental compensation. In 2020, a water tank was installed in the community Cabeça de Boi, in order to distribute water to eight families in that community. Moreover, in the same year, the construction of the hydraulic network for water distribution was carried out, serving both the Cabeça de Boi and Jatuarana communities, providing improved access to quality water, improving the quality of life and health of the Community. Also in 2020, as a way to contemplate other communities of the RESEX, the piping and drilling of an artesian well was carried out for the distribution of water in the Campo Novo community, covering four families, as well as the construction of temporary bathrooms and pumps to supply water to a riverside family in the Jatobá community.

Considering the actions carried out, 8 families from the Cabeça de Boi community, 6 families from the Jaturarana community, 4 families from the Campo Novo community, 1 family from the Jatobá community were benefited. In all, during the monitored period, 19 families were positively contemplated with improvements in sanitary conditions in existing houses.

Data / Parâameter	**Families benefited by REDD+ Project**
Unity of data	Number of families
Description	Number of families benefited from social investments of the project getting the best access to improved sanitation conditions provided by SEDAM
Source of data	Project activity reports, list of families and residents of the Project

<table>
<tr><td>Description of measurement methods and procedures to be applied</td><td>Analysis of the actions carried out by the Project and the benefited community members, such as building houses and other improvements in sanitary conditions</td></tr>
<tr><td>Frequency of monitoring/recording:</td><td>Annual</td></tr>
<tr><td>Value Applied:</td><td><table><tr><th>Year</th><th>Number of Families</th></tr><tr><td>2016</td><td>0</td></tr><tr><td>2017</td><td>0</td></tr><tr><td>2018</td><td>0</td></tr><tr><td>2019</td><td>0</td></tr><tr><td>2020</td><td>19</td></tr></table></td></tr>
<tr><td>Monitoring equipment</td><td>Spreadsheet with the list of families and residents of RESEX</td></tr>
<tr><td>GQ/CQ procedures to be applied</td><td>Validation of the systematized information with ASMOREX and CES Rioterra.</td></tr>
<tr><td>Purpose of data</td><td>Provide information about the benefits generated to the community through the REDD+ Project getting the best access to improved sanitation conditions provided by SEDAM</td></tr>
<tr><td>Calculation Method</td><td>Counting the families and residents of RESEX based on evidence</td></tr>
<tr><td>Comments</td><td>-</td></tr>
</table>

The second activity, which consists of the construction of community space in the riverine part of the RESEX and improvement in the structure of the existing space on terra firme, is related to the indicator "Families benefited by the REDD+ project". The construction of this infrastructure aims to increase the participation of communities by improving decision-making processes, as well as promoting organized occupation of the territory by improving the space for moments of community interaction.

Contemplating the improvement in the structure of the existing space on the mainland, the community members of the entire RESEX benefited from the construction of the community complex on the premises of the Jatuarana Community, with a total of 7 infrastructure works, financed through the REDD+ Project: in 2018, a shed was made to house the association's vehicles and agricultural implements, and in 2019 the construction covered an auditorium, a computer room, a cafeteria, a block of bathrooms, an office for the board of directors, being later contemplated, in the same year, with the drilling of an artesian well and installation of a water tank, allowing the distribution of water in the community complex. For better functionality and space utilization, some appliances and electronics were acquired, such as notebooks, printers, air conditioning, and others.

Other improvements were built within the RESEX, addressing the themes of "Health," "Improving Income," and "Education," and are described in the respective themes of this section. In 2019, the computer room, also known as the "telecenter", and an auditorium were built, presented in the theme "Education". In 2020, other complementary works were carried out, being an accommodation and an outpatient clinic, related to the theme "Health", where it was better described. In this way, 13 infrastructure works were contemplated within the RESEX.

Considering the improvements made to the community complex, all the residents of the RESEX have benefited, as they all enjoy the facilities available annually, in carrying out various activities in these infrastructures, from courses to religious use, thus totaling 33 families benefited since the completion of the constructions.

Figure 9 - Community complex. From right to left: Restrooms, Clinic, Office, Telecenter, Canteen, and Auditorium

Data / Parâameter	**Families benefited by REDD+ Project**
Unity of data	Number of families
Description	Number of families benefited from social investments of the project in the construction of infrastructure in the mainland sector
Source of data	Project activity reports, list of families and residents of the Project
Description of measurement methods and procedures to be applied	Analysis of the actions carried out by the project and the community members who benefited from the improved structure in the existing mainland space
Frequency of monitoring/recording:	Annual
Value Applied:	Year | Number of Families

	2016	0	
	2017	0	
	2018	33	
	2019	33	
	2020	33	
Monitoring equipment	Spreadsheet with the list of families and residents of RESEX		
GQ/CQ procedures to be applied	Validation of the systematized information with ASMOREX and CES Rioterra.		
Purpose of data	Provide information about the benefits generated to the community through the REDD+ Project in the construction of infrastructure in the mainland sector		
Calculation Method	Counting the families and residents of RESEX based on evidence		
Comments	-		

At first it was planned the implementation of 3 communities in strategic locations, settling a total of 12 families, with the objective of reducing deforestation through a greater physical presence in the unprotected limits of the RESEX, contributing also to a better use of forest products in uninhabited locations. Given the instability of the areas bordering the project area, reflecting violence and deforestation in the region, as pointed out in section 3.1.3, it was understood that this action could offer risks to the community members, who would be somewhat isolated within the context of the location of the existing communities. As well as prioritizing the safety of the community members, the reallocation in a planned and intentional manner did not occur. Currently, the possibility of occupying areas that are considered strategic occurs when new families enter the RESEX. Upon receipt of proposals for the entry of new residents, uninhabited sites are proposed, both to maintain strategic occupation and to avoid further densification of existing communities.

The maintenance of road and branches within RESEX aimed to promote improved community logistics, consequently facilitating the flow of products. In this way, in April 2020, a bridge connecting the communities Jatuarana and Campo Novo was repaired due to the compromise of the structure, directly benefiting 10 families belonging to these communities, as well as all other residents of the RESEX who can use the stretch for transportation. The improvement was carried out through resources from forest management, because of this, it is not counted as a result of the REDD+ project

Data / Parâameter	**Families benefited by REDD+ Project**
Unity of data	Number of families

<table>
<tr><td>Description</td><td>Number of families benefited from social investments of the project for the maintenance of roads, sidings, and bridges.</td></tr>
<tr><td>Source of data</td><td>Project activity reports, list of families and residents of the Project</td></tr>
<tr><td>Description of measurement methods and procedures to be applied</td><td>Analysis of the actions carried out by the project and the community members who benefited with the maintenance of roads and tracks within the RESEX</td></tr>
<tr><td>Frequency of monitoring/recording:</td><td>Annual</td></tr>
<tr><td>Value Applied:</td><td><table><tr><td>year</td><td>Number of Families</td></tr><tr><td>2016</td><td>0</td></tr><tr><td>2017</td><td>0</td></tr><tr><td>2018</td><td>0</td></tr><tr><td>2019</td><td>0</td></tr><tr><td>2020</td><td>33</td></tr></table></td></tr>
<tr><td>Monitoring equipment</td><td>Spreadsheet with the list of families and residents of RESEX</td></tr>
<tr><td>GQ/CQ procedures to be applied</td><td>Validation of the systematized information with ASMOREX and CES Rioterra.</td></tr>
<tr><td>Purpose of data</td><td>Provide information about the benefits generated to the community through the REDD+ Project for the maintenance of roads, sidings, and bridges.</td></tr>
<tr><td>Calculation Method</td><td>Counting the families and residents of RESEX based on evidence</td></tr>
<tr><td>Comments</td><td>-</td></tr>
</table>

During the project's development, other needs were identified by the community members, and consequently other infrastructure fronts were extended, complementing the planned activities. Before the consolidation of the REDD+ project in the area, not all communities, both on the mainland and the riverside, had access to electricity. In this sense, with the structuring of the Rio Preto-Jacundá RESEX REDD+ Project and its activities, it was possible to gradually increase the electrical self-sufficiency of families present in the RESEX.

Due to the location of the communities, the distribution of electricity occurred from conventional sources, through the expansion of transmission lines, and alternative sources such as photovoltaic solar energy, both financed through the REDD+ Project. The activities that took place meet the indicator "Families benefited by the REDD+ project".

Regarding the expansion of the distribution lines, on March 27, 2018 it was approved in the extraordinary general meeting the investment of part of the project's resources in electric power installation works benefiting the Cabeça de Boi community. In the same year, during the month of October the term of reference was prepared for hiring a qualified company and in November the contract was closed with the Tifó Installer for the installation of 4,650m of single-phase MRT transmission lines and 6 substations of 05 kVA each and in December 2018 they began the works. In the year 2019, electric grid installations were also made, benefiting families that until then had not been contemplated with such a benefit in the Chibé and Campo Novo communities.

Considering the improvements made in relation to access to conventional electricity, 7 families from the Cabeça de Boi community, 4 families from the Campo Novo community, and 4 families from the Chibé community were benefited.

Figure 10 - Electrical network installation at RESEX Rio Preto-Jacundá.

Regarding solar photovoltaic energy, the first initiatives occurred in 2018, serving 5 riverside families from the Jatobá community and the Bom Futuro placement through the installation of 6 photovoltaic kits. Due to the location of the communities, the riverside families were able to benefit from the photovoltaic plates given the difficulty of access to conventional energy facilities. Whereas the families on mainland were able to benefit from both traditional electricity methods and more innovative methods such as solar panels.

As well as increasing the electrical self-sufficiency of the families present in the RESEX, the installation of photovoltaic kits is a way to insert technological innovations to the communities, promoting the transition of the energy matrix of the RESEX to sustainable and clean sources, and contributing to the improvement of the quality of life of local families and to the reduction of GHGs.

In April 2020, as a continuation of the actions, 3 photovoltaic kits were installed, serving two families with difficult access to onshore areas of the RESEX – Manaus placement and Seringal Redonda placement – and one riverside family, represented by the Trindade placement. Thus, between conventional and alternative energy, 100% of the residents were provided with access to electricity. Considering the improvements made in relation to access to electricity through solar kits, 7 riverside families and 2 mainland families benefited from the project's activities.

Figure 11 - Installation of the solar power kit in April 2020.

Data / Parâameter	**Families benefited by REDD+ Project**
Unity of data	Number of families
Description	Number of families benefited from social investments of the project in improved access to energy, considering conventional and non-conventional sources (photovoltaic kit)
Source of data	Project activity reports, list of families and residents of the Project
Description of measurement methods and procedures to be applied	Analysis of the actions carried out by the project and the community members such as: infrastructure, obtaining equipment, conducting courses and training, generating employment and income, among others
Frequency of monitoring/recording:	Annual
Value Applied:	

Year	Number of Families
2016	0

	2017	0
	2018	13
	2019	8
	2020	3
Monitoring equipment	Spreadsheet with the list of families and residents of RESEX	
GQ/CQ procedures to be applied	Validation of the systematized information with ASMOREX and CES Rioterra.	
Purpose of data	Provide information about the benefits generated to the community through the REDD+ Project in improved access to energy	
Calculation Method	Counting the families and residents of RESEX based on evidence	
Comments	-	

4.3.1.10. REDD + Jacundá Financial Mechanism

Among the activities developed in the REDD+ Jacundá Project, between February and May 2014, workshops called "Building the Life Plan" and "Building the Benefit-Sharing and Conflict Resolution Mechanism" were held, which culminated in the decision on characteristics, pathways conflict resolution, governance, etc. The financial mechanism that should guide the sharing of the benefits of the REDD+ Project to the communities existing within the RESEX Rio-Preto Jacundá, as mentioned in section 2.2.3, was renamed the “Mechanism Financial REDD+ Jacundá”.

The structuring, implementation and monitoring of the Financial Mechanism began on November 8, 2016, from a meeting with the participation of ASMOREX, Biofílica, CES Rioterra and SEDAM. Since then, several other meetings were held in 2017 with the aim of carrying out a collective construction for the validation of the agreement terms between the parties.

These meetings resulted in a mechanism guided by collegiate management, representative and committed to community concerns, transparency and publicity of all its acts, the application of benefits and resources exclusively directed to the RESEX community collectivity, the representative participation of Community members , for credibility and legality, and for environmental conservation. With the objective of financially supporting RESEX, the financial mechanism was constituted as an instrument indicated for the sharing of benefits coming mainly from the resources of the REDD+ Project.

The implementation of Resources from the REDD+ Jacundá Financial Mechanism referring to the first cycle were made available by Biofílica, in the REDD+ Jacundá Financial Mechanism Account (managed by ASMOREX) after the approval of the Annual Work Plan in 2018, carried out through the Extraordinary General Meeting of ASMOREX , according to the minutes of 03.27.2018, of the First Ordinary

Meeting of CDREX, of the year 2018, dated of 04.13.2018, as well as the CDREX Resolution, approving ASMOREX's planning, regarding the application of REDD+ Jacundá resources, in the amount a total of R$ 1,637,479.54, duly approved by the technical area of SEDAM, for the year 2018, and published in the State Official Gazette, referring to the first cycle of validity of the REDD+ Jacundá Financial Mechanism.

The Executive Secretariat of the REDD+ Financial Mechanism (composed by Biofílica, ASMOREX and CES Rioterra) is responsible for preparing the Annual Work Plan, which defines the priorities, actions, composition of investments and activities, related to the period of 12 (twelve) subsequent months (“Cycle”) of the REDD+ Jacundá Financial Mechanism always based on the Investment Policy. This plan is approved by the community through a General Assembly and, after 6 (six) months of its approval, the Annual Work Plan can be evaluated and revised, and adjustments can be made, if necessary, the review is submitted to the deliberation of the Community, via the General Assembly to be constituted extraordinarily.

All the benefits described in the previous items of this section were carried out using this methodology, thus, within the monitoring period of this report, 2 Work Plans for investments in RESEX were approved and implemented, the third work plan referring to the 2020/2021 cycle its preparation began during the monitored period, but its approval was postponed to 2021 due to the COVID-19 pandemic. In addition, in 2017, an accounting firm was contracted with the aim of providing services and advice to ASMOREX regarding support in the administration of the Association's financial resources. These activities are in line with the indicator “Strengthening governance”.

Currently, the document that celebrates the agreement for the constitution of the REDD+ Jacundá Financial Mechanism is in its final stage of preparation, however the activities described in the tool have been in practice in the project since the beginning of carbon credit sales, in fact this documentation will only serve to legally formalize the good practices described above that are already applied by the project proponents.

In this theme, the only activity that was not carried out in the monitored period was the hiring of financial/accounting audit services, as described in the mechanism:

> "The REDD+ Jacundá Financial Mechanism will have its accounting and financial transactions audited, every two (2) Cycles of the Annual Work Plan, by an independent third party, duly registered with the Securities Commission - CVM, which will be chosen by the Secretariat Executive Committee of the REDD+ Financial Mechanism in a specific meeting on this topic, upon presentation of 03 (three) proposals, which period may be reduced if the Executive Secretariat of the REDD+ Financial Mechanism deems it necessary.”

Thus, as the project's investments started in 2018, the accounting audit was expected to take place in 2020, but due to the COVID-19 pandemic, this activity was halted, being resumed only in 2021, remaining outside the monitored period.

Data / Parâameter	**Strengthening governance**

<table>
<tr><td>Unity of data</td><td>Number of implemented governance initiatives</td></tr>
<tr><td>Description</td><td>Records of activities that took place in the minutes of assemblies and meetings regarding the construction of the Financial Mechanism, the planning, approval and review meetings of the Work Plan and the number of approved Work Plan plans</td></tr>
<tr><td>Source of data</td><td>Minutes of ordinary and extraordinary meetings, and meetings of the Executive Secretariat of the REDD+ Jacundá Financial Mechanism</td></tr>
<tr><td>Description of measurement methods and procedures to be applied</td><td>Accounting of applied meetings dealing with the themes of construction of the Financial Mechanism, planning, approval and review of the Work Plan and approval of the Work Plans.</td></tr>
<tr><td>Frequency of monitoring/recording:</td><td>Monthly and Annual</td></tr>
<tr><td>Value Applied:</td><td>
<table>
<tr><th>Year</th><th>Mouth</th><th>Meetings on the construction of the Financial Mechanism</th><th>Meetings for planning, approval and review of the Work Plan</th><th>Approved Work Plans</th></tr>
<tr><td>2016</td><td>11</td><td>1</td><td></td><td></td></tr>
<tr><td>2017</td><td>03</td><td>1</td><td></td><td></td></tr>
<tr><td>2017</td><td>09</td><td>1</td><td></td><td></td></tr>
<tr><td>2018</td><td>03</td><td></td><td>2</td><td></td></tr>
<tr><td>2018</td><td>04</td><td></td><td>1</td><td>1</td></tr>
<tr><td>2019</td><td>06</td><td></td><td>1</td><td>1</td></tr>
<tr><td>2019</td><td>10</td><td></td><td>1</td><td></td></tr>
<tr><td>2019</td><td>12</td><td></td><td>1</td><td></td></tr>
<tr><td>2020</td><td>01</td><td></td><td>1</td><td></td></tr>
</table>
</td></tr>
<tr><td>Monitoring equipment</td><td>Read the minutes of the meetings</td></tr>
<tr><td>GQ/CQ procedures to be applied</td><td>Validation of systematized information with ASMOREX and CES Rioterra.</td></tr>
<tr><td>Purpose of data</td><td>Understand the dynamics of specific meetings aimed at community investments and collecting feedback from residents</td></tr>
<tr><td>Calculation Method</td><td>Counting in meeting minutes</td></tr>
<tr><td>Comments</td><td>-</td></tr>
</table>

4.3.1.11. Zoning

The main objective of the actions developed for zoning was to increase food security and species conservation. These actions were based on an activity: implementation of hunting and fishing zones (multiple use). The activities are in line with the indicator "Strengthening governance". To complement the

monitoring of both the actions and the indicators, the Multiple-Use Management Plan (PMUM) of the Rio Preto-Jacundá RESEX was used.

Integrating the activity "implementation of the hunting and fishing areas (multiple use)", the Multiple Use Management Plan (PMUM) was implemented in 2016, which had its work and data collection started in July 2015, as a way to strengthen the activities of extractivists in a sustainable way. The PMUM was prepared by CES Rioterra, partner of the REDD+ Project, and approved in May 2017 by SEDAM, via publication in the Official Gazette (available to VVB).

The PMUM established the Zoning of the RESEX Rio Preto-Jacundá (encarte-IV), whose main function was to guarantee the preservation of the natural environment, biodiversity, potentialities for environmental education, attractions for visitation and, mainly, the maintenance of the local extractivist's way of life.

As a way to achieve the objective of the activity in question, the traditional use, multiple use, and forest management zones have specific rules for hunting and fishing activities. Therefore, in the Traditional Use Zone hunting and fishing are allowed, as well as oil extraction, seed and fruit gathering, as long as they are carried out with low impact and medium intensity and are executed following a specific management plan.

The Multiple Use Zone is made up, for the most part, of areas destined for the use of the extractive communities of the RESEX, therefore, hunting and fishing activities are allowed, as well as oil extraction activities, seed and fruit gathering, as long as they are carried out following a specific management plan.

The Forest Management Zone is designated for forest exploitation with the purpose of generating income and improving the quality of life of the community, based on the sustainable use of biodiversity. Although the focus is on forest management, this zone allows hunting, fishing, and the collection of seeds and fruits.

Besides the Traditional Use, Multiple Use and Forest Management Zones, other zones were determined in the PMUM, such as: Restricted Use Zone (33%); Forest Management Zone (31%); Traditional Use Zone (21%); Multiple Use Zone (13%); Sacred Zone (0,05%).

The Buffer Zone was also determined, with the objective of minimizing the negative impacts of existing human activities in the area of the municipalities adjacent to the RESEX. More details about the zoning of the RESEX, is described in the section 5.1.2 of this document.

Data / Parâameter	**Strengthening governance**
Unity of data	Number
Description	Number of governance initiatives implemented: Multiple Use Management Plan
Source of data	Multiple Use Management Plan – encarte I, encarte II, encarte III, encarte IV

<table>
<tr><td></td><td>Official Gazette – approval of PMUM by SEDAM</td></tr>
<tr><td>Description of measurement methods and procedures to be applied</td><td>CES Rioterra prepared the Multiple Use Management Plan (PMUM) where the zoning of the RESEX was carried out, including the traditional use zones and the multiple use zone that have specific rules for hunting and fishing. Through this Plan and its approval by SEDAM through the Official Journal we can validate and account for the initiative to strengthen governance in the area of food security (hunting and fishing) that was implemented..</td></tr>
<tr><td>Frequency of monitoring/recording:</td><td>Monthly</td></tr>
<tr><td>Value Applied:</td><td><table><tr><td>Year</td><td>Number of initiatives</td></tr><tr><td>2016</td><td>1</td></tr><tr><td>2017</td><td>0</td></tr><tr><td>2018</td><td>0</td></tr><tr><td>2019</td><td>0</td></tr><tr><td>2020</td><td>0</td></tr></table></td></tr>
<tr><td>Monitoring equipment</td><td>Digital Records</td></tr>
<tr><td>GQ/CQ procedures to be applied</td><td>The booklets are sent by the contracted partner CES Rioterra. Furthermore, there is a record of approval of the PMUM by SEDAM through the Official Gazette.</td></tr>
<tr><td>Purpose of data</td><td>Provides information about the benefits generated to the community through the REDD+ Project.</td></tr>
<tr><td>Calculation Method</td><td>Governance initiatives count</td></tr>
<tr><td>Comments</td><td>-</td></tr>
</table>

Complementarily, the implementation of multiple and sustainable use of forest products was foreseen in the climate scope, given its relationship with the reduction of emissions from deforestation and forest degradation linked to the valorization of standing forest and, consequently, its maintenance in the Project Zone and the physical presence of community members in it. The activity was linked to the resumption of the extractive culture of community members and the generation of income for them. It was focused on structuring value chains, including capacity building and training ranging from harvesting techniques to marketing, with emphasis on improving product processing practices.

The activity is related to the indicator "Number of families managing non-timber forest products". The families managing non-timber forest products were monitored through interviews with each family existing in the RESEX, and their results were compiled in a table for annual monitoring.

<table>
<tr><td>Data / Parâameter</td><td>Number of households managing non timber forest products</td></tr>
<tr><td>Unity of data</td><td>Number</td></tr>
<tr><td>Description</td><td>Number of governance initiatives implemented: Multiple Use Management Plan</td></tr>
<tr><td>Source of data</td><td>Residents' spreadsheet - non-timber forest products</td></tr>
<tr><td>Description of measurement methods and procedures to be applied</td><td>Through interviews with each family in the RESEX, a compilation of the results of the quantity of families that carried out management of non-timber forest products in each year of the monitored period was made.</td></tr>
<tr><td>Frequency of monitoring/recording:</td><td>Annual</td></tr>
<tr><td>Value Applied:</td><td><table><tr><td>Year</td><td>Number of families</td></tr><tr><td>2016</td><td>11</td></tr><tr><td>2017</td><td>14</td></tr><tr><td>2018</td><td>15</td></tr><tr><td>2019</td><td>14</td></tr><tr><td>2020</td><td>13</td></tr></table></td></tr>
<tr><td>Monitoring equipment</td><td>Digital Records</td></tr>
<tr><td>GQ/CQ procedures to be applied</td><td>The spreadsheet, as well as the interviews, was made by ASMOREX and Biofílica has a digital copy of the data compilation.</td></tr>
<tr><td>Purpose of data</td><td>Provides information about the benefits generated to the community through the REDD+ Project.</td></tr>
<tr><td>Calculation Method</td><td>Family count</td></tr>
<tr><td>Comments</td><td>-</td></tr>
</table>

4.3.2 Monitoring Plan Dissemination (CM4.3)

As already described in item 2.3.1, the REDD+ RESEX Rio Preto-Jacundá Project implemented three methods of communication, aiming to ensure access to documents and all other Project information to communities and other players through oral, written and virtual methods.

The results were released: i) in a printed version, where each document related to monitoring was made available for consultation at ASMOREX's office; ii) in a virtual version, where documents related to monitoring were made available through Verra's website and through Biofílica's newsletters and social media; and iii) orally, through RESEX meetings (promoted by ASMOREX), during activities and meetings

developed by CES Rioterra, ECOPORÉ and Pacto das Águas, as well as other opportunities for contact between project stakeholders and bidders.

4.4 Optional Criterion: Exceptional Community Benefits

4.4.1 Short-term and Long-term Community Benefits (GL2.2)

Project activities were able to promote short, medium and long term benefits to the communities, as shown in sections 4.1.1, 4.1.3, 4.3.1.

Considering the short-term actions, the community members underwent various trainings and qualifications on topics such as information technology, administrative and financial management, good practices in the processing of açaí and cassava flour, monitoring of biodiversity, management and social organization, among others. At first, in addition to the benefits of new skills and knowledge incorporated by them, the training enabled an improvement in ASMOREX's management, thus promoting a reduction in dependence on external agents. In the medium and long term, these trainings will provide opportunities to improve the quality of life, both by training a more qualified workforce, providing job and business opportunities and, consequently, income improvements, as well as by increasing their resilience. people due to the knowledge acquired.

The construction of houses for some community members, access to electricity, and investments in RESEX's infrastructure improvement also provided several benefits. In the short term, there was an improvement in the quality of life, a better use of the community space, contributing to the motivation of community permanence and, consequently, in reducing their exodus to the cities, and also enabling visits by teams of health, using as a place of service infrastructure built with the investment of the REDD+ Project. These actions in the medium and long term reflect directly in the contribution in improving the health of the residents and in increasing the life expectancy of the community.

Another benefit achieved in the short term was the empowerment of community members promoted by the various possibilities provided, such as: community participation in RESEX decisions related to the General Assemblies, increased social participation offered by the new infrastructure, training of community members in various courses, increasing their knowledge and skills, among others. In the short term, this empowerment also occurred for women, with occupation in management positions at ASMOREX. In the medium and long term, these initiatives are crucial for the continuous encouragement of community participation in these spaces, especially women and young people, thus enabling the perpetuation of the communities currently residing in RESEX, conserving their sustainable lifestyle, with the forest as your most precious resource.

Increased food security was another benefit achieved in the short term through the acquisition of agricultural inputs, such as limestone spreaders, a grid coupled to tractor for mechanization, and a small truck, which allowed the improvement of family agricultural production. Considering the productive scope,

both for agricultural and extractive practices, it is expected that in the medium and long term, community members will achieve an improvement and diversification of income, especially after the start of operation of agroindustry that were built with environmental compensation resources from SEDAM and with the implementation of the diagnosis of the production chains carried out by the Project. Furthermore, with the encouragement of extractive practices by these two initiatives, the strengthening of extractive culture and associativism is expected as a benefit.

The benefits achieved by each activity were monitored through some indicators. They were related to each main pillar: Governance and Adaptive Management, Health, Income Generation, Education, Youth and Women, Environment, Social Organization, Communication, Infrastructure, REDD+ Jacundá Financial Mechanism, and Zoning.

Governance and adaptive management

<table>
<tr><td>Data / Parameter</td><td>Strengthening governance</td></tr>
<tr><td>Data unit</td><td>Number of implemented governance initiatives</td></tr>
<tr><td>Description</td><td>Records of activities that took place in the minutes of assemblies and meetings</td></tr>
<tr><td>Source of data</td><td>Minutes of ordinary and extraordinary assemblies, and meetings of the Executive Secretariat of the REDD+ Jacundá Financial Mechanism</td></tr>
<tr><td>Description of measurement methods and procedures to be applied</td><td>The survey was carried out by recording the minutes of the meetings and assembly where investments were discussed within RESEX, being separated by the type of meeting held and by the months that took place.</td></tr>
<tr><td>Monitoring/recording frequency</td><td>Monthly and Annual</td></tr>
<tr><td>Monitored value</td><td>
<table>
<tr><th>Year</th><th>Month</th><th>Ordinary Meeting</th><th>Extraordinary Meeting</th><th>Executive Secretariat Meetings Financial Mechanism</th></tr>
<tr><td>2016</td><td>11</td><td></td><td></td><td>1</td></tr>
<tr><td rowspan="3">2017</td><td>03</td><td></td><td></td><td>1</td></tr>
<tr><td>09</td><td></td><td></td><td>1</td></tr>
<tr><td>12</td><td></td><td></td><td>1</td></tr>
<tr><td rowspan="3">2018</td><td>01</td><td></td><td></td><td>1</td></tr>
<tr><td>03</td><td></td><td>1</td><td>1</td></tr>
<tr><td>04</td><td>1</td><td></td><td></td></tr>
<tr><td rowspan="4">2019</td><td>02</td><td></td><td></td><td>1</td></tr>
<tr><td>06</td><td>1</td><td>1</td><td></td></tr>
<tr><td>10</td><td></td><td></td><td>1</td></tr>
<tr><td>12</td><td></td><td></td><td>1</td></tr>
<tr><td>2020</td><td>01</td><td></td><td></td><td>1</td></tr>
</table>
</td></tr>
<tr><td>Monitoring Equipment</td><td>Reading the minutes of the meetings</td></tr>
<tr><td>QC/CG procedures to be applied</td><td>Validation of systematized information with ASMOREX and CES Rioterra.</td></tr>
</table>

Data purpose	Understand the dynamics of specific meetings aimed at community investments and collecting feedback from residentes
Calculation method	Counting in meeting minutes
Comments	Throughout the project lifecycle, several meetings took place internally and externally on project activities. In such meetings, it was possible to identify discussions and deliberations regarding investments, finances, cash flow, etc. The first stage for discussing investments occurs at the level of the meetings of the Executive Secretariat of the REDD+ Jacundá Financial Mechanism, where considerations are made on which investments are more pertinent to be prioritized given the community's needs, and thus the Work Plans are established. Subsequently, the plans are evaluated and voted on by the community at the ordinary and extraordinary general meetings.

Health

Data / Parameter	**Families benefiting from the REDD+ Project**
Data unit	Number of families
Description	Number of families benefited by the survey carried out by the study on the ecological knowledge of RESEX community members about the non-timber forest products used or of potential use
Source of data	Since the study was carried out within the RESEX, with the direct participation of the community members, and the results are available for their access, it was considered that all RESEX families can benefit from this survey, from the year it was carried out of the research.
Description of measurement methods and procedures to be applied	The count of families residing in RESEX who have access to the results raised in the survey was carried out.
Monitoring/recording frequency	Annual
Monitored value	Year / Number of Families 2016: 0 2017: 0 2018: 33 2019: 0 2020: 0
Monitoring Equipment	Master's Dissertation Leandro Ribas (2018)
QC/CG procedures to be applied	Validation of systematized information with ASMOREX and CES Rioterra.

Data purpose	Provide information about the families benefiting from a study that has as its main reference the rescue of popular medicine within RESEX.
Calculation method	Spreadsheet count of the list of families and residents of RESEX
Comments	-

Data / Parameter	**Families benefiting from the REDD+ Project**
Data unit	Number of families
Description	Number of families benefiting from investments in infrastructure to support actions aimed at the health and well-being of the Project's community
Data source	Project activity reports and list of Project families and residents
Description of measurement methods and procedures to be applied	Accounting of community benefited by the assistance aimed at the health area carried out within the RESEX in the infrastructures invested by the Project.
Monitoring/recording frequency	Annual
Monitored value	Year / Number of Families: 2016: 0; 2017: 0; 2018: 0; 2019: 33; 2020: 33
Monitoring equipment	Spreadsheet listing families and residents of RESEX
QC/CG procedures to be applied	Validation of systematized information with ASMOREX and CES Rioterra.
Data purpose	Provide information on the benefits generated to the community through the REDD+ Project.
Calculation method	Spreadsheet count of the list of families and residents of RESEX
Comments	-

Income generation

Data / Parameter	**Families benefiting from the REDD+ Project**
Number of families	Number of families

Description	Number of families benefited by the Project's social investments in the acquisition of tractor implements for the mechanization of the plantation
Data source	Project activity reports and list of Project families and residents
Description of measurement methods and procedures to be applied	Analysis of the actions carried out by the Project and the beneficiary communities
Monitoring/recording frequency	Annual
Monitored value	Year / Number of Families 2016 / 0 2017 / 0 2018 / 2 2019 / 1 2020 / 5
Monitoring equipment	Project activity reports and Spreadsheet listing families and residents of RESEX
QC/CG procedures to be applied	Validation of systematized information with ASMOREX and CES Rioterra.
Data purpose	Provide information about the benefits generated to the community through the REDD+ Project with regard to the families benefiting from the mechanization of the plantation.
Calculation method	RESEX Families and Residents Counting Based on Evidence
Comments	-

Data / Parameter	**Number of courses and training**
Data unit	Number
Description	Number of courses and training complementary to technical assistance activities
Data source	Project activity reports
Description of measurement methods and procedures to be applied	The courses and training carried out with the residents of RESEX Rio Preto-Jacundá were recorded in an activity report (all made available to the VVB team), as well as having an attendance list and a photographic record.
Monitoring/recording frequency	Annual
Monitored value	Year / Number of Courses

	2016: 0 2017: 0 2018: 3 2019: 0 2020: 1
Monitoring equipment	Attendance list and photographic records
QC/CG procedures to be applied	In all courses, workshops and trainings carried out, an attendance list was passed (containing space to fill in the name, CPF, telephone number, Institution/Entity belonging and signature).
Data purpose	Provides information on the benefits generated to the community through the REDD+ Project.
Calculation method	Count of courses taken
Comments	-

Education

Data / Parameter	**Families benefited by REDD+ Project**
Data unit	Number of families
Description	Number of families benefited by the Project's investments in the construction of the telecenter and the acquisition of IT materials
Data source	Project activity reports and list of Project families and residents
Description of measurement methods and procedures to be applied	Analysis of the actions carried out by the Project and the community benefited, such as: infrastructure, obtaining equipment, equipment maintenance and software installation.
Monitoring/recording frequency	Yearly
Monitored value	Year: Number of Families 2016: 0 2017: 0 2018: 0 2019: 33 2020: 33
Monitoring equipment	Spreadsheet listing families and residents of RESEX
QC/CG procedures to be applied	Validation of systematized information with ASMOREX and CES Rioterra.

Data purpose	Provide information on the benefits generated to the community through the investments made by the REDD+ Project in the construction of the telecenter and in the acquisition of computer materials.
Calculation method	Spreadsheet count of the list of families and residents of RESEX
Comments	-

Data / Parameter	**Number of courses and training**
Data unit	Number
Description	Number of courses and training within the project's thematic axes
Data source	Project Activity Reports and Attendance Lists
Description of measurement methods and procedures to be applied	The courses and training carried out with the residents of RESEX Rio Preto-Jacundá were recorded in an activity report (all made available to the VVB team), as well as having an attendance list and a photographic record.
Monitoring/recording frequency	Yearly
Monitored value	Year / Number of Courses: 2016: 0; 2017: 0; 2018: 1; 2019: 1; 2020: 3
Monitoring equipment	Attendance list and photographic records
QC/CG procedures to be applied	In all courses, workshops and trainings carried out, an attendance list was passed (containing space to fill in the name, CPF, telephone number, Institution/Entity belonging and signature).
Data purpose	Provide information on the benefits generated to the community through the REDD+ Project.
Calculation method	Count of courses taken
Comments	-

Data / Parameter	**Course participants**
Data unit	Number

<table>
<tr><td>Description</td><td>Number of people who participated in the courses offered within the thematic axes</td></tr>
<tr><td>Data source</td><td>Project Activity Reports and Attendance Lists</td></tr>
<tr><td>Description of measurement methods and procedures to be applied</td><td>The courses and training carried out with the residents of RESEX Rio Preto-Jacundá were recorded in an activity report (all made available to the VVB team), as well as having an attendance list and a photographic record.
From attendance lists, it was possible to count the number of participants in each course.</td></tr>
<tr><td>Monitoring/recording frequency</td><td>Yearly</td></tr>
<tr><td>Monitored value</td><td><table><tr><td>Year</td><td>Number of Course Participants</td></tr><tr><td>2016</td><td>0</td></tr><tr><td>2017</td><td>0</td></tr><tr><td>2018</td><td>1</td></tr><tr><td>2019</td><td>22</td></tr><tr><td>2020</td><td>26</td></tr></table></td></tr>
<tr><td>Monitoring equipment</td><td>Attendance lists and photographic records</td></tr>
<tr><td>QC/CG procedures to be applied</td><td>In all courses, workshops and trainings carried out, an attendance list was passed (containing space to fill in the name, CPF, telephone number, Institution/Entity belonging and signature).</td></tr>
<tr><td>Data purpose</td><td>Provide information on the benefits generated to the community through the REDD+ Project.</td></tr>
<tr><td>Calculation method</td><td>Counting in spreadsheets and/or directly in attendance lists</td></tr>
<tr><td>Comments</td><td>-</td></tr>
</table>

Social organization

Data / Parameter	**Number of courses and training**
Data unit	Number
Description	Number of courses and training within the thematic axes of the project for training in management and finance for ASMOREX board members
Data source	Project Activity Reports and Attendance Lists
Description of measurement methods and procedures to be applied	The courses and training carried out with the residents of RESEX Rio Preto-Jacundá were recorded in an activity report (all made available to the VVB team), as well as having an attendance list and a photographic record.

Monitoring/recording frequency	Annual
Monitored value	Year: 2016 — Number of Courses: 0 Year: 2017 — Number of Courses: 5 Year: 2018 — Number of Courses: 1 Year: 2019 — Number of Courses: 3 Year: 2020 — Number of Courses: 0
Monitoring equipment	Attendance list and photographic records
QC/CG procedures to be applied	In all courses, workshops and trainings carried out, an attendance list was passed (containing space to fill in the name, CPF, telephone number, Institution/Entity belonging and signature).
Data purpose	Provide information on the benefits generated to the community through the REDD+ Project.
Calculation method	Count of courses taken
Comments	-

Data / Parameter	**Course participants**
Data unit	Number
Description	Number of people who participated in courses offered within the thematic axes for training in management and finance to ASMOREX board members
Data source	Project Activity Reports and Attendance Lists
Description of measurement methods and procedures to be applied	The courses and training carried out with the residents of RESEX Rio Preto-Jacundá were recorded in an activity report (all made available to the VVB team), as well as having an attendance list and a photographic record. From the lists, it was possible to count the number of participants in each course.
Monitoring/recording frequency	Annual
Monitored value	Year: 2016 — Number of Course Participants: 0 Year: 2017 — Number of Course Participants: 79 Year: 2018 — Number of Course Participants: 15 Year: 2019 — Number of Course Participants: 31 Year: 2020 — Number of Course Participants: 0
Monitoring equipment	Attendance lists and photographic records

QC/CG procedures to be applied	In all courses, workshops and trainings carried out, an attendance list was passed (containing space to fill in the name, CPF, telephone number, Institution/Entity belonging and signature).
Data purpose	Provide information on the benefits generated to the community through the REDD+ Project.
Calculation method	Counting in spreadsheets and/or directly in attendance lists
Comments	-

Communication

Data / Parameter	**Families benefited by REDD+ Project**
Unity of data	Number of families
Description	Number of families benefited from social investments of the project in the maintenance of the radios amateur
Source of data	Project activity reports, list of families and residents of the Project
Description of measurement methods and procedures to be applied	Analysis of the actions carried out by the Project and the benefited community members, such as equipment maintenance.
Frequency of monitoring/recording:	Annual
Value Applied:	year / Number of Families 2016 / 0 2017 / 0 2018 / 33 2019 / 0 2020 / 0
Monitoring equipment	Spreadsheet with the list of families and residents of RESEX
GQ/CQ procedures to be applied	Validation of the systematized information with ASMOREX and CES Rioterra.
Purpose of data	Provide information about the benefits generated to the community through the REDD+ Project in maintaining amateur radios in the communities.
Calculation Method	Counting the families and residents of RESEX based on evidence
Comments	-

Data / Parameter	**Families benefited by REDD+ Project**
Unity of data	Number of families
Description	Number of families benefited from social investments of the project in internet and phone antennas
Source of data	Project activity reports, list of families and residents of the Project
Description of measurement methods and procedures to be applied	Analysis of the actions carried out by the Project and the benefited community members, such as equipment maintenance.
Frequency of monitoring/recording:	Annual
Value Applied:	Year / Number of Families: 2016: 0; 2017: 0; 2018: 0; 2019: 8; 2020: 18
Monitoring equipment	Spreadsheet with the list of families and residents of RESEX
GQ/CQ procedures to be applied	Validation of the systematized information with ASMOREX and CES Rioterra.
Purpose of data	Provide information about the benefits generated to the community through the REDD+ Project in implementation of internet and phone antennas
Calculation Method	Counting the families and residents of RESEX based on evidence
Comments	-

Infrastructure

Data / Parâameter	**Families benefited by REDD+ Project**
Unity of data	Number of families
Description	Number of families benefited from social investments of the project in housing construction, for housing improvement
Source of data	Project activity reports, list of families and residents of the Project

Description of measurement methods and procedures to be applied	Analysis of the actions carried out by the Project and the benefited community members, such as building houses and other improvements in sanitary conditions
Frequency of monitoring/recording:	Annual
Value Applied:	<table><tr><th>Year</th><th>Number of Families</th></tr><tr><td>2016</td><td>0</td></tr><tr><td>2017</td><td>0</td></tr><tr><td>2018</td><td>0</td></tr><tr><td>2019</td><td>10</td></tr><tr><td>2020</td><td>2</td></tr></table>
Monitoring equipment	Spreadsheet with the list of families and residents of RESEX
GQ/CQ procedures to be applied	Validation of the systematized information with ASMOREX and CES Rioterra.
Purpose of data	Provide information about the benefits generated to the community through the REDD+ Project in housing construction, for housing improvement
Calculation Method	Counting the families and residents of RESEX based on evidence
Comments	-

Data / Parâameter	**Families benefited by REDD+ Project**
Unity of data	Number of families
Description	Number of families benefited from social investments of the project getting the best access to improved sanitation conditions provided by SEDAM
Source of data	Project activity reports, list of families and residents of the Project
Description of measurement methods and procedures to be applied	Analysis of the actions carried out by the Project and the benefited community members, such as building houses and other improvements in sanitary conditions
Frequency of monitoring/recording:	Annual
Value Applied:	<table><tr><th>Year</th><th>Number of Families</th></tr><tr><td>2016</td><td>0</td></tr></table>

	2017: 0 2018: 0 2019: 0 2020: 19
Monitoring equipment	Spreadsheet with the list of families and residents of RESEX
GQ/CQ procedures to be applied	Validation of the systematized information with ASMOREX and CES Rioterra.
Purpose of data	Provide information about the benefits generated to the community through the REDD+ Project getting the best access to improved sanitation conditions provided by SEDAM
Calculation Method	Counting the families and residents of RESEX based on evidence
Comments	-

Data / Parâameter	**Families benefited by REDD+ Project**
Unity of data	Number of families
Description	Number of families benefited from social investments of the project in the construction of infrastructure in the mainland sector
Source of data	Project activity reports, list of families and residents of the Project
Description of measurement methods and procedures to be applied	Analysis of the actions carried out by the project and the community members who benefited from the improved structure in the existing mainland space
Frequency of monitoring/recording:	Annual
Value Applied:	Year: Number of Families 2016: 0 2017: 0 2018: 33 2019: 33 2020: 33
Monitoring equipment	Spreadsheet with the list of families and residents of RESEX

GQ/CQ procedures to be applied	Validation of the systematized information with ASMOREX and CES Rioterra.
Purpose of data	Provide information about the benefits generated to the community through the REDD+ Project in the construction of infrastructure in the mainland sector
Calculation Method	Counting the families and residents of RESEX based on evidence
Comments	-

Data / Parâameter	**Families benefited by REDD+ Project**
Unity of data	Number of families
Description	Number of families benefited from social investments of the project for the maintenance of roads, sidings, and bridges.
Source of data	Project activity reports, list of families and residents of the Project
Description of measurement methods and procedures to be applied	Analysis of the actions carried out by the project and the community members who benefited with the maintenance of roads and tracks within the RESEX
Frequency of monitoring/recording:	Annual
Value Applied:	year / Number of Families 2016 / 0 2017 / 0 2018 / 0 2019 / 0 2020 / 33
Monitoring equipment	Spreadsheet with the list of families and residents of RESEX
GQ/CQ procedures to be applied	Validation of the systematized information with ASMOREX and CES Rioterra.
Purpose of data	Provide information about the benefits generated to the community through the REDD+ Project for the maintenance of roads, sidings, and bridges.
Calculation Method	Counting the families and residents of RESEX based on evidence
Comments	-

Data / Parâameter	**Families benefited by REDD+ Project**
Unity of data	Number of families
Description	Number of families benefited from social investments of the project in improved access to energy, considering conventional and non-conventional sources (photovoltaic kit)
Source of data	Project activity reports, list of families and residents of the Project
Description of measurement methods and procedures to be applied	Analysis of the actions carried out by the project and the community members such as: infrastructure, obtaining equipment, conducting courses and training, generating employment and income, among others
Frequency of monitoring/recording:	Annual
Value Applied:	<table><tr><td>Year</td><td>Number of Families</td></tr><tr><td>2016</td><td>0</td></tr><tr><td>2017</td><td>0</td></tr><tr><td>2018</td><td>13</td></tr><tr><td>2019</td><td>8</td></tr><tr><td>2020</td><td>3</td></tr></table>
Monitoring equipment	Spreadsheet with the list of families and residents of RESEX
GQ/CQ procedures to be applied	Validation of the systematized information with ASMOREX and CES Rioterra.
Purpose of data	Provide information about the benefits generated to the community through the REDD+ Project in improved access to energy
Calculation Method	Counting the families and residents of RESEX based on evidence
Comments	-

REDD + Jacundá Financial Mechanism

Data / Parâameter	**Strengthening governance**
Unity of data	Number of implemented governance initiatives
Description	Records of activities that took place in the minutes of assemblies and meetings regarding the construction of the Financial Mechanism, the planning, approval and review

<table>
<tr><td></td><td>meetings of the Work Plan and the number of approved Work Plan plans</td></tr>
<tr><td>Source of data</td><td>Minutes of ordinary and extraordinary meetings, and meetings of the Executive Secretariat of the REDD+ Jacundá Financial Mechanism</td></tr>
<tr><td>Description of measurement methods and procedures to be applied</td><td>Accounting of applied meetings dealing with the themes of construction of the Financial Mechanism, planning, approval and review of the Work Plan and approval of the Work Plans.</td></tr>
<tr><td>Frequency of monitoring/recording:</td><td>Monthly and Annual</td></tr>
<tr><td>Value Applied:</td><td>
<table>
<tr><th>Year</th><th>Mouth</th><th>Meetings on the construction of the Financial Mechanism</th><th>Meetings for planning, approval and review of the Work Plan</th><th>Approved Work Plans</th></tr>
<tr><td>2016</td><td>11</td><td>1</td><td></td><td></td></tr>
<tr><td>2017</td><td>03</td><td>1</td><td></td><td></td></tr>
<tr><td>2017</td><td>09</td><td>1</td><td></td><td></td></tr>
<tr><td>2018</td><td>03</td><td></td><td>2</td><td></td></tr>
<tr><td>2018</td><td>04</td><td></td><td>1</td><td>1</td></tr>
<tr><td>2019</td><td>06</td><td></td><td>1</td><td>1</td></tr>
<tr><td>2019</td><td>10</td><td></td><td>1</td><td></td></tr>
<tr><td>2019</td><td>12</td><td></td><td>1</td><td></td></tr>
<tr><td>2020</td><td>01</td><td></td><td>1</td><td></td></tr>
</table>
</td></tr>
<tr><td>Monitoring equipment</td><td>Read the minutes of the meetings</td></tr>
<tr><td>GQ/CQ procedures to be applied</td><td>Validation of systematized information with ASMOREX and CES Rioterra.</td></tr>
<tr><td>Purpose of data</td><td>Understand the dynamics of specific meetings aimed at community investments and collecting feedback from residents</td></tr>
<tr><td>Calculation Method</td><td>Counting in meeting minutes</td></tr>
<tr><td>Comments</td><td>-</td></tr>
</table>

Zoning

Data / Parâameter	**Strengthening governance**
Unity of data	Number
Description	Number of governance initiatives implemented: Multiple Use Management Plan
Source of data	Multiple Use Management Plan – encarte I, encarte II, encarte III, encarte IV Official Gazette – approval of PMUM by SEDAM

<table>
<tr><td>Description of measurement methods and procedures to be applied</td><td>CES Rioterra prepared the Multiple Use Management Plan (PMUM) where the zoning of the RESEX was carried out, including the traditional use zones and the multiple use zone that have specific rules for hunting and fishing. Through this Plan and its approval by SEDAM through the Official Journal we can validate and account for the initiative to strengthen governance in the area of food security (hunting and fishing) that was implemented..</td></tr>
<tr><td>Frequency of monitoring/recording:</td><td>Monthly</td></tr>
<tr><td>Value Applied:</td><td><table><tr><td>Year</td><td>Number of initiatives</td></tr><tr><td>2016</td><td>1</td></tr><tr><td>2017</td><td>0</td></tr><tr><td>2018</td><td>0</td></tr><tr><td>2019</td><td>0</td></tr><tr><td>2020</td><td>0</td></tr></table></td></tr>
<tr><td>Monitoring equipment</td><td>Digital Records</td></tr>
<tr><td>GQ/CQ procedures to be applied</td><td>The booklets are sent by the contracted partner CES Rioterra. Furthermore, there is a record of approval of the PMUM by SEDAM through the Official Gazette.</td></tr>
<tr><td>Purpose of data</td><td>Provides information about the benefits generated to the community through the REDD+ Project.</td></tr>
<tr><td>Calculation Method</td><td>Governance initiatives count</td></tr>
<tr><td>Comments</td><td>-</td></tr>
<tr><td>Data / Parâameter</td><td>Number of households managing non timber forest products</td></tr>
<tr><td>Unity of data</td><td>Number</td></tr>
<tr><td>Description</td><td>Number of governance initiatives implemented: Multiple Use Management Plan</td></tr>
<tr><td>Source of data</td><td>Residents' spreadsheet - non-timber forest products</td></tr>
<tr><td>Description of measurement methods and procedures to be applied</td><td>Through interviews with each family in the RESEX, a compilation of the results of the quantity of families that carried out management of non-timber forest products in each year of the monitored period was made.</td></tr>
<tr><td>Frequency of monitoring/recording:</td><td>Annual</td></tr>
<tr><td>Value Applied:</td><td><table><tr><td>Year</td><td>Number of families</td></tr><tr><td>2016</td><td>11</td></tr></table></td></tr>
</table>

	2017	14
	2018	15
	2019	14
	2020	13
Monitoring equipment	Digital Records	
GQ/CQ procedures to be applied	The spreadsheet, as well as the interviews, was made by ASMOREX and Biofílica has a digital copy of the data compilation.	
Purpose of data	Provides information about the benefits generated to the community through the REDD+ Project.	
Calculation Method	Family count	
Comments	-	

4.4.2 Marginalized and/or Vulnerable Community Groups (GL2.4)

According to the socioeconomic diagnosis carried out in 2013 by CES Rioterra and the description in section 6.4.4. of the PD, the inhabitants of the riverside sector are considered a vulnerable group due to the difficulties faced, such as the precarious housing conditions and the location far from other community members. As shown in section 4.1.1, the project activities also achieved benefits with this group, also mentioned in the table below.

Community Group	RESEX riverside population - represented by the Jatobá community and by the Bom Futuro placement
Net positive impacts	1. There was an empowerment of the community as they began to play an active role in deciding the activities to be developed within RESEX. This occurred due to the increased representation of these vulnerable communities in spaces such as the ASMOREX board, since participation in these positions is open to all community members present in the territory of RESEX, and by encouraging the individual participation of each community member in favorable decision-making spaces such as the General Assemblies. 2. An important initiative that contributed to the improvement of the community's income was the diagnosis of the production chains. This study proposed recommendations for strengthening existing community enterprises and the processes of production, commercialization, and decision-making regarding the management of the business and the

	territory. As soon as the diagnostic guidelines are put into practice together with the start of operation of the two agroindustries (built through SEDAM's investment), these will strengthen even more the income generation by the community. The two initiatives could be implemented due to the Multiple Use Management Plan, which provided guidelines on the use and occupation of land within RESEX, to the investments to improve RESEX's infrastructure, which provided an adequate space, making it a reference within the territory for the implementation of agroindustry, and the project's investment in actions that encourage extractive culture in communities. Furthermore, these actions increase the possibility of strengthening the extractive culture, since they are associated with the practice of collecting non-timber forest products. Practice that, mainly due to infrastructure difficulties in the riverside region in implementing other production processes, is increasingly encouraged to these community members. 3. The construction of a computer room and an auditorium within the RESEX, together with the acquisition of equipment (such as computers), made it possible for the community to apply various courses. The courses given were open to all RESEX community members and addressed different topics, such as information technology, administrative and financial management, good practices in the processing of açaí and cassava flour, biodiversity monitoring, management and social organization, among others. 4. Community members were also benefited from other infrastructure built within RESEX, including the outpatient clinic, the cafeteria, the accommodation, the ASMOREX board office, and the shed to house the association's vehicles and agricultural implements. All these spaces are for common use by all RESEX community members and their use is constantly encouraged. 5. Some families in the Jatobá community were benefited from the construction of an internet tower, enabling them to improve communication and access to the internet and, consequently, improve their quality of life

	and access to knowledge, given the possibilities of using the internet. 6. Five families from the Jatobá community were benefited from the construction of a new residence, ensuring an improvement in their housing quality and, consequently, in their quality of life. 7. The Bom Futuro placement and some families from the Jatobá community received photovoltaic kits, thus allowing access to electricity and all uses that depend on energy. Consequently, the new improvements provided quality of life for all benefited.
Benefit access	The mitigation of risks and barriers in addressing the benefits to vulnerable groups (represented by the riverside populations) occurred through the implementation of the actions of the "REDD Financial Mechanism", which is mainly guided by the representative participation of community members. As described in section 4.4.4., the decision-making space is prioritized for all community members, including riverside members, so that they can contribute to decisions on the activities to be developed by the Project. Focusing on greater engagement on the participation of this group, ASMOREX managers assist in the transportation of these residents to the common areas (Community Complex), where meetings are held.
Negative impacts	No negative impact on identified marginalized groups within the project zone was expected. All activities carried out had their chain of impacts analyzed (section 4.1) and none of them generated negative impacts on the well-being of any community member (whether at individual or collective level) However, some mitigation measures for negative impacts were implemented, as can be seen in section 4.1.2.

4.4.3 Net Impacts on Women (GL2.5)

Considering the benefits promoted by the project activities, as described in sections 4.1, 4.1.3, and 4.3.1, women were also positively impacted, since, in this first cycle of the project, the activities carried out were addressed, in a general way, to all the families of the RESEX. Therefore, the improvement of the quality of life, the empowerment of the community, the increase of food security, and all other existing benefits, also reached the women. The following indicators monitored the benefits achieved:

Health

Data / Parameter	**Families benefiting from the REDD+ Project**
Data unit	Number of families
Description	Number of families benefited by the survey carried out by the study on the ecological knowledge of RESEX community members about the non-timber forest products used or of potential use
Source of data	Since the study was carried out within the RESEX, with the direct participation of the community members, and the results are available for their access, it was considered that all RESEX families can benefit from this survey, from the year it was carried out of the research.
Description of measurement methods and procedures to be applied	The count of families residing in RESEX who have access to the results raised in the survey was carried out.
Monitoring/recording frequency	Annual
Monitored value	Year / Number: 2016: 0; 2017: 0; 2018: 75 women; 2019: 0; 2020: 0
Monitoring Equipment	Master's Dissertation Leandro Ribas (2018)
QC/CG procedures to be applied	Validation of systematized information with ASMOREX and CES Rioterra.
Data purpose	Provide information about the families benefiting from a study that has as its main reference the rescue of popular medicine within RESEX.
Calculation method	Spreadsheet count of the list of families and residents of RESEX
Comments	-

Data / Parameter	**Families benefiting from the REDD+ Project**
Data unit	Number of families
Description	Number of families benefiting from investments in infrastructure to support actions aimed at the health and well-being of the Project's community
Data source	Project activity reports and list of Project families and residents

Description of measurement methods and procedures to be applied	Accounting of community benefited by the assistance aimed at the health area carried out within the RESEX in the infrastructures invested by the Project.
Monitoring/recording frequency	Annual
Monitored value	Year: Number 2016: 0 2017: 0 2018: 0 2019: 75 women 2020: 75 women
Monitoring equipment	Spreadsheet listing families and residents of RESEX
QC/CG procedures to be applied	Validation of systematized information with ASMOREX and CES Rioterra.
Data purpose	Provide information on the benefits generated to the community through the REDD+ Project.
Calculation method	Spreadsheet count of the list of families and residents of RESEX
Comments	-

Education

Data / Parameter	**Families benefited by REDD+ Project**
Data unit	Number of families
Description	Number of families benefited by the Project's investments in the construction of the telecenter and the acquisition of IT materials
Data source	Project activity reports and list of Project families and residents
Description of measurement methods and procedures to be applied	Analysis of the actions carried out by the Project and the community benefited, such as: infrastructure, obtaining equipment, equipment maintenance and software installation.
Monitoring/recording frequency	Yearly
Monitored value	Year: Number 2016: 0 2017: 0 2018: 0 2019: 75 women

	2020 | 75 women
Monitoring equipment	Spreadsheet listing families and residents of RESEX
QC/CG procedures to be applied	Validation of systematized information with ASMOREX and CES Rioterra.
Data purpose	Provide information on the benefits generated to the community through the investments made by the REDD+ Project in the construction of the telecenter and in the acquisition of computer materials.
Calculation method	Spreadsheet count of the list of families and residents of RESEX
Comments	-

Communication

Data / Parâameter	**Families benefited by REDD+ Project**
Unity of data	Number of families
Description	Number of families benefited from social investments of the project in the maintenance of the radios amateur
Source of data	Project activity reports, list of families and residents of the Project
Description of measurement methods and procedures to be applied	Analysis of the actions carried out by the Project and the benefited community members, such as equipment maintenance.
Frequency of monitoring/recording:	Annual
Value Applied:	year | Number 2016 | 0 2017 | 0 2018 | 75 women 2019 | 0 2020 | 0
Monitoring equipment	Spreadsheet with the list of families and residents of RESEX
GQ/CQ procedures to be applied	Validation of the systematized information with ASMOREX and CES Rioterra.
Purpose of data	Provide information about the benefits generated to the community through the REDD+ Project in maintaining amateur radios in the communities.

Calculation Method	Counting the families and residents of RESEX based on evidence
Comments	-

Infrastructure

Data / Parâameter	**Families benefited by REDD+ Project**
Unity of data	Number of families
Description	Number of families benefited from social investments of the project in the construction of infrastructure in the mainland sector
Source of data	Project activity reports, list of families and residents of the Project
Description of measurement methods and procedures to be applied	Analysis of the actions carried out by the project and the community members who benefited from the improved structure in the existing mainland space
Frequency of monitoring/recording:	Annual
Value Applied:	Year / Number 2016 / 0 2017 / 0 2018 / 75 women 2019 / 75 women 2020 / 75 women
Monitoring equipment	Spreadsheet with the list of families and residents of RESEX
GQ/CQ procedures to be applied	Validation of the systematized information with ASMOREX and CES Rioterra.
Purpose of data	Provide information about the benefits generated to the community through the REDD+ Project in the construction of infrastructure in the mainland sector
Calculation Method	Counting the families and residents of RESEX based on evidence
Comments	-

Data / Parâameter	**Families benefited by REDD+ Project**
Unity of data	Number of families

<table>
<tr><td>Description</td><td>Number of families benefited from social investments of the project for the maintenance of roads, sidings, and bridges.</td></tr>
<tr><td>Source of data</td><td>Project activity reports, list of families and residents of the Project</td></tr>
<tr><td>Description of measurement methods and procedures to be applied</td><td>Analysis of the actions carried out by the project and the community members who benefited with the maintenance of roads and tracks within the RESEX</td></tr>
<tr><td>Frequency of monitoring/recording:</td><td>Annual</td></tr>
<tr><td>Value Applied:</td><td><table><tr><td>year</td><td>Number</td></tr><tr><td>2016</td><td>0</td></tr><tr><td>2017</td><td>0</td></tr><tr><td>2018</td><td>0</td></tr><tr><td>2019</td><td>0</td></tr><tr><td>2020</td><td>75 women</td></tr></table></td></tr>
<tr><td>Monitoring equipment</td><td>Spreadsheet with the list of families and residents of RESEX</td></tr>
<tr><td>GQ/CQ procedures to be applied</td><td>Validation of the systematized information with ASMOREX and CES Rioterra.</td></tr>
<tr><td>Purpose of data</td><td>Provide information about the benefits generated to the community through the REDD+ Project for the maintenance of roads, sidings, and bridges.</td></tr>
<tr><td>Calculation Method</td><td>Counting the families and residents of RESEX based on evidence</td></tr>
<tr><td>Comments</td><td>-</td></tr>
</table>

From the perspective of women's participation in decision-making on Project's activities, they were able to contribute through their participation in General Meetings, as well as by occupying leadership positions in ASMOREX, making it possible for them to act even more directly in decision-making about the lives of community members and the progress of the project. This leadership position was achieved thanks to the training courses in administrative and financial management, presented in section 4.3.1, specifically on the theme of social organization. Moreover, it is important to emphasize that in these specific courses taught by Rioterra, part of the seats were reserved for women, in order to contribute to gender equality.

The parameters "Training for women" and "Number of women in leadership positions in ASMOREX and COOPEREX" were designed to monitor these achievements by women.

The survey of the parameter "Training for women" considered the indicator "Participants in courses", filled in section 4.3.1, for the activity of promoting workshops for training in management and finance to members of the board of ASMOREX, restricting its count only to the female group present in these trainings. Thus, it was considered in this analysis the training in social strengthening, administrative and financial management, social organization and cash flow updating.

The parameter "Number of women in leadership positions at ASMOREX and COOPEREX" was filled in through the results found in the minutes of the General Meeting held on December 6, 2014, electing Maria da Conceição Macedo Santos as vice president, Sandra Neves de Oliveira as first secretary, Sebastiana da Mota Souza as first treasurer, and through the minutes of the General Meeting held on February 8, 2018, in which the voting of the new ASMOREX board of directors was carried out. In relation to the director's council, Sebastiana da Mota Souza became the treasurer and Sandra Neves de Oliveira became the secretary, and in relation to the fiscal council, Maria do Socorro da Silva Viana became the president. COOPEREX was not considered in the parameter because, as described in section 2.2.4, due to some legal and management problems, the cooperative's activities were temporarily halted, and no action related to the actions of community members in this institution was accounted for in the monitored period. During the monitored period, the attributions previously established to COOPEREX were attributed and carried out by ASMOREX.

<table>
<tr><td>Data / Parameter</td><td>Training for women</td></tr>
<tr><td>Data unit</td><td>Number</td></tr>
<tr><td>Description</td><td>Number of qualified women in management and leadership courses</td></tr>
<tr><td>Source of data</td><td>Project Activity Reports and Attendance Lists</td></tr>
<tr><td>Description of measurement methods and procedures to be applied</td><td>The courses and training carried out with the women of RESEX Rio Preto-Jacundá were registered in an activity report (all made available to the VVB team), in addition to having a presence list and photographic record.
From the attendance lists, it was possible to count the number of women participating in each course.</td></tr>
<tr><td>Frequency of monitoring/recording</td><td>Annual</td></tr>
<tr><td>Value monitored</td><td><table><tr><td>Year</td><td>Number of trained women</td></tr><tr><td>2016</td><td>0</td></tr><tr><td>2017</td><td>41</td></tr><tr><td>2018</td><td>5</td></tr><tr><td>2019</td><td>9</td></tr><tr><td>2020</td><td>0</td></tr></table></td></tr>
</table>

Monitoring equipment	Attendance lists and photographic records
QC/CG procedures to be applied	In all courses, workshops and trainings carried out, an attendance list was passed (containing space to fill in the name, CPF, telephone number, Institution/Entity belonging and signature).
Purpose of the data	Provide information on the benefits generated to the community through the REDD+ Project.
Calculation method	Counting in spreadsheet and/or directly in attendance list
Comments	-

Data / Parameter	**Number of women in leadership positions in ASMOREX and COOPEREX**
Data unit	Number
Description	Number of women on the board of the Resex organizations
Source of data	Project Activity Report and General Meeting Minutes
Description of measurement methods and procedures to be applied	Elections for the Board of Directors of ASMOREX and COOPEREX are held in a Community Meeting. At all Meetings, records are made in minutes, which were used to measure this indicator. These elections are also mentioned in Activity Reports, as it is common to have photographic records.
Frequency of monitoring/recording	Annual
Value monitored	Year / Number of women in leadership positions 2016 / 3 2017 / 3 2018 / 3 2019 / 3 2020 / 3
Monitoring equipment	General Meeting Minutes
QC/CG procedures to be applied	Minutes are done at every Meeting, which are subsequently registered in the notary's office.
Purpose of the data	Provide information on women empowerment within the Rio Preto-Jacundá RESEX
Calculation method	Counting directly in the minutes of investiture
Comments	During the monitored period, there was 1 ASMOREX board election of ASMOREX's board of

	directors,was held; however, assince the term of board officemandate lasts 3 years, the participation of women referring towas counted annually for the current year of administration performance was recorded annually, including the managementadministration that began in 2014.

4.4.4 Benefit Sharing Mechanisms (GL2.6)

From participatory workshops held during 2014, it was decided on the mission, characteristics, form of conflict resolution, governance, among others, of a financial mechanism that should guide the sharing of benefits of the REDD+ Project for the existing communities within of RESEX Rio-Preto Jacundá, as mentioned in section 2.2.3, this mechanism was renamed the "REDD+ Jacundá Financial Mechanism". The diagram shown in Figure 12 was created and approved in plenary to represent the flow of investments in the Project.

Figure 12 - Structure of the RESEX Rio Preto-Jacundá Fund

The Financial Mechanism is guided by collegiate management, representative and committed to the community's concerns, by the transparency and publicity of all its acts, by the application of benefits and resources exclusively directed to the RESEX community collectivity, by the representative participation of Community members, by credibility and legality, and for environmental conservation. With the objective of financially supporting RESEX, being the instrument indicated for the sharing of benefits coming mainly from the resources of the REDD+ Project.

As pointed out in section 4.3.1, annually, prior to the year to be in force, a decision process is carried out to choose activities considered priority according to the vision of the community, based on the Life Plan, the Action Plan, and in other suggestions or demands that arise from the communities. The process is run by the Executive Secretariat of the REDD+ Financial Mechanism (composed by Biofílica,

ASMOREX and CES Rioterra), to understand the current situation, considering the needs and social context of the communities and the project's financial context, to list the priority activities to be carried out in a given year.

As a result of this process, the Work Plan is created, which consists of prior planning on the Project's activities in the current cycle. As provided for in ASMOREX's Bylaws, this plan is presented to the RESEX community members, which will be approved via the Extraordinary General Meeting. In order to achieve the participation of a greater number of community members in the decision-making process, the notice announcing the Assembly is published in a widely publicized newspaper at least 15 days in advance. Furthermore, the community members receive logistical support for their displacement to the auditorium where the Assembly will take place. After 6 (six) months of approval, the Annual Work Plan can be evaluated and revised, and adjustments can be made, if necessary, and the revision is submitted for deliberation by the Community, via a General Meeting to be constituted extraordinarily.

Currently, the document that celebrates the agreement for the constitution of the REDD+ Jacundá Financial Mechanism is in its final stage of preparation, however the activities described in the tool have been in practice in the project since the beginning of carbon credit sales, in fact this documentation will only serve to legally formalize the good practices described above that are already applied by the project proponents.

4.4.5 Governance and Implementation Structures (GL2.8)

During the structuring of the Rio Preto-Jacundá RESEX REDD+ Project, the community chose to create a management/deliberation body called the "Steering Committee". However, as presented in section 2.2.4, some difficulties created barriers in the formation of this Committee, and its attributions were basically directed to the Implementation Instance, made up of ASMOREX, Biofílica and CES Rioterra, which were therefore responsible for including the residents in the decision-making and implementation of the Project.

The procedures related to decision making and the implementation of project activities are open to the participation of the communities in the way they are proposed, from the beginning of the project design. As described in section 2.6.2 of the PD, in March 2014 a Life Plan was developed with the objective of identifying the actions that would benefit the community and that could be carried out linked to the REDD+ Rio Preto Jacundá Project, considering the local reality, beliefs, values and principles of the community.

The construction of this plan occurred in a participatory manner among community members during a workshop structured in different dynamics. Two dynamics were essential to define the activities to be carried out: the SWOT (strengths, opportunities, weaknesses, and threats) dynamics, which enabled the identification of the focal problems of the communities, and the Action Plan dynamics, in which the community members were encouraged to build a set of proposed activities, with objectives, people responsible, partnerships, results, and a budget estimate, considering the local reality, beliefs, values, and community principles.

Community participation in the implementation of Project activities continued via meetings, as described in section 4.4.4, mainly because one of the principles of the Financial Mechanism is the "Representative Participation of Community Members".

Through Extraordinary and Ordinary General Meetings, internal meetings, and/or meetings with other stakeholders (SEDAM, CDREX, Rioterra), space is given to all community members who are interested in participating in decision making, giving their opinions, answering questions, or demanding clarifications, and these spaces are democratic and open to the public of interest.

Furthermore, it is important to emphasize that all the decisions come somehow from the community, since ASMOREX, one of the project proponents that participates at the forefront of the project's decisions, is made up of RESEX residents. More information about the implementation of ASMOREX as co-manager of the RESEX can be found in ASMOREX's Social Statute.

4.4.6 Smallholders/Community Members Capacity Development (GL2.9)

Among the investment thematic axes, training activities took place on several fronts, as pointed out in sections 4.1, 4.1.3, and 4.3.1. These were divided in the PD considering human, social, financial and natural capital, and for this RM the human and social were considered together, different from the way reported in the PD. The capabilities of RESEX residents were improved in the following aspects:

• Human and social capital: investment in infrastructure for better access to information (telecentre and internet access), training focused on computing, administrative and financial management, and strengthening and social organization, serving both ASMOREX board members and the other community members of RESEX, enabling such knowledge to be applied in the administration of the common good. The benefits achieved by each activity were monitored through the following indicators:

<table>
<tr><td>Data / Parameter</td><td colspan="2">Families benefited by REDD+ Project</td></tr>
<tr><td>Data unit</td><td colspan="2">Number of families</td></tr>
<tr><td>Description</td><td colspan="2">Number of families benefited by the Project's investments in the construction of the telecenter and the acquisition of IT materials</td></tr>
<tr><td>Data source</td><td colspan="2">Project activity reports and list of Project families and residents</td></tr>
<tr><td>Description of measurement methods and procedures to be applied</td><td colspan="2">Analysis of the actions carried out by the Project and the community benefited, such as: infrastructure, obtaining equipment, equipment maintenance and software installation.</td></tr>
<tr><td>Monitoring/recording frequency</td><td colspan="2">Yearly</td></tr>
<tr><td>Monitored value</td><td>Year</td><td>Number of Families</td></tr>
<tr><td></td><td>2016</td><td>0</td></tr>
</table>

	2017: 0 2018: 0 2019: 33 2020: 33
Monitoring equipment	Spreadsheet listing families and residents of RESEX
QC/CG procedures to be applied	Validation of systematized information with ASMOREX and CES Rioterra.
Data purpose	Provide information on the benefits generated to the community through the investments made by the REDD+ Project in the construction of the telecenter and in the acquisition of computer materials.
Calculation method	Spreadsheet count of the list of families and residents of RESEX
Comments	-

Data / Parameter	**Number of courses and training**
Data unit	Number
Description	Number of courses and training within the thematic axes of the project for training in management and finance for ASMOREX board members and strengthening and social organization
Data source	Project Activity Reports and Attendance Lists
Description of measurement methods and procedures to be applied	The courses and training carried out with the residents of RESEX Rio Preto-Jacundá were recorded in an activity report (all made available to the VVB team), as well as having an attendance list and a photographic record.
Monitoring/recording frequency	Annual
Monitored value	Year: Number of Courses 2016: 0 2017: 5 2018: 1 2019: 3 2020: 0
Monitoring equipment	Attendance list and photographic records
QC/CG procedures to be applied	In all courses, workshops and trainings carried out, an attendance list was passed (containing space to fill in the

	name, CPF, telephone number, Institution/Entity belonging and signature).
Data purpose	Provide information on the benefits generated to the community through the REDD+ Project.
Calculation method	Count of courses taken
Comments	-

Data / Parameter	**Course participants**
Data unit	Number
Description	Number of people who participated in courses offered within the thematic axes for training in management and finance to ASMOREX board members and strengthening and social organization
Data source	Project Activity Reports and Attendance Lists
Description of measurement methods and procedures to be applied	The courses and training carried out with the residents of RESEX Rio Preto-Jacundá were recorded in an activity report (all made available to the VVB team), as well as having an attendance list and a photographic record. From the lists, it was possible to count the number of participants in each course.
Monitoring/recording frequency	Annual
Monitored value	Year / Number of Course Participants 2016: 0 2017: 79 2018: 15 2019: 31 2020: 0
Monitoring equipment	Attendance lists and photographic records
QC/CG procedures to be applied	In all courses, workshops and trainings carried out, an attendance list was passed (containing space to fill in the name, CPF, telephone number, Institution/Entity belonging and signature).
Data purpose	Provide information on the benefits generated to the community through the REDD+ Project.
Calculation method	Counting in spreadsheets and/or directly in attendance lists
Comments	-

• Financial capital: training related to income generation, such as the açaí, cassava and fruit production chain and good practices in the processing of açaí and cassava flour. The benefits achieved by each activity were monitored through the following indicators:

Data / Parameter	**Number of courses and training**
Data unit	Number
Description	Number of courses and training complementary to technical assistance activities
Data source	Project activity reports
Description of measurement methods and procedures to be applied	The courses and training carried out with the residents of RESEX Rio Preto-Jacundá were recorded in an activity report (all made available to the VVB team), as well as having an attendance list and a photographic record.
Monitoring/recording frequency	Annual
Monitored value	Year: Number of Courses 2016: 0 2017: 0 2018: 3 2019: 0 2020: 1
Monitoring equipment	Attendance list and photographic records
QC/CG procedures to be applied	In all courses, workshops and trainings carried out, an attendance list was passed (containing space to fill in the name, CPF, telephone number, Institution/Entity belonging and signature).
Data purpose	Provides information on the benefits generated to the community through the REDD+ Project.
Calculation method	Count of courses taken
Comments	-

• Natural capital: training aimed to botanical identification, assisting forest management within RESEX, and to biodiversity monitoring in order to prepare RESEX residents to have an on-site team trained and involved in the process. The benefits achieved by each activity were monitored through the following indicators:

Data / Parameter	**Number of courses and training**
Data unit	Number

Description	Number of courses and training within the project's thematic axes
Data source	Project Activity Reports and Attendance Lists
Description of measurement methods and procedures to be applied	The courses and training carried out with the residents of RESEX Rio Preto-Jacundá were recorded in an activity report (all made available to the VVB team), as well as having an attendance list and a photographic record.
Monitoring/recording frequency	Yearly
Monitored value	Year / Number of Courses: 2016: 0; 2017: 0; 2018: 1; 2019: 1; 2020: 3
Monitoring equipment	Attendance list and photographic records
QC/CG procedures to be applied	In all courses, workshops and trainings carried out, an attendance list was passed (containing space to fill in the name, CPF, telephone number, Institution/Entity belonging and signature).
Data purpose	Provide information on the benefits generated to the community through the REDD+ Project.
Calculation method	Count of courses taken
Comments	-

Data / Parameter	**Course participants**
Data unit	Number
Description	Number of people who participated in the courses offered within the thematic axes
Data source	Project Activity Reports and Attendance Lists
Description of measurement methods and procedures to be applied	The courses and training carried out with the residents of RESEX Rio Preto-Jacundá were recorded in an activity report (all made available to the VVB team), as well as having an attendance list and a photographic record. From attendance lists, it was possible to count the number of participants in each course.
Monitoring/recording frequency	Yearly
Monitored value	Year / Number of Course Participants

	2016	0
	2017	0
	2018	1
	2019	22
	2020	26
Monitoring equipment	Attendance lists and photographic records	
QC/CG procedures to be applied	In all courses, workshops and trainings carried out, an attendance list was passed (containing space to fill in the name, CPF, telephone number, Institution/Entity belonging and signature).	
Data purpose	Provide information on the benefits generated to the community through the REDD+ Project.	
Calculation method	Counting in spreadsheets and/or directly in attendance lists	
Comments	-	

5 BIODIVERSITY

5.1 Net Positive Biodiversity Impacts

5.1.1 Biodiversity Changes (B2.1)

Change in Biodiversity	Reduction of unavoidable and unplanned deforestation
Monitored Change	During the monitored period, except for 2017 and 2019, it was identified that the deforestation predicted in the baseline was greater than what occurred. In other words, there was a reduction in unavoidable and unplanned deforestation both in the project area and in the leakage belt.

	Ex-ante of deforested area in PA (ha)	Ex-post of deforested area in PA (ha)
2016	1,291	954
2017	1,525	1,177
2018	1,290	361
2019	1,314	2,276
2020	1,288	725

	Ex-ante of deforested area in LK (ha)	Ex-post of deforested area in LK (ha)

	<table><tr><td>2016</td><td>289</td><td>194</td></tr><tr><td>2017</td><td>374</td><td>615</td></tr><tr><td>2018</td><td>430</td><td>254</td></tr><tr><td>2019</td><td>393</td><td>75</td></tr><tr><td>2020</td><td>447</td><td>91</td></tr></table> Overall, a total change of 6,527 ha in the Project Area and 1,933 ha in the Leakage Belt, caused by deforestation, was predicted in the baseline (Section 3.2.1 and table above). However, according to the deforestation monitoring data conducted over these years and already pointed out in this report (Sections 3.2.2. and 3.2.3. and in the tables above), the total change that occurred during this monitoring period was 5,493 ha in the Project Area and 1,229 ha in the Leakage Belt, representing 15.8% and 36.4% less than expected, respectively. In 2019, a drastic change in land use (deforestation) occurred and exceeded the baseline deforestation forecast described in the PD. Despite 2019, deforestation that occurred below the baseline forecast resulted in qualitative changes, such as conservation and maintenance of forest integrity and existing ecological processes, reducing soil erosion, contributing to the conservation of water quality, maintaining genetic variability of plant and animal species, important for resilience to pests and diseases, pollination and climate regulation, reducing extinction risks, and conserving forest cover, which acts as a protective shield against winds and storms. In addition, mitigating actions are proposed for biodiversity remains stable over time (Section 5.1.2. below).
Justification of Change	The deforestation data survey and accuracy verification, via satellite images and in the field, are described in section 3.1.3. In addition to the monitoring of forest coverage through satellite images, other activities influenced the results obtained during the monitored period: the frequent conduct of patrol rounds by SEDAM; the development of sustainable forest management activities; the preparation of the Multiple Use Management Plan, which strengthens the governance of RESEX; and the realization of social and environmental actions with communities (which permeate "the great theme" about the importance of sustainable use and maintenance of natural resources), such as technical assistance activities carried out by ASMOREX, the training course for fauna biodiversity monitors given by Ecoporé and the monitoring of biodiversity carried out by the community, and the diagnosis of production chains (Brazil nut, cassava flour and açaí). Details of these actions are found in sections 4.1.2, 4.1.3, 4.2, 4.3.1, 5.1.2, 5.1.3, 5.2 e 5.3.1.

	It is even mentioned here that the Project as a whole, through the opportunity for work and income generation associated with the project activities, infrastructure work built, the courses offered (even those that have not directly addressed the theme of environmental conservation , but which work in the empowerment of community members and in the perception of "being a community in a RESEX") and other moments of exchange with community members (during the Assemblies, for example), have been raising awareness among RESEX residents and showing that it is possible to improve the quality of life and conserving the forests at the same time, which directly culminates in less internal pressure on the forest.

Change in Biodiversity	Biodiversity Conservation
Monitored Change	The results of the monitoring of biodiversity carried out in the monitored period show that the presence of large areas of native forests in the landscape promotes the maintenance of regional fauna communities. It is noticed an increase in the registration of species with some degree of threat (NT; VU; EM) when comparing the 2013 diagnosis with the 2020 monitoring (carried out by Ecoporé), increasing from 24% to 31%. In the 2020, carried out by Ecoporé, there were 42 species, 18 of which were mammals, 14 were birds and 10 were butterfly tribes, 6 of which also appeared on the list of threatened species. Among the threatened species, there is the spider monkey (*Ateles chamek*), which has a higher degree of threat, being in the “Endangered” (EN) category. Regarding flora, it is possible to mention the most representative monitoring in the monitored period, the diagnosis of the vegetation of the RRPJ, which took place in 2015 and 2016. This diagnosis served to support the elaboration of the RESEX’s PMUM. In it, it was possible to verify that RESEX has about 228.39 indiv./ha considering the 471 species found in the forest inventory. In addition to these, the diversity indices showed satisfactory and surprising values and were within the expected values for the region. In relation to threatened and protected species, about 6 species were observed in the category (VU) of the list of threatened species (Brazil nut tree, Spanish Cedar, Sucupira-amarela, Angelim-pedra, Itaúba, and Garapeira) and 4 species protected by law , being 3 species of Rubber Tree and the Brazil nut tree. It was also possible to verify the existence of about 114 possible rare species (little abundant) in RESEX, as well as indicator species. Finally, through data from sustainable forest

	management, it was observed that the permanent plots have an average plant community diversity of 25 species/ha. Therefore, the changes monitored for the conservation of biodiversity were considered real, positive and direct, since both the Fauna Biodiversity Monitoring Report (conducted by Ecoporé) and the flora values found in the diagnosis of the plant community and in the analysis of the permanent parcels give the Project Area the status of conserved forest. Detailed monitoring results can be found in the respective reports (available to the VVB team) and in Section 5.3. of that document.
Justification of Change	The positive impact on biodiversity conservation is a result both of the actions to contain deforestation, described in the previous table, and of the best practices carried out in Forest Management (mainly reflecting on the fauna). In addition, it can be mentioned that all activities carried out in the Project aim to mitigate the impacts generated on biodiversity, the sustainable use of natural resources and the maintenance of the forest. Another important factor is the development of scientific research that results in knowledge of the local biodiversity. It is important to highlight that biodiversity monitoring is essential to understand and moderate the extent of climate change and mitigate its negative impacts. Details of these actions are found in sections 4.2.2, 4.3.1, 5.1.2, 5.1.3, 5.1.4, 5.2 and 5.3.1.

5.1.2 Mitigation Actions (B2.3)

As described in section 4.1.2, the population increase and the occupation of new regions within the project zone, can trigger a scenario of negative impacts related to biodiversity. This is because this population growth and occupation are likely to come together with more invasive technical knowledge of hunting and fishing, which could lead to overhunting and overfishing. The increased pressure on low-abundance species is another possible scenario of negative impacts on biodiversity (as described in PD, section 7.2).

As a method to ensure the preservation of the natural ecosystem, biodiversity, potential for environmental education and, allied to this, the maintenance of the extractivist's lifestyle and the more sustainable use of natural resources, the RESEX participatory zoning was prepared, as a measure of the Multiple Use Management Plan aiming to mitigate possible impacts on biodiversity. Therefore, the zoning was defined as follows:

Restricted Use Zone: where no human changes that cause medium and large impact are tolerated, being limited to scientific research activities, monitoring and protection, collection and extraction of non-

timber products, which must be carried out in a restricted manner and with low impact. Its main purpose is the preservation in order to ensure the reproduction of RESEX's fauna and flora;

Forest Management Zone: specially designed for the execution of Community Forest Management activities with the purpose of generating income and improving the quality of life of the community and sustainable use of biodiversity. Therefore, its purpose includes promoting the recovery of degraded areas, the possibility of managing species of economic and cultural interest, in addition to other activities with low impact;

Traditional Use Zone: created, for the most part, for areas intended for use by traditional extractive activities, with the premise of generating income and improving the quality of life of the local population. It can present some anthropic alterations, being subject to controlled interventions;

Multiple Use Zone: created, for the most part, for areas intended for use by RESEX extractive communities. Its premise is to carry out all activities provided for in the Multiple Use Management Plan and in the zoning. In addition, it allows activities related to the extractivist's traditional lifestyle, which should take place with a low impact on the natural environment;

Sacred Zone: Areas of historical or sacred interest. Permitted activities must take place with little or no impact on sacred sites.

In addition, the Multiple Use Management Plan planned the Buffer Zone, defined by Law No. 9.985/2000 as “the heart of a Conservation Unit where human activities are subject to specific rules and restrictions, with the purpose of minimizing the negative impacts on the UC.” Thus, the RESEX’s Buffer Zone has some purposes, such as: avoiding possible conflicts of social and economic activities, protecting watercourses that are fundamental for the maintenance of ecological processes and environmental services, restricting and/or dampening the pressure of human occupation, especially those that can threaten the conservation of RESEX's socio-biodiversity, enable the conservation of natural resources, develop actions for the conservation and restoration of Permanent Preservation areas and Legal Reserves, and mobilize players who can make up the RESEX Deliberative Council.

Furthermore, RESEX Rio Preto-Jacundá has a Usage Plan, established in the Multiple Management Plan insert IV, which contains rules for the use and rights and duties of residents, being used as a guide for residents on how to take care of natural resources. The rules are based on the principle of activities already carried out by the residents and also rules that comply with Brazilian Environmental Law.

As described in section 4.1.2, population growth and the occupation of new regions within the project area may trigger a scenario of negative impacts related to biodiversity. This is because this population growth and occupation are likely to come together with more invasive technical knowledge of hunting and fishing, which could lead to overhunting and overfishing. Based on this zoning and thinking about the potential impacts on biodiversity within the project area, zoning was an important instrument to reduce the pressure for hunting and fishing species, since there are specific zones for such activity, contributing to keep the levels of these species stable. In a complementary manner, by establishing zones

that are in dialogue with the extractivist lifestyle, zoning serves as a basis for guaranteeing the continuity of the species that serve as a source of food for the community members.

It is essential to monitor biodiversity in order to understand and moderate the extent of climate change and mitigate its negative impacts. Therefore, as a step following the elaboration of the Multiple Use Management Plan, monitoring of biodiversity was carried out (more detailed in section 5.3). The company ECOPORÉ carried out monitoring of RESEX's biodiversity in 2020 mapping species with some degree of threat, especially the *Ateles chamek*, a trigger species considered endangered. Therefore, carrying out biodiversity monitoring based on serious and well-defined rules and methodologies, as was the case, works as a mitigating and control practice, helping to maintain the levels of biodiversity and conservation status of flora and fauna species, as well as endangered, rare, and endemic species. Still in this context, it is important to keep in mind that the monitoring conducted relied on community participation, providing the empowerment of the community with regard to biodiversity and working as an important strategy to raise awareness about the fauna and flora through the eyes of the extractivists who live there. All these considerations can be better visualized in section 5.3.1.

Another possible scenario of negative impacts on biodiversity is the increased pressure on species of low abundance (as described in the PD, section 7.2). In contrast to this, during the monitoring period, we can mention the completion of the "Diagnosis of the Production Chains of Brazil Nut, Açaí and Cassava Flour Chains in the Rio Preto-Jacundá RESEX", carried out by the Pacto das Águas in 2020 (described in item 4.3.1). In this document, ways are proposed to strengthen these productive chains as an environmental and territorial management strategy, and as an alternative income generation for the population living in the RESEX. Thus, such diagnosis served to stimulate and tone up the sustainable exploitation of such species, which are considered abundant in the region, reducing the pressure on the less abundant and frequent ones and, as an effect, served as a mitigating measure to local biodiversity.

In order to avoid or minimize the negative impacts associated with biodiversity, ASMOREX has a series of operational procedures focused on strategies to reduce impacts that are monitored and linked to the Multiple Use Management Plan (PMUM). These procedures range from the pre-exploitation stage, in the planning of operations (opening and maintenance of roads and zoning of the area), to the post-exploitation stage, (such as the monitoring of damages and impacts) and with the post-harvest treatments and environmental monitoring. These procedures can be better visualized in section 3.1.3.

Finally, it is worth mentioning that all the operations involved in extractivism and forest management have specific work procedures and those involved maintain the standards of sustainable use of natural resources through empirical knowledge and field experience, aiming to mitigate the impacts related to biodiversity.

All functions involved in extractivism and forest management have specific work procedures and those involved maintain standards for the sustainable use of natural resources through empirical knowledge and field experience in order to mitigate impacts related to biodiversity. In addition, the institution

responsible for monitoring biodiversity (ECOPORÉ) provided specific training for residents, with the aim of having a trained team involved in the field process.

5.1.3 Net Positive Biodiversity Impacts (B2.2, GL1.4)

The activities proposed in the REDD+ RESEX Rio Preto-Jacundá Project aim to generate several benefits to the climate, communities, and biodiversity. The main benefits related to biodiversity are associated with the reduction of deforestation and forest degradation and the conservation of biodiversity and habitats. Despite all the problems faced with invasions and deforestation in the years 2017 and 2019, the RESEX Rio Preto-Jacundá is still an area of great importance for maintaining biodiversity.

Deforestation not only directly reduces the number of plant specimens, including endangered species, but also threatens faunal diversity through habitat loss and degradation. Most animal species have a close and specific relationship with the environment in which they live, and the loss of habitats can lead to the extinction not only of species directly dependent on this environment, but also of species related to it, causing a cascade effect. If not extinct, genetic erosion of the species still poses a risk. In extreme cases, habitat loss can lead to the extinction of key ecosystem processes (GROOM & VYNNE, 2006). Habitat loss, degradation and fragmentation can also lead to the edge effect, the dominance of invasive species and increased susceptibility to the effects of climate change. All these combined effects would enhance the extinction process of more sensitive and endemic species.

Given the context, it is important to remember that it has been identified in the biodiversity monitoring studies since the beginning of the project that several species are endemic to the region, as well as many being on the IUCN red list of threatened species, and that the presence and maintenance of the forest in this location is of extreme importance in the maintenance of such species in the short and long term.

It is in this sense that the reduction in deforestation and the positive results found in the Biodiversity Monitoring Reports (detailed in Section 5.3.1 and in full versions made available to the VVB) are so important, and therefore it is assumed that all negative impacts not generated to the ecosystem are considered net positive impacts on biodiversity.

It is also valid to say that the implementation of the project's activities directly and positively impacts biodiversity, acting to maintain the vegetation cover and species that are already in suitable environmental conditions and abundance and with good levels of conservation. These positive impacts result mainly from avoided deforestation, the monitoring of deforestation and biodiversity, technical assistance, environmental education workshops, and capacity building and training courses. As an example, we can cite the basic training in botanical identification given to community members on July 2, 2020 (mentioned in section 4.3.1.4), an important action with regard to biodiversity in order to prepare and empower residents for biodiversity monitoring (section 5.3.1). In this sense, an empowered community, aware of the exuberant richness of the place it inhabits, works as a real net benefit for biodiversity. This social nature of the use of

biodiversity by communities residing in RESEX is covered in the Multiple Use Management Plan and in the activities related to it. Such activities generate positive impacts, barring invaders and ensuring the continuity of natural resources.

It can be said, therefore, that there are several positive impacts generated and/or maintained related to biodiversity, which go beyond the reduction of deforestation and forest degradation within the Project Area, encompassing all indirect positive impacts, related to both the monitoring of biodiversity and the diagnosis of productive chains (described in items 4.3.1. and 5.1.2. above) and the strengthening of the socio-environmental component, with the traditional way of life of the residents helping to maintain the quality of biodiversity in the RESEX.

5.1.4 High Conservation Values Protected (B2.4)

Since it is a Conservation Unit and has already registered endemic species, as well as threatened, vulnerable or endangered species for both fauna and flora, RESEX can be classified as an area that concentrates attributes of high value for biodiversity conservation. In addition, the extractivist and riverside population has a close relationship with biodiversity, whether for food, medicine, or a source of income.

The fauna diagnosis, carried out by the company ECOPORÉ (2020), also shows the importance of RESEX for the maintenance of fauna diversity, preserving endangered species (4 fauna species in the “Almost Threatened” category (NT), 1 species in the category “Endangered” (EN) and 5 in “Vulnerable” (VU)), as well as important environments for its maintenance. The species of fauna with some degree of threat registered in the diagnosis, totaled 19%. On the other hand, it is perceived that there is an increase in the registration of species with some degree of threat (NT; VU; EM) when we compare the diagnosis in 2013 with the monitoring in 2020, rising from 24% to 31%.

It is important to highlight the presence of the spider monkey species (*Atheles Chamek*), which has great biological importance, because it is a large primate, is a seed disperser, has high sensitivity, and mainly because it appears as Endangered by the IUCN Red List. The species has great abundance in the Project Area compared to other areas (Fazenda Manoa), even in areas of sustainable use. The primate's ecology is disadvantaged in the scenario without the project, as it lives in trees emerging from the upper part of the forest canopy, which reinforces the importance of maintaining RESEX for the species.

ECOPORÉ's Biodiversity Monitoring Report (see Section 5.3.1 for further details) shows that the Project Area's forests have a high degree of conservation and balance, even in areas where forest harvestinf occurred some time ago and points out that the traditional lifestyle of the residents helps to preserve the quality of the area. Indicators such as the presence of animals with some degree of threat, and even the increase in this presence, can emphasize the conservation and balance of the forest in RESEX, and its importance for such species.

Another important indicator to analyze the conservation and balance of the local flora is the presence of frugivorous butterflies. Their continuous monitoring can be a tool to predict and be able to act quickly to any possible change in the environment, as they have a short life cycle and respond well to quality, balance and natural or anthropogenic changes in the environment. In a general panorama, the signature of the profile of this monitoring target in the RESEX Rio Preto-Jacundá presents itself in equilibrium in the proportion of tribes expected for the Amazon region.

The last consideration of relevance for conservation is the existence of natural pits, beaches, and lakes inside the RESEX, which can also be considered as attributes for conservation, since they are areas of high relevance for the maintenance of the species.

5.1.5 Invasive Species (B2.5)

There was no introduction or increase of invasive species in any area involved by the project, thus in line with what was foreseen in the planning – section 7.2 of the PD. The actions developed in the verified period (which basically consisted of low-impact forest management activities, monitoring of deforestation, patrolling the project area, training and capacity building with workers and the population, and conservation practices and reduction of impacts on biodiversity, as well as its monitoring), did not involve the manipulation or introduction of invasive species.

5.1.6 Impacts of Non-native Species (B2.6)

In line with what was previously mentioned in section 5.1.5, the REDD+ RESEX Rio Preto-Jacundá Project did not manipulate or introduce non-native species and the Project encourages the use of native species by local communities. Furthermore, in the second report of the diagnosis carried out by the Pacto das Águas in the RESEX (in 2020), presented in section 4.3.1.3, it is pointed out that of the 24 families in the RESEX that were interviewed, 21 said they collect Brazil nuts, 15 are involved in the açaí activity, and 23 said they work with cassava flour. In this way, the main crops that generate a source of income for the producers served by the project are based on the development and production of native species.

However, it is noted that some non-native species are used by local communities, mostly on a small scale and without presenting an adverse impact on the environment. Taking this into consideration and based on the vegetation diagnosis performed in 2015 and 2016 (made available to the VVB and described in section 5.3), the non-native species used are beneficial for serving as food for humans and animals, such as lemon, Citrus Limonium, orange, Citrus sinensis, avocado, Persea americana Mill, mango, Mangifera indica, among others.

It was also identified in the mentioned diagnosis that some exotic (and environmentally damaging) grass species were introduced into the RESEX RPJ mainly by invaders, in order to form pastures, such as

brachiaria grass - Brachiaria decumbens Stapf cv Comum and Brachiaria brizantha (A. Rich.) Stapf vr. Marandu, which are of African origin. Despite being considered aggressive and competing species to native vegetation, it was not identified any area seriously compromised by these grasses, only several points in the RESEX, usually in anthropized areas, not pointing out any eminent concern in the control of these species.

5.1.7 GMO Exclusion (B2.7)

Through the REDD+ RESEX Rio Preto-Jacundá Project, it was ensured that no Genetically Modified Organism (GMO) was used, as provided for in the PD. It is also guaranteed that the seeds and seedlings of forest and agricultural species provided to the communities are not GMOs. The reduction or removal of greenhouse gas emissions was achieved through the reduction of deforestation and forest degradation.

Furthermore, in line with section 5.1.5, the actions developed in the verified period, which basically consisted of low-impact forest management activities, monitoring of deforestation, patrolling the project area, training and qualification for workers and the population, and conservation practices and reduction of impacts on biodiversity, as well as its monitoring, did not involve the manipulation or introduction of genetically modified organisms.

5.1.8 Inputs Justification (B2.8)

Through the REDD+ RESEX Rio Preto-Jacundá Project, there was no use of fertilizers, chemical pesticides, biological control agents or any other input related to these practices mentioned, as provided for in the PD (Section 7.2). Moreover, ASMOREX only provides technical assistance to the community, and does not provide seedlings and does not support, until then, the use of inputs, pesticides, and seedlings with a productive goal.

5.2 Offsite Biodiversity Impacts

5.2.1 Negative Offsite Biodiversity Impacts (B3.1) and Mitigation Actions (B3.2)

A likely negative impact outside the project zone is associated with leakage and pressure from hunting and fishing activities in areas adjacent to the RESEX boundaries. However, when analyzing the biodiversity monitoring conducted in the project area, it is possible to observe that the fauna indices are adequate even for animals that are often targets of hunting within and outside the RESEX, as they are culturally hunted.

On the access roads to the communities, mammals and terrestrial birds that are plausible to be hunted were observed, evidencing a low pressure for hunting these animals beyond the project limits. It was also not identified within the project area a densification of fauna, which could occur due to pressure outside the project boundaries (migration into the RESEX, due to hunting and overfishing outside the project area).

As a result, there is no evidence of visible negative impacts on biodiversity outside the project zone. This absence of negative impacts is mainly because the project has an important regional role in maintaining biodiversity, which favors the scenario of conservation and connectivity with the surrounding forest fragments. Another very commendable point is that the forest has excellent quality for the survival of biodiversity, tiction attested by the sightings of top-of-the-chain carnivores, such as onça-pintada (Jaguar - Panthera onca), and animals that need large living areas to maintain their populations, such as the “queixadas” (White-lipped Peccary - Tayassu pecari). Besides, just seeing animals of this size confirms that the project area, as well as its surroundings, presents an ecological balance in the food chain.

That said, the act of monitoring biodiversity within the project area is essential to evaluate the biodiversity behavior within the boundaries of RESEX and adjacent areas, functioning as an important instrument for mitigating impacts on biodiversity inside and outside the project zone.

Another point that served as a great support to minimize negative impacts on biodiversity outside the project area were the patrol rounds by SEDAM within RESEX and in other Conservation Units in an unsystematic and sporadic way. Such activity is further described in section 3.1.3 of this document.

Finally, it is important to say that outside the project zone, all interested parties, when identifying any negative impact or dissatisfaction can contact the channel that accesses the project Implementing Body, formed by ASMOREX, CES Rioterra and Biofílica, or by e- mail, telephone or in person. Within the monitored period, no such dissatisfaction was reported.

5.2.2 Net Offsite Biodiversity Benefits (B3.3)

As mentioned in the section 5.2.1 above, no negative impacts on the Project Zone's biodiversity caused by the activities developed were detected, in the same way that leakages were not detected. Mitigating actions on possible negative impacts (such as forest cover monitoring activities by satellite images; biodiversity monitoring; frequent patrolling by the heritage surveillance SEDAM team; good practices in Sustainable Forest Management, strengthening governance of the property and seeking a minimum impact on biodiversity; the preparation of the Multiple Use Management Plan; greater engagement of local communities in biodiversity monitoring activities; workshops and training; and in the sustainable use of natural resources and maintenance forest), promoted the conservation of biodiversity in the region and avoided negative impacts.

The activities that took place within the project area promoted the conservation of biodiversity, which plays an important role in maintaining biodiversity in the surrounding area, through connectivity with

other Conservation Units in the region. This connectivity between fragments constitutes a large and resilient conservation system, making significant improvements in the quality of life of local populations.

5.3 Biodiversity Impact Monitoring

5.3.1 Biodiversity Monitoring Plan (B4.1, B4.2, GL1.4, GL3.4)

5.3.1.1 The choice of monitoring methodology

The In situ biodiversity monitoring methodology was developed, built collectively and with technical-scientific excellence over the years, which includes protocols for the planning and implementation of the In situ Biodiversity Monitoring Program in protected areas, procedures for sampling the four groups of biological indicators selected in the Program, as well as identification guides, field sheets and training booklet for monitoring (all available to VVB) (NOBRE, 2014)[1]. The first paragraph of the document "Biodiversity Monitoring: Methodological guide for application of monitoring" summarizes the purpose and premises of the Monitoring Program:

> "Monitoring the condition of biodiversity within protected areas, especially observing those groups of indicators that are relevant to guide decisions on preventive and mitigating actions against the effects of climate change, is one of the emerging global demands. And for initiatives aimed at this end to achieve financial sustainability and temporal continuity, it is necessary to think of integrated programs within a broad monitoring system, which allows for obtaining accurate and comparable data, but also obtained at affordable costs and under a perspective that produces useful information for the management of these spaces (NOBRE, 2014, p.10)."

It is important to remember that this roadmap is a project of the Brazilian government, coordinated by the Ministry of Environment (MMA) and the Chico Mendes Institute for Biodiversity Conservation (ICMBio), in the context of the Brazil-Germany Cooperation under the International Climate Protection Initiative (IKI) of the German Federal Ministry for the Environment, Nature Protection, Building and Nuclear Safety (BMUB), and that it had full technical support through the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

This methodology brings a series of consolidated procedures and protocols and, after years of collective construction, offers a guide for the *in situ* monitoring of biodiversity in protected areas. Therefore, it offers a step-by-step approach based on guidelines on how to carry out the procedure in practice, providing a set of data capable of reflecting the conservation landscape found in the area where it is applied.

[1] NOBRE, R. A.; KINOUCHI, M. R.; CONSTANTINO, P. de A. L.; PEREIRA, R. C.; UEHARA-PRADO, M. **Monitoramento da biodiversidade: roteiro metodológico de aplicação.** Brasília: ICMBio, 2014. 40 p.

The methodology proposes a minimum of three sampling stations, guaranteeing that the data are consistent and have a scientific standard. The sampling protocols of the Monitora Program were designed considering two fundamental elements: replication, to guarantee the reproduction of a sample so that the results are confirmed at each event, and randomization, which guarantees that each sampling unit is selected at random. The incorporation of these two elements in the sampling protocols guarantees quality and scientific reliability to the collected data.

Considering the choice of locations where the sampling stations, also referred to as transects, will be implemented, some relevant considerations are made within the sampling design:

i) the assessments are restricted to the most representative forest physiognomies within the Conservation Unit;

ii) the eligible areas are analyzed to incorporate the environmental features of interest;

iii) aspects such as topography, slope, hydrography are evaluated, avoiding drastic relief variations and preferably with easy access;

iv) application of a 5km buffer around the first point drawn, preventing the adoption of another sampling station in order to guarantee data independence.

It is important to highlight that the protocols consider 4 relevant guidelines, one of them refers to implementation and execution of a sample at a reduced cost allowing the longevity of monitoring, regardless of the fluctuation of the financial contribution. In this way, the Program sought to achieve quality in the mapping with an adequate budget in order to guarantee the continuity of monitoring.

Additionally, the great opportunity of this format for monitoring biodiversity was to enable community participation in the collection and discussion of results, as they were the protagonists of the monitoring. Thus, being in line with the guidelines of Richards[2] (2011) to implement a biodiversity program that was simple, low-cost and that would be run by a team of experts together with local residents, called “community-based monitoring”.

According to Richards (2011), the involvement of community members in monitoring allows for some benefits such as the development of a greater sense of ownership and responsibility for the biodiversity objectives of a project, also resulting in community empowerment, as well as improvements in methods and results through the incorporation of local knowledge of community members about the region's biodiversity. Furthermore, Richards (2011) directs two recommendations, one scientific and one practical, which are in line with the adoption of transects, respectively:

i. Monitor indicators at fixed geographic locations within the Project zone, to minimize variation caused by geographic variation within the Project zone. Thus, justifying the second monitoring to be applied in the same transects of the Monitora Program.

[2] Pitman, N. 2011. Social and Biodiversity Impact Assessment Manual for REDD+ Projects: Part 3 – Biodiversity Impact Assessment Toolbox. Forest Trends, Climate, Community & Biodiversity Alliance, Rainforest Alliance and Fauna & Flora International. Washington, DC.

ii. Involve local residents or Project staff in monitoring that are feasible to ensure important benefits. Thus, the location of the transects closer to the communities allows for greater adhesion of these given the feasibility of access to the site and, mainly, the provision of greater security as it is a place far from deforestation pressures caused by illegal agents.

In addition, given the need to monitor biodiversity in a feasible manner, the solution is to monitor specific groups of animals and plants that respond predictably to environmental changes, called biological indicators. However, even though the monitoring of only certain groups of organisms with bioindication potential is more practical and feasible in logistic terms, there is still the barrier of taxonomic identification of these groups, which involves the need for specialists. In order to get around this barrier, the strategy of selecting indicators that are easy and quick to identify and that do not depend on the involvement of specialists is presented (PEREIRA et al, 2013)[3].

By being linked to this, the involvement of people in monitoring activities can be a mechanism for strengthening the management of the Conservation Unit and for promoting the conservation of biodiversity. In this regard, community involvement and participation in monitoring biodiversity is facilitated “by selecting biological indicators that are taxonomically easy to identify and that are part of the daily lives of those who live or use the Conservation Unit” (PEREIRA et al, 2013).

Many meetings were necessary for experts to reach a consensus on which groups could be included in the list of biological indicators. In addition to considering technical and scientific aspects (consultation with specialists in different taxonomic groups; a survey of the most renowned groups in international initiatives; and a survey of the groups most reported in the scientific literature), it was established that the indicators should have three characteristics: i) high rationality; ii) high performance; and iii) high possibility of implementation, as pointed out in Figure 13 (RIOTERRA & ECOPORÉ, 2019; PEREIRA et al, 2013).

At the end, four groups were selected as indicators: i) woody plants; ii) Large and medium-sized mammals; iii) Selected groups of birds; and iv) frugivorous butterflies. The result was a minimum set of practical biological indicators for monitoring, viable and useful for Conservation Unit management. Details of the selection process for these indicators and the characteristics of these groups that make them advantageous in monitoring can be found in Pereira et al (2013).

[3] PEREIRA, R. C.; ROQUE, F. O.; CONSTANTINO, P. A. L.; SABINO, J.; UEHARA-PRADO, M.; **Monitoramento in situ da biodiversidade: Proposal for a Brazilian Biodiversity Monitoring System.** Brasília / DF ICMBio, 2013, 61p.

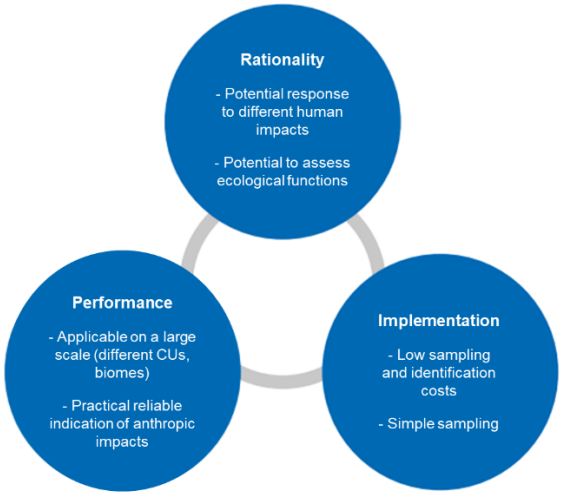


Figure 13 - Three defined characteristics for choosing biological indicators. Source: Pereira et al, 2013.

Another opportunity was to make it possible to compare the data with data obtained in other protected areas in the Amazon, including those from other categories in the same RESEX region. It is also possible in the future, according to the opportunities generated, to evolve to more advanced protocols, such as camera traps for birds and mammals (Terrestrial Vertebrates Monitoring Protocol – TEAM) and species-level identification of frugivorous butterflies. Having presented the trajectory, purposes and possibilities of the implementation of the in situ Biodiversity Monitoring Program, the choice of this methodology for the in situ monitoring of biodiversity in the RESEX (and, consequently, in the REDD+ Project), carried out in 2020 by ECOPORÉ, is justified.

5.3.1.2 Fauna monitoring

The monitoring of fauna biodiversity at RESEX Rio Preto-Jacundá was carried out in 2020 by the Ecological Station Guaporé – ECOPORÉ, followed the methodologies proposed in the in situ Biodiversity Monitoring Program (in Portuguese, "Programa de Monitoramento in situ da Biodiversidade) (published by Pereira et al. in 2013), using the same trails and, therefore, the same sampling stations for monitoring used by Monitora Program[4] in 2019, designed by ICMBio and implemented by SEDAM/CUC - State Environmental Development Secretariat/Coordination of Conservation Units.

It is important to highlight that the Monitora Program is not a result of direct investments from the REDD+ Project, as the monitoring of the Monitora Program was carried out by a public entity with public financial resources as the responsibility/obligation of the State of Rondônia, consequently, the data from the Monitora program were not counted as a result of the REDD+ project.

[4] ICMBio. **Programa Monitora**. Disponível em: <https://www.icmbio.gov.br/portal/monitoramento-2016/programas-de-monitoramento-da-biodiversidade-em-ucs>. Acesso em 28 de abril de 2021.

Finally, as mentioned in section 2.2.4, during the monitored period, the Project prioritized investment in activities associated with community development. Thus, activities related to monitoring biodiversity entered the project schedule in 2019.

1) Monitoring Objectives and Expected Results

The monitoring of biodiversity in the RESEX Rio Preto-Jacundá area carried out by ECOPORÉ had specific purposes as listed below:

- Train local communities in the application of biodiversity monitoring protocols;
- Compare actual impacts with predictions made in the preliminary impact assessment;
- Detect unanticipated changes related to project activities;
- Alert to the need to act if the negative impacts exceed certain limits; Monitoring groups of mammals, game birds and frugivorous butterflies to propose general conservation and management strategies appropriate to the area's needs;
- Detect the possible impacts that the sustainable timber management carried out in RESEX, affects the composition, richness and abundance of these groups in the region;
- Detect the possible impacts that the installation of UHE Tabajara may cause on the mediations of RESEX;
- Make communications at regional and national congresses and/or publish articles in scientific journals.

Additionally, as described in the PD, the realization of the REDD+ Project within the RESEX would help in the permanence of the forest and, consequently, of an ideal environment for the maintenance of species in an area that was already in adequate environmental conditions, diverse, and with good levels of conservation.

Thus, the main expected result of this monitoring is the proof of the area's conservation effectiveness after the implementation of the REDD+ project, demonstrating the maintenance of the biodiversity levels and conservation status of fauna species, the maintenance of specialist, rare, and endemic species, the decrease in illegal hunting and fishing by non-residents who exert strong hunting and fishing pressure, and the continuity of the species that serve as a source of food for the resident community of the RESEX.

2) Application of the Methodology

The monitoring of biodiversity conducted within the RESEX by ECOPORÉ followed the methodology established in the In situ Biodiversity Monitoring Program proposed by ICMBio and was carried out between the months of August and September 2020.

Three groups of indicators were monitored in the RESEX Rio Preto-Jacundá area (birds and mammals and frugivorous butterflies) and, based on this inspection, it was possible to monitor the variations that may occur in the region's biodiversity over time.

The three groups mentioned are good indicators, as they have endangered species, species used by the community for food (birds and mammals), high sensitivity to environmental changes, among other characteristics that have elevated them to target groups for in situ monitoring iof biodiversity. They also stand out for presenting applied, validated and low cost of implementation and execution methodologies.

As these are good biodiversity indicators, being defined for national monitoring, any changes that may occur can be observed and effective management measures can be taken in a timely manner. The indicators chosen, as well as the methodologies proposed for Biodiversity Monitoring at RESEX Rio Preto-Jacundá by the company ECOPORÉ followed the prerogatives of the standards of The Climates, Community & Biodiversity Alliance – CCBA, taking into account all the defined propositions.

Monitoring followed the protocols for birds and mammals and frugivorous butterflies, described below:

Sampling Unit of medium and large mammals, and selected groups of birds. A 5 km linear transection, in the form of a main trail, which must be at least 110 meters away from the central point of the woody plant SU (if this occurs);

Sample unit of frugivorous butterflies. Formed by a transection (trail) perpendicular to the main transection (Mammals and birds), containing four traps 30-50m apart from each other. Each Sampling Station contains four SU of frugivorous butterflies.

For RESEX, three (3) transects were used in areas defined together with the community ones. Each transect is 5,000 meters long by one (1) meter wide, with markings every 50m. Each transect has four (4) side trails of 200 meters for the installation of the frugivorous butterfly traps.

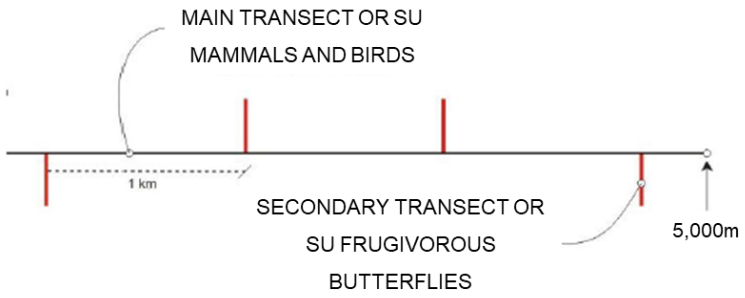


Figure 14 - Illustration of a sampling station for mammals and birds with side trails for frugivorous butterflies. Adapted from (NOBRE et al, 2014).

These transects were covered for at least ten days, consecutive or interspersed, in the dry period of the year, for the group of terrestrial mammals and birds. The same applies for the group of frugivorous

butterflies, with two 7-day campaigns for each sampling station. The transects have the following characteristics:

Figure 15 - Image depicting the transect used in monitoring

Transect 1 - The vegetation is more closed in relation to the canopy, composed of large trees, the litter is very moist and has thick lianas. It is a transect in a flatter area than the other two and there are no streams with water near the trail. From the road to the beginning of the main trail it is approximately 500 meters.

Transect 2 - Near the road that crosses the trail at point 3200, the transect's landscape is composed of hills, lots of rocks formation, and litter with drier leaves. From point 3200 on, the transect has more hills and rocks formation, and streams appear. At point 2500 there is primary vegetation, abundant in lianas and shrubs. At the end of the trail there is a stream with running water. From point 0 to 3200 the terrain is more rugged and, when crossing the road, the terrain becomes flatter and the vegetation more closed, with larger trees than previously seen.

Transect 3 - It starts 20 meters from the access road. At point 900 passes a "trail", containing three streams that cross the main trail. After point 900 there are no slopes. From 0 to 900 there are four climbs and in this stretch there are rocks formation. There is a clearing because trees have fallen. At 2500 there is a lot of Caranaí (palm tree with thorns that, when it occurs, tends to dominate the landscape), as well as in the rest of the trail, but in lesser quantity. The forest is very closed with thinner trees and closer to each

other. The canopy is neither closed nor open. The litter is moist and composed of a thin layer of dry leaves. The vegetation transition along the transect is notorious.

Each transect has four (4) 200 meter lateral trails for the installation of the Van Someren-Rydon frugivore butterfly traps. Four traps were set in each lateral trail. The first one was installed 10 meters from the main trail, and the others were installed respectively every 30-50 meters, according to the availability of one or two trees to support the trap.

The transects were arranged following the relevant considerations of the sample design, are located mainly in the multiple use zones and forest management zone, defined in the RESEX Multiple Use Management Plan, prepared in 2016, the end of transect 3 enters the unit's conservation zone, where there is a vegetation transition signaling the areas that incorporate the environmental features of interest in the RESEX and with aspects such as topography, slope, hydrography, similar, with no drastic variations in relief and with easy access to the community, since they are located near community residential areas and common areas of the RESEX (Figure 16).

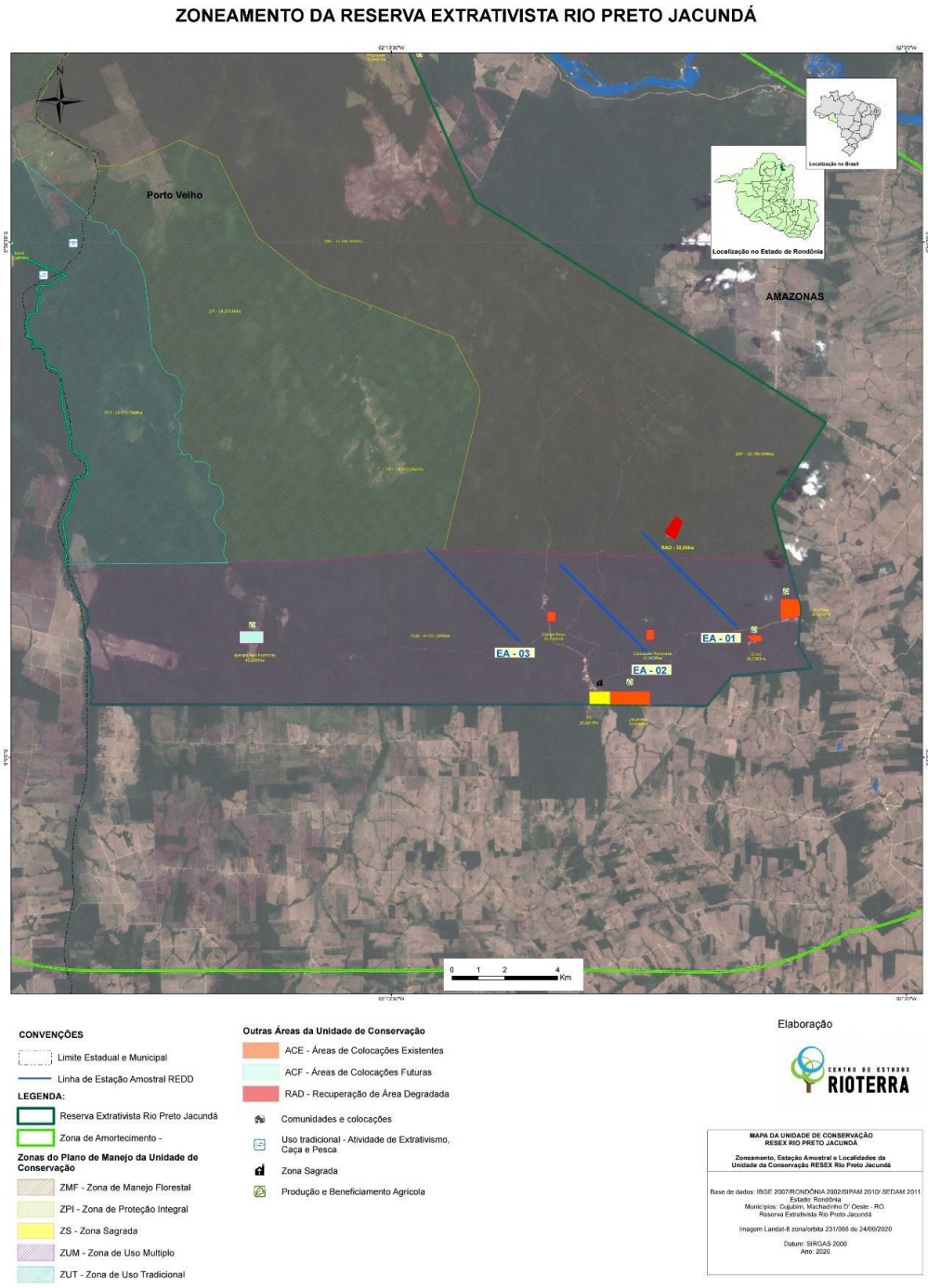


Figure 16 - Location of the transects in the Multiple Use Zone of the RESEX

Following the consideration of the evaluations being carried out in the most representative forest physiognomies within the UC, the vegetation of the transects is basically composed of Submontane Open Ombrophylous Forest, according to IBGE data, with few variations, following to Open Ombrophylous Forest

with Bamboos and a transition to a Pioneer Formation under Shrubby Fluvial Influence in transect 3 (Figure 17).

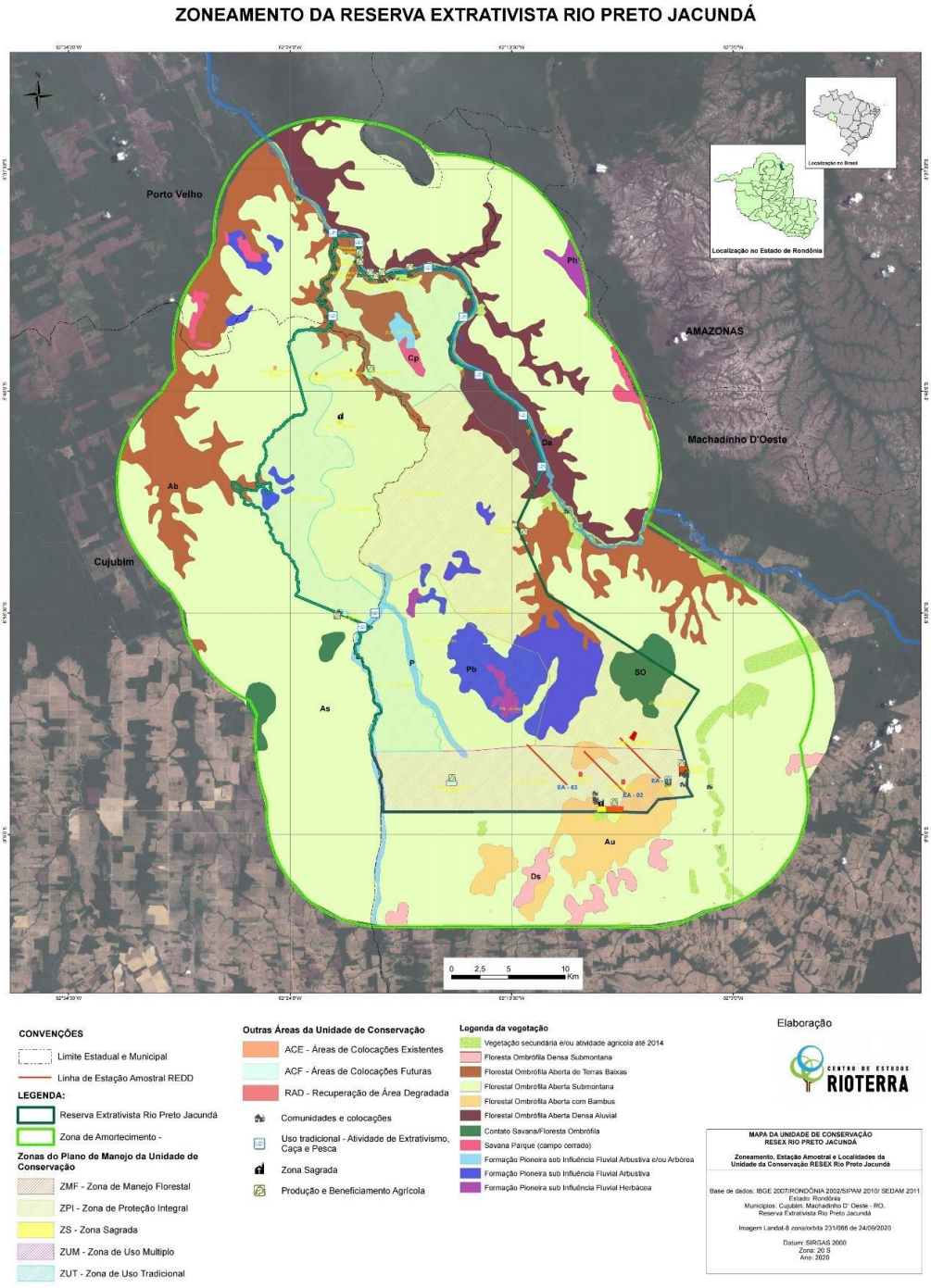


Figure 17 - Map with the location of the sampling stations, the zones defined in the Multiple Use Management Plan, highlighting the vegetation

Nine potential monitors were trained in the methods of linear transect data collection, for mammals and birds, and with VSR traps. The choice of monitors was decided by ASMOREX, with the orientation of selecting people who already had some brief knowledge about monitoring.

Of the trained monitors, seven participated in the data collection, with one pair per transect and one more responsible for accompanying the butterfly sampling. Two trained monitors could not participate because they were involved in other activities in the RESEX. All data collection was accompanied by the technician from ECOPORÉ (Gesiana Kamila Damasceno Miranda), who was in the field during the two collection periods.

Each pair of monitors walked one of the transects at an average speed of 1.5km/hour, noting all sightings of mammals and terrestrial birds. For the frugivorous butterfly group, the VSR traps were installed for seven consecutive days, reviewed every 48 hours. After an interval between 15 and 30 days, the protocol was reapplied. Data collection is performed in pairs for both the census of birds and mammals and the monitoring of frugivorous butterflies.

Monitoring of the sample unit of medium and large mammals, and selected groups of birds

One of the initial requirements for data collection was to appoint a staff member to be the observer, who were residents of RESEX already mentioned above.

Early in the morning, the team moved to the sampling stations, and began collecting data in the main transect as soon as daylight broke, that is, when natural light allowed the animals to be seen. The walk on the transect was always carried out in silence and with great attention, observing from the ground to the top of the trees, covering the entire length of the trail (5 km), at low speed, ending a maximum of 5 hours until the end of the route.

When an animal was sighted, information was recorded that could not exceed 10 minutes. With the help of a guidebook on mammals and birds illustrated in the region, the identification of the individual observed was made. Then, the perpendicular distance was measured with a measuring tape (in meters) from the place where the first animal was seen up to the trail. Subsequently, the collected data were recorded by a member of the team who filled in the information in field sheets, also noting in which numbering of the marking plate the animals were seen. Whenever possible, photographic records were made of the animals observed through applications which provided the geographic coordinates of the sighted animals.

Monitoring of the frugivorous butterfly sampling unit

For the methodology applied in the monitoring and capture of frugivorous butterflies, “Van Someren-Rydon” (VSR) traps were used, which have specific standards such as dimensions and material used in their manufacture, as made available by ICMBio. 4 (four) traps had been installed in each secondary transect and hung from branches of resistant trees so that it would not sag with the weight, leaving the base at a height close to 1 (one) meter from the ground. So that the trap would not sway with the actions of the

wind, strings were tied at the base and nearby vegetation, such as branches or even trees with smaller dimensions, and grease was applied to the strings so that insects would not use them as bridges to the trap.

Previously, the installation of the traps in each transect was made as baits for catching butterflies. The baits were prepared with a mixture of very ripe banana (dwarf Cavendish banana) with sugarcane juice in the proportion of three (3) kg to 1 (one) liter of sugarcane juice and fermented in PET bottles and closed for 48 hours before being used, and periodically, the lid was opened to release gases produced in the fermentation process.

The baits made were poured into a coffee cup placed in the center of the base of each trap, and after placing the baits, the team returned to the site only after 24 (twenty four) hours to check if there was capture of butterflies.

The captured individuals were checked, one by one, to identify which tribe of butterflies they belonged to. This procedure was performed with the support of identification guides (Santos et al. 2014), which contains images, size and shape of each tribe of frugivorous butterflies. After identification and registration in the field spreadsheet, the butterflies received a marking with a special permanent ink pen so that it would not compromise or cause damage to their wings. This prevented the same butterflies from being counted twice in the trap. After these procedures, the captured butterflies were released in the same place and after release, the baits were exchanged for new ones to continue the process until completing the 7 (seven) days of the campaign. The traps remained active for seven (7) days, being reviewed every 48 hours, totaling three (3) visits for data collection.

Data Analysis

Bird and mammal data are shown through species accumulation curves, which are obtained from the increase in data collection effort in relation to the record of new species. The curve stabilizes when new species records become rare, illustrating whether the effort was sufficient to sample the richness of the sampled area (BEGON et al., 2007)[5]. In this monitoring, data collection days were used for the general data as the unit of collection effort. The data from each transect were shown in kilometers traveled as the unit of collection effort. This division was necessary because it would not be possible to combine the data from the three transects using kilometers traveled, but this difference does not affect the demonstration of the data.

The analysis of variance for Regression (R2), calculates the exponential curve that fits the data and returns a matrix of values that describes the curve. In this study it was obtained using Microsoft Excel 2019® software.

[5] BEGON, M.; TOWNSEND, C. R.; HARPER, J. L. **Ecologia: de Indivíduos a Ecossistemas**. 4. ed. Porto Alegre: Artmed, 2007. 572 p.

The relative abundance values (rates of sightings per 10 km traveled) were calculated for each sampling station, using the equation: Sightings per 10 km = N ÷ K ×10 (Where: N = number of sightings and K = kilometers traveled; the product obtained is the number of sightings per ten kilometers traveled).

For frugivorous butterflies, the data are demonstrated by the abundance and proportion of the tribes monitored, the graph with the "Signature" of the RESEX Rio Preto Jacundá was made, according to the biodiversity monitoring coordination - COMOB of ICMBio, showing how the profile of the tribes of frugivorous butterflies monitored in the Unit is, which it is used to compare the percentage that each value contributes to a total and is used to show how the percentage contribution of each value is maintained or changes over time, if this pattern over time changes abruptly management should be on the alert for possible natural changes or alterations in the environment.

Currently it is considered for analysis of frugivorous butterfly data the following representations of tribes with respect to the type of forest canopy: Tribes *Brassolini*, *Morphini* and *Haeterini* preferentially inhabit more closed forests, tribes *Ageroniini*, *Biblidini*, *Calicorini*, *Epicalini*, *Epiphilini*, *Anaeini*, *Preponini* and *Coeini* are found in more open areas and some of these are present in human altered areas, tribes *Satyrini* and *Melanitini* are inhabitants of "open" and "closed" forest areas.

3) Results and Discussion

The compiled results were presented in a meeting with the monitors and some community members so that, in a participative way, there could be a better understanding of the results found. The general data collected were: in sampling station 1, a total of 56 animals were found, being 43 mammals and 13 birds. In relation to sample unit 2, a total of 58 animals were observed, 39 of which were mammals and 19 birds. Finally, in sampling station 3, a total of 56 animals were monitored, being 29 mammals and 25 birds.

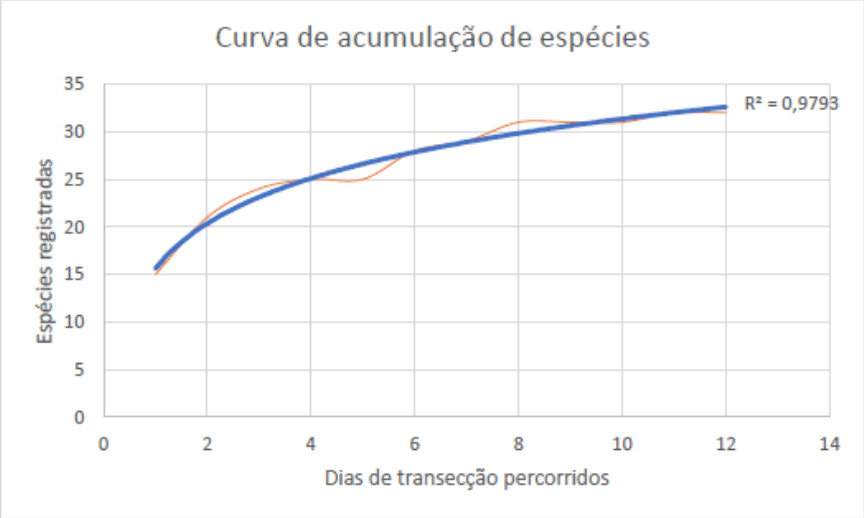
Monitoring of the sample unit of medium and large mammals, and selected groups of birds

The overall results for mammals and terrestrial birds were similar among the three sampling stations. In total, 32 species were sighted and identified, 18 for the mammal group and 14 for the terrestrial bird group.

The general rate of encounters per 10 km traveled was 9.4. When comparing the data of the relative abundance of 9.4 encounters per 10 km traveled with other areas in the state of Rondônia, some nearby, we note that the RESEX Rio Preto Jacundá presents the highest rate of sightings, being above other protected areas, even full-protection units, such as Ecological Stations (details of this comparison are in table 2 and table 3 of the ECOPORÉ report on biodiversity monitoring – available to VVB).

The species accumulation curve shows that the sampling for the groups mentioned was significant, with a well-defined stabilization. Remember that species accumulation curves are obtained from the increase in the effort of data collection in relation to the record of new species, stabilizing when new records of species become rare. What is presented is a stabilization, demonstrating that the sampling that was

proposed is perfectly suited for the study in the RESEX. The value of the analysis of variance for the regression (R2) was very significant and shows that the model explains 97.9% of the variability of the response data around its mean, that is, in general, the methodology for the groups studied is adequate and the study was effective.



Graph 1 - Species accumulation curve for mammals and terrestrial birds for the RESEX Rio Preto Jacundá

Medium and large mammals

The general data only for the group of mammals show that the curve of species accumulation for this group presents the variance for the regression (R2) 93.1%, being significant, the curve is well stabilized, which demonstrates that the sampling is effective. Obviously, with the increase in sampling effort there is the possibility of an increase of new species, however, as observed in the R2, even with this increase there will not be many changes. (Figure 13 of ECOPORÉ's report on biodiversity monitoring - available to VVB).

Among the transects, UA2 had the lowest richness, but had 10 more sightings than UA3. The encounter rate of UA3 is noteworthy, being much lower than the other AUs. What may have led to this difference is the fact that UA3 is near a transition zone from forest vegetation to a shrubbier vegetation. UA1 showed a higher abundance and richness than the others. According to the monitors during the community feedback, this dynamic may be related to the fact that UA1 is near a region of mountains and has two water reservoirs very close to the trail, one natural and the other made by the community.

When we compare the encounter rates with the data obtained in the Rio Preto Jacundá RESEX in the fauna studies for REDD+, prepared in 2013, and other nearby areas, the results obtained in this study are still above the rates of the other studies. When we observe the data of encounter rates between the studies cited and the rates obtained for each sampling station, it is noted that only UA3 was below for the mammal group, which may be a pattern for this trail by the vegetation transition, but this information will be validated or refuted over the years of monitoring in the RESEX. The species accumulation curves were

separated by each sampling station and were represented in figures 14, 15 and 16 of the ECOPORÉ report of biodiversity monitoring - available to VVB.

One species of primate recorded is endangered, the Spider Monkey - *Ateles chamek*. It is noteworthy the importance of the RESEX area for this species, as it is a large primate that needs large areas for its survival. Besides this, species like the cervids of the genus *Mazama* are important to be sighted because they are species that are consumed by the extractivists, such as the *Mazama nemorivaga*. A record that drew attention in the work was that of the ferret - *Galictis vittata*, for not being a common species in this type of methodology, although this species is listed as of little concern on the list of endangered species, it is a difficult animal to be recorded in forest environments, especially as in the case of the sighting of a family of four individuals, three of them young.

The species with the highest number of records is the capuchin monkey - *Sapajus apella*, followed by the agouti - *Dasyprocta variegata*, this being a common pattern for studies of mammals with this methodology. A species that recently entered the category of vulnerable to extinction was the Zogue Zogue monkey - *Plecturocebus brunneus*, recorded in the diagnostic studies for REDD in 2013 and again recorded by biodiversity monitoring in 2020.

The number of records of species of large and medium-sized primates, such as *Ateles chamek* and *Saimiri ustus*, stands out because they are species that can suffer problems in areas where they are hunted or lose their habitat due to deforestation. The record of the Jaguar - *Panthe onca*, is also of great importance because it is a carnivore from the top of the food chain, demonstrating the good structure of biodiversity in the area, it is common in the RESEX to hear reports of jaguars on the roads, as well as footprints and vocalization.

Terrestrial Birds

The data for the terrestrial bird group alone shows that the species accumulation curve for this group shows the variance for the regression (R2) 91.7% (Figure 17 from ECOPORÉ's biodiversity monitoring report - available to VVB). In comparison, encounter rates varied, with UA1 having the lowest encounter rate (2.2) and UA3 having the highest (4.5). After the feedback in the community to share the data analysis, it was mentioned by the monitors that some residents may have hunted in EA1, which would explain the low richness and abundance compared to the other sampling stations.

When we compare the encounter rate with the results found by Bonavigo (2005)[6], in the Samuel Ecological Station, same zoogeographic region, who obtained the general encounter rate of 2.24 sightings per 10 kilometers traveled, we observe that the general rate found for the group of cinegetic birds in the RESEX Rio Preto Jacundá is still higher, even the lower value found in UA 1.

[6] BONAVIGO, P. H. **Inventário e Estimativa Populacional da Mastofauna de Médio e Grande Porte da Estação Ecológica de Samuel/RO**. Monografia. Universidade Federal de Rondônia – UNIR. Campus Porto Velho, 2005. 46 p.

The encounter rate is also similar to the records in the ESEC Antônio Mujica Nava and State REBIO Rio Ouro Preto (2.3 and 3.0 respectively), which even though they are in different zoogeographic regions, are two fully protected conservation units, reinforcing the good relative abundance of land birds in the RESEX Rio Preto Jacundá. The greater species richness is a result of traditional knowledge, where the community has more familiarity and ease in identifying the smaller tinamids, such as the *Inhambus*.

For the group of terrestrial birds, the largest number of records was of the species of mutum - *Pauxi tuberosa*, followed by the jacu - *Penelope jaqguacu*, the largest number of observations of these species is already expected for this methodology. It is noteworthy that these are large birds that may occur in low densities in areas where they are overexploited. Thus, it is notable that even though it is a sustainable use area, the RESEX is an important area in terms of conservation for these two species, which can also be associated to the other species of terrestrial birds. The five records of the Jacamim - *Psophia viridis* and the azulona - *Tinamus tao* also stand out as important for the RESEX area, because both species appear as vulnerable to extinction and depend on healthy areas to maintain their populations.

It is noteworthy here that the species *Rhegmatorhina hoffmannsi* – white-breasted Antbird (Mãe-de-Taoca, in Portuguese), despite appearing as an important species for the RESEX area in the studies for the Social and economic and Environmental Diagnosis of the RESEX Rio Preto Jacundá REDD+ Region Project, carried out in 2013, mainly because it is a species recognized as endemic to the Madeira-Tapajós geographic sub-region, it was not included in this monitoring, as this requires the use of specific methodologies, demanding a higher cost of field materials, time and hiring of specialists.

Endangered Species

When we observe the threatened species, adding the Spider Monkey plus the other species that appear as vulnerable to extinction, makes a total of 19% of the species recorded (six species). The species that appear as Near Threatened - NT, total 12% (four species) of the species recorded, these are framed in this category the species that are close to being classified as threatened. When we add to the other species with some degree of threat, 31% (ten species) that require healthy areas for the maintenance of their species, the RESEX Rio Preto Jacundá being an area with a high degree of importance.

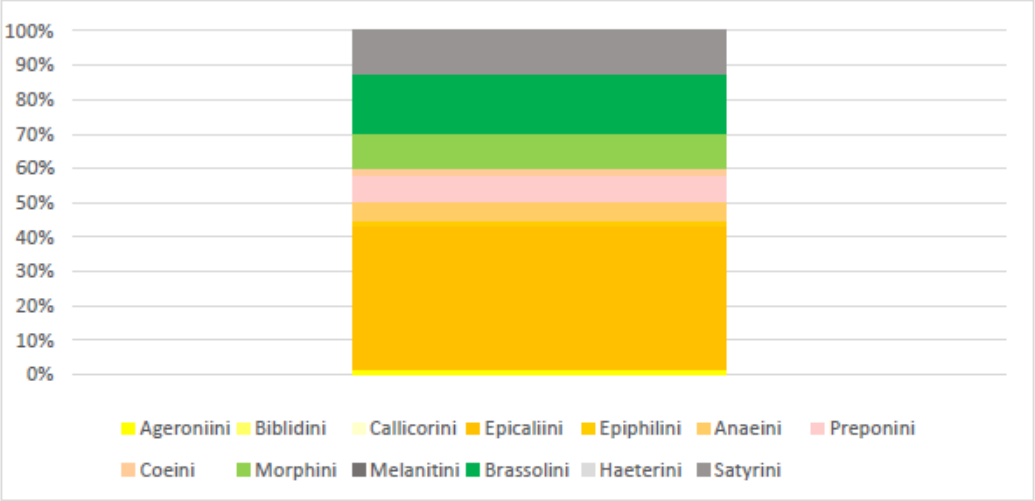
It is worth noting that the species of the Mico-de-Rondônia - *Mico rondoni*, was not spotted in this monitoring, but its occurrence is recorded in the area in the fauna survey work in 2013, for the REDD+ project, and in 2016, for the studies of the Multiple Use Management Plan of the RESEX, besides being seen by the ECOPORÉ team during the field trip in 2020. This species is endemic to Rondônia and is considered vulnerable to extinction by the red list, mainly due to high rates of deforestation in the state. Areas such as RESEX Rio Preto Jacundá are of paramount importance for this species.

The species that have been recorded that appear as Data Deficient (DD), which totals 6% (two species) should be viewed with caution as there is not enough data on distribution or population status to categorize it.

Monitoring of the frugivorous butterfly sampling unit

The data were collected in two field expeditions, the first took place from August 7 to 14 and the second with a 20-day interval, within the timeframe specified in the protocol, from September 4 to 10, 2020. A total of six hundred and nineteen (619) records were made of individuals representing four (4) subfamilies, distributed in ten (10) tribes. The most abundant tribe was *Epicaliini* (tribe 4) representing almost half of the records (42% of abundance).

Next, the graph with the "Signature" of the RESEX Rio Preto Jacundá is presented, showing what the profile of the tribes of frugivorous butterflies monitored in the Unit looks like. This is used to compare the percentage that each value contributes to a total and is used to show how the percentage contribution of each value stays the same or changes over time, if this pattern over time changes abruptly the project proponents should be on the alert for possible natural changes or alterations in the environment. The coloring of the signature pattern follows that used by the Monitora Program for monitoring in federal and state protected areas through the Protected Areas in the Amazon - ARPA program.

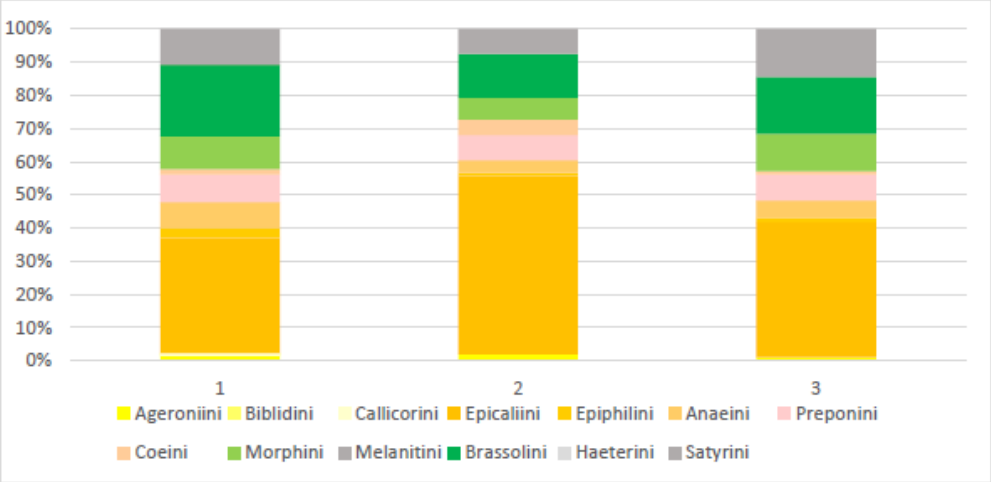


Graph 2 - General signature of frugivorous butterfly tribes for RESEX Rio Preto Jacundá

Overall, we have a balanced profile of frugivorous butterfly tribes. On trail 1 we observed a more significant number of butterflies from the *Brassolini* and *Morphini* tribes, which shows that it is an area of closed forest, and in the feedback with the monitors it was reported that it had more fruits and flowers and thus greater availability of food, however, the record of the *Ageroniini* tribe on this trail may demonstrate the fact that an adjacent area is being affected by human interference, in this case it was confirmed by the community that it is an area that some residents used the area for hunting.

Trail 2 we observed fewer frugivorous butterflies of the tribes *Brassolini* and *Morphini* and a higher number of *Epicaliini*, showing that this trail has more open areas, mainly because this transect is located in a stony area, which characterizes a more "open" vegetation physiognomy. On Trail 3 there seems to be a balance between the proportion of tribes in open areas, forested areas and mixed areas, according to the

monitors who participated in the feedback, at the end of this transect it is an area of vegetation transition, which corroborates the demonstration of the data.



Graph 3 - Signature of the tribes collected in the RESEX Rio Preto Jacundá by transect

Data / Parameter	**Number of animal species monitored**
Data unit	Number
Description	Number of animal species monitored
Source of data	Field sheets, data sheet and Fauna Monitoring Reports
Description of measurement methods and procedures to be applied	Three groups of fauna were monitored: i) medium and large mammals; ii) land birds; and iii) frugivorous butterflies. Mammals and birds were monitored using linear transection methodology, while butterflies were monitored using Van Someren-Rydon traps. Note that for frugivorous butterflies, the data refer to tribes, not species. The analyzes and accounting of the species of animals monitored were made through the Monitoring Reports.
Frequency of monitoring/recording	Annual
Value monitored	

Year	Mammals	Birds	Butterflies
2016	n/a	n/a	n/a
2017	n/a	n/a	n/a
2018	n/a	n/a	n/a

		2019	n/a	n/a	n/a
		2020	18	14	10
Monitoring equipment	Reading of the final biodiversity monitoring reports carried out by Ecoporé and analysis of the data sheets.				
QC/CG procedures to be applied	Validation of information with Ecoporé				
Purpose of the data	Provide values and information on fauna biodiversity within RESEX Rio Preto-Jacundá				
Calculation method	Calculation in data sheet				
Comments	Despite the calculation method being through the data sheet, the final monitoring reports were also used to compute the parameter.				

Data / Parameter	**Monitoring of *Ateles chameck* (Spider monkey)**		
Data unit	Abundance		
Description	Monitoring of the species *Ateles chameck* (spider monkey)		
Source of data	Survey in the field		
Description of measurement methods and procedures to be applied	The survey data must be carried out periodically by the local community during the whole year, and once a year for specialist team. Monitoring the *Atheles chameck,* during this verification period, was carried out together with the monitoring of the fauna, covering 3 transects, called Sample Stations.		
Frequency of monitoring/recording	Annual		
Value monitored		Year	Abundance
		2016	n/a
		2017	n/a
		2018	n/a
		2019	n/a
		2020	9
Monitoring equipment	Reading of the final biodiversity monitoring reports carried out by Ecoporé and analysis of the data sheets.		

QC/CG procedures to be applied	Validation of information with Ecoporé.
Purpose of the data	Provide the spider monkey (*Ateles chameck*) abundance values in the years when biodiversity monitoring was carried out
Calculation method	Linear transect
Comments	It was foreseen and established in "Description of measurement methods and procedures to be applied", explained above, that the collection of this parameter would be carried out periodically by the local community and once a year by a specialist. However, the collection of this data only started in 2019. In both surveys (conducted in 2019 and 2020) the local community and specialist(s) participated jointly. This non-compliance with the parameter was reported as a deviation in section 2.2.4 of this document.

4) Final considerations

In general, it is notorious that RESEX Rio Preto-Jacundá, despite all the problems faced with invasions and deforestation in 2017 and 2019, is still an area of great importance for the maintenance of biodiversity. When comparing the results obtained for mammals and birds in the 2020 biodiversity monitoring with other studies in the state and even with studies conducted in the RESEX, it is noted that the area is still quite preserved, and that the traditional lifestyles of the residents help to maintain the quality of this area.

The damage to biodiversity would be incalculable if the RESEX Rio Preto Jacundá succumbed to invaders, because it is one of the Amazon Forest remnants inserted in a portion of the state that can protect part of this biodiversity in the future, given the changes in the landscape that are occurring at a rapid pace.

Apparently, there was no evidence of excessive hunting for these groups, as, in addition to the results observed in the monitoring, it is common to find some animals on the access roads to the communities. A possible densification of fauna is also not observed, which could occur due to the pressure of invasions within the limits of RESEX.

For the frugivorous butterflies, in a general overview, the profile signature of this monitoring target in the RESEX Rio Preto Jacundá is in balance with the proportion of tribes expected for the Amazon region. For the data analysis it was very important the analysis by the group specialist, the feedback of these data and the exchange of knowledge with community monitors who described the sampling stations and local situations that may have influenced the presence of sampled individuals. In any case, continuous monitoring of frugivorous butterflies is necessary to predict and be able to act quickly to any possible change in the environment, since they have a short life cycle and respond well to the quality, balance, and natural or anthropic changes in the environment.

The information generated from the data collected in the monitoring in 2020 serves as a photograph of biodiversity as a basis for the following years of monitoring. From this, with the maintenance of monitoring with the same protocols, we can evaluate the variation of information over time, and can anticipate external events that may cause damage to biodiversity, or even have information for local discussions about the use of natural resources. It is also possible to obtain information to take to other decision makers, such as the government and other agents that can intervene to maintain the quality of the RESEX area.

Answers can even be obtained for the deforestation of the surroundings and interior of the unit, which can scare the fauna to the more preserved areas provoking a densification and consequently an increase in the abundance of records. The same applies to the potential large-scale enterprises that may occur around the RESEX.

Variations in the abundance of cinegetic species can also show over-hunting of some of these species. It is emphasized that, from the comparison between other areas, this is not the current case in the RESEX. The forest presents excellent quality for the survival of biodiversity, information corroborated by sightings of top carnivores, such as the jaguar, and animals that need large home ranges for the maintenance of their populations, such as bush pigs.

In principle, the RESEX Rio Preto Jacundá presents positive impacts for biodiversity conservation for the region, even though the area is under constant pressure from deforestation. Thus, monitoring biodiversity can provide relevant information to understand the impacts of these actions over the years.

There is still no data that can create alerts for interventions in biodiversity or even interpret the population trend of threatened species (GL3.4) especially because this is the first year of monitoring and the data presented, when compared with other areas and even with data from the RESEX itself are apparently favorable. We see a slight increase in the registration of species with some degree of threat (NT; VU; MS) when we compare the 2013 diagnosis with the 2020 monitoring, rising from 24% to 31%. This information further reinforces the need to maintain the conservation status of the RESEX.

Since the transects cross several management zones defined in the Multiple Use Management Plan and, at this time, there is no significant differentiation in the data collected, it appears that sustainable logging does not negatively affect biodiversity.

Thus, the project plans, for the next few years after the verification, the continuity of biodiversity monitoring, collecting data in the following years, following the defined protocols to monitor whether there is any change in biodiversity numbers. Besides the fact that the data collection will be carried out in the same period of 2020, following a trend of data collection in the dry season, through periodic collections it will be possible to observe trends for the groups studied, whether of decrease, stabilization, or even densification of fauna. This whole process will follow the profile of participative monitoring with community involvement, expanding the training of monitors, aiming for more trained community members and for old ones with recycled knowledge.

Additionally, it is intended to hold technical meetings to revisit the questions that must be answered for monitoring, aligning the methodology for obtaining these questions. If in technical discussions the

monitoring questions change, it may be the case to expand the number of sampling stations targeting forest transition areas. For example, the answer today is how the biodiversity rates for mammals, cinegetic birds and fruit butterflies vary over the years of the REDD+ project, with emphasis on the primate species *Ateles chamek*. If by chance, the question is changed to answer about increment in biodiversity richness, such as new species of these groups recorded, it makes sense to extend the sampling stations to new areas, but this is a question that can be answered with a direct survey, with quick answers.

5.3.1.3 Flora

1) Vegetation Diagnosis of the Reserva Extrativista Estadual Rio Preto-Jacundá - CES Rioterra and Ecoporé

Contextualization

The diagnosis of the vegetation of the Reserva Extrativista Estadual Rio Preto-Jacundá, occurred between the years 2015 and 2016, raised accas per the implementation of the Term of Reference (TDR) nº 2012.0928.00002-8 of the Secretaria de Estado do Desenvolvimento Ambiental (SEDAM) (in English, State Secretariat for Environmental Development) of Rondônia, was carried out in partnership between CES Rioterra, Ecoporé, ASMOREX and SEDAM. This diagnosis followed the guidelines of the "*Roteiro Metodológico para Elaboração de Plano de Manejo de Uso Múltiplo em RESEX*" ("Methodological Guide for the Elaboration of the Multiple Use Management Plan in RESEX", in English) and served as support and subsidy for the elaboration of the Multiple Use Management Plan for this Conservation Unit. By this, it was possible to generate a diagnosis of the vegetation in RESEX through a floristic and structural report of the forest.

Methodology

The methodology associated with the classification of vegetation followed national criteria (BRASIL, 2012)[7], according to the IBGE, and is correlated with the regional classification of Rondônia as explicit in the Socio-Economic-Ecological Zoning of the State of Rondônia (ZSEE/RO, 2000)[8] which was based on the IBGE classification of 1992 and (BRASIL, 1978), as stated in the RADAMBRASIL Project, with adaptations for the State of Rondônia.

The methodology used for this diagnosis of flora at RESEX was through a sampling forest inventory of open and dense rainforests in the Conservation Unit, which comprised 5 steps: planning, sampling, field

[7] **Manual técnico de Vegetação Brasileira**. 2. ed. Rev. e ampl. Rio de Janeiro: IBGE, 2012 [1992]. 271 p. (Manuais técnicos em geociências, n. 1).
[8] RONDÔNIA. Zoneamento Sócio-Econômico-Ecológico do Estado de Rondônia (ZSEE/RO). **Relatório Final Cobertura Vegetal**. SEPLAN/PLANAFLORO, Porto Velho, 2000.

survey of primary data, botanical species identification, primary data processing, estimated parameters, equations, formulas and analyses.

The sampling itself has three stages. The first occurs in the form of a conglomerate (primary units), with random distribution according to the mapped access routes. The second, in the form of sample subplots (secondary units) with dimensions of 20 x 125 m and arranged systematically in 04 subplots, forming a cross that represents the conglomerate. In the third stage, sampling plots (tertiary units) are launched, with dimensions of 10 x 10 m, within each of the secondary units, totaling 8 tertiary units per conglomerate.

The conglomerates (primary sampling units) were randomly placed on the physiognomies of the open (O) and dense (D) ombrophilous forests, which occupy approximately 90% of the vegetation cover of the Conservation Unit (in Portuguese, Unidade de Conservação).

A total of 5 conglomerates (primary units) were launched, each with 4 subplots (secondary units), whose dimensions are 20 x 125 meters (0.25 hectares), totaling 20 secondary sample subplots, which together cover 5 hectares of sampled area, and 40 tertiary sampling subplots, whose total sampled area is 0.4 hectares. All conglomerates were launched in virgin forests, which means that, at the time the described diagnosis was carried out, there were no signs of disturbance or forest exploitation.

The inclusion limit of individuals measured in the 20 x 125 m subplots (secondary units) and in the 10 x 10 m sample plots (tertiary units) considered two levels of approach:

- **Level I** - Represents the tree individuals with DBH ≥ 15 cm (CAP ≥ 47 cm) that were incidental to the 20 x 125 m sample sub-plots (secondary units);
- **Level II** - represents the individuals with 5 ≤ DBH ≥ 15 (regenerants) that incurred in the 10 x 10 m sample plots (tertiary units). The minimum inclusion level was therefore 5 cm DBH, which corresponds to 15 cm CAP.

In the other plant physiognomies that cover the RESEX area (pioneer formation under fluvial influence (P), savanna park (Campo cerrado) (S), savanna/ombrophilous forest contact (SO)) and which are dispersed and fragmented in the area, it was used as methodology the photographic record and the detached identification in the field of the species of greatest occurrence, using common or vernacular names. In a second moment, a botanical identification work was done, aiming to arrive at a classification of genus or even species.

Furthermore, the Rio Preto-Jacundá RESEX is a sustainable use conservation unit, and these formations are primarily a refuge for wildlife, and should therefore be preserved.

In the non-forest formations mentioned above, due to the low relevance in relation to economic use in the forest management activity of timber forest products and due to the small representation in the area (occurring in approximately 10% of the surface), there was no need to install sample plots to quantify and qualify the species present in these formations. Furthermore, the RESEX Rio Preto-Jacundá is a

conservation unit for sustainable use, giving these formations the role mainly of refuge for wild fauna, and should therefore be preserved.

Floristic inventory and botanical identification of the species

The term of reference that guided this diagnosis did not make any scientific requirement in the collection of fauna and flora and, as it is a state Conservation Unit, SEDAM does not authorize the removal of any botanical material from within RESEX. In view of the above, it was used as a solution, in the case of vegetation, to photograph parts of the plants found and measured (such as the trunk, rhytidome (bark), the internal part of the rhytidome after cutting with a machete, presence and color of exudates, leaves, and flowers and fruits when possible), so that these photos could help in botanical identification, when comparing it with the images of plants already identified in several herbarium. Some flowering plants and shrubs that were found randomly were also photographed detachedly. It was tried to follow this photographic record procedure for all species found, mainly for the lesser known, rarer, endemic and unknown species by the parabotanist (local identifier of species, because of his forest experience and expertise).

The nomenclature adopted for the families was the angiosperm classification system, that is, Angiosperm Philogeny Group II (APG II, 2003), adapted by Souza & Lorenzi, (2005)[9] for the Brazilian flora. The popular names of the species surveyed were described according to the regional knowledge of the parabotanist, who helped in the fieldwork, identifying and measuring the trees. For other questions regarding the botanical identification of the measured species, broad support was sought on platforms and online herbarium.

Results

a. Phytoecology

The vegetation typologies that occur in the RESEX Rio Preto-Jacundá, according to the methodology described above, showed a percentage of 82.09% of open ombrophilous forest, 8.84% of pioneer formation under fluvial influence, 3.4% of dense ombrophilous forest, 1.55% of savanna/ombrophilous forest contact and 0.33% of campo cerrado (savanna park).

b. Estimated density, basal area, and volume of species per hectare

These results were derived from the sample forest inventory and were estimated per hectare, considering the 20 tree species sampled that had DBH ≥ 15 cm and that occurred in the conglomerates (specifically, in the 224 subplots, with an area of 0.25 ha and that presented the highest volumes per hectare). The 20 species in the forest inventory that presented the highest volumes per hectare totalled a

[9] SOUZA, V. C. & LORENZI, H. 2007. **Chave de identificação: para as principais famílias de Angiospermas nativas e cultivadas do Brasil.** Ed. Instituto Platarum, Nova Odessa, 31p.

density or abundance of 65.30 indiv./ha, basal area or dominance of 7.601 m²/ha and volume of 76.2676 m³/ha.

Considering all 471 species surveyed in the forest inventory, the total abundance was 228.39 indiv./ha, the total basal area was 21.733 m²/ha and the total volume was 205.70 m³/ha.

c. Floristic inventory and botanical identification of the species

12,790 individuals were identified, distributed in 471 species, 203 genera and 54 botanical families. Of the 471 inventoried species, 453 were identified at the genus level, 386 were identified at the genus and species level, 18 species were not identified at the genus level, and 19 were not identified at the family level.

d. Indexes

For the diversity analysis the Shannon-Weaver diversity index (H') was used, and in a complementary way, for comparison, Simpson's index, Margalef's species richness index, and Pielou's equitability index, as shown in the table below:

Table 29 - Richness and diversity indexes of the species found in the vegetation diagnosis

Shannon-Weaver diversity index	(H') = 5,1466
Pielou's equitability index	(J') = 0,8350
Simpson's index	(D) = 0,0113

The Shannon-Weaver index always considers the number of species and the dominant species. The higher the H' value, the greater the floristic diversity of the study population. This index can express richness and uniformity. Furthermore, according to Knight (1975)[10], the Shannon-Weaver diversity index varies between 3.83 and 5.85 for Amazonian tropical forests. As the result found for the Shannon-Weaver index was (H') = 5.1466, this implies that this diversity index for the phytophysiognomy of open and dense rainforests in RESEX is very high, resulting in great richness and variety of species, which explains the 471 different species found and distributed in 54 botanical families.

According to Brower & Zar (1984)[11], in interpreting Simpson's dominance index, the estimated value of D varies from 0 (zero) to 1 (one), and for values close to one, the diversity is considered higher. Thus, the value found of (D) = 0.0113 reinforces the idea of a high diversity rate in the Conservation Unit.

[10] KNIGHT, D. H. **A phytosociological analysis of species-rich tropical forest on Barro Colorado Island, Panama.** Ecological Monographs, v. 45, p. 259 - 284, 1975.
[11] BROWER, J. E.; ZAR, J. H. **Field & laboratory methods for general ecology**. 2. ed. Dubuque: Wm. C. Brown Publishers, 1984, 226 p.

The value of Pielou's equability (J = 0.8350), compared to other studies conducted in the Amazon, in which the values are between 0.75 to 0.92 (KUNZ et al. 2008[12]; ALVES & MIRANDA, 2008[13]; OLIVEIRA et al. 2008[14]), demonstrated that the flora in the RESEX has adequate uniformity among individuals and species.

e. Phytosociological aspects

The Importance Value Index (IVI) estimated for plant species can be used in management plans as a forest management tool, as it acts as an indicator of ecological importance. The Index reflects the influence of the most frequent and dominant species in the basic processes of flora balance and fauna maintenance, providing shelter and food to all living beings present in the habitat (OLIVEIRA & AMARAL, 2004[15]).

The ten species that stood out most by the Importance Value Index (IVI), in descending order, were: abiurana (*Pouteria* sp.), breu (*Protium* sp.) pama/cega-corrente (*Pseudomedia laevigata*), matamata (*Eschweilera micrantha* (Berg) Mie), roxinho (*Peltogyne lecointei* Ducke), tauari (*Cariniana* sp.), amapá (*Brosimum parinarioides* Ducke), ripeira (*Eschweilera collina* Eyma) and rubber tree (*Hevea brasiliensis* (Wild) ex A). These species represent about 51% of all individuals sampled. If they do not suffer anthropic action, the main threat, they will continue to ensure the predominance in the natural composition of the vegetation.

As for the families, the ten that presented the most expressive importance value index (IVI) in the studied area, in descending order, were: Fabaceae (65.2), Sapotaceae (29.4), Moraceae (22), Lecythidaceae (19 .3), Burseraceae (15.8), Chrysobalanceae (13.7), Euphorbeaceae (12.6), Annonaceae (11.7) Lauraceae (9.3) and Myristicaceae (8.7). These families represent 69.2% of all individuals sampled.

f. Vertical (diametrical) structure

The diametric distribution of the forest shows the formation of an inverted J, a typical behavior of balanced natural forests, with a greater number of individuals in smaller diameter classes, progressively reducing to larger class intervals. It can be said, therefore, that the forest studied is well preserved.

[12] KUNZ, S.H.; IVANAUSKAS, N.M.; MARTINS, S.V.; SILVA, E.; STEFANELLO, D. 2008. **Aspectos florísticos e fitossociológicos de um trecho de Floresta Estacional Perenifólia na Fazenda Trairão, Bacia do rio das Pacas, Querençia-MT.** Acta Amazonica, 38: 245-254.
[13] ALVES, J.C.Z.O.; MIRANDA, I.S. 2008. **Análise da estrutura de comunidades arbóreas de uma floresta amazônica de Terra Firme aplicada ao manejo florestal**. Acta Amazonica, 38: 657-666.
[14] OLIVEIRA, A.N.; AMARAL, I.L.; RAMOS, M.B.P.; NOBRE, A.D.; COUTO, L.B.; SAHDO, R.M. 2008. **Composição e diversidade florístico-estrutural de um hectare de floresta densa de terra firme na Amazônia Central, Amazonas, Brasil**. Acta Amazonica, 38: 627-642.
[15] OLIVEIRA, A. N. & AMARAL, I. L. **Florística e fitossociologia de uma floresta de vertente na Amazônia Central, Amazonas, Brasil**. Acta Amazonica, Manaus, v.34, n.1, p.21-34, 2004.

g. Endangered species, species with use restriction and species of cultural interest

The Brazil nut tree (*Bertholletia excelsa* Bonpl.) and the rubber tree (*Hevea* spp.), found in the forest inventory, are species prohibited from cutting (Decree 5,975 of 2006) and require special attention to be preserved. The Brazil nut tree, besides being prohibited to cut, appears as "Vulnerable" (VU) on the IUCN Red List of Threatened Species.

The rubber tree (*Hevea brasiliensis* L.), in addition to being a protected species of economic interest, is also a cultural species. It is rooted in the rubber tapper's life and is primarily responsible for the territoriality exercised by rubber tappers in conquering the space they have occupied for years and that was recognized by civil society, culminating in the creation of the Reserva Extrativista Rio Preto-Jacundá. The study also identified the Seringa-itauba ("itauba-rubber tree" - *Hevea guianensis* Aubl.) and the Seringa-barriguda (bellied-rubber tree - *Hevea benthamiana* Mull.), which, like the real Rubber tree (*Hevea brasiliensis*), are protected species.

Besides these, the Spanish Cedar (*Cedrela odorata* L.), the Sucupira-amarela (*Bowdichia nitida* Spr. Ex Benth), the Angelim-pedra (*Hymenolobium excelsum* Ducke), the Itaúba (*Mezilaurus itauba* (Meissn)Taub.), and the Garapeira (*Apuleia leiocarpa* (vog.) Macbr.v) were species identified in the forest inventory and are in the vulnerable category (VU).

In summary, nine species are restricted for use because they are on the list of endangered species or prohibited cutting, which corresponds to 1.9% of the sampling inventory.

h. Rare species

Rare plant species are those with restricted distribution, less abundance, or lower frequency per hectare. The probability of finding them randomly in a forest area is very small and may even be unlikely.

According to Steege et al. (2013), less than 2% of the species that are part of the Amazon biome provide almost half of all existing trees in this biome. In other words, this means that there is a hyperdominance of a few species, where they will be very frequent and abundant per unit area, predominating in the ecosystem, while the vast majority of species, about 88%, are not very abundant and frequent, and are found with rarity or extreme rarity.

Considering this information and assuming that the rare species found in the sampling forest inventory were those with absolute density AD ≤0.40 ind./ha, this equates to a number of 114 probably species that would be classified as rare. This result confirms the hyperdominance of few species and the rarity of species in the RESEX RPJ.

The Sucupira-pele-de-sapo (Bowdichia nitida Spruce) is a rare and vulnerable species found during the diagnosis. This species is not very common in the State of Rondonia, because its occurrence is predominantly in the Atlantic Forest.

i. Bioindicator species

Regarding bioindicator species, it is possible to cite the buriti (Mauritia flexuosa) as an example. This plant inhabits flooded areas located on the edge of water courses and springs. It is, therefore, an indicator of wet, flooded, and marshy places, serving as food and refuge for a certain type of fauna that occupies these habitats. Other bioindicator species found were the embaúba, (Cecropia sp.), Ipe (Handroanthus sp.), among others, which are indicative species of fertile soil.

Final considerations

The floristic composition, the horizontal and vertical structure of the forest and the phytosociological aspects obtained in the vegetation diagnosis of the Reserva Extrativista Rio Preto-Jacundá allowed it to be classified as a strategic site in the maintenance and conservation of biodiversity, representing the natural (undisturbed) forest portions from the Amazon.

Furthermore, the diversity values symbolized by the Shannon and Simpson indexes and Pielou equability index were considered satisfactory and surprising, as they fit within the standards for Amazonian tropical forests, crediting the studied environment with the status of a well-conserved area that maintains a high local biodiversity.

2) Sustainable Forest Management

Contextualization

As described in the project description (PDD), there is sustainable forest management operating within the boundaries of the RESEX, and MADREX is the current company responsible for managing forest management activities in the Conservation Unit. In addition, as already discussed in other sections (3.1.3 and 6.1), during the monitored period, sustainable exploitation of APUs 14,15,16,17,18 and 19 occurred, according to the procedures of the Community Forest Management Plan (SFMP).

In the context of forest management, permanent plots are areas permanently demarcated and untouched in the forest and periodically remediated, with the objective of acquiring information about the growth, dynamics, and floristic composition of the forest. Permanent plots serve to continuously measure the ecological state of the intact natural forest and, throughout the exploration, serve as a guide to minimize the impacts of forest management.

As medium/long term activities, the project description foresees the adaptation of sustainable forest management to the criteria of the Forest Stewardship Council (FSC). However, in the interval of the monitored period, reflecting the present day, the forest management that occurs in the RESEX has not yet managed to comply with FSC. Therefore, without the obligations related to the post-harvest measurements of the certification, the measurements of the permanent plots have been taking place only in the pre-harvest phase, one year before the harvest of the APUs. The permanent plots are measured after harvesting only if the forest engineers responsible for forest management detect that there was an impact during the

harvesting activities, which did not occur during this monitoring period. In other words, the permanent plots of APUs 14 to 19 were inventoried only one year prior to harvesting.

However, the frequency associated with the predicted indicator of the PDD would be to account for the diversity of the permanent plots one year before the harvest and, at intervals of one, three and five years after the APU harvest. However, this frequency was considered due to FSC premises and, as forest management did not obtain the seal in the monitored period, the inventory of permanent plots did not take place after exploration. Thus, the frequency of the indicator was only collected one year after the UPA's were collected, and the deviation associated with the frequency of this indicator was reported in section 2.2.4 of this document. Taking the context informed above, due to the existence of the indicator, only the diversity of species in these plots was extracted and no other result of this activity can be measured, since these are permanent plots.

Methodology

The methodology used to collect data and information from the permanent plots is the one established by MADREX in the SFMP forest inventory activities.

Each UPA has three permanent plots, randomly distributed, of 10,000m² area, or one hectare. Thus, each UPA has three sampling units that together have 3 hectares.

The circumference of the trees was measured with a tape measure in centimeters at a height of 1.3 m above ground level (CAP). For trees with sapopemas (tabular roots), the circumference was measured at 0.3 m above them. Only trees with a CAP ≥ 47 cm were measured.

Commercial height was established as that found at the limit of the first stem branches of the trees and/or trunk bifurcations, and a 5 m long stick was used for measurement. For the rest of the stem, only height estimates were made.

In addition, the quality of the stem of the tree individuals was observed, following the following quality classes:

Class 1 - individuals presenting good formation, with total use of the stem;

Class 2 - individuals presenting some irregularity, with partial use of the stem;

Class 3 - individuals presenting irregularities, with no commercial use of the stem.

Results

a) Diversity

For the diversity calculation, we used the spreadsheets containing the common and popular names of the species identified in the inventories of the permanent plots. It is important to note that the species were identified at the species level, but it was not possible to access the scientific names. This occurred because MADREX, the owner of this information, suffered an incident during the monitoring period, losing relevant information. In view of this, and taking into consideration that species names may present

variations due to the observer and the region where they are located, it was not possible to identify possible double counts of these names, and all species listed in the spreadsheet were considered true and reliable in the diversity counts of the permanent plots. Double counting was only avoided when, by analyzing the names in the spreadsheet, it was identified that there was an error when typing the name of the species. An example of double counting that was avoided was "Babacu" where it appears in the inventory written with and without cedilla. In addition, unidentified species were counted as a different species from any other computed.

Another important point to consider is the date of exploitation of the UPA with the date of measurement of the permanent parcels of this UPA, which occurred one year before the exploitation, as already pointed out. That is, APUs 14 and 15, exploited in 2016, had their permanent plots measured in 2015. UPA 16, exploited in 2017, was measured in 2016. UPA 17, exploited in 2018, was measured in 2017. UPA 18, exploited in 2019 and measured and 2018. And UPA 19, finally, was exploited in 2020, but measured in 2019. Thus, the species diversity of the permanent plots was counted from 2015 to 2019.

As a result of diversity, one has that in 2015 the diversity of the plant community was 96 different species, in 2016 the diversity was 70 species, in 2017 the value was 77 species, in 2018 it was 67 and in 2019 the value was 68 species.

<table>
<tr><td>Data / Parameter</td><td>Diversity of plant community in permanent plots</td></tr>
<tr><td>Data unit</td><td>Wealth of species</td></tr>
<tr><td>Description</td><td>Variety of species found in the plant community within the permanent plots</td></tr>
<tr><td>Source of data</td><td>Data sheets</td></tr>
<tr><td>Description of measurement methods and procedures to be applied</td><td>Counting the species surveyed in the forest inventories in the permanent plots of each UPA.</td></tr>
<tr><td>Frequency of monitoring/recording</td><td>A year before the harvest. At intervals of one, three and five years after the harvest of the UPA.</td></tr>
<tr><td>Value monitored</td><td><table><tr><td>Year</td><td>wealth of species</td></tr><tr><td>2015</td><td>96</td></tr><tr><td>2016</td><td>70</td></tr><tr><td>2017</td><td>77</td></tr><tr><td>2018</td><td>67</td></tr><tr><td>2019</td><td>68</td></tr><tr><td>2020</td><td>n/a</td></tr></table></td></tr>
<tr><td>Monitoring equipment</td><td>Data sheets of the permanent plots</td></tr>
</table>

QA/QC procedures to be applied	Validation of information with ASMOREX and MADREX
Purpose of the data	Control diversity indices in permanent plots within the forest management area
Calculation method	Data sheets
Comments	The frequency of this parameter was not performed as planned, and was only accounted for one year before harvest. More details can be seen in the deviations section of this document (2.2.4).

5.3.2 Biodiversity Monitoring Plan Dissemination (B4.3)

As already described in item 2.3.1, the REDD+ RESEX Rio Preto-Jacundá Project implemented three methods of communication – oral, writen and virtual-, aiming to ensure access to the documents and all other Project information to communities and other stakeholders.

The results were released in a printed version, where each document related to monitoring was made available for consultation at ASMOREX's office and at CUC/SEDAM (Porto Velho municipality); in a virtual version, where documents related to monitoring were made available through Verra's website and through Biofílica's newsletters and social media; and orally, through the internal alignment meetings held by ASMOREX, and in the Ordinary and Extraordinary General Meetings held with the residents of the RESEX.

In addition, it is worth mentioning that the two biodiversity monitorings carried out in this monitoring period counted on the participation of the communities themselves and the results were presented to them through a feedback session right after the consolidation of the results.

Figure 18 - Feedback with the results of the biodiversity monitoring conducted by Ecoporé in 2020. Source: Ecoporé, 2020.

5.4 Optional Criterion: Exceptional Biodiversity Benefits

5.4.1 Trigger Species Population Trends (GL3.3)

Trigger Species	*Atheles Chamek* (Spider monkey)
With-project Scenario	According to the IUCN Red List, the species is threatened with extinction (EN), since there is an estimated decline due to habitat loss. The species is selected in studies of fauna diagnosis for its great biological importance, especially for being a large primate, seed disperser and high sensitivity, the degree of endemism and for beijng threatened with extinction. During the monitored period, the biodiversity monitoring carried out followed the premises of the methodology taken from the document "Monitoring Biodiversity: Methodological guide for the application of monitoring" as mentioned and referenced in item 5.3.1.1, which was developed by experts and renowned institutions, ensuring the technical-scientific character required for the execution of the monitoring. Besides this, seeking the best methodology suitable for monitoring primates and, consequently, the spider monkey, the document entitled "Protocols for the Collection of Data on Primates in Conservation Units of the Amazon[16]" was taken into consideration so that the method would be the most appropriate for the trigger species and, consequently, obtain results that corroborate precisely in the maintenance and improvement of the population status of this species. In the report developed by Ecoporé (monitoring carried out in 2020), the abundance for this species was 0.5 sightings/10km traveled. This value is similar to that found in a conserved forest (taken as a control plot) and higher than the values found in forest management plots newly exploited (NE) and regenerating (RG) (study carried out in a farm near the RESEX, both belonging to the same zoogeographic region). When compared to the NE and RG areas, the species has higher abundance in the RESEX Rio Preto Jacundá even in areas with sustainable use, including the exploration of a sustainable forest management plan, which reinforces the importance of the maintenance and preservation of the RESEX for the *Ateles chamek* species. Regarding the state of conservation and importance of RESEX forest in maintaining biodiversity, it is also noted that a slight increase in species with some degree of threat (NT; VU; EM) was detected when comparing the diagnosis in 2013 with the 2020 monitoring, increasing from 24% to 31%. Thus, it is highlighted in this report that "the forest presents excellent quality for the survival of biodiversity, information corroborated by sightings of top carnivores and animals that require large living areas for the maintenance of their populations". The conservation status of the forest implies directly in the conservation of biodiversity.

[16] VIDAL, M.D, et al. **Protocolo para coleta de dados sobre primatas em Unidades de Conservação da Amazônia.** Marcelo Derzi Vidal (organizador). –Brasília: ICMBio, 38 p.: il. 2012.

	It can be confirmed that the project activities have been effective in maintaining the species, since, according to the initial project description, one of the positive impacts of the project would be to maintain the levels of biodiversity and rare and special species. The project, when it was described, predicted that the maintenance of the habitat of this species would be linked to the empowerment of the community on biodiversity issues in the place where they live, as well as the in loco monitoring of the rates of the species, generating data and estimates to verify the population trend of *Ateles chamek*. It is noteworthy that the in loco monitoring of biodiversity in the RESEX had the support of the community and feedback with the results obtained was done, showing and transferring to the inhabitants of the RESEX the numbers obtained, besides pointing out the importance of the RESEX in the preservation of the spider monkey and other species found. It is understood, therefore, that all project activities, which result in a common purpose of reducing deforestation, forest conservation and social and economic development, have been efficient in maintaining the biodiversity and populations of the trigger species.

6 ADDITIONAL PROJECT IMPLEMENTATION INFORMATION

6.1 Sustainable Forest Exploration

During the monitored period, sustainable harvesting of the APUs 14,15,16,17,18 and 19 occurred, according to the procedures of the Sustainable Forest Management Plan (SFMP), which were under SEDAM's ownership, as described in section 3.1.3.3. In this section, the main results referring to the respective harvests in each year were discussed.

The APUs are closed for exploitation in the period December 31 of the previous year until March 31 of the following year, and the beginning of exploitation activities is authorized as of April 1st of the current year of exploitation. Still, it is important to emphasize that all the farms had an inspection carried out by SEDAM to close the exploration activities of each UPA. The final inspection is a mandatory activity, being the only way to carry out the exploration of the consecutive UPA. The final reports of the inspection remain in SEDAM's possession.

In this way, in 2016, APUs 14 and 15 were explored. The UPA 14 was authorized to explore 10,557.79m3, representing 1,537 trees. The total volume of the effective exploitation was 8,984.61m3, corresponding to 21.99 m3/ha, which represents 85.13% of the volume authorized in AUTEX. A total of 1,332 trees were logged, and 205 trees were left, representing 1,568.87 m3. The UPA area corresponded to 456.72 ha, with 422.38 ha having been effectively exploited.

The UPA 15, also explored in 2016, had an area of 544.08 ha, and 516.09 ha was explored. The authorized volume for exploitation was 8,043.69 m3, referring to 1,655 trees. The effective exploitation corresponded to a volume of 7,455.37 m3 (92.63% of that authorized at AUTEX), which represents 14.45 m3/ha and 1,543 trees. There were 112 remaining trees left, which refers to 588.32 m3.

In 2017, UPA 16 was explored. During the activities, maintenance of the project's access roads was carried out. An area of 540.94 ha was exploited, representing 88.8% of the area (609.13 ha). The authorized volume of exploration at AUTEX was 12,818.04 m3, and 23.7 m3/ha, corresponding to 2,841 trees. In the harvest, the effective volume was 23.28 m3/ha, which represents 98.23% of the total authorized at AUTEX. The average volume of the remaining trees was 225.93 m3, which represents 34 trees.

In the year 2018, UPA 17 was exploited. The volume authorized by AUTEX to be exploited was 11,974.37 m3, and 24.99m3/ha. The volume actually exploited was 11,701.15 m3, and 24.43 m3/ha, representing 97.72% of the total authorized in AUTEX, equivalent to 2,414 trees. The 59 remaining trees represent a total of 273.22 m3. The area authorized for exploitation was 514.24 ha, and only 478.99 ha were exploited.

UPA 18 was exploited in the year 2019, where it was authorized by AUTEX to exploit 13,109.53 m3, and 24.99m3/ha, this volume exploited in an area of 552.92 ha. In its post-exploitation report, a total of 12,920.49 m3, and an average of 24.63 m3/ha, was exploited, which represents 2,488 trees and 98.56% of the total authorized in AUTEX. There were 51 remaining trees, giving a total of 189.03 m3. The area of effective exploitation was 524.52 ha.

In 2020, the exploration of UPA 19 began. Thus, the UPA has a total area of 586.17 ha, of which 544.44 ha is effective area. AUTEX authorized the exploration of a volume of 13,610.15 m3, corresponding to 2,409 trees. By the end of the monitoring period, 83.35% of the volume authorized at AUTEX, which represents 11,344.77 m3, representing 1,924 trees, had been exploited. There were 485 remaining trees left, which is equivalent to a total volume of 2,265.38 m3. By August 7, 2020 (the end of the monitored period) the exploitation of UPA 19 had not been finalized, for this reason, only the preliminary results were presented.

As can be seen in the results obtained from the post-exploitation reports, all APUs exploited during the monitored period were exploited below what was authorized in the AUTEX. Thus, it is possible to demonstrate good forest management practices to assist in the conservation of forest cover in the RESEX, and, consequently, the good results regarding biodiversity, as demonstrated in sections 5.1 and 5.3.

7 ADDITONAL PROJECT IMPACT INFORMATION

7.1 Forest Reference Emission Level – (FREL)

The FREL, known as the Forest Reference Emission Level, is a reference level against which REDD+ activities in Brazil are measured and its principle is to allow the evaluation of the real effects of policies and measures to reduce greenhouse gas emissions. This reference level of forest emissions is a requirement for developing countries that wish to obtain recognition of their national forest mitigation efforts by the UNFCCC for the purpose of payments for REDD+ results.

Therefore, the reference level was derived from the document "Brazil's submission of a Forest Reference Emission Level (FREL) for reducing emissions from deforestation in the Amazon biome for REDD+ results-based payments under the UNFCCC"[17], which was submitted by Brazil to the UNFCCC in 2014.

As an improvement in the analysis of the project's emissions and reductions data, a comparison was made with the values reported in the reference level of Brazil's forest emissions reported in the FREL. Initially, the entire methodological context and the assumptions used that generated the values presented by the FREL were thoroughly analyzed. The analysis aimed to understand the insertion of the project at the national level, as well as an exercise to follow the government's updates regarding emission levels and whether the project follows these updates.

Thus, it was identified that the FREL brings an average annual value of emissions of 907,959,466.3 tCO_2 referring to 702,277.6 total annual hectares of deforested areas in the legal Amazon. With regard to the project, in the years monitored, the average annual emissions rate from planned (opening of forest management infrastructure), unplanned deforestation and forest fires was 489,269 tCO_2 for the 1,098.47 average hectares deforested each year. Thus, by a simple rule of three, taking the project's annual deforested rate and extrapolating to the reference level, the project should be emitting 585,901.44 tCO2 annually.

The percentage of the project's emissions (489,269 tCO_2) was also verified in comparison to the reference level to verify the representativeness of the project's emissions in the total value (907,959,466.3 tCO2). Consequently, it was identified that the project's emissions in the monitored period represented 0.0005% of the total emissions of the legal Amazon.

In view of this and, making a methodological comparison associated with the FREL and the Rio Preto-Jacundá REDD+ project, although the reference emission level was calculated using an extremely robust and reliable methodology, some points should be taken into consideration to explain this difference found between what was expected and what happened.

[17] BRASIL. Ministério do Meio Ambiente. Ministério da Ciência, Tecnologia e Inovação. **Brazil's submission of a Forest Reference Emission Level (FREL) for reducing emissions from deforestation in the Amazonia biome for REDD+ results-based payments under the UNFCCC**.Brasília, DF: MMA, Set. 2014.

First, the national reference level considered the years 1996 to 2010 in its calculations, which consists of a different period from the monitored years of the project (2016 to 2020). In addition, the methodology associated with the FREL incorporated the litter in its carbon stock calculations and, consequently, emissions from this carbon pool were considered in the final emission value. Furthermore, to calculate the carbon stock, the differentiation of the forest physiognomies and their respective emission factors were taken into consideration. Another important distinction is the fact that the REDD+ Project approach is developed in a more regional analysis, unlike FREL. Thus, the differences in methodological approaches make the emission factors of these two references different from each other.

Despite these differences, the FREL is an important national initiative for monitoring emissions at a broader level, which will be monitored to accompany its updates and improvements in order to add to the progress of the REDD+ Project.