

JARI/PARÁ REDD+ PROJECT MONITORING REPORT

Project title	Jari Pará REDD+ Project
Project ID	1811
Crediting period	08-July-2014 to 07-July-2044
Monitoring period	23-October-2017 to 06-March-2023
(CCB) GHG accounting period	08-July-2014 to 07-July-2044 30 years
Original date of issue	03-April-2025
Most recent date of issue	03-April-2025
Version	1.0
VCS Standard version	4.7
CCB Standards version	3.1
Project location	Brazil, Pará.
Project proponent(s)	Biofílica Ambipar Environmental Investments S/A - Av. Angélica, 2330, 11º andar – Higienópolis, ZIP Code 01228-200, São Paulo/SP– Brazil - verra.ambiparenviroment@ambipar.com / redd.jaripara@ambipar.com Jari Celulose - Avenida Tamboaré 267, 8º andar, Torre Norte – Tamboaré – Barueri – SP - Vinicius.garcia@gurpojari.com.br Fundação Jari - Alameda Mamoré, 989 – 25º andar – Alphaville - CEP 06454-040, Barueri/SP – Brazil - jorge.almeida@fundacaojari.org.br
Validation/verification body	Earthood Services Private Limited "ESPL" – Kaviraj Singh – email: kaviraj.singh@earthood.in / endereço: 1203-1205,12th Floor, Tower B, Emaar Digital Greens, Sector 61, Gurugram, Haryana, India / telephone: +91 1244204599.
History of CCB Status	Validation 15-October-2019 1's Verification 23-October-2017 – 06-March-2023
Gold Level criteria	Gold Level GL1 - Climate Change Adaptation Benefits by providing significant support to help communities and/or biodiversity adapt to the impacts of

	climate change. The project's climate-related activities focus on actions to promote food security and alternative sources of income through sustainable natural resource management, biodiversity protection, and improved community infrastructure. Project activities to help achieve these benefits include environmental education, control of wildfires and enforcement of deforestation, courses and training, implementation of agroforestry systems, creation of new production chains, donation of solar panels, and improvements in community infrastructure. Gold Level GL3 - Exceptional Biodiversity Benefits, according to the vulnerability criteria described by CCBS for critically endangered or endangered species (according to the IUCN Red List). The Jari Pará REDD+ Project zone plays a critical role in the conservation of local biodiversity and proposed activities in the Project, such as biodiversity monitoring and incentives for scientific research to help maintain this conservation.
Prepared by	Bioflica Ambipar Environmental Investments S/A

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1 SUMMARY OF PROJECT BENEFITS

1.1 Unique Project Benefits

Outcome or Impact	Achievements during the Monitoring Period	Section Reference	Achievements during the Project Lifetime
1) Climate change mitigation	Total emissions avoided in the monitoring period: 1,682,232 tCO₂e¹ Total avoided deforestation within the project zone: 14,440 hectares² Total deforestation alerts generated with high resolution images: 109 Total inspection activities promoted: 1,356 Total number of reports made: 31	3	Total emissions avoided in the monitoring period: 2,775,145 tCO₂e Total avoided deforestation within the project zone: Hectares 24,197 Total deforestation alerts generated with high resolution images: 109 Total inspection activities promoted: 2,114 Total number of reports made: 41
2) Increase the level of socioeconomic conditions and the quality of life of families by helping them obtain goods and services that promote economic and social well-being, reducing social vulnerability and a rural exodus by strengthening associations, improving family agriculture, providing technical	Number of people reached by the project: 575 Communities affected by the project: 52 Improvements and construction of infrastructure for the communities: 15	4	Number of people reached by the project: 575 Communities affected by the project: 52 Improvements and construction of infrastructure for the communities: 15

¹ Total emissions avoided in the PA and LK

² Total avoided deforestation in the PA and LK

assistance and improving energy, and communication systems	Associations supported by the project: 10		Associations supported by the project: 10
3) Courses and training provided and focused on sustainable management practices of forest resources, production, social organization, cooperativism, leadership and financial management, developing technical and professional skills	Number of training courses focused on family agriculture and sustainable extractivism: 27 The number of training courses offered to strengthen associativism and cooperativism in the communities: 39 Number of training offered focused on environmental education: 30	4	Number of training courses focused on family agriculture and sustainable extractivism: 27 The number of training courses offered to strengthen associativism and cooperativism in the communities: 39 Number of training offered focused on environmental education: 30
4) Maintenance and monitoring of the forest cover in the Project area, ensuring the protection and conservation of habitats, and local biodiversity, including species with some degree of threat and the role of an "ecological corridor" in the Project area, connecting Conservation Units.	Number of expeditions for fauna monitoring: 1 (2022) Number of actions for flora survey: 1 (monitoring) Number of species monitored: 179 (fauna) and 139 (flora)	5	Number of expeditions for monitoring fauna: 2 (2016 and 2022) Number of actions for flora survey: 1 (monitoring) and 1 (diagnosis) Number of species monitored: 179 (fauna) and 139 (flora)

1.2 Standardized Benefit Metrics

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	1,682,232	3	2,775,145
Forest ³ cover	For REDD ⁴ projects: Number of hectares of reduced forest loss in the project area measured against the without-project scenario	5,051	3	8,119
	For ARR ⁵ 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 ⁶ 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	1,466 participations in capacity building	4.3.1	1,466 participations in

³ Land with woody vegetation that meets an internationally accepted definition (e.g., UNFCCC, FAO, or IPCC) of what constitutes a forest, which includes threshold parameters, such as minimum forest area, tree height and level of crown cover, and may include mature, secondary, degraded and wetland forests (*VCS Program Definitions*)

⁴ Reduced emissions from deforestation and forest degradation (REDD) – Activities that reduce GHG emissions by slowing or stopping conversion of forests to non-forest land and/or reduce the degradation of forest land where forest biomass is lost (*VCS Program Definitions*)

⁵ Afforestation, reforestation and revegetation (ARR) – Activities that increase carbon stocks in woody biomass (and in some cases soils) by establishing, increasing and/or restoring vegetative cover through the planting, sowing and/or human-assisted natural regeneration of woody vegetation (*VCS Program Definitions*)

⁶ Improved forest management (IFM) – Activities that change forest management practices and increase carbon stock on forest lands managed for wood products such as saw timber, pulpwood, and fuelwood (*VCS Program Definitions*)

	resulting from training provided as part of project activities	offered by the Project: 353 participations in capacity building for Strengthening Family Agriculture and Sustainable Extractivism 486 participations in capacity building for Environmental Education 627 participations in capacity building of associations and cooperatives in the communities		capacity building offered by the Project: 353 participations in capacity building for Strengthening Family Agriculture and Sustainable Extractivism 486 participations in capacity building for Environmental Education 627 participations in capacity building of associations and cooperatives in the communities
	Number of female community members who have improved skills and/or knowledge resulting from training provided as part of project activities of project activities	Not applied	-	Not applied
Employment	Total number of people employed in of project activities, ⁷ expressed as number of full-time employees ⁸	Not applied		Not applied
	Number of women employed in project activities, expressed as number of full-time employees	Not applied		Not applied

⁷ Employed in project activities means people directly working on project activities in return for compensation (financial or otherwise), including employees, contracted workers, sub-contracted workers, and community members that are paid to carry out project-related work.

⁸ Full time equivalency is calculated as the total number of hours worked (by full-time, part-time, temporary and/or seasonal staff) divided by the average number of hours worked in full-time jobs within the country, region, or economic territory (adapted from UN System of National Accounts (1993) paragraphs 17.14[15.102]; [17.28])

Livelihoods	Total number of people with improved livelihoods ⁹ or income generated as a result of project activities	575	4	575
	Number of women with improved livelihoods or income generated as a result of project activities	182	4	182
Health	Total number of people for whom health services were improved as a result of project activities, measured against the without-project scenario	Not applied	-	Not applied
	Number of women for whom health services were improved as a result of project activities, measured against the without-project scenario	Not applied	-	Not applied
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	15 young people enrolled in Agribusiness technical teaching	4	15 young people enrolled in Agribusiness technical teaching
	Number of women and girls for whom access to, or quality of, education was improved as a result of project activities, measured against the without-project scenario	06 young women enrolled in Agribusiness technical teaching	4	06 young women enrolled in Agribusiness technical teaching
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	Not applied	--	Not applied
	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	Not applied	--	Not applied

⁹ Livelihoods are the capabilities, assets (including material and social resources) and activities required for a means of living (Krantz, Lasse, 2001. *The Sustainable Livelihood Approach to Poverty Reduction*. SIDA). Livelihood benefits may include benefits reported in the Employment metrics of this table.

Well-being	Total number of community members whose well-being ¹⁰ was improved as a result of project activities	580 families	4.3	580 families
	Number of women whose well-being was improved as a result of project activities	Not applied	--	Not applied
Biodiversity conservation	Change in the number of hectares significantly better managed by the project for biodiversity conservation, ¹¹ measured against the without-project scenario	496,988	5	496,988
	Number of globally Critically Endangered or Endangered species ¹² benefiting from reduced threats as a result of project activities, ¹³ measured against the without-project scenario	3 species of mammals and 6 species of birds	5	3 species of mammals and 6 species of birds

2 PROJECT DETAILS

2.1 Summary Description of the Implementation Status of the Project

2.1.1 Summary Description of the Project (VCS, 2.1, 3.6; CCB, G1.2)

The activities of Jari Pará REDD+ Project are under the responsibility of Biofílica Ambipar Environment and the Fundação Jari and were started in 2014. Biofílica works in all the project stages from design, implementation, monitoring, and management, being responsible for developing all technical documents for the relationship with the partner and for conducting and performing verification audits. Jari Celulose is the owner of the land where the Project is being developed and is responsible for the co-management of the project and for land security and property surveillance. Fundação Jari is responsible for the co-management of the project, managing the socio-environmental activities of the projects, offering through Technical Assistance and Rural Extension (TARE) for producers activities focused on reducing negative impacts and generating positive ones.

¹⁰ Well-being is people's experience of the quality of their lives. Well-being benefits may include benefits reported in other metrics of this table (e.g. Training, Employment, Health, Education, Water, etc.), but could also include other benefits such as empowerment of community groups, strengthened legal rights to resources, conservation of access to areas of cultural significance, etc.

¹¹ Biodiversity conservation in this context means areas where specific management measures are being implemented as a part of project activities with an objective of enhancing biodiversity conservation.

¹² Per IUCN's Red List of Threatened Species

¹³ In the absence of direct population or occupancy measures, measurement of reduced threats may be used as evidence of benefit

During the monitoring period, the project worked in 52 communities located in Pará, providing TARE services to around 575 rural producers and improving the infrastructure of 15 communities. Among the main activities implemented during the monitoring period we highlight as follows: 1. The frequent monitoring of the areas using satellite images; 2. The intensification and improvement of the efficiency of the property surveillance team; 3. The hiring of high-resolution satellite images to improve monitoring techniques; 4. The technical assistance and rural extension work (TARE); 5. Training is offered by Fundação Jari; 6. Monitoring Guide Implementation; 7. Improvement in the community infrastructure; 8. Partnership with IFAP and Biodiversity monitoring.

Activities carried out by REDD+ to curb unplanned deforestation, promote social inclusion and socioeconomic development, allowed for total reductions in GHG emissions of 1,682,232 tCO₂e, emissions during the monitored period (October 23, 2017 to March 06, 2023). To achieve these results, actions were taken to prevent events that could impact GHG emissions reductions, in addition to carrying out surveillance actions throughout the Project Zone, communication procedures with stakeholders were improved, and the social action by Fundação Jari was strengthened in the monitored period. Such actions aim to establish a broad and transparent management of the territory, avoiding the occurrence of invasions, disputes and illegal practices and reducing social tensions.

2.1.2 Audit History (VCS, 4.1)

Audit type	Period	Program	Validation/verification body name	Number of years
Validation	15-October-2019	VCS and CCB	Rina Services SPA	-
Verification	08-July-2014 – 22-October-2017	VCS	Rina Services SPA	3
Verification	23-October-2017 – 23-September-2022	VCS	Earthood Services Private Limited	5
Verification	23-October-2017 – 06-March-2023	CCB	Earthood Services Private Limited	5
Total	08-July-2014 – 06-March-2023	-	-	8

2.1.3 Sectoral Scope and Project Type (VCS, 3.2)

Sectoral scope	14 – Agriculture, Forestry and Other Land Use (AFOLU)
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AFOLU project category¹⁴	Reducing Emission from Deforestation and Degradation
Project activity type	Unplanned Avoided Deforestation (AUD)

2.1.4 Project Proponent (VCS, 3.7; CCB, G1.1)

Organization name	Bioflica Ambipar Environmental Investments S/A
Contact person	Plínio Ribeiro
Title	Chief Executive Officer (CEO)
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Email	verra.ambiparenviroment@ambipar.com / red.d.jaripara@ambipar.com

Organization name	Jari Celulose.
Contact person	Vinicius Montagnana Garcia
Title	Advisor
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Telephone	+55 11 4689-8700
Email	Vinicius.garcia@gurpojari.com.br
Organization name	Fundação Jari
Contact person	Jorge Rafael Almeida
Title	General Coordinator
Address	Alameda Mamoré, 989 – 25º andar – Alphaville CEP 06454-040, Barueri/SP – Brazil
Telephone	+55 93 3735-1140

¹⁴ See Appendix 1 of the VCS Standard

Email jorge.almeida@fundacaojari.org.br

2.1.5 Other Entities Involved in the Project

Organization name	Harmonia Socioambiental
Role in the Project	Social consultation carried out for socio-economic and environmental diagnosis and socio-economic module
Contact person	Nicia Coutinho
Title	Senior Consultant
Address	Alameda Augusto Fernandes Queiros, 07 – Caranazal CEP 68040-650, Santarém/PA – Brazil
Telephone	+55 93 99159-8911
Email	hconsultoriasocioambiental@gmail.com

Organization name	Empresa Brasileira de Pesquisa Agropecuária – EMBRAPA (AMAPÁ)
Role in the Project	Transfer of Production Technology (TT) to farmers and extractivist producers in the Vale do Jari Region through training and implementation of new technologies in the field, as well as conducting studies and research focused on optimizing production in the field. Embrapa is also one of the institutions responsible for providing training to the TARE team of the Project
Contact person	Walter de Souza Paixão
Title	Technology Transfer Supervisor Analyst
Address	Rod. Josmar Chaves Pinto, Km 5, nº 2.600 – Universidade, CEP 68903-419, Macapá/AP – Brazil
Telephone	+55 96 98402-4720
Email	walter.sousa@embrapa.br

Organization name	Instituto Federal do Amapá – IFAP
Role in the Project	Biodiversity monitoring (fauna and flora) scientific publications and provision of internship programs and scholarships, for students in the region
Contact person	Anderson Pedro Bernardina Batista

Title	Cooperation Agreement Coordinator
Address	Rua Nilo Peçanha, s/nº, Cajari, Laranjal do Jari, Amapá – Brazil
Telephone	+55 93 3735-1140
Email	13otmail13.batista@ifap.edu.br

Organization name	Instituto Chico Mendes de Conservação da Biodiversidade (ICMBIO)
Role in the Project	Acting on the Advisory Board of the Jari Ecological Station Conservation Unit, which is represented by the Jari Foundation due to the strong influence of the activities of both areas, as they share a geographical boundary
Contact person	José Newton Costa
Title	Head of ESESC JARI/ICMBio/MMA
Address	Rua 80, nº 109, Bairro Staff, Distrito de Monte Dourado Almeirim/PA- Brazil
Telephone	+55 96 99100-5333
Email	jose.costa@icmbio.gov.br

Organization name	Empresa de Assistência Técnica e Extensão Rural do Estado do Pará – EMATER Pará
Role in the Project	Strengthening of the Technical Assistance and Rural Extension Services (ATER), in the municipality of Almeirim/PA, aimed at the community members served by the Project
Contact person	Elinaldo Martins da Silva
Title	Head of the Local Office of the Municipality of Almeirim
Address	BR 316 – Km 12 – Centro, CEP: 67201-045, Marituba/PA- Brazil
Telephone	+55 93 99105-4118
Email	elinaldomartins@hotmail.com

Organization name	Secretaria de Estado do Desenvolvimento Rural do Amapá – SDR
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Role in the Project	Orients and makes possible the financing of the Integrated Food Production Program (FPP) for farmers from Almeirim/PA, assisted in the scope of the Project, and also acts in training activities
Contact person	Haroldo Palheita Amaral
Title	Coordinator
Address	Av. FAB, 0087- Centro Administrativo, Central. CEP: 68.900-073 Macapá-AP – Brazil
Telephone	+55 96 99140-2009
Email	haroldo.hpa@hotmail.com

Organization name	Instituto de Extensão, Assistência e Desenvolvimento Rural do Amapá (RURAP) – Vitória do Jari & Laranjal do Jari
Role in the Project	Strengthening of the Technical Assistance and Rural Extension Services (TARE), with activities focused on the farmers of Almeirim/PA, served by the project, including support for training
Contact person	Dalberto Moraes da Silva
Title	South Regional Center Manager
Address	Av. Profa. Cora de Carvalho, 2430 A – Central, CEP 68900-040, Macapá/AP – Brazil
Telephone	+55 91 99117-2059
Email	dalbertorurap@gmail.com

Organization name	Prefeitura de Vitória do Jari
Role in the Project	Development of Joint Actions for the Promotion and Strengthening of Sustainable Development, especially in actions aimed at strengthening associativism and cooperativism in the communities located in Almeirim/PA. Because of the partnership consolidated in the Jari Pará and Amapá REDD+ Projects, and the geographical location of the Jari property, on the border between the states of Pará and Amapá
Contact person	Paulo Sérgio Araújo Parente
Title	Municipal Secretary of Agriculture

Address	Passagem José Simeão de Sousa, 459, CEP 68924-000 – Prainha, Vitória do Jari/AP- Brazil
Telephone	+55 96 99155-3635
Email	pauloparente66@gmail.com

Organization name	Prefeitura de Almeirim
Role in the Project	Development of Joint Actions for the Promotion and Strengthening of Sustainable Development, focused on the rural producers of Almeirim/PA, and their demands
Contact person	José Ribamar Moraes da Silva
Title	Municipal Secretary of Environment (SEMA)
Address	Rod. Almeirim Panaica, 2442, CEP 68230-000, Almeirim/PA – Brazil
Telephone	+55 93 98112-5564
Email	ribamarmoraes2021@gmail.com

Organization name	Serviço Nacional de Aprendizagem Industrial (SENAI) AP
Role in the Project	Promotes the development of competencies and skills of young people for the world of work, through the project Generation Apprentice, for the qualification of teenagers and young people from the city of Almeirim/PA
Contact person	Júlio Augusto Zorzal dos Santos
Title	Executive Operations Manager Sesi SENAI
Address	Av. Padre Júlio Maria Lombaerd, 2000 – Santa Rita, CEP 68901-283, Macapá/AP – Brazil
Telephone	+55 27 99941-1914
Email	julio.zorzal@sesisenaiap.org.br

Organization name	Banco da Amazônia
Role in the Project	Guides and Enables the Financing of Agroextractivist Production via Refundable Rural Credit from PRONAF, being the main partner bank to promote lines of credit with farmers in Almeirim/PA, benefited by the Project

Contact person	Joana Emília Lima
Title	Branch Manager of Banco da Amazônia
Address	Avenida Coaracy Nunes, Centro, CEP: 68900-010, Macapá/AP – Brazil
Telephone	+55 96 98139-8555
Email	joana.lima@bancoamazonia.com.br

Organization name	Associação das Famílias da Escola Família Agrícola da Região do Pacuí (AFEFARP)
Role in the Project	Acting in favor of high school and technical agricultural training for young people and adults, children of farmers and extraction workers from the rural communities of Almeirim and Monte Dourado
Contact person	Bianca Rigamonte
Title	Director of EFA/PACUI
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Organization name	Sindicatos dos Trabalhadores rurais Agricultores e Agricultoras Familiares do Município de Almeirim – STTRA – PA
Role in the Project	Supports and guides the Social Mobilization and Documentation Actions of Rural Farmers of the Almeirim Municipality
Contact person	Francyléia Mendes de Araújo
Title	President
Address	R. Venceslau Ricardo Lopes, CEP 68230-000, Almeirim/PA – Brazil
Telephone	+55 93 98127-0335
Email	francyleiamendes@hotmail.com

Organization name	Di Ciero
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Role in the Project	Conducting technical studies to evaluate the impacts of social projects, perception of social impacts and characterization of communities
Contact person	Alexandre Di Ciero
Title	Technical Director
Address	Avenida Nove de Julho, 2989, Rubi – 63, Jundiaí, São Paulo
Telephone	+55 11 95267-5812
Email	diciero@sustentabilidade.com.br

2.1.6 Project Start Date (VCS, 3.8)

Project start date	08-July-2014
Justification	The start date of Jari Pará REDD+ Project is 08-July-2014 because it represents the moment when the contract for expansion of conservation initiatives in the region was signed. The detailed justification created to define the project start date is provided in the project description document.

2.1.7 Benefits Assessment and Project Crediting Period (VCS, 3.9; CCB, G1.9)

Crediting Period	The crediting period of the Jari Pará REDD+ Project will refer to the complete period of 30 years, considering the VCS v4.7 standard.
Start Date of First or Fixed Crediting Period	08-July-2014 until 07-July-2044
Total Number of Years of Crediting Period	30 years
CCB Benefits Assessment Period	There will be ongoing monitoring of the benefits to climate, communities and biodiversity, subject to verification with the CCB, ideally every two or three years, throughout the duration of the Project.

2.1.8 Project Location (VCS, 3.11; CCB, G1.3)

Jari Pará REDD+ Project is located in the northern region of the State of Pará, and to the north of the Conservation Unit “Estação Ecológica do Jari” [Jari Ecological Station] and is on the right bank of the lower

Jari River, bordering the State of Amapá, in the Almeirim municipality, between parallels 0° 20" 00" S and 1° 40" 00" S and meridians 51° 50" 00" W and 53° 20" 00" W. The vicinity of the area is characterized by the presence of several Conservation Units (Full Protection and Sustainable Use), as well as land reform settlements of the National Institute for Colonization and Agrarian Reform (INCRA).

The Project Area (496,988 hectares) is located within the Gleba Jari I property (Project Zone), which totals an area of 909,498 hectares (sum of the areas of the 99 Glebas of the property) shown in Figure 1.

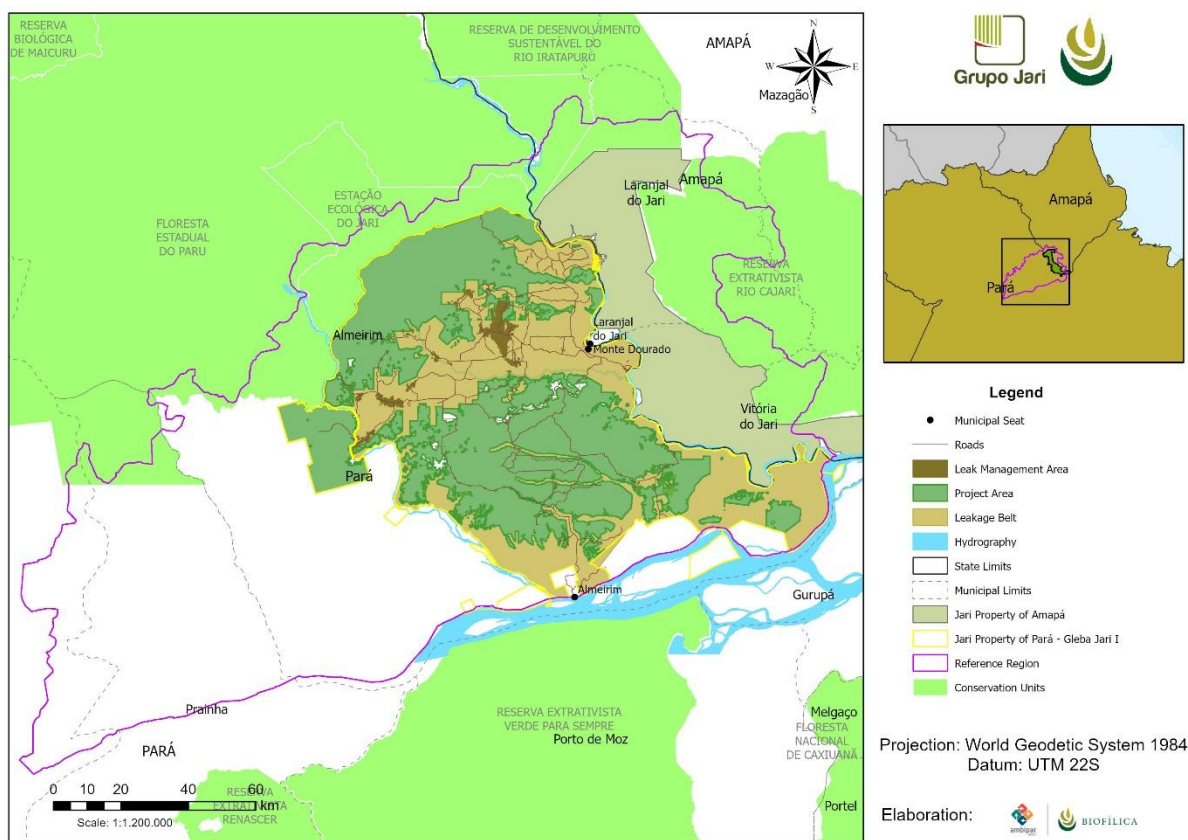


Figure 1. Jari Pará REDD+ Project location.

☒ KML file has been provided

2.1.9 Title and Reference of Methodology (VCS, 3.1)

Type (methodology, tool or module).	Reference ID, if applicable	Title	Version
Methodology for Unplanned Avoided Deforestation	VM0015	VM0015 for Unplanned Avoided Deforestation	1.1

Tool for the Demonstration and Assessment of Additionality in Agriculture, Forestry and Other Land Use VCS Project Activities (AFOLU)	VT0001	VT0001 – for the Demonstration and Assessment of Additionality in Agriculture, Forestry and Other Land Use VCS Project Activities (AFOLU)	3.0
AFOLU Non-Permanence Risk Tool	-	AFOLU Non-Permanence Risk Tool	4.2

2.1.10 Double Counting and Participation under Other GHG Programs (VCS, 3.23; CCB, G5.9)

2.1.10.1 No Double Issuance

Is the project receiving or seeking credit for reductions and removals from a project activity under another GHG program, or any other form of community, social, or biodiversity unit or credit?

☐ Yes ☒ No

2.1.10.2 Registration in Other GHG Programs

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

☐ Yes ☒ No

2.1.10.3 Projects Rejected by Other GHG Programs

Has the project been rejected by any other GHG programs?

☐ Yes ☒ No

2.1.11 Double Claiming, Other Forms of Credit, and Scope 3 Emissions (VCS, 3.24)

2.1.11.1 No Double Claiming with Emissions Trading Programs or Binding Emission Limits

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

☐ Yes ☒ No

2.1.11.2 No Double Claiming with Other Forms of Environmental Credit

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

☐ Yes

☒ No

2.1.11.3 Supply Chain (Scope 3) Emissions

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

☐ Yes

☒ No

2.1.12 Sustainable Development Contributions (VCS, 3.17)

One of the purposes of Jari Pará REDD+ Project is to promote sustainable development in the region, and Fundação Jari considered a facilitating and encouraging agent of this sustainable development, since it is responsible for the project's co-management, managing the projects' socio-environmental activities.

The Fundação is a non-profit social organization, created in April 1994, that plays the role of a social enterprise of the Grupo Jari, whose mission is the sustainable development of communities in the Vale do Jari through programs and projects focused on fostering human development and the all-round education of children and adolescents.

Fundação Jari works according to Human Rights Defense and Guarantee Policy and Human and Sustainable Development. It develops Programs and Projects free of charge, prioritizing actions in the field of Work and Income Generation as a Strategy to Fight Poverty, Assurance of Rights, Education, Culture, Environment, and Agriculture. Strengthening and fostering access to public services and citizenship and social welfare actions through advisory services to sector and rights councils and social education initiatives, in an integrated manner with professional qualification, productive inclusion, and Technical Assistance and Rural Extension actions.

Based on the principle of the 3 P's of Sustainability (Planet, Profit and People), it is integrated into the corporate management system of the Grupo Jari, which covers the areas of quality, environment, occupational health and safety and social responsibility, in line with international standards such as ISO 9001, OHSAS (Occupational Health and Safety Assessment Services), and the Brazilian Forestry Certification Program (CERFLOR). All this work has been recognized by several awards throughout its existence, as the Foundation is strongly committed and works with UNICEF SEAL, an initiative of the United Nations Children's Fund (UNICEF) to encourage and recognize real and positive advances in the promotion, achievement, and guarantee of children and adolescents rights in municipalities of the semi-arid region and the Brazilian Legal Amazon.

The Foundation also has the CEBAS "certification" (Certification of Charitable Entities for Social Assistance in the Education Area) granted by the Federal Government, through the Ministries of Education, Social and Agrarian Development, and Health, to non-profit private legal entities recognized as charitable entities for social assistance that provide services in areas of education, social assistance, or health.

All the emphasis on the role and performance of the Fundação Jari is crucial, in the monitoring period, along with the development of the activity governance by Fundação Jari, they understood that all communities, families, associations, and organizations receiving some support and service from Fundação Jari are included as beneficiaries of Vale do Jari REDD+ Project, once the investments coming from REDD+ are the main funding source for activities promoted by the Foundation in the region.

By expanding the scope of affected families and communities, the Foundation's socio-environmental work obtained greater engagement from local communities and institutions in the program strategies to reduce emissions from deforestation, and environmental degradation in Vale do Jari, spreading a "collective awareness" in the region, about the importance of keeping the forest standing and enjoying the social and economic benefits generated by the valuation, in the carbon market, of the environmental services that the standing forest promotes in favor of the climate balance, the well-being of the communities, and the conservation of biodiversity.

Based on this understanding and according to the impacts occurred by the project that are described in the following sections, and detailed in the CCB monitoring report, it is understood that the project contributes to the following UN Sustainable Development Goals:

Table 1: Sustainable Development Contributions

Row number	SDG Target	SDG Indicator	Net Impact on SDG Indicator	Current Project Contributions	Contributions Over Project Lifetime
1)	2.3	Productivity, Diversity and Farm Income	Activities implemented increase to	Through the technical assistance offered 10 productive chains were implemented.	Implemented 10 productive chains.
2)	2.4	Technical Assistance and Rural Extension Team	Activities implemented increase to	575 farmers received technical assistance for family farming and sustainable extractivism activities	575 farmers able to access the rural technical assistance
3)	4.3, 4.4 and 4.7	Participation of project beneficiaries in capacity building activities	Activities implemented increase to	96 training courses offered on the following themes: family agriculture and sustainable extractivism, strengthening associativism and cooperativism, and environmental education, with 1,466 participants	1,466 participations in capacity building activities
4)	5.5	Participation of women in decision-making processes	Activities implemented increase to	31 women in positions in the associations/ cooperatives supported by the Project	31 women in positions in the associations/ cooperatives supported by the Project
5)	5.5	Participation of youth, women, and people in vulnerable conditions in project activities	Implemented activities to increase	02 projects implemented focusing on youth and women	02 projects implemented focusing on youth and women

6)	12.a	Promotion of scientific research	Activities implemented increase to	Support for the “Giant Tree Expedition” (monitoring of giant trees in the north of Pará) Biodiversity monitoring and scientific research	Support for the “Giant Tree Expedition” (monitoring of giant trees in the north of Pará) Biodiversity monitoring and scientific research
7)	12.4	Use of chemical pesticides, biological control agents or other types of inputs	Activities implemented decrease to	Minimally used chemical inputs, guided by soil analysis. Preference to the use of natural fertilizers/composting	Minimally used chemical inputs, guided by soil analysis. Preference to the use of natural fertilizers/composting
8)	13.0	Tons of greenhouse gas emissions avoided or removed	Implemented activities to increase	Jari Pará REDD+ Project avoided the release of 1,682,232 tCO ₂ e to atmosphere during the monitoring period	Avoided release of 2,775,145 tCO ₂ e to atmosphere
9)	15.1	Number of hectares of forest loss avoided by the Project	Activities implemented increase to	Jari Pará REDD+ Project avoided deforestation of 4,811 hectares of rain forest within the project area	Conserved 8,119 ha of tropical forest that would have been cleared in the without-project scenario within the project area

2.2 Project Implementation Status

2.2.1 Implementation Schedule (VCS, 3.2; CCB, G1.9)

Date	Milestone(s) in the project's development and implementation
July 2014	Signing of contractual amendment between the bidders
Completed between March/2015 and June/2015	Identification of actors and partnerships and choice of Research Institutions
Completed between May/2014 and August/2016 and revised between January/2017 and October/2018	Baseline Determination
Completed between May/2015 and April/2016	Preparation of technical studies: Forest carbon stock estimation, Socioeconomic and Environmental Diagnosis
Started in 2015 and ongoing for the entire duration of the project	Creation of the Socio-environmental Financial Management Agreement REDD+ Jari
Started in 2015 and ongoing for the entire duration of the project	Intensification and improvement of the efficiency of the Property Surveillance
Started in 2018 and ongoing along the entire project term	Strengthening the TARE Team: training aimed at qualifying the team to meet the demands of the communities
Started in 2019 and completed in 2022	Carrying out a new Socioeconomic and Environmental Diagnosis to update the characterization and registration of the communities, along with a reassessment of the social and environmental impacts on Vale do Jari.
Started in 2020	Hiring high-resolution images for monitoring risk areas in the property
Started in 2022	Creation of the application for monitoring the activities of Fundação Jari
Started on 07/11/2022 and ends on 07/11/2026 (with possibility of renewal)	Consolidation of a partnership with IFAP to carry out teaching, research, and extension activities in the region of Vale do Jari, focused on the projects' biodiversity monitoring activities.
September 2021	Training on REDD+ Projects for members of Fundação Jari and Grupo Jari
Started in 2022 and ongoing along the entire Project term	Consolidation and Implementation of the Monitoring Guide
1st Training held in November/2022	Training of the Monitoring Guide
December 2022	Review of benefit distribution to communities

December 2022	Definition of annual public consultations to broaden the channels of communication and participation of the community in the Project Zone
Started in 2019	First sale of carbon credits
September 2022	Approval of the new financial control system of Fundação Jari
September 2022	Beginning of the presentation of the annual accountability of Fundação Jari based on data from the controllership of Grupo Jari

The activities of the CCB scope were foreseen in the PDD of the Project to start from 2018/2019, considering the need for investments from the commercialization of the first verification of carbon credits, to ensure the full execution of these activities. In some cases, it was possible to advance the activities to 2018, which are indicated throughout this report in section 4.3

2.2.1.1 Monitoring deforestation through satellite images

The analysis of land use and land cover changes in the Jari Pará REDD+ Project is based on deforestation monitoring activities using satellite images. The monitoring of forest cover, specifically in the Project Area¹⁵ and in the Leakage Belt, was based on data from the Program for Monitoring the Brazilian Amazon Forest by Satellites (PRODES) conducted by the National Institute for Space Research (INPE), with subsequent analysis of data accuracy using high-resolution satellite images from the Planet platform.

PRODES has been annually monitoring deforestation in the Legal Amazon since 1988. The images used are compatible with those generated by the NASA/USGS (USA) Landsat series satellites called "Landsat class images". These images are characterized by a spatial resolution in the range of 20-30 meters and at least three spectral bands. Currently images from the Landsat-8 satellite, Landsat-9 (United States with 30 meters spatial resolution and revisit rate of 16 days), CBERS 4/4A of INPE/CRESDA (Brazil/China) and SENTINEL 2 (European Union) can be used, in a combination that seeks to minimize the problem of cloud cover and ensure interoperability criteria. (ALMEIDA et. al., 2022)¹⁶

PRODES estimations are considered reliable by national and international scientists (KINTISH, 2007)¹⁷. The project has the collaboration of the Ministry of Environment (MMA) and the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA). The images used for PRODES monitoring are made available by providers as orthorectified images, with system geometric correction refined using

¹⁵ Eucalyptus plantations and other areas (wetlands and pastures) were not included in the Project Area.

¹⁶ ALMEIDA, Claudio Aparecido et. al. Metodologia Utilizada nos sistemas PRODES e DETER – 2ª Edição (Atualizada). INPE – Instituto Nacional de Pesquisas Espaciais, 2022.

¹⁷ KINTISCH, Eli. Improved monitoring of rainforests helps pierce haze of deforestation. Science, v. 316, n. 5824, p. 536-537, 2007.

control points and digital terrain elevation models. This corresponds to the highest level of geometric correction and means that the images are ready to be used without requiring further processing (SOUZA et. al., 2019)¹⁸. The annual PRODES monitoring period runs from August 1 of the previous year to July 31 of the current year.

The methodology used by PRODES to identify the deforestation polygons in the Legal Amazon is divided into three main steps:

1. Image selection phase: The selection of images occurs from August and one looks for images with less cloud cover and acquisition date closer to the dry season in the Amazon.

2. Phase of mapping deforestation polygons: Trained specialists perform photointerpretation of the images identifying and delimiting the polygons of deforested areas. They observe three main points in the image to help identify affected areas: tone, texture, and context.

3. Phase of the annual deforestation rate calculation: The annual deforestation rate estimation is made within the year monitored by PRODES.

Data accuracy assessment

Planet images, with a spatial resolution of 4.77m obtained by a constellation formed from hundreds of Dove satellites, were used to perform the accuracy analysis. These images are free and provided by the Norwegian Government. It is the result of a partnership between the Norwegian Ministry of Climate and Environment with Kongsberg Satellite Services (KSAT) and its partners Airbus and Planet, to provide universal access to high resolution satellite monitoring of the tropics to support efforts to stop the destruction of the world's rainforests (Planet¹⁹, Royal Norwegian Embassy in Brazil²⁰).

The analysis period for forest cover conversion in the Project Area and Leakage Belt was August, 2017 to September, 2022, as per PRODES 2018, 2019, 2020, 2021 and 2022 data. The data were acquired from the TerraBrasilis platform²¹

¹⁸ SOUZA, Arlesson. Metodologia Utilizada nos Projetos PRODES e DETER. INPE – Instituto Nacional de Pesquisas Espaciais, 2019.

¹⁹ Planet Developers – Mapas Base Visuais – Última atualização: 01 de novembro de 2022. Disponível em: <<https://developers.planet.com/docs/data/visual-basemaps/>>

²⁰ Noruega no Brasil, Embaixada Real da Noruega em Brasília. Disponível em: < <https://www.norway.no/pt/brasil/noruega-brasil/noticias-eventos/brasilia/noticias/novas-imagens-de-satelite-permitirao-que-qualquer-pessoa-em-qualquer-lugar-monitore-o-desmatamento-tropical/>>

²¹ TerraBrasilis. Disponível em: <<http://terrabrasilis.dpi.inpe.br/downloads/>>

The following classes were found within these boundaries: Forest, Non-forest, Hydrograph, and Deforestation. Within the Project Area, according to PRODES mapping 2.210 ha of forest cover conversion and 1.804 ha within the Leakage Belt were identified. Therefore, the PRODES data accuracy was based on visual evaluation of classes using the high spatial resolution satellite images as reference, acquired in the Planet platform, Basemaps Viewer.

The necessary scenes were downloaded to cover the entire monitored area with acquisition date in October 2022 and with low cloud cover. With the images already georeferenced, a mosaic was made with all the scenes using geoprocessing software.

A random distribution of 300 points was made in the monitored area, and then the visual interpretation among four classes mentioned above was performed. Figure 2 demonstrates the methodology adopted to evaluate the mapping accuracy of the deforestation polygons.

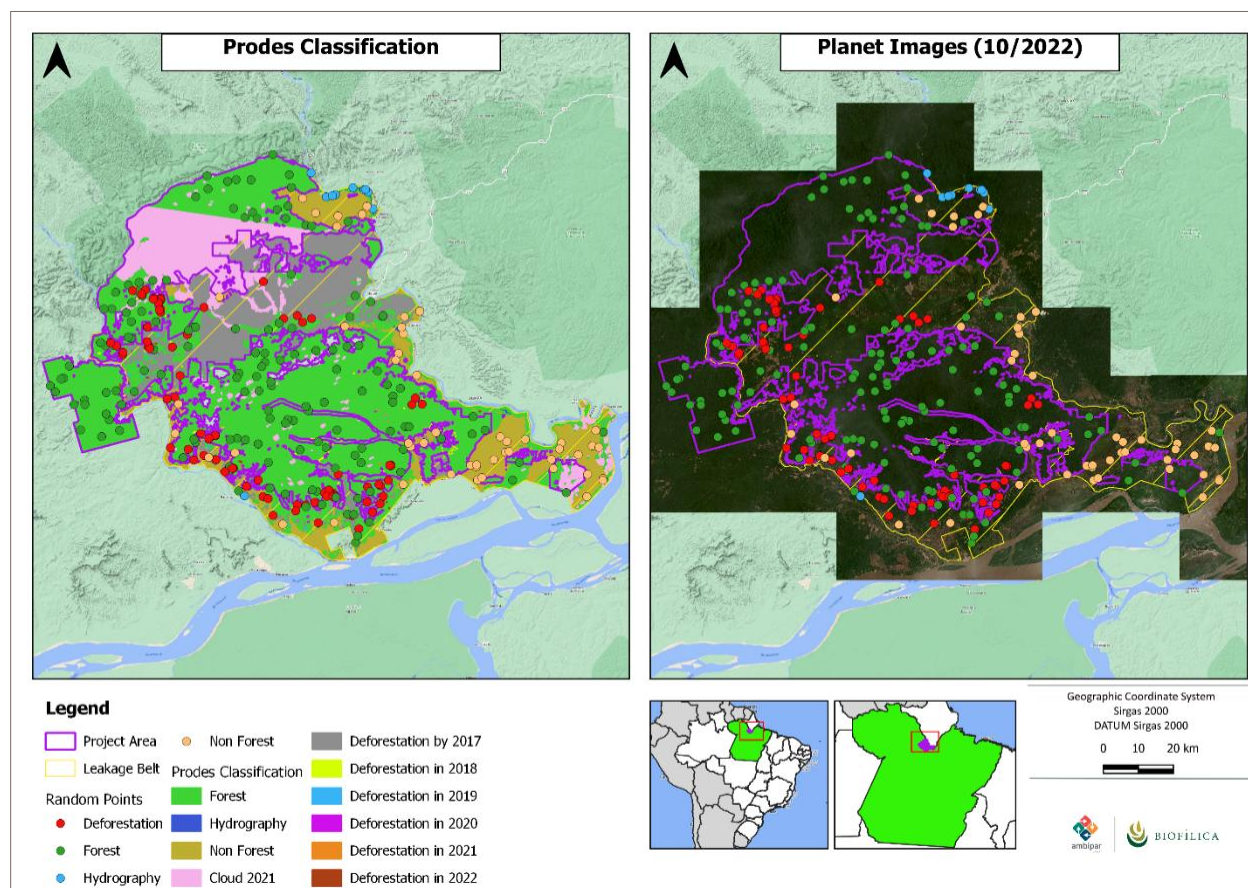


Figure 2. Accuracy Points Validation Map.

With the reference points, land use and land cover map of the monitoring from the 2018 to 2022 monitoring period and Planet imagens, it was possible to assess the accuracy of the monitoring data

through confusion matrix analysis (Table 1) according to Congalton and Green (2019)²². The confusion matrix was made based on the 300 random points, whereby, 150 points fell into the Forest class, with only 2 of these points located in a deforested area according to the October Planet image, and 1 point located in a non-forested area. In the Deforestation class 90 points were distributed, where 1 point was in a Forest area according to the reference image. In the class non-forest 50 points were distributed, where 1 point was in a Forest area. And of the 10 points distributed in the Hydrography class, in fact, all were located in hydrographic networks.

The user accuracy is the estimates of the fractions of mapping pixels, for each class, correctly classified. User accuracy is associated with the commission error, which is the error made when assigning a pixel to class *i*, when it belongs to some other class. On the other hand, the producer's accuracy is the sample fractions of pixels of each class correctly assigned to their classes by the classifiers. The producer's accuracy is associated with the omission error, which occurs when we fail to map a pixel of class *j* correctly (PONTIUS JR, R. G., MILLONES, M., 2011)²³.

These metrics are associated with the sensitivity of the classifier, i.e., the ability to correctly distinguish one class from another. Finally, the overall accuracy is the estimate of the overall correctness ratio of the classifiers, and in this analysis, it was 98.33%, meeting the requirements of VM0015.

Table 1. Confusion matrix generated to evaluate PRODES data for the period August 2020.

		PRODES x PLANET						
		Reference				Total	User accuracy	Omission Error
		Forest	Deforestation	Hydrography	No Forest			
Classified	Forest	147	2	0	1	150	98,00%	2,00%
	Deforestation	1	89	0	0	90	98,89%	1,11%
	Hydrography	0	0	10	0	10	100,00%	0,00%
	No Forest	1	0	0	49	50	98,00%	2,00%
Total		149	91	10	50	300		
Producer accuracy		98,66%	97,80%	100,00%	98,00%			
Omission Error		1,34%	2,20%	0,00%	2,00%			
Map Accuracy								98.33%

²² CONGALTON, Russell G.; GREEN, Kass. Assessing the accuracy of remotely sensed data: principles and practices. CRC press, 2019.
Disponível em: https://www.perlego.com/book/1605289/assessing-the-accuracy-of-remotely-sensed-data-principles-and-practices-third-edition-pdf?utm_source=google&utm_medium=cpc&campaignid=15913701111&adgroupid=131883394309&gclid=Cj0KCQiA0oagBhDHARIsAl-BbgenyrtNECMz3m6EfndM-ZYr-SCfHBgT1W13a7NFkd83ENYXhGMKc8aAhOtEALw_wcB

²³ PONTIUS JR, Robert Gilmore; MILLONES, Marco. Death to Kappa: birth of quantity disagreement and allocation disagreement for accuracy assessment. International Journal of Remote Sensing, v. 32, n. 15, p. 4407-4429, 2011.

2.2.1.2 Intensify and improve the efficiency of the Property Surveillance

The security department of the Grupo Jari has been monitoring its properties uninterruptedly since 2003 in Pará and Amapá, and has improved since the beginning of the project and last monitoring report.

Within the scope of the project, there was a need to reassess the existing priorities of the surveillance team, going beyond the care and security of the property, adding other factors that are essential to a REDD+ project such as field checking of areas detected as "deforestation" by satellite images and actions incorporated into the procedures of the Grupo Jari during the monitoring period, covering issues of conflict resolution, internal processes, conditions and conduct of surveillance, control of activities in Jari areas and enhancement of the monitoring of areas of high conservation value.

Deforestation is the main illegal activity that can negatively impact the development of Jari Pará REDD+ Project and hunting, and predatory exploitation of fauna and flora species are possible. As drawn in the PDD, this illegal deforestation is caused by landholders for the installation of subsistence agriculture and by small farmers for small-scale agricultural crops, grazing and property boundary demarcation.

In the absence of the project, it was projected that 102,654 hectares of native forest would be lost in 30 years in the Project Zone, of which 14,896 hectares would be present in the monitored period.

To reverse this scenario, during the monitored period, with the implementation of planned activities, a deforestation of 4,015 hectares was identified between 2018 and 2023, a deforestation 73% lower than projected. Although the project's goal is to completely zero unplanned deforestation in the region, the complex local context in which these agents operate prevents this goal from being achieved in the short term; it is a work of continuous construction and cooperation.

During the monitoring period, these illegal activities were prevented in the region covered by the project, mainly through mitigating measures such as strengthening land inspection and surveillance, as well as encouraging the engagement of other actors and stakeholders, social inclusion, and regional socioeconomic development through the generation of economic alternatives to deforestation.

Regarding inspection and patrimonial vigilance matters, regular and ostensive patrols are carried out to prevent, control and not allow the illicit negotiation of lands, as well as to restrain actions or acts against the company's patrimony and the environment, following a previously elaborated program, which counts on the formation of patrol teams by land and/or river, following the general conditions:

- Carry out regular patrols in forest areas and HCVAs (HCVA - High Conservation Value Areas), preventing and identifying deforestation actions, illegal exploitation of wood and forest products, among other illegal activities.
- Avoid deforestation, forest fires or other acts of aggression to the environment;
- Avoid illegal logging and trade in timber and other products, as well as predatory hunting and fishing;
- Maintain good relationship with squatters and existing communities;

- Promote social actions;
- Provide support from police and supervisory authorities, when necessary;
- Carry out river patrols with speedboats that cover the main watersheds in the region;
- Road patrols by vehicles along the main roads, side roads and bypasses for monitoring the forest areas and existing communities in the areas where the company operates and, consequently, the REDD+ Project.

The patrol route is prepared according to an Inspection Program, and when the occurrence of illegal activities is detected by the land inspection, the Property Security team must take the following steps:

- Sending a team to the site of the occurrence to investigate the fact and apply the appropriate measures;
- Collect all relevant information about the problems and pass them on to the Infrastructure Manager, who will evaluate the fact;
- If it is found, in the act of inspection, the need for immediate action, the patrol members trigger the competent bodies, to take the necessary corrective actions
- Record the incidents involving property invasions, damage to property and irregular extraction of forest products at the police station by the Property Security Coordinator;
- Occurrences involving damage to the environment must be registered with the responsible bodies (IBAMA, Environmental Police, etc.) by the Property Security Coordinator;
- When an invasion of the property occurs, all the information will be gathered and passed on to the Infrastructure Management, to the competent bodies, and to the Legal Department for appropriate action. The Property Security must wait for the Legal Department's position before taking action;
- In all situations involving land conflicts, it is necessary to avoid confrontation between the parties, respecting the laws in force in the country.

These actions generate as a record: Protocol of occurrences registered with IBAMA; Bulletin of occurrences; Photographic record of occurrences; Updated regular surveillance program and the Property Security Activity Reports. All these records obtained from the property security team for the monitored period were made available to the VVB. The details of the activities of the property security team can be found in the procedure "Land Surveillance", with the most updated version of 2022, which was also made available to the VVB. The flowchart of the activities carried out by the security team during the monitored period is shown below.

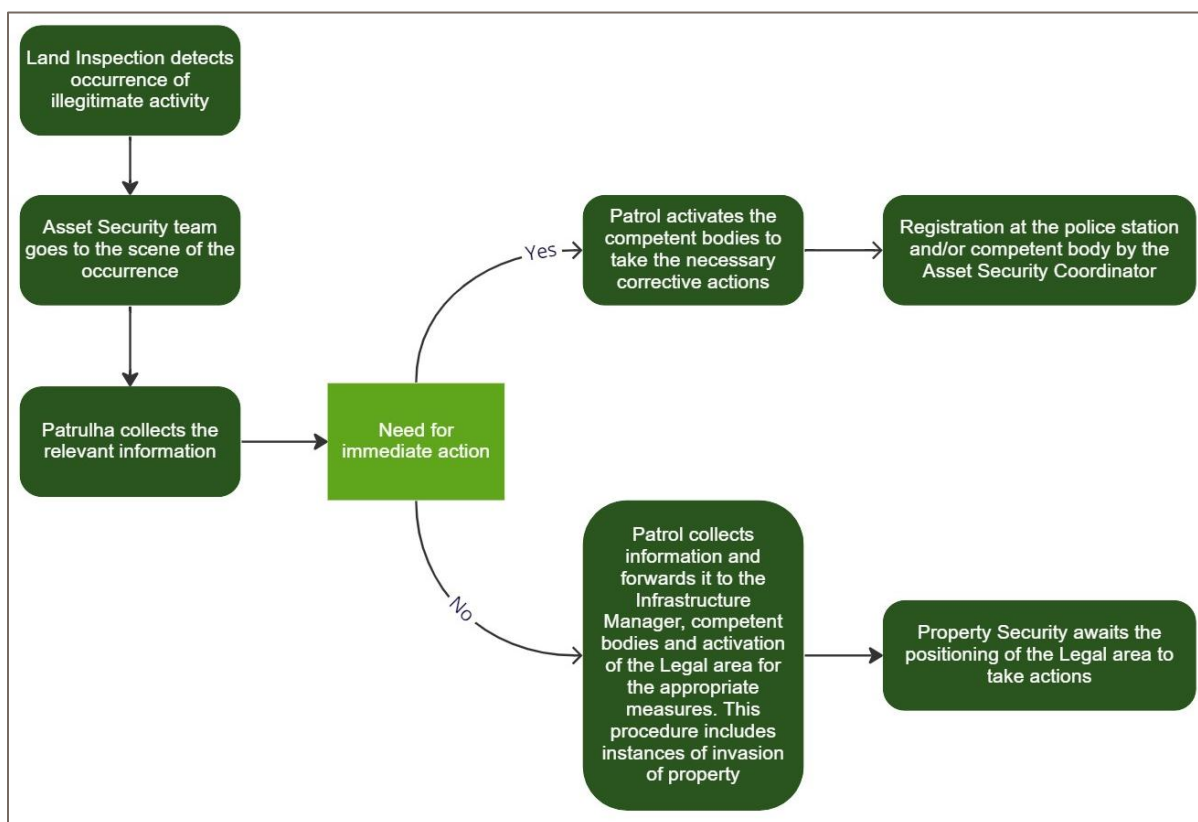


Figure 3. Flowchart of the surveillance process applied to the project.

Strategies were implemented focusing on continuous improvement of these actions during the monitored period, by investing in intensification and intelligence in the Property and Land Security activities involving the monitoring via high-resolution satellite images, with monthly emission of deforestation alerts for risky areas, allowing to generate monthly reports of altered areas (better detailed below), the acquisition of support equipment for the patrolling team and additional financial support for logistics costs and vehicle maintenance.

Additionally, the Fundação Jari works by applying conflict management procedures to prevent and manage in the best way possible invasions that could take place in the area. This work is handled by the Intersectoral Conflict Mediation Center that has emerged as a peace-building tool for rural communities, working on two fronts: mediation focused on land ownership rights, and mediation focused on land use rights. In addition to the Fundação Jari, these actions count on the following institutions Military Police, Monte Dourado District Agency, Rural Workers' Trade Union, Community Safety Council, Public Prosecutor's Office and Civil Registry.

During the monitored period, 1,356 patrols took place. However, an assessment of the data shows that since June 2022, these field visits have not been conducted due to financial issues at the Grupo Jari, which directly impacted this activity, as it is necessary to release funds for vehicle infrastructure costs, fuel

and personnel logistics. Nevertheless, community members living in the project area are engaged with the Fundação Jari in reporting any invasions that may take place in their neighborhoods, working as a complement to the actions of the company, particularly during periods when no activities are underway. Further information on this procedure can be found in Section 2.2.12 Grievances (G3.8) and Appendix 1: Project Risk Table of the CCB monitoring report.

2.2.1.3 Improvement in forest monitoring techniques and property surveillance

As already mentioned, the Grupo Jari asset surveillance team performs patrols along waterways and overland routes to conduct field verification of irregularities on the property, such as criminal fires and third-party land ownership in the project area and leakage belt. In order to make this activity more strategic on a large property, the use of higher frequency high resolution satellite images was adopted from 2020 onwards. The higher frequency was extremely relevant to following "real time" deforestation dynamics in the region.

This activity started in October 2020, by contracting the services of the company Santiago e Cintra Consultoria (SCCON). The project started using the license to use orbital images from the PlanetScope constellation in daily view, for areas between the states of Pará and Amapá for a period of 12 continuous months (which was renewed annually as of 2020) of monitoring with the visualization in natural colors, 4.77 meters and 8 bits of radiometric resolution, provided through the Web Platform.

The contract also included the supply of a service to generate monthly change detection alerts for the area of interest delivered in shapefile format and through a Web Panel. The generation of this data serves as a basis to support strategic actions of the surveillance team that was able to aggregate greater efficiency in surveillance activities on the property, in areas of higher risk, according to the knowledge of the local context, especially when compared to using only PRODES data, as was previously employed.

Initially priority areas were defined for monitoring on the property based on the deforestation rates that have occurred in recent years, areas close to communities, areas where management activities occur, and risk areas based on knowledge of the local reality. From the definition of the areas, Native Vegetation Alteration Detection Alerts were generated for the areas of interest (based on the daily Planet images, also visualized on the Web Platform). These alerts were generated and made available monthly with deliveries in shapefile format and disclosed on the alert panel for consultation and via e-mail. In total, during the monitored period 109 alerts were issued for the monitored areas.

After the dissemination to those responsible, the geoprocessing team prepares maps with the location of the alerts that are directed to the Property Surveillance team. Using this material, the surveillance team carries out field checks in the areas and prepares a report that contains photos, a description of the situation found in the field with the type of action taken by the surveillance team, the name and address of the offender, qualification of the activity found and detailed information about the invasion, and if applicable, the records of the complaints at the responsible government agencies, that is,

applying the entire property security procedure that must be followed. Below is a brief flowchart of the Planet image monitoring done by the project.

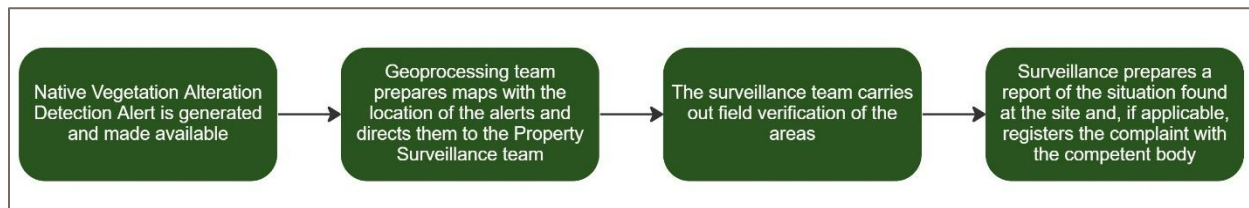


Figure 4. Flowchart of surveillance process from deforestation alerts.

The mapping will use images with special resolutions of 3.125 m (Planet) and 5 m (RapidEye), with a ground sample distance (GSD) better than 4.5 m and 6.5 m respectively, with a minimum mapping unit of 1 ha. The ratings will be assessed and validated through data collected in the field using GPS navigation and recorded in reports containing photos, maps, complaints filed with the relevant government agencies (when applicable), and a description of the situation found in the field that includes the type of action taken by the surveillance team, the name and address of the trespasser, details of the activity encountered, and detailed information about the invasion.

Of the total number of alerts issued, 26 occurrences were recorded after the field inspection for the monitored period. While applying these tools, the surveillance team ended up experiencing delays in surveying the identified areas, due not only to the financial problems of the Grupo Jari, but also to the difficulty of accessing some locations due to rain and river flooding. At any rate, investigating these areas did not cease to be a priority, and the strategy then adopted was to assess new sites together with old ones that were logistically close. All the data collected in the evaluated period was made available to the VVB.

2.2.2 Baseline Reassessment (VCS, 3.2.6, 3.2.7)

Did the project undergo baseline reassessment during the monitoring period?

☐ Yes

☒ No

2.2.3 Methodology Deviations (VCS, 3.20)

Not applicable. There were no deviations from methodology in the Project in the monitored period.

2.2.4 Minor Changes to Project Description (CCB Program Rules, 3.5.6)

Grupo Jari and Fundação Jari website

It was initially provided in the PDD, in section 2.3.2 "Dissemination of Project Summary Documents", that Project information would be disseminated on the websites of Grupo Jari and Fundação

Jari. These sites were inactive in the monitored period, but the information was available in other virtual media such as: Instagram, Facebook, also Biofílica' media (Instagram, Linkedin, and Verra website).

The Fundação Jari website was initially developed, but due to the priority of other activities and structural and financial issues of Grupo Jari, its review was not completed, these activities are being resumed for completion and approval of the website.

Although the non-dissemination of information by the planned sites resulted in the occurrence of a deviation from what was initially provided in the PDD, the gaps were filled by other means of dissemination and there were no impacts on the criteria for application and appropriateness of the methodology, and the additionality of the Project.

Validation of report data from Fundação Jari by the Technical Chamber

The Technical Chambers did not occur as planned (detailed description in the next section), so the reports from Fundação Jari were not validated by them.

It is noteworthy that the absence of the Boards does not directly influence the validation of the reports, since they are produced and used as evidence in CERFLOR (Brazilian Forest Certification Program) audits, with data submitted for audit.

As the data continue to be validated by the Fundação Jari team, negative impacts related to this activity are not expected, nor are impacts on the additionality of the project, with no major measures to be taken.

Market access

The PDD, section 2.1.11 - table 10, initially planned the activity "Access to credit and market", which would include support for access to credit for the associations/ cooperatives supported by the Project. This activity was planned to start in 2020; however, for reasons of prioritization, the project activities, in terms of cooperatives and associations, focused on regularization and support to the structuring of these entities.

This guideline was taken at this first moment because it is understood that in order to be able to grant credit, it is necessary to be in a regular situation, and also, activities to support the structuring and advising were assured, to prepare the cooperatives/associations in the management of their assets, so that they could plead access to credit.

The work with these actors has been occurring through these basic actions, essential to be able to target access to the credit line, as can be seen in section 4.3.1. It is understood that no impacts were generated, since they will continue to occur continuously until the final objective is reached. The proponents expect that by the next verification period this activity will have been initiated, so its results will be indicated in the next monitoring reports.

Monitoring indicators

Throughout the monitoring period some indicators initially established had difficulties in being raised and/or suffered changes in their metrics, which are described below.

- **Strengthening of Family Agriculture and Sustainable Extractivism:** Gross revenue arising from new activities implemented after the start of training and technical assistance. The indicator was not accounted for in the monitored period, although provided in the work plan validated in the PDD. However, it is noteworthy that the Project has sought some initiatives related to improving the income of community members by providing technical assistance, training and support to agricultural production, as well as entering into important programs for strengthening family farming.

The non-accounting for these indicators did not negatively influence the project implementation, nor its additionality, nor the generation of benefits to the community, since all other indicators related to the Strengthening of Family Agriculture and Sustainable Extractivism were answered, demonstrating mainly improvements in the quality of life and well-being of community members.

Additionally, for the coming years and consequently for the next verifications, it is planned that this indicator will be monitored based on a sample portion of families, in order to clarify all the benefits generated to community members through the activities proposed in all scopes.

- **Strengthening of associations and cooperatives in the communities:** It was provided in the PDD (section 3.3), that the "Number of youth and women involved in the associations/ cooperatives benefited by the Project" would be monitored, however the indicator parameter underwent some changes: The number of youth was not counted because the control instruments for this indicator have not tracked those involved in the activities so far. The number of women was counted according to the available minutes of the associations/ cooperatives benefited by the Projects, identifying positions held by women. As some associations still do not have this document established, it is understood that the number presented for the monitored period is below what has been actually happening.

It is noteworthy that the change in this indicator does not negatively influence the implementation of the project, its additionality, nor the generation of benefits to the community since the Project encourages the participation of young people and women in its activities, and that participation in the associations/ cooperatives has been occurring, although not measured as proposed, and that exclusive projects are developed for these target groups, as presented in the section 2.3.15, demonstrating mainly improvements in the quality of life and well-being of these groups.

This deviation has a temporary character, being present only in this monitored period becoming "Number of women involved in the associations/ cooperatives benefited by the Project". Mechanisms to register and survey this data will be incorporated for the next period. It is worth mentioning that as of 2022, the attendance lists already include the field "age" and "gender" to be accounted for, allowing the scope of activities in these groups to be more broadly based, beyond what is provided in the indicator, allowing future activities to be planned based on the scenario of participation of these groups in all Project activities.

- **Strengthening the Fundação Jari:** The measurement units of the indicators that make up this activity, "Growth of annual resources available for the activities of the Fundação Jari " and "Total resources raised from other sources for investment in the Project region", had their measurement units altered. This was due to the fact that the proponents understood that the form previously defined for the results statement is commercially sensitive (reais per year), and so the data was adjusted to be presented as a percentage, demonstrating, in the same way, the growth in resources, but in a broader form. The full data and analysis of this indicator (and the information which its based on) have been made available to VVB on a confidential basis, together with the changes made in sensitive documentation (such as reports, contracts, etc).
- **Conduct scientific studies focused on Biodiversity and Environmental Impacts:** The indicators "Training of community members to monitor Biodiversity" and "Number of people trained" were not quantified during the monitored period.

The training of community members to participate in the biodiversity monitoring process was provided in the PDD in sections 2.3.14 "Worker Training" and 5.4.1 "Biodiversity Monitoring Plan", which was scheduled to begin in 2020, which was delayed by the dynamics of the project's activities and priority of the monitoring studies, only after feedback with the community members, the training activities are scheduled to start in 2023.

Logistically, it was necessary to complete the first stage of monitoring according to the current IFAP work plan, in order to later involve the community in general in research, teaching, and extension activities in the Vale do Jari region. Although there is the engagement of IFAP students who are from the region, there is no mapping of their relationship with the communities. In addition, the biodiversity monitoring included a survey of the perception of community members about fauna, but no training was developed with them.

2.2.5 Project Description Deviations (VCS, 3.21; CCB Program Rules, 3.5.7 – 3.5.10)

2.2.5.1 Deviations referring to the period from 2014 to 2017

Generation of annual deforestation bulletins based on official data from PRODES/INPE Project

As described in Table 2. Summary of the main activities at Jari Pará REDD+ Project in the monitored period – it was found that the project committed a deviation by not completing the output "Generation of annual deforestation bulletins based on the official data from the PRODES/INPE Project" on activities related to "Monitoring Deforestation through Satellite Images" planned for the year 2015, as described in the Project Description document. This activity is part of the theme of activities called "Intelligence of Forest Monitoring" and was not included in this Monitoring Report because it had not been initiated within the monitoring period. The activity provides for field checking of deforested areas detected by satellite images, which were identified by performing the output "Assessment of new deforestation points and areas through satellite images", and aims to improve the work of patrimonial surveillance, generating greater knowledge about the dynamics of deforestation in the Project Zone and contributing to the work of technical assistance to local communities.

Despite this deviation from what was initially foreseen in the Project Description, there were no impacts on the criteria for application and adequacy of the methodology, and on the additionality of the Project. All the project applicability and adequacy criteria for the methodology remain unchanged and are not related to the non-implementation of this specific activity. By not performing this activity, there was no methodological deviation in the project regarding its adequacy to the requirements of VM0015. Therefore, all applicability criteria remain unchanged, e.g., baseline activities according to AFOLU requirements, scope of "Protection with Controlled Logging, Firewood Harvesting or Charcoal Production" and the classification of areas as "forest" according to the given parameters.

In the case of additionality, since this is a multi-activity project, where the evidence of additional efforts to reduce emissions is not dependent on a single specific action are presented in Table 2 presents other activities performed during the monitoring period that demonstrate legitimate efforts to reduce deforestation and avoid emissions in the monitored period in question. As described in the Project Description document and shown in the Project implementation status, the activities to prevent and mitigate deforestation involve, in addition to field work with the surveillance teams, actions aimed at local communities, whether through technical support and guidance or through institutional actions aimed at communication and conflict management. Table 2. Therefore, in addition to the surveillance of the property carried out in accordance with REDD+ principles, the activities carried out in the first monitoring period were focused on mitigation actions, as described in Table 2. Therefore, even considering that it was not possible to start the field verification activity during the monitoring period, other mitigation activities were

carried out, allowing the presentation of the results of this report without affecting the additionality of the project.

It is also important to take into account the assumptions presented in the investment analysis, where it was shown that the implementation of the project is economically or financially less attractive compared to the baseline scenario. In this sense it is important to reinforce that, although a specific activity planned to be started during this first monitoring period has not been implemented, other actions planned to start after 2019 have been advanced. These actions refer to the theme "Technical Assistance and Rural Extension (ATER)" which involved the activities of Strengthening Family Agriculture and Sustainable Extractivism, through the implementation of the SAFs project, and the Environmental Education Program, with the realization of workshops for the prevention of environmental degradation by the communities. The execution of these activities was essential for the project to achieve success in the objective of reducing deforestation in the Project Area and Leakage Belt, and they would not have happened as usual practice scenario because they demanded additional investments by the proponents. Thus, the non-performance of a planned activity, as described above, does not affect financial additionality because it was replaced by other activities, which in turn required additional investments for the project to be successful in reducing deforestation.

2.2.5.2 Deviations for the current monitored period (2018 to 2022)

Project Ownership

The following are up-to-date details on disputes (including ongoing legal proceedings) related to rights to land, territories or resources affected by the project. The Project Proponents present developments that also occurred after the monitoring period, with the aim of providing clarity and especially presenting the evolution of events that corroborate Jari Celulose's ownership of the land.

- CJCI Provision 13/2006, which imposed the blocking of all rural real estate registries in the interior of the state of Pará.

Between 2005 and 2010, the CJCI-PA carried out several special inspections at the state's Real Estate Registry Offices, finding that in several municipalities in the interior there were properties registered with unrealistic and oversized areas. This was a general act, with no specific targeting of Jari Celulose's rural properties, which were nevertheless affected.

Thus, as a preventive measure during the course of the process of correcting and combating the evidence of land grabbing found in the state, the CJCI-PA, by means of Provimento CJCI 13/2006, imposed a block on all rural real estate registries in the interior of the state of Pará. Subsequently, based on the decision handed down by the National Council of Justice in Providence Request No. 0001943-

67.2009.2.00.0000, by means of Provimento CJCI 02/2010, it converted the blockade into cancellation of the same areas.

In order to respect the property rights of the legitimate owners and holders of rural properties whose real estate registrations have been unduly blocked and canceled, the CJCI-PA has, since 2010, issued normative acts providing for the convalidation of canceled registrations, rendering the previously imposed cancellation null and void. These normative acts began with Instruction CJCI-PA 003/2010 and currently, after several improvements, the requalification procedures are regulated by Joint Provision CJCI-CJRMB 004/2021 and, more recently, by Provision 06/2023 of the CGJ-PA.

Over the last few years, Jari Celulose has been conducting a major land regularization process for its rural properties located in the state of Pará, specifically with the Pará State Land Institute - ITERPA, since it is the competent body for issuing the main document in the process of requalifying the registrations, namely: the certificate attesting to the regularity of the detachment of the property from the public assets, its boundaries and confrontations (Certificate of Regularity).

Over the last few years, Jari Celulose has been carrying out a major land regularization process for its rural properties located in the state of Pará, specifically with the Pará State Land Institute - ITERPA, since it is the competent body for issuing the main document in the process of requalifying the registrations, namely: the certificate attesting to the regularity of the detachment of the property from public assets, its boundaries and confrontations (Certificate of Regularity).

Since the end of 2021, Jari Celulose has been successful with ITERPA in issuing Certificates of Regularity for its properties. Once these documents had been obtained, in 2022 the company began the final stage of redeveloping eighteen (18) properties, i.e. filing the application for redevelopment and restoration of their real estate registrations with the relevant Real Estate Registry Office, in this case the Almeirim Registry Office.

The areas subject to the requalification requests filed with the Almeirim Real Estate Registry Office have already had new registrations issued, based on ITERPA's Certificate of Regularity, and are moving on to the final stage of the requalification procedure, which is the reversal of the cancellation and its unblocking, acts produced by the notary public of the Real Estate Registry Office or, depending on the non-compliance of certain properties with Provision 06/2023 CGHJ-PA, by the competent Agrarian Judge.

We currently have 18 regularized certificates, which seek the requalification of Jari Celulose's properties in Pará, in addition to the existence of other processes underway at the agency, which seek the requalification of Jari Celulose's properties in Pará.

Jari Celulose expects to complete the requalification processes for all of its rural properties, or the vast majority, by the end of 2025, when the registrations will be ready for any registration or notary changes.

Further details on the registrations affected and the status of the requalification are detailed in the following section 2.5.5 Recognition of Property Rights (VCS, 3.7, 3.18, 3.19; CCB, G5.1).

- Fazenda Saracura property

Fazenda Saracura has been classified as private land since 1856 and was acquired by Grupo Jari in 1948. The Jari Group has owned the area of Fazenda Saracura for more than 70 years and, in 2014, began the activities of the Jari Pará REDD+ Project, one of the largest conservation projects in the Amazon.

As explained in the previous section, the Justice Department of the Interior of Pará (CJCI-PA) establishes statewide infralegal rules that affect all rural property titles located in the interior of the state of Pará, culminating in the blocking and cancellation of the registration of the Saracura Farm.

The State of Pará, through the State Land Institute (ITERPA), summarily seized the Saracura Farm in October 2018, through administrative process 2018/317179. Resigned to such arbitrariness, Jari Celulose filed a request for an Emergency Order with the Court of Law of the District of Monte Dourado, District of Almeirim, State of Pará, the same court where its Judicial Recovery process is taking place, and obtained a court decision ordering the State of Pará to refrain from carrying out, or authorizing third parties to carry out, any act capable of preventing or limiting Jari Celulose from freely owning and using the Saracura Farm; and preserving Jari Celulose's right to obtain ownership of its farm through adverse possession, since it is an area that has undeniably been privately owned since 1856, the decision was published in December 2021.

In 2022, the Pará State Attorney's Office appealed the decision of the state judiciary in the above-mentioned case, but was unsuccessful in overturning the decision in favor of the Jari Group before the Pará Court of Justice.

Among other reasons cited in the court decision, it was noted that Jari Celulose has had peaceful possession of the property in question for more than 70 years, and that keeping the property in the plaintiff's possession could mean more effective social gains, in a broader economic analysis, as maintaining the enterprise could imply significant job creation, generation of new jobs, movement of the economy, maintenance of the financial health of suppliers, success of the recovery process and follow-up of the company, among countless other gains, and it is indisputable that any act capable of transferring to third parties and/or making access/planting/use/exploitation of this area unfeasible is tantamount to making the company's own activity unfeasible.

In August 2024' a writ of possession was issued to Jari Celulose for the Fazenda Saracura property, a court order that allows someone to take possession of a property.

Therefore, it is clear that the Jari Group has possession of the property, which meets the requirement of a "legal right to control and operate the project's activities", meeting the land requirement to implement a carbon project and maintaining the right to regularize the Fazenda Saracura property

through the original acquisition prescription, as well as the forced attribution of a public nature to the Fazenda Saracura managed by the State of Pará with the collection and consequent opening of the registration called Arraiolos by the State of Pará.

- Fazenda Santo Antônio property

In 2021, the Public Prosecutor's Office of the State of Pará filed a Public Civil Action, case 0812867-37.2021.8.14. 0051, against Jari Celulose, the Pará Land Institute (ITERPA) and the State of Pará alleging irregularities in the chain of ownership of the Santo Antônio da Cachoeira property and requesting, among other ludicrous requests, (i) the declaration of nullity of the title deed obtained by the seller of the property to Jari Celulose, with the cancellation of transfers related to the property, as well as (ii) the imposition of an obligation on the State of Pará to collect the area under dispute and then discriminate and allocate it to the communities that inhabit the property.

Jari Celulose, ITERPA and the State of Pará presented a defense, demonstrating the accuracy of the chain of title and the fulfillment of the legal formalities at the time it was issued, and then the Santarém Agrarian Court issued an unimpeachable decision rejecting the request for an injunction made by the Public Prosecutor's Office, due to the presumption of legality of the property title issued in 1937 (almost 100 years ago) and, consequently, the lack of probability of the right claimed by the attorneys who signed the initial petition.

The Public Prosecutor's Office filed an interlocutory appeal with a request for a preliminary injunction and, in a cursory analysis and without the defendants having the opportunity to comment, the judge reporting on the appeal granted the preliminary injunction in November 2022 and ordered the provisional blocking of the land title of Fazenda Santo Antônio da Cachoeira.

Finally, it is important to clarify that the preliminary injunction granted in favor of the Public Prosecutor's Office in **no way affects Jari Celulose's possession and free use and exploitation of Fazenda Santo Antonio da Cachoeira**. It should be noted that since 2024 the company and ITERPA have been focused on the requalification of the Santo Antonio da Cachoeira Gleba - PA, which is large and of great relevance to the Redd+ Pará Project, and that the ITERPA Certificate attesting to the regularity of the title of this property has already been issued.

The company, ITERPA and the MP-PA are in negotiations to complete the redevelopment of this property in the shortest possible time. The participation of the MP-PA in this redevelopment is justified by the fact that it is the author of ACP No. 0812867-37.2021.8.14.0051, which is being processed by the Santarém Agrarian Court, where an **agreement was negotiated to extinguish this lawsuit**, which will bring more security to the REDD+ Project and will certainly speed up the completion of the redevelopment of this area with the competent Real Estate Registry and the Agrarian Court itself.

Project Proponent - New Partner

In July 2021, Ambipar Participações e Empreendimentos S.A. completed the acquisition of 53,6% of capital shares of Biofílica Investimentos Ambientais S.A. The main purpose of this transaction was to accelerate the company's growth, enhanced by Grupo Ambipar, as a result, the company has expanded its portfolio of available environmental services.

Because of this acquisition, the company underwent a nominal change, deliberated at an extraordinary general meeting, and was renamed Biofílica Ambipar Environment Investments S.A. The arrival of a new partner (Ambipar) at Biofílica Ambipar Environment did not change its Social Subject, which continues to be strongly related to the promotion and financing of activities related to the environment and environmental conservation. A detailed description of the same can be found in Article 3 of the updated Bylaws of the company, made available to VVB. The arrival of a new partner will also have a positive effect, once the contribution of resources, expertise and economies of scale will allow Biofílica 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 to the contract with Jari Pará REDD+ Project, or any other project implemented by Biofílica Ambipar Environment prior to this transaction, as a result of the entry of a new partner of Biofílica Ambipar Environment. The main objectives of the investments in this transaction are the development of technology and expertise regarding NBS – Nature Based Solutions.

Monitoring of forest cover via high resolution satellite imagery

In the PDD, section 3.3, was stated that the monitoring of forest cover through satellite images would be accounted through the "number of reports produced per year", this unit of data was changed to "number of alerts issued and number of occurrences recorded".

This alteration was necessary because in October 2020, the contracting of the company Santiago e Cintra Consultoria (SCCON) included the provision of the service of generating monthly alerts of land use change detection for the area of interest delivered in shapefile format and through a Web Panel.

The generation of this data served as a basis to support strategic actions of the surveillance team that managed to add greater efficiency in surveillance activities on the property, in areas of higher risk, according to the knowledge of the local context, the patrol actions generate the number of occurrences recorded, which are also used in the calculation basis of the indicator.

It should be noted that the term "alert" is usually used for this monitoring because it is linked to the source of information from the contracted company for the monitored period. This term can be updated, as

well as the metric of the indicator, when the source of data is changed (in this case, the company contracted to provide high resolution images).

It is noteworthy that this deviation from what was initially anticipated in the Project Description, did not impact the criteria for application and adequacy of the methodology, as well as in the additionality of the Project.

Additionality

Legal Additionality - VCS Standard 4.4 - Topic 3.14.1

Based on the slope and hydrography analyses presented in the project's PD (Topic 3.1.3 Project Boundaries) and the Brazilian Forest Code of 2012 (Law 12651 - https://www.planalto.gov.br/ccivil_03/_ato2011-2014/2012/lei/l12651.htm), the REDD+ Jari Pará Project predominantly falls under two legal protection categories:

1. Permanent Protection Areas, characterized in the document by the articles:
 - a. Article 3: Permanent Protection Area (APP): An area, whether covered with native vegetation or not, aimed at preserving water resources, landscapes, geological stability, and biodiversity. It also facilitates the genetic flow of fauna and flora, protects the soil, and ensures the well-being of human populations.
 - b. Article 4 defines Permanent Protection Areas in both rural and urban zones as the following for the purposes of this Law: [...] (similar content from the original is provided here).
 - c. Article 7: Vegetation in a Permanent Protection Area must be maintained by the property owner or possessor, whether an individual or legal entity, public or private.
 - d. Article 9: Access to Permanent Protection Areas is permitted for water collection and for low environmental impact activities. (In this case, the Reduced Impact Forest Management – PMFS- is forbidden inside its limits, so trees within cannot be considered part of the harvesting plan and the boundaries must be respected, with no operation inside, to achieve the government's AUTEX, Exploration Authorization.)
 - e. Complementing the 12651 LAW, Permanent Protection Areas in Reduced Impact Forest Management Plans– PMFS have the following points as regulation, originated from “Normative Instruction MMA nº 5 de 11/12/2006”:
 - "Art. 2º For the purposes of this Normative Instruction, the following are considered: IX - Area of effective forest exploitation: this is the area actually exploited within the UPA (Forest Management Unit), considering the exclusion of permanent preservation areas,

inaccessible areas, infrastructure, and other areas that are protected” In this regard, combined with the mentioned Forest Code Law 12651, the normative only requires the same as the Code: to exclude the APPs from within the explored zone to prevent tree cutting and damage to the area during operations."

- "ANNEX I - BASIC STRUCTURE FOR THE PREPARATION OF TECHNICAL DOCUMENTS 2.3. Zoning of the property(ies) Productive areas for forest management Permanent Preservation Areas (APP)" In this case, the Forest Management Plan needs to delineate, at the property level, the known APPs, typically obtained from watershed modeling of low precision RADAM 90m x 90m pixel data. This delineation is a broad overview and is only for the recognition and clarification of their exclusion from the exploitative area, as described in the previous point, and doesn't require any additional care. The identification of secondary or tertiary watersheds can be done during the pre-exploratory census inventory of each UPA, where field demarcation (gradually done during the exploration years) is used to enhance the known and modeled data, which is then submitted to obtain the AUTEX and harvesting license of the particular UPA.

2. Legal Reserve, characterized by the articles:

- a. Article 3: Legal Reserve (RL): An area located within a rural property or possession, marked according to Article 12, aiming to ensure sustainable economic use of property resources, assisting in ecological processes conservation and biodiversity, and providing shelter for native fauna and flora.
- b. Article 12: Every rural property must maintain an area with native vegetation coverage as a Legal Reserve [...] (similar content from the original is provided here).
- c. Article 17: The Legal Reserve must be preserved with native vegetation by the rural owner or possessor, whether an individual or legal entity, public or private.
- d. Article 20: Sustainable management of Legal Reserve Forest vegetation shall adopt selective logging practices [...].
- e. Article 21: The collection of non-timber forest products, such as fruits, vines, leaves, and seeds, is unrestricted.

The Forest Stewardship Council Certified Management ("FSC Certified Management") certification was in place during the creation of the Project, regulating the Forest Management inside Project area. FSC has core principles that also apply as regulation for the protected areas PA:

- “Principle 1 – Compliance with laws and FSC principles - Forest management shall respect all applicable laws of the country in which they occur, and international treaties and agreements to which the country is a signatory and comply with all FSC Principles and Criteria.”
- “Principle 4 – Community relations and workers’ right - Forest management operations shall maintain or enhance the long-term social and economic well-being of forest workers and local communities.”
- “Principle 5 – Benefits from the forest - Forest management operations shall encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits.
- “Principle 6 – Environmental impact - Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by doing so, maintain the ecological functions and the integrity of the forest.”
- “Principle 8 – Monitoring and assessment - Monitoring shall be conducted – appropriate to the scale and intensity of forest management –to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts.”
- “Principle 9 – Maintenance of high conservation value forests - Management activities in high conservation value forests shall maintain and/or enhance the applicable conservation attributes that define such forests. Decisions related to high conservation value forests shall always be taken into consideration under a precautionary approach.”

From the articles listed above, there's a clear direction from the legislation about actions the property occupant/owner should avoid within property boundaries, namely, not to remove or impact the vegetation on-site. With the specific situation of the existence of a legal PMFS on site, the harvesting and skidding operations inside the Legal Reserve are authorized but, in the APP, areas are forbidden, and its limits must be respected in the same sense as mentioned previously in this paragraph.

In the case of the REDD+ Jari Pará Project – AUD, the Business-as-Usual scenarios – with and without PMFS happening- (described in PD under Topic 2.2 and represented in Figure 35 - page 146) present actions taken by external deforestation agents (described in Topic 3.1.4 – Baseline Scenario) that surpass the Proponents' legal commitments, threatening the forest cover within the project's boundaries, including in APP areas that are especially attached to some deforestation drivers like rivers. In this context, the project's aim and strategy are to act beyond property boundaries (and responsibilities listed in Law 12651, already fulfilled by the Proponent), by engaging and developing regional communities to dismantle

and replace deforestation needs with alternative economic practices that do not only preserve vegetation but also ensure a source of income and socio-economic improvement for beneficiaries.

In doing so, the project takes on the role of monitoring deforestation, caring for local biodiversity (by monitoring species and protecting high conservation value areas), partnerships with local communities (to ensure access and environmental care to non-wood products such as Açai within the APP and HCVA of *Bertholletia excelsa*) and actively working as a regional socio-economic developer, using funds from certified carbon credits to create jobs entirely dedicated to activities that, once implemented, steer away from the BAU scenarios and bring unique environmental and social benefits to the region while developing a deep sense of conservation in the population who benefits from the forest existing.

As FSC regulation is concerned, it's also possible to follow its principles and regulations, with quality, without doing the REDD+ activities that were stated above or, even, doing some of them only during the time where the operations happen in the specific area with HCVA or close to a community, not necessarily being carried out during years after the operation. For example: Environmental impact can be mitigated only by operational practices and soil conservation in roads and not by protecting the forest from external deforestation pressure. Benefits from the Forest can be achieved by not polluting rivers and not by necessarily developing ways for communities to have quality drink water. In addition, the effort of developing agricultural and forest product's chains and strengthening the cooperatives inside the PMFS area is definitively not needed, only the monitoring of the wood chain of custody.

Based on the legislative topics listed above, and all the material on the theory of change, additionality, identification of agents of deforestation (much of which is described in the PD), the Project Area was established considering the presence of Legal Reserve areas and Permanent Protection Areas (within and outside the PMFS areas) as part of the forest protected by REDD+, since the actions developed within the scope go beyond legal compliance with national laws and regulations and thus demonstrate the additionality of the project under these sites.

Project Longevity updated to 40 years - VCS 4.4 Template updating.

To adapt to the new methodology requested, the longevity of the project will be extended to 40 years while the crediting period will remain 30 years. The 10 years will have only protection and monitoring activities. In this case, the financial additionality of the project was reviewed to better represent the costs and revenues from VCUS and the extension of the longevity. It's important to make clear that this change does not change or modify any level of either applicability nor additionality (legal, actions, etc) more than revise the economic values presented during validation, since the scenario without project remains the same and the need for the protection actions are key for the forest permanence in the region.

The revised economic additionality is detailed below and will be better described in the baseline reassessment PD.

Step 2. Investment Analysis

Sub-steps 2a and 2b were followed as described on the PD, without any change, using the revised project longevity and costs show below.

Sub-step 2c. – Calculation and comparison of financial indicators

The summary of revenue and expense sources considered in the analysis is presented in Section 1.11 of this document, where the proposed activities to contain/monitor unplanned deforestation and generate net benefits to the climate are described in detail, communities, and biodiversity. A summary of the sources of expenditure and revenue considered in the analysis is presented in the below.

Table 2. Scenario and respective sources of income and expenses.

Scenario	Revenue	Expenses
(ii) Land leasing for Low Impact Forest Management without REDD+ activities and without registration as a VCS AFOLU Project:	Lease Payment	- Maintenance of forest areas for the tenant's usufruct
(iii) Land lease for Low Impact Forest Management with REDD+ activities and without registration as a VCS AFOLU Project:	Lease Payment	- Maintenance of forest areas for tenant use - Additional activities to contain/monitor unplanned deforestation and climate, communities, and biodiversity

Each cash flow scenario is composed considering the sources described in the table above. The assumptions provided are valid for the respective scenarios (ii) and (iii), including a real discount rate of 9.00%. This discount rate reflects the critical managerial parameter for determining the feasibility of investing with a new project.

The analysis revealed that with the inclusion of REDD+ activities the NPV of the project suffers a drop of -150,82% being around -R\$ 16.918.288,29 for the scenario (iii), significantly lower than the scenario (ii) that presents a positive NPV of R\$ 33.289.920,58. Thus, it becomes evident that the containment of deforestation and monitoring of additional forest management activities compromise the financial viability of the business if there is no additional revenue as the result of the negotiation of credits registered in the VCS.

Sub-step 2d. Sensitivity Analysis

The table below the critical assumptions of scenario (iii) as well as their variations considered reasonable and used here in this sensitivity analysis (Perspective 1: pessimistic variations and Perspective 2: optimistic variations). The base values are those considered for the NPV found in Subbass 2c.

Table 3. Critical premises for scenario analysis (iii).

Scenario	Previous conditions	Perspective	
		1 – Pessimistic	2 - Optimistic
(iii) Land lease for Low Impact Forest Management with REDD+ activities and without registration as a VCS AFOLU Project	a. Lease Payment	80% of the base value	120% of the base value
	b. Expenditure on REDD+ activities	120% of the base value	80% of the base value

The results entered were shown in the table below:

	1 – Pessimistic	2 - Optimistic
Perspective 1	-R\$ 27.750.040,74	-R\$ 6.086.535,85
Perspective 2	-R\$ 26.959.930,07	-R\$ 6.876.646,52

Thus, the conclusion that the VCS AFOLU Project without the financial benefits of the credits registered in the VCS cannot be considered as a more attractive scenario financially, even with reasonable variations of critical assumptions. Also, it's possible to evaluate that the conservational actions that would preserve the area have high costs and wouldn't happen without the project in place. The detailed results of this evaluation were made available to VVB.

Optional Criterion Project Description Climate Change Adaptation Benefits

During the evaluation of the results and impacts of the activities carried out by the project in the monitored period, the proponents noted that, in addition to having a long-term continuity plan, the actions developed, as well as their impacts, bring significant support to help communities and biodiversity to adapt to climate change, meeting the Gold Level requirements of the CCB standard.

Therefore, in this monitoring report information is provided to demonstrate that the project meets the Gold Level requirements that were not included in the project description in the previous validation. Below are the sections that refer to the climate gold seal in the PDD template.

i. Regional scenarios of climate change (GL 1.1)

The Amazon Rainforest is a focus of concern when it comes to climate change, both because of the severe environmental impacts projected for the region, and because of its importance in mitigating climate change (ELLWANGER, et al., 2020²⁴; PBMC, 2016²⁵; FEARNSIDE, 2003²⁶). These concerns are not only due to the current projections, but also to their worsening, caused by the interaction of several anthropic factors that generate changes in land cover, such as deforestation, forest fragmentation and fires (MARENGO, et al., 2018²⁷; NOBRE et al., 2016²⁸).

Since the 1970s the region has undergone major changes in land cover and use, caused mainly by the replacement of native vegetation with large-scale cattle and monoculture plantations, mainly (OMETTO, 2014²⁹). Deforestation is one of the factors that contribute to the aggravation of global climate change, through emission of greenhouse gases, through the burning and decomposition of biomass (FEARNSIDE, 2021³⁰), in the Brazilian Amazon is caused by several factors, among them the opening of roads (infrastructure), extensive cattle raising, agriculture and logging (RIBEIRO et al., 2009³¹; FERREIRA, et al., 2005³², FEARNSIDE et al., 2020).

Climate modeling studies that simulate deforestation in the Amazon show significant reductions in rainfall in Amazonian forests (MARENGO et al., 2018). Variations in precipitation over the past years were

²⁴ ELLWANGER, H. J. et al. Beyond diversity loss and climate change: Impacts of Amazon deforestation on infectious diseases and public health. 2020. *Anais da Academia Brasileira de Ciências*. 92 (1) doi: 10.1590/0001-3765202020191375.

²⁵ PBMC – PAINEL BRASILEIRO DE MUDANÇAS CLIMÁTICAS. Impactos Regionais, Adaptação e Vulnerabilidade ao Clima e suas Implicações para a Sustentabilidade Regional no Brasil. Vol. 2. Cap. 8. 2016.
http://www.pbmc.coppe.ufrj.br/documentos_publicos/GT2/GT2_volume_completo_cap8.pdf

²⁶ FEARNSIDE, P. M. A floresta amazônica nas mudanças globais. Manaus: INPA, 2003. 134 p. ISBN 85-211-0019-1

²⁷ MARENGO, J. et al. Changes in climate and land use over the Amazon region: current and future variability and trends. *Frontiers in Earth Science*, v. 6, p. 228, 2018.

²⁸ NOBRE, A. C. et al. Riscos de uso da terra e mudanças climáticas na Amazônia e a necessidade de um novo paradigma de desenvolvimento sustentável. 2016. 113 (39) 10759 – 10768. doi: <https://doi.org/10.1073/pnas.1605516113>.

²⁹ OMETTO, J. P., et al. Amazon deforestation in Brazil: effects, drivers and challenges, *Carbon Management*. 2011. 2:5, 575-585, doi: 10.4155/cmt.11.48.

³⁰ FEARNSIDE, P.M. 2020. Desmatamento na Amazônia brasileira: História, índices e consequências. p. 7-19. In: Fearnside, P.M. (ed.) **Destrução e Conservação da Floresta Amazônica**, Vol. 1. Editora do INPA, Manaus, Amazonas. 368 p. (no prelo).

³¹ RIBEIRO, S. et al. Pecuária e desmatamento: uma análise das principais causas diretas do desmatamento na Amazônia. *Nova Economia*. Belo Horizonte. 2009. 19 (1) 41-66.

³² FERREIRA, V. L.; ALMEIDA, S.; VENTICINQUE, E. O desmatamento na Amazônia e a importância das áreas protegidas. *ESTUDOS AVANÇADOS* 19 (53), 2005.

also evidenced, for example, in the northeastern Amazon the trend is an increase in rainfall occurrence while in its southeastern portion, the trend is a reduction in rainfall occurrence based on observations from 1981 to 2017 analyzed from modeling and numbers of drought and flood events for the region (ESPINOZA et al., 2018³³).

The importance of the biome in maintaining local, regional and global rainfall through air masses, meteorological variables, and the hydrological cycle of the forest is highlighted, and the hydrological cycle of the forest, especially the importance of its "flying rivers". (ARRAUT et al., 2012³⁴; ZEMP et al., 2014³⁵; MARENGO et al. 2018³⁶; MARENGO, 2020³⁷; ARTAXO, 2020³⁸).

According to the last report of the International Panel on Climate Change (IPCC - AR6 WGI, 2022³⁹) the Amazon Rainforest was highly impacted by the preceding droughts and higher temperatures observed in the years 1998, 2005, 2010, 2015, and 2016, attributed in part to climate change, resulting in high rates of tree mortality and reductions in forest productivity throughout the basin.

Extreme climatological events have occurred in the Amazon region, such as three major droughts, in the years 2005, 2010 and 2016 (already mentioned periods of high temperatures), and three major floods in the years 2009, 2012 and 2014, for the period of the last 17 years (MARENGO; ESPINOZA, 2016⁴⁰; ZOU et al., 2015⁴¹).

Projections presented in the report for Brazil's Fourth National Communication to the UNFCCC show that during the summer, the states of Amazonas and Pará show a relative reduction in the percentage of

³³ ESPINOZA, J. C., RONCHAIL, J., MARENGO, J. A., AND SEGURA, H. (2018). Contrasting North–South changes in Amazon wet-day and dry-day frequency and related atmospheric features (1981–2017). *Clim. Dyn.* 116, 1–18. doi: 10.1007/s00382-018-4462-2.

³⁴ ARRAUT, Josefina Moraes et al. Aerial rivers and lakes: looking at large-scale moisture transport and its relation to Amazonia and to subtropical rainfall in South America. *Journal of Climate*, v. 25, n. 2, p. 543-556, 2012.

³⁵ Zemp, D. C., Schleussner, C.-F., Barbosa, H. M. J., van der Ent, R. J., Donges, J. F., Heinke, J., Sampaio, G., and Rammig, A.: On the importance of cascading moisture recycling in South America, *Atmos. Chem. Phys.*, 14, 13337–13359, <https://doi.org/10.5194/acp-14-13337-2014>, 2014.

³⁶ MARENGO, Jose A. et al. Changes in climate and land use over the Amazon region: current and future variability and trends. *Frontiers in Earth Science*, v. 6, p. 228, 2018.

³⁷ MARENGO, JOSE A. Drought, floods, climate change, and forest loss in the amazon region: a present and future danger? *Frontiers for Young Minds*, v. 7, p. 8-147, 2020.

³⁸ ARTAXO NETTO, Paulo Eduardo. The role of Amazonia in the Global Climate. 2020. <https://repositorio.usp.br/item/003018232>

³⁹ IPCC, Grupo de Trabalho II. Impactos, Adaptação e Vulnerabilidade. Ficha Informativa. América Central e do Sul. <https://www.ipcc.ch/report/ar6/wg2/about/factsheets/>.

⁴⁰ MARENGO, J. A., ESPINOZA, J. C. (2016). Extreme seasonal droughts and floods in Amazonia: causes, trends and impacts. *International Journal of Climatology*, 36(3), 1033-1050

⁴¹ ZOU, Y., MACAU, E. E. N., SAMPAIO, G., RAMOS, A. M. T., AND KURTHS, J. (2015). Do the recent severe droughts in the Amazonia have the same period of length? *Clim. Dyn.* 46, 3279–3285. doi: 10.1007/s00382-015-2768-x.

accumulated precipitation, and a model also indicates a rainfall reduction in the northern region of up to 35% (MCTI, 2021⁴²).

The IPCC report projects with high confidence that dry climate impactors will increase regionally from expected higher levels of global warming. The strongest signal of future increases in agricultural and ecological drought, aridity, and fire weather is over the Amazon region.

The warming caused by high temperatures in the Amazon region is historically evidenced by various sources since the 1950s (MARENGO et al., 2020; MARENGO, SOUZA JR, 2018⁴³). Temperatures across the Amazon Basin have increased by 0.5 °C since 1980, with higher rates of warming observed during the dry season (August to November), the frequency and duration of heat waves in the region is predicted to increase by up to 214 additional days by 2090 decade (WORLD BANK, 2021⁴⁴) and the increased risk of fire should arise before 2050 (IPCC b, 2022⁴⁵).

The following figures present the future climate averages scenario forecast⁴⁶ over long-term time horizons, with a multi-model ensemble representing the range and distribution of the most plausible projected outcomes of change in the climate system for Pará state⁴⁷.

⁴² MCTI – MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E INOVAÇÕES.[MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATIONS.] Brazil 2020. Brazil's Fourth National Communication to the UNFCCC.

⁴³ MARENGO, J.A., SOUZA JR, C. 2018. Climate change: impacts and scenarios for the Amazon.

⁴⁴ WORLD BANK. Climate Risk Profile: Brazil (2021): The World Bank Group. <https://climateknowledgeportal.worldbank.org/country/brazil>.

⁴⁵ IPCC b. Climate Change Information for Regional Impact and for Risk Assessment. <https://www.ipcc.ch/report/ar6/wg1/chapter/chapter-12/>.

⁴⁶ the latest IPCC report (AR6) presented a new set of 5 emissions scenarios, called the Intercomparison of Climate Models Project Version 6 (CMIP6). There are two low emission scenarios (SSP1-1.9 e SSP1-2.6), an average emission scenario (SSP2-4.5), and two high emission scenarios (SSP3-7.0 e SSP5-8.5).

⁴⁷ <https://climateknowledgeportal.worldbank.org/country/brazil/climate-data-projections>.

Projected Mean-Temperature
Para, Brazil; (Ref. Period: 1995–2014), Conjunto de vários modelos

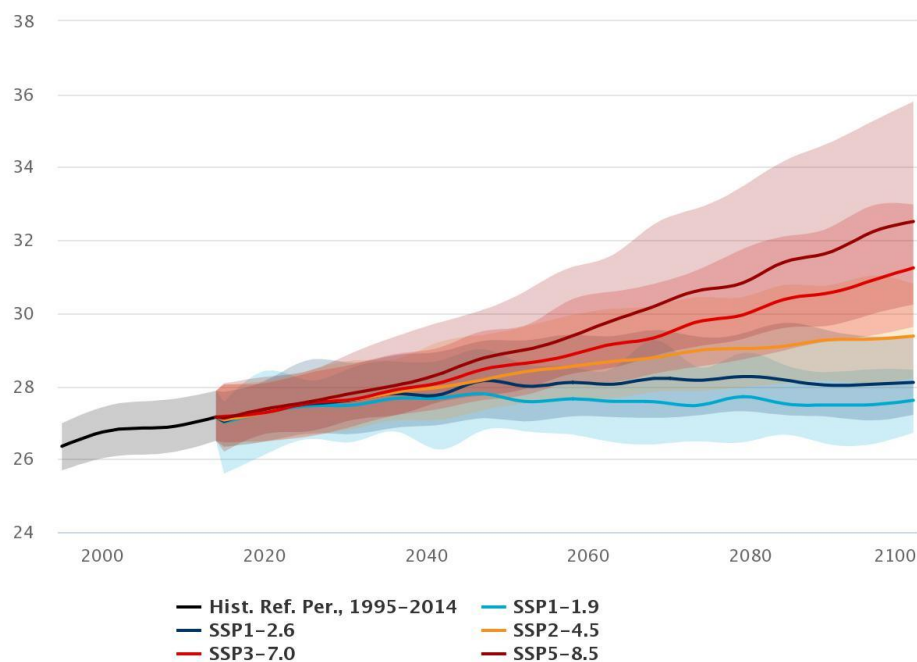


Figure 5: Average temperature forecast for Pará State until 2100.

Projected Days with Heat Index > 35°C
Para, Brazil; (Ref. Period: 1995–2014), Conjunto de vários modelos

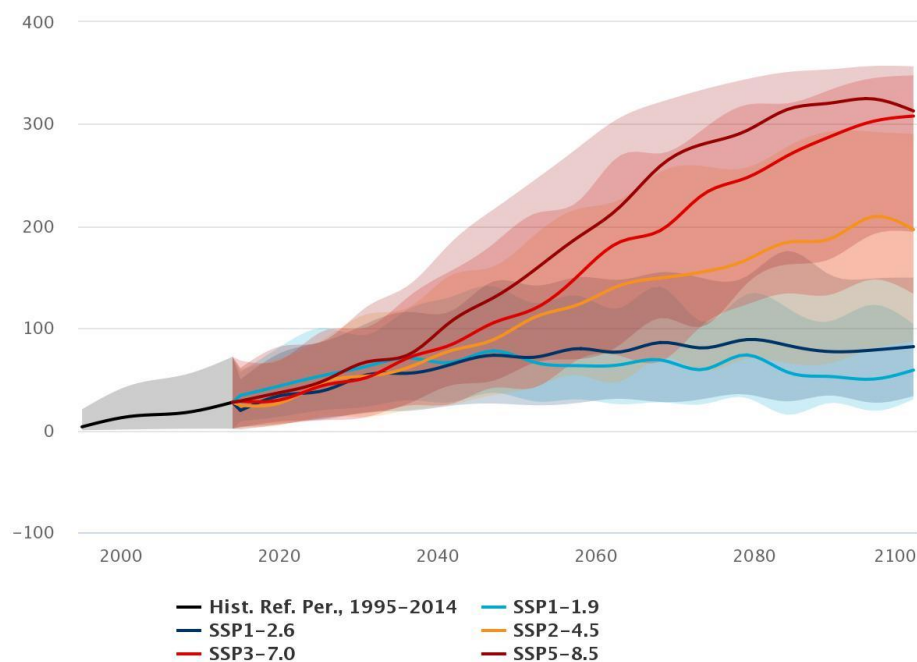


Figure 6: Heat forecast with index days above 35°C in the state of Pará until 2100.

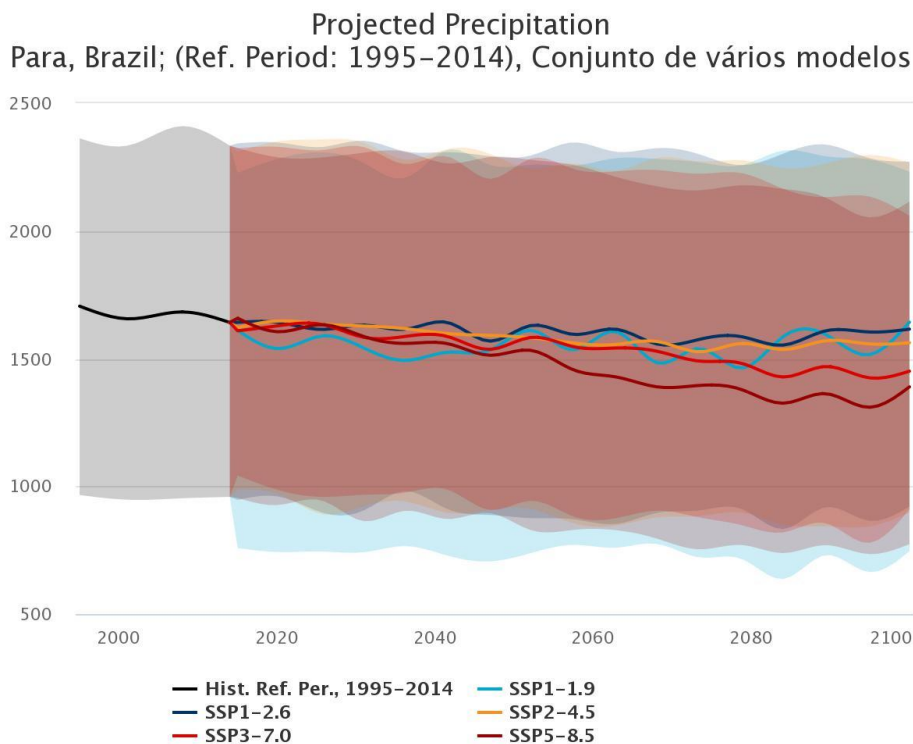


Figure 7: Rainfall forecast for Pará State until 2100.

Climate projection data are modeled based on global climate model compilations of the Coupled Model Intercomparison Projects (CMIPs) supervised by the World Climate Research Program. The data presented are CMIP6, derived from the Sixth phase of the CMIPs, which form the database of the IPCC Assessment Reports. As can be seen, there is an indication of temperature increases and rainfall reductions.

Forecasts from different climate models generally indicate an increasing increase in extreme events of droughts and prolonged droughts mainly in the North and Northeast regions of Brazil (MCTI, 2021).

In a scenario of absence of the Project the illegal practices would intensify in its area, the State of Pará leads the index of states that deforest the Amazon region the most. Illegal timber trading, land conversion into pasture, and most areas are exploited by squatters, land grabbers, besides mining and animal trafficking as examples of activities occurring in the region, boosting the environmental degradation.

The Project works on several fronts, seeking to contain this pressure exerted on its limits (GLOBO PARÁ, 2021a⁴⁸; GLOBO PARÁ, 2021b⁴⁹; CNN, 2022⁵⁰; FOLHA DE SÃO PAULO, 2022⁵¹; CORREIO PARAENSE⁵²).

ii. Effects of the climate change (GL 1.2)

Forests play an important role in mitigating and adapting to climate change, including biodiversity conservation, provision of livelihoods, food security, and the containment of natural hazards (FAO, 2022⁵³).

Brazil is home to nearly 60% of the Amazon rainforest area the productive and biodiverse ecosystems of the Amazon basin provide essential services to about 30 million people and ecosystem services important not only to the region but globally (USAID, 2018⁵⁴).

The impacts of climate change are diverse; higher temperatures may alter the range and distribution of species, drought may affect freshwater systems and their dependent communities, and changes in precipitation and temperature may increase the spread of disease. If climate impacts decrease agricultural production, Brazil's food insecurity could increase, as could farmers' pressure on Amazonian lands and resources (USAID, 2018).

Among the most vulnerable to the effects of climate change in the Amazon are indigenous peoples, traditional communities, small producers, farmers, low-income people in urban areas, children, and the elderly (IPCC a, 2022). In view of this, numerous socioeconomic problems may arise, affecting these layers of the population in different proportions.

The association between climate change and various other factors generated by anthropic action in the Amazon Forest, together with the precarious social and environmental conditions may lead to the

⁴⁸ GLOBO PARÁ, 2021a. Polícia ambiental resgata mais de 600 animais alvo de tráfico nos quatro primeiros meses de 2021 no PA. <https://g1.globo.com/pa/para/noticia/2021/05/05/policia-ambiental-resgata-mais-de-600-animais-alvo-de-trafico-nos-quatro-primeiros-meses-de-2021-no-pa.ghtml>.

⁴⁹ GLOBO PARÁ, 2021B. Pará é o estado com maior índice de desmatamento do Brasil no mês de julho, aponta Imazon. 2021. <https://g1.globo.com/pa/para/noticia/2021/08/19/para-e-o-estado-com-maior-indice-de-desmatamento-do-brasil-durante-o-mes-de-julho-aponta-imazon.ghtml>.

⁵⁰ CNN. 2021. Desmatamento na Amazônia em 2021 é o maior dos últimos 10 anos. <https://www.cnnbrasil.com.br/nacional/desmatamento-na-amazonia-em-2021-e-o-maior-dos-ultimos-10-anos/>.

⁵¹ FOLHA DE SÃO PAULO. 2022. Pará é síntese de desafios e problemas da Amazônia. <https://www1.folha.uol.com.br/ambiente/2022/09/para-e-sintese-de-desafios-e-problemas-da-amazonia.shtml>.

⁵² CORREIO PARAENSE. 2021. Trabalhadores são resgatados em garimpo ilegal no município de Almeirim (PA). <https://correioparaense.com.br/2021/08/10/trabalhadores-sao-resgatados-em-garimpo-ilegal-no-municipio-de-almeirim-pa/>.

⁵³ FAO - Food and Agriculture Organization of the United Nations. The State of the World's Forests 2022. <https://www.fao.org/3/cb9360es/cb9360es.pdf>.

⁵⁴ Climate risk profile. https://www.climatelinks.org/sites/default/files/asset/document/2018-April-30_USAID_CadmusCISF_Climate-Risk-Profile-Brazil.pdf

emergence of new infectious diseases, as well as the resurgence of existing diseases (ELLWANGER, et al., 2020).

Extreme weather events have serious economic consequences, which can destabilize the order and functioning of the human communities affected by them, generating social instability and weakening the public health system, which is already precarious in Amazonian countries, even in the absence of these events (ELLWANGER, et al., 2020).

Significantly reduced rainfall in the Amazon rainforest will affect the regional hydrology, increasing the vulnerability of ecosystem services for the population inside and outside the Amazon region (MARENGO et al., 2018).

Drought aggravated by lack of rain and logging increases the risk of forest fires (MARENGO et al., 2018). Drought-induced Forest fires in the Amazon have largely contributed to Brazil's national-level carbon emissions (Aragão et al., 2018⁵⁵). Furthermore, large-scale deforestation of the Amazon rainforest associated with climate change will increase the risk of exposure to extreme heat, potentially affecting regions where highly vulnerable populations reside (OLIVEIRA, et al., 2021⁵⁶).

In the last three decades, more intense floods and ebb tides have occurred in the Amazon basin, and extreme events have occurred at shorter intervals. Based on records made in the Port of Manaus in the early 20th century, flood events occurred at an interval of 20 years. At the beginning of the 21st century, this interval has decreased to 4 years, and besides the natural causes related to these events, the high level of CO₂ in the atmosphere, which has been gradually increasing over the decades, has contributed to the change in the water circulation in the oceans, causing more abundant floods (O ECO, 2021⁵⁷).

This scenario has been reflected in the region where Jari Pará REDD+ Project is located, and in 2022, the Jari river reached historic levels, affecting more than 18,000 people in the Vale do Jari region, leaving several families homeless and putting their food security at risk (AMAPÁ STATE GOVERNMENT, 2022⁵⁸). In 2021 the municipality of Almeirim received community aid due to major impacts caused by

⁵⁵ ARAGÃO, L. E. O. C. et al. 21st Century drought-related fires counteract the decline of Amazon deforestation carbon emissions. 2018. Nat. Commun.

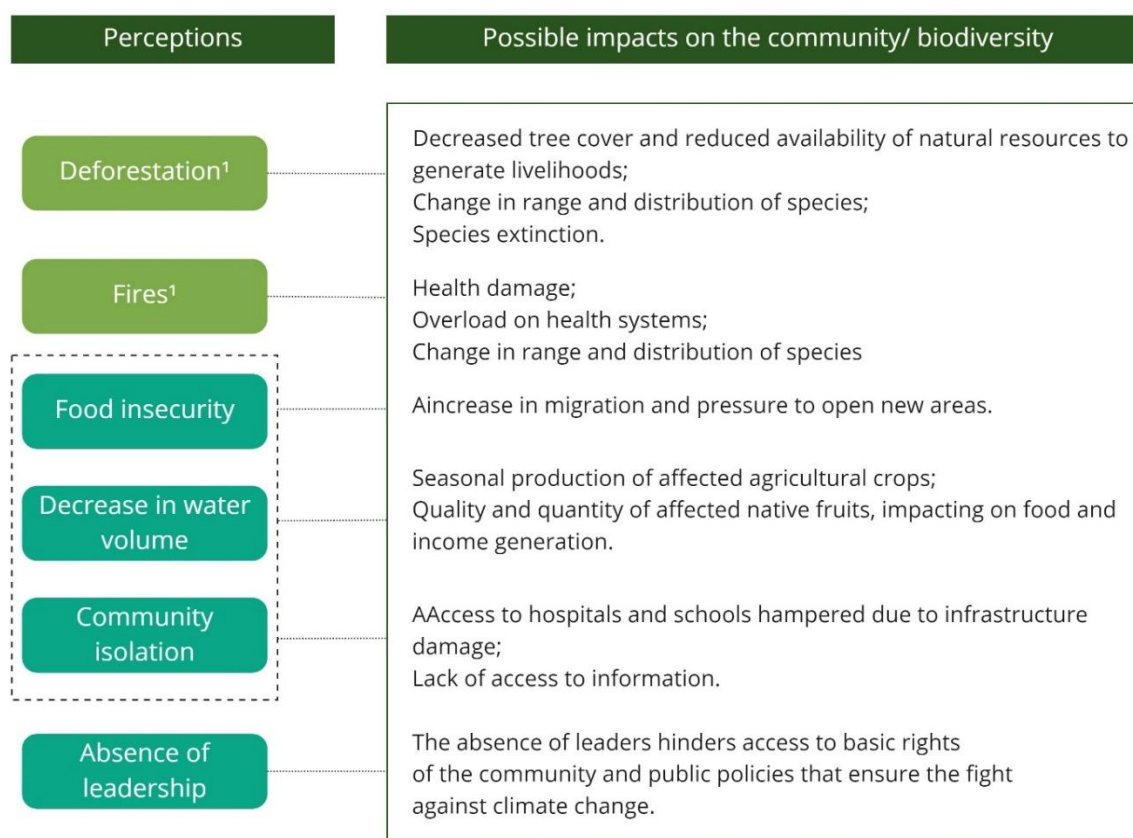
⁵⁶ OLIVEIRA, B. F. A. et al. 2021. Deforestation and climate change are projected to increase heat stress risk in the Brazilian Amazon, doi: <https://doi.org/10.1038/s43247-021-00275-8>.

⁵⁷ O eco, 2021. <https://oeco.org.br/reportagens/cheia-historica-no-amazonas-e-uma-mistura-da-variabilidade-natural-com-mudancas-climaticas/>.

⁵⁸ AMAPÁ STATE GOVERNMENT, 2022. <https://www.portal.ap.gov.br/noticia/2705/vale-do-jari-governo-amplia-atendimentos-as-familias-atingidas-por-enchente>.

flooding and heavy rains, leading the municipality to declare a situation of emergency (GLOBO PARÁ, 2021c⁵⁹).

In addition to the references above, a socio-economic and environmental diagnosis was carried out in the area of the Jari Pará REDD+ Project, an evidence that brings community perceptions about some issues related to climate change, through the field diagnosis carried out with some communities, Figure 8 presents these perceptions and concerns raised.



¹ Deforestation and fires, in addition to the possible impacts presented, are anthropic factors that aggravate the global warming process, with the intensification of the release of greenhouse gases (GHGs).

Figure 8. Insights obtained from the Socio-economic and Environmental Diagnosis, and correlation with its possible impacts.

The conclusion of the diagnosis also pointed out that in a scenario without the project, the demand for financial resources would put pressure on forest resources due to the increase in unplanned and

⁵⁹ GLOBO PARÁ, 2021c. <https://g1.globo.com/pa/santarem-regiao/noticia/2021/06/17/belterra-e-almeirim-tem-r-14-milhao-liberados-para-compra-de-kits-de-ajuda-humanitaria.ghtml>.

predatory agro-extractive activities and would lead to an increase in illegal forest exploitation activities due to the low formal education and a resulting difficulty to the local population to get paid jobs. Therefore, the anthropic actions that suppress the natural areas in the Project region have the effect of intensifying the problem of global warming and, consequently, the climate change.

iii. Required and planned measures for adaptation (GL 1.3)

Faced with the challenge of projections of a warmer and drier environment for the Amazon, it was found that the project already comprises a series of beneficial activities to assist communities and biodiversity in adapting to climate change, among which we highlight:

- The fight against deforestation, preventing the loss of forest cover, thus acting at the core of the climate change issue, aiming to contain the emission of greenhouse gases, and preserving the habitat of species;
- The strengthening of family agriculture and sustainable extractivism, with pillars in food security, aiming to guarantee availability, quantity, quality, and access to food. With technical support activities that aim to dynamize and diversify the sustainable production of agricultural systems, increasing the capacity of crops to adapt to climate changes and variations;
- Environmental education, through various axes, helps the community to understand the challenges of long-term conservation and the support capacity of the land and the sustainable use of natural resources, fire prevention, and the implementation of less aggressive practices to the environment on rural properties;
- The strengthening of communities, which are organized are better able to face the challenges associated with climate change, allowing them to better adapt to changes in the environment and social conditions, appropriate their needs and tools to better manage the processes of climate change;
- Support in the installation of infrastructure, facilitating access to energy in remote areas, and having as an opportunity the availability of solar energy for photovoltaic generation, benefiting and increasing the security of energy supply, as an adaptation option to the predominant hydro source in the electricity matrix;
- Biodiversity monitoring enables a better understanding of the dynamics of local species and thus the development of effective strategic plans for their conservation, through adaptive management, allowing the perpetuation of wildlife in the long term, associated with the containment of unplanned deforestation and, consequently, the maintenance of natural habitats and the reduction of loss of landscape connectivity.

The activities relevant to climate change adaptation and their respective benefits achieved through project execution are detailed below.

Project activity	Scope	Climate change risks and concerns addressed	Adaptation benefits
Monitoring deforestation and improving property surveillance	Climate	Unstructured land use conversion Detection of risk and conflict areas Damage caused by forest fires Low traceability of deforestation vectors	The monitoring of deforestation carried out by the surveillance team in the project area significantly reduces the occurrences of unplanned deforestation, and consequently generates a reduction in greenhouse gas emissions from these practices. The constant physical presence is a determining and fundamental factor in containing the actions of deforestation agents. Through remote monitoring carried out by high-resolution satellite images, patrolling and surveillance, in line with and supporting the environmental agencies, actions are intensified to promote and maintain the vegetation cover and, consequently, biodiversity conservation and the natural resources enjoyed by communities, to mitigate global climate change.
Strengthening of Family Agriculture and Sustainable Extractivism	Social	Threat to the food sovereignty of families Decreased income generation	It is expected that the communities will be able to conduct their farming effectively and efficiently, produce food and generate income without requiring to open new areas, and recover already impacted areas, valuing sustainable land use and perpetuating the benefits to themselves, the climate and biodiversity. The Technical Assistance and Rural Extension service, focused on the insertion of new production techniques and technologies, such as the implementation of agro-forestry systems, shapes the transition from a conventional production system to a low carbon agriculture. In addition, there is also the Low-Impact Multiple Use Forest Management axis, which is based on encouraging good extraction practices that allow the exploitation of timber and non-timber forest resources by the community, with the aim of promoting income diversification, as well as improving the management of the territory and the protection of the forest in the long term. TARE activities also support the development of local production chains, with gains in scale and quality, helping families to be more

Project activity	Scope	Climate change risks and concerns addressed	Adaptation benefits
			independent and have greater income diversification, consequently mitigating the impacts of climate change by increasing food security, respecting the social and environmental functions of rural properties, conserving biodiversity, and giving local producers autonomy.
Promotion of environmental education	Social	Fires Environmental degradation Loss of biodiversity	The environmental education actions guide, disseminate and spread information to the communities about environmental practices through lectures, campaigns, and workshops with the theme of environmental degradation, recovery of degraded areas, fire prevention, environmental legislation, among others. Specifically, regarding forest fires, the dissemination of emergency response practices provides subsidies to the community to face the incidents, as well as teaching and guiding about the risks to health and biodiversity. In general, the approach of these axes helps in the perception of individual impacts on the environment, encourages sustainability and social participation, making the community a key player in the reflections about the need to adapt to the challenge of climate change.
Strengthening associativism and cooperativism in the communities	Social	Population migrations Difficult access to public policies	The project works to strengthen associativism and cooperativism in the communities, as well as being active when it comes to the access of community members to public policies, being both a means by which community members seek information about their rights and a link between them and the competent bodies. Strengthened communities to be better skilled managing the required adaptations to climate change. Social organization also allows for better articulation in the access to public policies and recognition of rights.
Construction of infrastructure for the communities	Social	Isolation Energy Crisis	Supporting the infrastructure of communities allows them to break out of a situation of isolation, and some alternatives reduce dependence on overloaded systems.

Project activity	Scope	Climate change risks and concerns addressed	Adaptation benefits
Biodiversity Monitoring	General and Biodiversity	Habitat fragmentation Population decline Species extinction	The project conducts scientific studies focused on Biodiversity and Environmental Impacts, this activity allows to monitor and mitigate impacts related to biodiversity, maintenance of gene flow, regulation of water flow and water quality, nutrient cycling, soil protection, shelter for fauna, supply of food, fiber and other products for local communities, scenic beauty, maintenance of ecological corridors, and so on. This activity also includes monitoring sensitive species, i.e., species with some degree of threat, according to the IUCN list of endangered species found in the region and guiding and encouraging scientific research in the project area. In addition, it also aims at constant monitoring in areas of high conservation value for communities and biodiversity. The lack of data on species and their behavior in the face of environmental changes is a major bottleneck for the implementation of an adaptive management plan, especially in the face of climate change. As the impact of climate change is still a very incipient subject, the continuous monitoring and evaluation of the Project will ensure that the necessary adaptations for biodiversity are taking place.

Finally, it is understood that a deviation does not affect the applicability of the methodology, the additionality, or the adequacy of the baseline scenario, once the activities to achieve the Gold Level are already included in the Project by design.

2.2.6 Grouped Projects (VCS, 3.6; CCB, G1.13-G1.15, G4.1)

Not applicable. The subject project is not a Grouped Project.

2.2.7 Risks to the Project (CCB, G1.10)

Identified Risk	Potential impact of risk on climate, community and/or biodiversity benefits	Actions needed and designed to mitigate the risk
1	Lack of interest of stakeholders, especially communities and public bodies in participating in project activities.	Strengthening and encouraging greater involvement of all parties involved in the design and decision-making processes in relation to the activities of the Project through stakeholder consultations, listening and dialogue carried out mainly by ATER visits, as this is a space for consultation, complaints and suggestions for stakeholders and in the improvement and dissemination of communication tools and open dialogue existing among the actors involved.
2	Difficulty in marketing verified carbon credits.	Ambipar has teams and departments responsible exclusively for developing project dissemination materials, participating in national and international events related to REDD+ and carbon markets in order to promote the project, establish and expand the network of commercial contacts with potential buyers of carbon credits to be made at the best possible prices that guarantee financial sustainability of the project and the proponents. The commercial team has professionals who are divided to serve national and international clients, who deliver the credits to companies and institutions committed to the effective conservation of their areas and the co-benefits for communities and biodiversity. Historically, the commercial team has been successful in selling 100% of the credits of the Jari Amapá REDD+ Project, which has more than 10 years of existence. Therefore, this project is of great reputation in the voluntary carbon market. In addition, Ambipar 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).

3	Restriction on land use and conversion.	The Fundação Jari team has direct contact with the communities and is constantly trained and oriented to clarify that the Project cannot impose any restriction on the use and conservation of the land. The approach of the project is to offer technical production alternatives, more productive and efficient, so that little by little communities will no longer need to deforest forest areas to grow crops. Along with alternative production techniques (provided by TARE), the project also implements the Property Use Plan Methodology, as a mediation approach to strategically think about the property's land use. With the Property Use Plan, the producer will be encouraged to think about his "future use" of the land, considering not only the productive aspects, but the social and environmental function of the land. And even if the producer is free to do whatever he wants. The restrictions that exist are for new invasions, as previously commented, but even the land surveillance team does not open charges against already established families, whether or not they are involved with the REDD+ project.
4	Non-inclusion of vulnerable groups such as young people and women	The technicians of the Fundação Jari are constantly trained and oriented not to discriminate against women and young people during the mobilizations for the activities of the Project. It should be noted that due to historical and cultural issues, in most cases men lead issues of family productivity and women take care of issues related to well-being. As the project aims to bring economic and social benefits, it is essential to involve women and young people in the discussions, however most of the representatives remain male. An activity already initiated by the project in this theme is the promotion of the Versatile Needles Project, with a female entrepreneurship bias, and new horizons must be reached for equity and inclusion of vulnerable groups. An activity already initiated by the project in this theme is the promotion of the Versatile Needles [Aguilhas Versáteis] project, with a female entrepreneurship bias, and new horizons must be reached for equity and inclusion of vulnerable groups.
5	Risks linked to the management of the Socio-Environmental Fund of the Jari Pará REDD+ Project	During the project implementation period, all guidelines related to transparency and stakeholder participation, including the presentation of results, were enshrined. This Financial Management Agreement has been formalized between the Proponents in order to ensure the maintenance of good financial management practices of the project throughout its duration.

6	Risk from the perspective of communities: Most of the community members do not have training in the use of fire as a way to clean the "capoeiras" (forest areas), which can cause the loss of control of the fire	The Grupo Jari has had an emergency response plan for forest fires since 2009. This plan is ready to be implemented in case of occurrence of forest fire, either by natural causes or human actions (criminal practices of fire, burning, forest management operation, among others), and includes stationary and mobile surveillance, as well as fire prevention and control procedures (see document "Forest Fire Emergency Response Plan"). In addition, another procedure called "PA - Prevention and Control of Forest Fires" aims to establish prevention measures based on two average strategies: Surveillance Techniques and Control of Forest Fires. In relation to Surveillance, prevention occurs through fixed observation towers scattered around the places of operation and surveillance field patrolling. Through monitoring by satellite images, annual bulletins are also prepared that report the occurrence of deforestation and fire outbreaks in the project area. These bulletins are delivered to the security area of the Grupo Jari and the Fundação Jari, which use this data to define actions implemented in the field, either aiming at punishing offenders and expelling invaders, as well as aiming to establish dialogue and provide training to local communities that may be responsible for the fires. Prevention Techniques are based on the elimination or reduction of the human factor on fire risk, through the implementation and maintenance of firebreaks, road maintenance and preventive environmental education. This preventive environmental education is a set of activities, mostly informative workshops, with the aim of providing necessary information and instructions to the local population in general on the basic knowledge to protect the forest and prevent forest fires. Along with the information workshops there is also written material and audiovisual resources prepared for this purpose. In addition to all this, the procedures also indicate essential points related to control and firefighting, such as necessary equipment, methods of combat and safety measures.
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2.2.8 Benefit Permanence (CCB, G1.11)

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

Strengthening the Fundação Jari: Fundação Jari acts as a key player in the development of social activities within the project. Therefore, the purpose of the Project's activities is to consolidate and improve what is already being done by the Fundação in the Project Zone. The number of communities initially

covered by the Project (07) was extended to all the communities reached by the Fundação, which was only possible due to the Fundação's structuring and organizational capacity within the Project, which also relied on internal training to be able to provide assistance to all these communities.

It is expected that when the Project is completed, Fundação Jari consolidate itself as an institution to promote business based on sustainable productive chains, having a qualified technical team that is sufficient to serve the communities and the application of partnerships, with lines of action that aim at its financial sustainability, resulting in the generation of consistent and continuous impacts in the long term.

Improved procedures for asset surveillance and conflict management: The actions for property surveillance, specially related to monitoring areas through satellite images have occurred since the project validation. In 2015, land and river patrols and operations were initiated to ensure the protection of Jari's land holdings, prevent deforestation, forest fires, and the illegal extraction and trade of timber and other products, as well as predatory hunting and fishing.

As an additional tool, remote monitoring was implemented in 2020 using high-resolution satellite images that enable detailed monitoring of the dynamics of land occupation, and training was carried out for the patrimonial surveillance team to increase the efficiency and reduce costs of patrimonial surveillance operations. Therefore, the surveillance operations received an increase in the intelligence process related to monitoring and land management. The monitoring procedures will continue to be updated whenever necessary, which will directly reflect in the maintenance of the climate benefits in the long term, the details of which are described in the VCS monitoring report.

In addition, the Project has worked in the communities to manage conflicts and create community councils, management strategies that pacify and organize coexistence in the territory and strengthen ties between communities, as well as formalizing the institution of leaders who represent the community and are the spokespersons for their demands.

Sustainable socio-economic development and social organization: Through actions aimed at strengthening associations and cooperatives, social entrepreneurship was stimulated, rescuing the values of associativism. The purpose of advisory was to ensure a higher organization level of the institutions, combining planning, production, and trading, allowing agro-extractivists and small entrepreneurs to have access to knowledge and adapted tools, management and commercial practices on their properties, learning good sustainable management practices, through incentives, technological innovation and adding value to regional products, prioritizing agro-forestry crops and traditional production systems that supplement the food and nutritional security of families, in addition to these focal activities of the advisory services, support was also provided to regularize some associations/cooperatives, allowing them to access the formal market, an important channel to increase the generation of income and jobs.

Technical Assistance and Rural Extension Service (TARE), workshops and training in agroforestry and agricultural techniques: The main activity carried out with the community members since the project start through actions by the Fundação Jari, support, training and direct capacity building for producers were carried out based on the joint construction of knowledge and the most suitable techniques for each family and community, enhancing the knowledge already mastered by the community members through integration with complementary information, thus giving more autonomy to the producers (see sections 4.1.3, 4.2.2, and 4.3.1).

In the scope of the TARE activities, services were also provided to support the Rural Environmental Registry of the properties, acting on the environmental suitability front, as well as, support services were provided to issue the Declaration of Aptitude to the National Program for the Strengthening of Family Farming, an identification document for family farming, essential for the family farmer to access the PRONAF (National Program for the Strengthening of Family Farming) credit lines and also at least 15 other Public Policies of the Federal Government.

Through technical training and capacity building in rural production, agricultural and forestry techniques according to family interests, the project expects to make producers capable of implementing adequate agricultural and forestry techniques, enabling constant production and income generation. It is expected that at the end of the project the communities will be able to manage their farming effectively and efficiently, produce food, and generate income without the need to open new areas, perpetuating the benefits to themselves, the climate, and biodiversity.

Far beyond training, TARE service was a link between the community members and the Fundação Jari, providing a bridge for the exchange of information and ongoing consultation on the expectations and interests of the community members, both at formal meetings and during informal meetings, which was of fundamental importance for the smooth running of the project.

Increased scientific knowledge on Biodiversity and Maintenance of High Conservation Value Attributes: The first study conducted on biodiversity was in 2016, during the project design, serving as a basis for the implementation of the long-term monitoring plan for Biodiversity and HCVAs.

As a strategic measure for the project, in 2022 a technical cooperation partnership was formalized with the Federal Institute of Amapá (IFAP) to carry out joint teaching, research and extension activities with the Fundação Jari, with an emphasis on monitoring social biodiversity in the Vale do Jari region, prioritizing the monitoring of fauna, flora and communities, as well as High Conservation Value Areas (HCVAs) in the area covered by the project.

The 2022 monitoring, carried out in order to diagnose the conditions of the species of fauna and flora in the Project Zone, obtained important results for understanding the impacts on biodiversity. The data

collected was analyzed under parameters of species numbers, richness and abundance, equitability, dominance, similarity, among other significant ecological indicators. The evaluations occurred in different environments, to allow the conclusion in a broader view, comparing the different types of maintenance of the areas, their connectivity and relationship, and the consequent impact of the activities carried out on the properties to the local diversity.

It is important to note that, from the data monitored, even with the eucalyptus forest management activities, the presence of endemic and/or threatened species was verified, which ratifies as a strong indication that the animal and plant communities are well established, such as the presence of carnivorous species at the top of the food chain. The connectivity of different environments (preserved native forest areas and anthropized areas) contributes to the maintenance of these species.

Thus, the studies and continuous monitoring of biodiversity are of great importance to understand the effect of the Project's activities on fauna and flora, while the presence of species sensitive to environmental changes are attributes for the classification of the Project Area as High Conservation Value Forest. Thus, the project plans to continue monitoring the benefits directly caused to biodiversity with a frequency of 2 years, mainly from the established partners, to also generate and disseminate knowledge about the region, highlighting mainly the importance of conservation and sustainable use of forests for biodiversity.

Environmental education program: The environmental education activities carried out have a focus on the problematic of environmental degradation, the importance of recovering degraded areas, fire prevention, conscious consumption, and compliance with environmental legislation. Given the importance of environmental education, the lectures were also held in schools and sometimes in a playful way, through community cinema. The theme of firefighting and fire control was the most worked on in the scope of environmental education, linked to the TARE work, are essential for the presentation of techniques for soil preparation and management, less aggressive to the environment.

Environmental education activities will be carried out on an ongoing basis, spreading knowledge and training the community members for their skills, attitudes and competences required for both individual and collective actions, thereby strengthening their participation in decision-making processes focused on environmental conservation and land management in the search for solutions to current and future environmental problems, allowing not only to understand about sustainable development, but also a sense of belonging and responsibilities to the community.

2.3 Stakeholder Engagement & Safeguards

2.3.1 Stakeholder Identification (VCS, 3.18, 3.19; CCB, G1.5)

Stakeholder Identification	With the development of the governance of activities by the Fundação Jari, it was understood that all the communities, families, associations and organizations that receive some support and assistance from the Fundação Jari are included as beneficiaries of the Vale do Jari REDD+ Programme, since investments from REDD+ are the main source of funds for maintaining the Foundation's activities in the region. As a result, support for the communities has been extended and currently 52 communities located in Pará are covered by this scope of action. As well as being based on the new survey carried out, the definition of these communities directly impacted by the project was related to their geolocation within the boundaries of the Project area and the Leakage Belt. A list of the 52 communities covered by the scope of the project can be found in Appendix 1: Communities Located in the State of Pará Within the Scope of the Project's Actions. More information is available in the CCB monitoring report.
Legal or customary tenure/access rights	There are no major agrarian conflicts in the area allocated to the Jari Pará REDD+ Project. Some repossession suits are filed by Jari Celulose when third parties invade small fractions of land owned by Jari Celulose S.A., and the success rate of these suits is high, not resulting in loss of areas. Due to the vast size of the property, such invasions may occur, though they are mostly kept in check by the actions of the land inspection and asset surveillance team at the Grupo Jari. The Grupo Jari follows the prepared mechanism for solving problems, present in the "Conflict Management" document, to deal with any possible dispute in the region. Additionally, the Group has a cooperative dialogue with government agencies to support the regularization of the land title situation of the communities where the Project operates, also mentioned above. The company has no conflicts with traditional communities, and works in partnership with them, recognizing and respecting their areas and including them in the social projects run by the Fundação Jari.

Stakeholder diversity and changes over time	The communities impacted by the Project's actions are located within the Project Area and Leakage Belt, or in the immediate surroundings, and develop economic activities linked to sustainable land use focused on extractivism and agriculture, or have the interest and potential to develop them. No great changes in the characteristics, livelihood and activities of the communities over time were registered.
Expected changes in well-being	The Jari Pará REDD+ Project also has a CCB scope, and in addition to containing deforestation, the primary objectives of the social activities are: Generate positive net impacts on communities in the Project's areas of operation throughout the duration of the Project; Support the development of profitable activities for social well-being and economic alternatives to deforestation in the form of sustainable businesses; and avoid leakage due to displacement of activities. The positive impacts expected to be caused by the project's activities activities, as well as the measures taken to enhance them are listed below: Income generation for the communities; Improvements in agricultural production and facilitating the sale of products as a result of the technical assistance and inputs and the technical training of communities; Prevention of the rural exodus and marginalization of people in the cities since the communities will be able to remain in rural areas with a good quality of life; Reducing the risk of extreme weather events due to climate change by reducing deforestation. More detailed information is available at CCB Monitoring Report.
Location of stakeholders	The communities impacted by the Project's actions are located in the Project Area, the Leakage Belt and the leakage management area.
Location of resources	The Jari Pará REDD+ Project is being carried out on a private property belonging to the Grupo Jari, which recognizes that for rural communities forests are essential

for survival. For this reason, timber species such as andiroba and copaiba are not included in the Forest Management Plan for logging, since they are a source of extraction for the communities. Traditional communities are also allowed to collect seeds, fruit and other non-timber products in the management units, and extractivists are allowed access to the chestnut groves to collect them.

2.3.2 Stakeholder Access to Project Documents (VCS, 3.18, 3.19; CCB, G3.1)

During the monitored period, the focus of the communication actions by Jari Pará REDD+ Project was through virtual media, although voice and written communication with the involved parties was also maintained and implemented, to ensure access to the documents and all other project information, as described below.

Written: the project proponents understand that the content contained in the PDD, and the monitoring reports prepared, even in Portuguese, are extremely technical and, many times, difficult to understand when read by the communities, or even partners that are not very close to the theme. For this reason, during the monitoring period a Monitoring Guide (Figure 9) was elaborated, which presents in a didactic and objective way, concepts, definitions, information, responsibilities, and procedures related to the Project. Project information and news were also published in the local Tribuna Regional newspaper between 2018 and 2021.



Figure 9. illustration of the Monitoring Guides.

Virtual: documents related to the Project are available through virtual means on Verra, Biofílica Ambipar Environment and Fundação Jari Websites News, news about the Project is published in the Bulletin of Biofílica Ambipar Environment through social media (Biofílica and Fundação Jari) and in the Jari News

newsletter, an initiative implemented in October/2022, broadcast internally between Biofílica, Grupo Jari and Fundação Jari, which presents an overview of the activities carried out on a weekly basis. During the monitored period the Grupo Jari e Fundação Jari websites have been discontinued, even though the renovation of the Foundation's website has started, it was not completed until 2022. The expectation of the proponents is that in the coming years this channel will be implemented and will make available the documentation related to the project.

Voice: although the Technical Chambers did not take place as reported in section 2.2.5, Information and news about the project was transmitted orally at events and through meetings between the council of farming communities and technicians, at TARE meetings, and other opportunities for contact between stakeholders and the project proponents.

Additionally, the communities that are not directly involved in the Project development, but as part of the Project area, received important information from similar dissemination tools. Figure 10 below shows some examples of the materials disseminated to stakeholders by the communication.



Figure 10: Examples of publications and news releases (Jari News, local newspaper, and Instagram).

2.3.3 Dissemination of Summary Project Documents (VCS, 3.18, 3.19; CCB, G3.1)

The documents related to the Project are available by virtual means on websites of **Verra** and **Biofílica**. News and updates about the project were published in the Biofílica Bulletin through social media such as Facebook, LinkedIn, and Instagram, through the Fundação Jari Instagram and through e-mail distribution to a pre-selected mailing list. Although the Technical Chambers did not take place as reported in the section 2.2.5, an information was passed between stakeholders and project proponents through the

public consultation held in 2019, meetings held with the Fundação's technical staff, meetings with Fundação and Biofílica, and alignment meetings at Fundação Jari.

The implementation to spread the Jari News newsletter weekly e-mail allowed partners and teams engaged in the project to keep up to date with the activities being carried out.

In addition, the Vale do Jari REDD+ Program Monitoring Guide was prepared, including 03 volumes (01. Projects, activities, and Indicators; 02. Stakeholders and their actions, and 03. Project Monitoring) from the joint efforts by Biofílica Ambipar Environment with Fundação Jari and gathers in didactic and objective way the concepts, definitions, information, responsibilities, and procedures related to projects, providing accessible knowledge, and helping to improve the best management practices, also serving as a tool to stimulate and strengthen the engagement of stakeholders in the development, management, and governance of the project. The training for the use of the guide was carried out with Fundação Jari in November 2022. The expectation is that the FJ technicians will change their behavior when dealing with community members, talking more about the REDD+ project.

It is planned to start in 2023, the annual public consultations to be held with community members and other stakeholders, where the results of the work of the Fundação Jari, promoting a participatory evaluation of the deliveries and will raise points for improvement that can be increased in the planning of the following year, ensuring the engagement of communities in the decision-making process. Furthermore, based on the training carried out with the Monitoring Guide, these activities may include the dissemination of project information to the communities in a more didactic way.

2.3.4 Informational Meetings with Stakeholders (VCS, 3.18, 3.19; CCB, G3.1)

In the monitored period, internal meetings were held with Biofílica, Grupo Jari, and Fundação Jari, on monitoring and planning activities and actions related to the Project and meetings with institutions such as the Agriculture and Environment Secretary of Almeirim.

In 2018, Participatory Diagnostic Workshops were carried out in the Jari Pará REDD+ Project with 09 communities involving the participation of 49 community members, where information related to the Project was presented in a proper language for the attending audience using mediation techniques. Fundação Jari also held meetings to present the Project in 06 communities (Braço, Bandeira, Cafezal, Nova Vida, Recreio, and Serra Grande), with attendance and engagement of 172 community members.

The Public Consultation in April 2019 was significant, requested at the time of the PDD validation and verification process audit (covering the years from 2014 to 2017), involving community leaders of Almeirim, region of the Paru River and Monte Dourado to present the project and being an open listening channel, so that participants could ask questions and make suggestions, focused on expanding and

strengthening the communication channels of the REDD+ Project with stakeholders, directly and indirectly, impacted by their further actions. The public consultation involved the adhesion of more than 150 actors.

In addition to meetings with community and institutional members related to Fundação Jari, on April 18, 2019, and July 16, 2021 meetings were held to present the results of its activities held among its internal teams.

Between November 7 and 11, 2022, a technical visit was made by Biofílica to the Project, covering the following topics: training of the Monitoring Guide, planning of the Public Consultation 2023, and alignment and review of strategies for verification.

It is important to highlight, due to the COVID-19 pandemic since 2020, many project activities were restricted, in addition to financial problems occurred in the Grupo Jari, this also affected the performance of activities, such as face-to-face meetings with community members. In these periods of crisis, activities focused mainly on the demands from community members were prioritized (based on how high the net positive result was of each action), such as TARE services and conflict resolution processes.

2.3.5 Risks from the Project and No Net Harm (VCS, 3.18, 3.19)

The risk assessment can be found in **Appendix 2** of this document.

2.3.6 Community Costs, Risks, and Benefits (CCB, G3.2)

Jari Pará REDD+ Project has been conducting certain strategies to address potential risks, costs and benefits with the communities and other stakeholders, ensuring effective engagement in the process with free, prior and informed consent. These strategies were based on Public Consultations, meetings for Project presentation, exchanges between communities, TAREs visits, and communication strategies with open dialogue provided by Information tools, Feedback Channels and the Complaint Redress Procedures, Conflict Management and Stakeholder Communication procedures, which are described in the section 2.3.14.

It is worth noting that these communication channels aimed to preserve and stimulate rapid dialogue, mainly by TARE visits, being a space for consultation, complaints, suggestions for stakeholders, and include, among other communication strategies implemented, the sending of requests, suggestions / or complaints, through suggestion boxes (Contact Us), contact forms and telephone channels. Although the Technical Chamber was discontinued with the communities in the monitored period, relevant and adequate information to the communities, such as appropriate and relevant information about costs, risks, and potential benefits to the communities were disseminated through the strategies already mentioned.

In addition to the benefits already mentioned in section 2.2.8, from November 2020 to February 2021, an Assessment of the Impacts from Social Projects on Communities was carried out by Di Ciero, with

the purpose for surveying and understanding project contributions in transforming the lives of the beneficiaries, generated benefits, contributions to a change in awareness, the occurrence of any negative impacts, whether the beneficiaries were relied on the projects, and the ongoing actions.

The results of this evaluation show that for the community members who affirmed that their communities benefited from the Project, the most common transformations that occurred are the improvement in the quality of life of the families, achievement of independence, significant increase in income, and getting a job to implement the productive chains ⁶⁰.

Therefore, the collected evidence of action in several communication channels demonstrated the project has participative and transparent communication spaces with open channels for dialogue, construction, and adaptation.

2.3.7 Information to Stakeholder on Verification Process (VCS, 3.18.6, 3.19; CCB, G3.3)

Jari Pará REDD+ Project has adopted different communication strategies for the verification process in the CCB standard. These strategies were targeted at local partners and institutions, involved communities, and society at large.

The local face-to-face public consultation process was started on 2/16/2023 with its content being publicized on radio and social media, and the field work was started on 2/23/2023 and finished on 3/10/2023. Even though the fieldwork started late, it was publicized via local radio and social media as expected (30 days in advance).

Initially the consultation was planned to start in November 2022, however, due to financial and operational difficulties of Fundação Jari, the activity has been postponed until 2023. The consultation process was not completed in its entirety within the period monitored in this report, but within the planning of the activity, 75% of the communities planned for Pará were reached, which is quite significant for the local context.

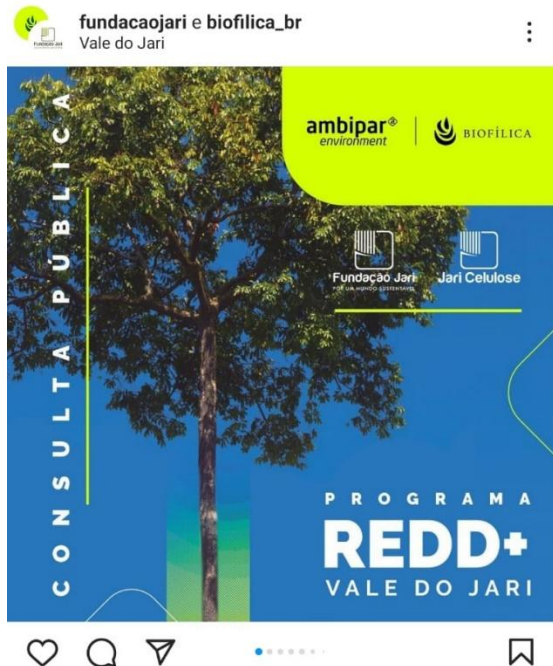
The consultation was structured in two stages: 1. Communication with society in general. 2. Field visit to each community for individual disclosure of the REDD+ Projects in the respective regions. The details for carrying out these activities are described below:

Therefore, considering all stakeholders, the actions that will be carried out are described below:

Communication with society in general: the public consultation process was disseminated by radio, online via social networks, websites, and e-mail of Biofíllica and Fundação Jari. Below are examples of the

⁶⁰ Di Ciero. Relatório de Avaliação de Impactos dos Projetos Sociais nas Comunidades. Área do Projeto Jari. setembro, 2021, p.13.

artwork disseminated by the proponents in this dissemination. In the radio dissemination the following text was read: "The FUNDAÇÃO JARI AND BIOFÍLICA AMBIPAR, hereby informs the public that the REDD+ Jari Program is experiencing an audit process to evaluate the activities for reducing emissions from deforestation and environmental degradation, provided under the program; and invites the community in general, rural producers, family farmers and extractivists, residents of rural communities in the municipalities of Almeirim, Laranjal do Jari and Vitória do Jari, to participate in the PUBLIC CONSULTATION, expressing their opinions, doubts and suggestions. The consultation visits to the communities located in the program's area of influence will take place between February 23 and March 10, 2023. It is important to highlight that the public consultation held covered communities impacted by the REDD+ Jari Pará and Amapá Projects, therefore, its disclosure dealt with the "Vale do Jari REDD+ Program", however, in this report, only the results referring to the communities impacted in Pará are presented.



fundacaojari A FUNDAÇÃO JARI E A BIOFÍLICA AMBIPAR, vem a público informar que o Programa REDD+ Vale do Jari esta vivenciando um processo de auditoria para avaliar as atividades de redução de emissões por desmatamento e degradação florestal, previstas no programa.

Convidamos as comunidades em geral, produtores rurais, agricultores familiares e extrativistas e moradores de comunidades rurais, dos municípios de Almeirim, Laranjal do Jari e Vitória do Jari, a participarem da CONSULTA PÚBLICA, manifestando suas opiniões, dúvidas e sugestões.

As visitas para consulta às comunidades situadas na área de influência do programa, ocorrerão entre os dias 23 de fevereiro a 10 de março de 2023.

Contamos com a participação de todos.

Ver todos os 3 comentários

16 de fevereiro • Ver tradução

Figure 11. Publication on the Fundação Jari social network about the Public Consultation.



Figure 12. Social network posting, from the Recreio community, during the course of the Public Consultation.

Community Visits: First, the communities participating in the Public Consultation were defined based on the prioritization criteria of communities located within the Project area, as well as, surrounding communities within a radius of 4 km from the edges of the area (such premise took into consideration, the indication of 3 km range defined as the Buffer Zone in CONAMA Resolution n°. 428/2010, i.e., considered 1 km more)⁶¹, resulting in the Consultation to 39 communities which are better detailed in section 2.3.9.

The sampling per community was 10% of people, based on the number of families in each community, giving priority to formal and informal leaders: presidents or directors of associations/cooperatives; community leaders or deputy leaders; public agents (teachers, health agents, among others); older residents; users of the social projects run by the Fundação Jari; women and young people (if not included in the items above).

During the visits, posters were hung, banners were used, and informative folders containing images and detailed didactic information were made available, as well as the project's communication channels (Figure 13 and Figure 14) and applied a questionnaire by Fundação Jari technicians on the perception of community members about climate change in the region. In the same process, signatures will be collected, photographic records taken, and geographical coordinates of the locations visited.

⁶¹ Buffer zone: the surroundings of a Conservation Unit, where human activities are subject to specific rules and restrictions, in order to minimize negative impacts on the Unit. Thus, we used the criteria of the range established by CONAMA Resolution 428/2010, updated by Resolution 473/2015, as a safety radius, with the purpose of including the communities most affected by the Project's actions. It should be noted that paragraph 2 of Article 1 of the aforementioned Resolution is no longer in effect; however, since no new text has been published, this premise will be maintained for this criterion.



Figure 13. Illustration of the Public Consultation poster and banner.

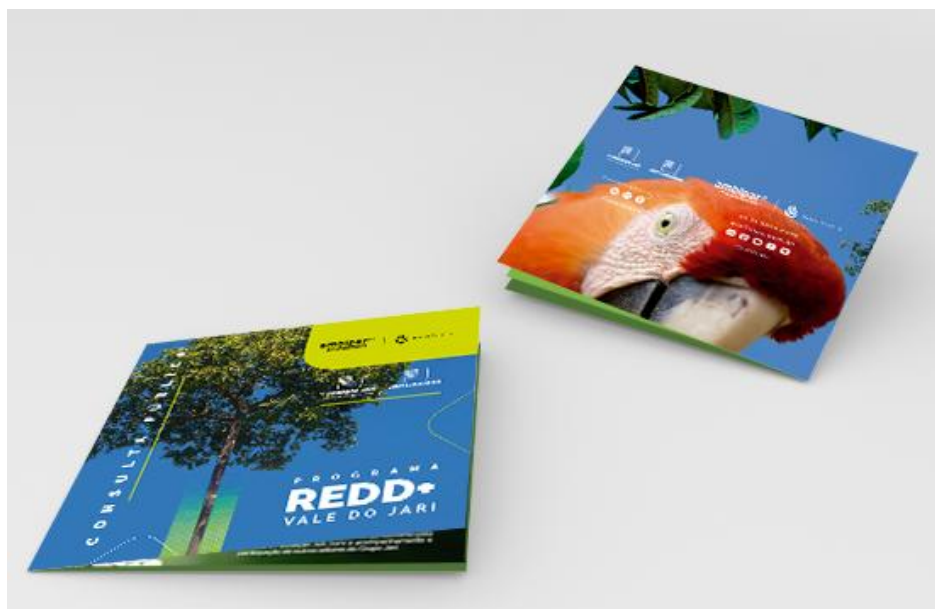


Figure 14. Illustration of the folders distributed during the Public Consultation.

Communication with society in general: Additional to the public consultation with local stakeholders, extensive communication will be carried out through social media (of Biofilica and Fundação Jari) and via email through a broad list of relevant governmental and non-governmental institutions,

publicizing the public consultation carried out by the Verra platform, where the intermediate project documents "drafts", with the results of the monitored period, can be evaluated by stakeholders worldwide.

2.3.8 Site Visit Information and Opportunities to Communicate with Auditor (VCS, 3.18.6, 3.19; CCB, G3.3)

Prior communication with stakeholders about the auditors' visit occurred during the public consultation process through the main channels mentioned in section 2.3.8. It is important to highlight that due to financial issues, the notification to the communities and other stakeholders of a planned future site visit by the validation/verification body did not occur 30 days in advance as required by the CCB-Program-Rules-v3.1, Section 4.3.14, according to the reasons described in section 2.3.8. However, the proponents understand the importance of making this communication and even outside this timeframe the activity was carried out, focusing on communicating with the communities and other stakeholders about the audit process.

In this sense, the proponents understand that all interested parties were informed about the audit process and site visits 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 stakeholders.

As far as the employees that make up the Jari Celulose and Fundação Jari teams are concerned, since the beginning of the VCS-CCB verification audit planning process, Biofílica has been clarifying the dynamics as they occur with the VVB, making clear the need for the proponents to remove doubts, explain processes and the local context of the project, always maintaining the required transparency. In this way, the various means of communication already explained carried out by the partners, presented the content that directs the preparation of the parties involved in the verification audit process.

In order to facilitate communication between the stakeholders and VVB, the proponents prepared a list with the list and contact details of the main actors in the project's area of influence or who may have an interest in the project.

With regard to the delivery of documentation to the VVB on the project to comply with the procedure for reporting news to Verra, the bidders were unaware of the change in the rules of the certification standards in which this delivery should have occurred 30 days before the fieldwork, the source of this information being the VVB itself, during the field audit, when it indicated that it had received an update on this change via email from Verra. Thus, the material was delivered after this deadline, mainly due to the large amount of information that needed to be compiled and organized to be delivered along with the project documentation. The bidders recognize their failure, but understand that, even so, the auditing

process was not prejudiced. In any case, the bidders commit themselves in the next audits to comply with the updated deadlines of the certification standard.

In order to make up for the delay in face-to-face communication with stakeholders about the verification process, the Project Proponents exceptionally opened a new period, which began on 09/05/2023 and ended on 09/30/2023, for stakeholders to send their comments to the audit team. This strategy was carried out on two fronts: the first with communication via e-mail, to stakeholders and partners reached by this media, in which they were able to have direct access to the VVB, and the second via ATER visits, in which this new opportunity for manifestation was communicated through the Suggestion Box.

However, the face-to-face strategy was delayed due to the distance between the communities and the greater logistical difficulties. It only started on October 2 (after the previously established deadline), and a further 34 people from the Braço, 13 de Maio, Bananal, Bandeira and Recreio communities were consulted. Due to the logistical and financial difficulties in reaching the largest number of people involved in a timely manner, the PPs decided, as a corrective action, to send out a new radio call about the possibility of community members expressing their views, with the following text:

"FUNDAÇÃO JARI AND BIOFÍLICA AMBIPAR, hereby informs the public that the REDD+ Vale do Jari Program will hold a new public comment period on changes to the Project Description and Monitoring Report for the REDD+ Jari Amapá and REDD+ Jari Pará projects. The consultation will be open to all communities and agencies that work with the project and wish to comment on the proposed adaptations to the projects. We would like to invite all interested parties to access the documents and submit their comments via the website www.biofilica.com.br. Communities can also comment by calling 93 - 991723138/ 93 37366292.

The process will open on November 27 and will run for 12 days, until December 8, 2023. This consultation is part of the program of continuous communication and transparency of the projects"

The choice of a new radio broadcast was due to the necessary reach and speed of the process, which face-to-face activities cannot achieve.

The strategy of communicating with community members by telephone is justified by the fact that several communities have received support from the project to install telephones and internet, benefiting 399 families, as reported in section 4.3.0 Community Monitoring Plan (CM4.1, CM4.2, GL1.4, GL2.2, GL2.3, GL2.5) of this MR.

2.3.9 Stakeholder Consultation (VCS, 3.18; CCB, G3.4)

Ongoing consultation	During the monitored period, communication with the community was focused on the TARE attendance of the technicians, workshops, lectures and trainings offered by the Fundação Jari. Through these channels, the communities of the Project Zone can participate with doubts, suggestions, questions and criticisms of the project activities. In addition, this communication was also carried out through Information and Feedback Channels. The entire monitoring period was contemplated by the mechanisms already implemented by the Grupo Jari and, mainly, by the Fundação Jari, such as the “Conflict Management” and “Communication with Stakeholders” procedures. In addition to this continuous consultation process, the 2023 Public Consultation was held, which had as its general objective to level information and publicize the Vale do Jari REDD+ Program, “together with rural producers, family farmers and extractivists, residents of rural communities, located in the area of coverage or in the surroundings, collecting your manifestations, opinions, doubts and suggestions related to the Program.
Date(s) of stakeholder consultation	23-February-2023
Communication of monitored results	In total, 312 people from 39 communities located in Pará (34 of which are in the scope of project) were consulted. As a result, there was the leveling of information and the provision of publicity about the Vale do Jari REDD+ Program, together with rural producers, family farmers and extractivists, residents of rural communities, located in the coverage area or in the surroundings, promoting the collection of manifestations, opinions, doubts and suggestions related to the Program.
Consultation records	CRITERIA FOR MOBILIZATION OF THE TARGET AUDIENCE: Older residents of the communities; Representatives of rural associations, cooperatives or unions; Representatives of the municipal or state government; Teachers from the municipal school system who work and live in the communities; Public health agents in the communities; Young people and students living in the communities; Community council leaders; Representatives of religious beliefs.

	TIMELINE FOR THE CONSULTATION: Communities with pre-selected land or river access; Communities in the area covered by or around the project in the municipality of Almeirim; Communities in the area covered by or around the project in the District of Monte Dourado; Communities in the vicinity of the project, considered up to a radius of 3km away from the edge. RECORDS Signatures were collected, photographic records were made, and the geographic coordinates of the places visited were demarcated. The “General Report of the Public Consultation” with all the information about the process was shared with the VVB.
Stakeholder input	During the in-person public consultation, no demands, complaints or contributions from interested parties were recorded. On the other hand, the continuous public consultation is carried out by the Grupo Jari in general, covering the entire region that encompasses its activities in both Pará and Amapá, therefore, in this monitoring period, with the application of the Procedure for Receiving Returns and Complaints and Conflict Resolution 904 demands or complaints were registered by different interested parties, of which 898 were addressed in some way, representing 99.3% of demands answered. A large part of these demands are requests for resources or equipment from communities, however, in many cases it is explained that the Grupo Jari is unable to provide resources to families without compensation or in some cases assuming the role that belongs to the State. In some cases, it was possible to make donations or form partnerships with local institutions and public authorities to meet demand. This information is detailed in the project’s CCB monitoring report.

2.3.10 Continued Consultation and Adaptive Management (VCS, 3.18; CCB, G3.4)

The Technical Assistance and Rural Extension Service (TARE) is an important channel for ongoing consultation for the communities and other stakeholders directly or indirectly involved in the project. Through TARE the stakeholders had direct and permanent contact with the Fundação Jari’s team, and by doing so, both of them have the opportunity of discussing the planning, strategies and propose changes and adaptations. In addition, as part of the TARE process various training sessions were held with producers and community associations in the project region.

In addition to these actions, the Conflict Management Procedures and Stakeholder Communication Procedures were permanent consultation tools that aimed to ensure the continuous involvement of all stakeholders and ensure a dynamic management of the project.

In addition to the continuity of the activities already carried out, the use of the Monitoring Guide will serve as a tool to stimulate and strengthen the engagement of stakeholders for the development, management, and governance of the project, as well as the resumption of the Technical Chambers in a new format, focused on the exchange between technical institutions that are partners of the project, with meetings held at the beginning of the year, presenting the planning of activities for the period and at the end of the year the results of the activities carried out will be presented (this activity will be implemented after the resolution of the legal situation of Grupo Jari, to avoid potential conflicts with the participating parties).

The dialogue and exchange with the communities will continue to take place through TARE actions and through annual public consultations where the results of the Foundation's work will be discussed, in order to evaluate the evolution of the work and its results, to capture suggestions, questions, or suggestions for improvements as a result, making the exchange between proponent and beneficiaries more solid and guaranteeing the engagement of the communities in the decision-making process.

In addition, five comments were received during the period from 03/20/2023 to 04/19/2023, during which the consultation was open on the Verra platform and were made available to the VVB.

Summary of comments received	Actions taken
Comment 1: The comment mentions the importance of the Jari Pará REDD+ Project for the continuity of sustainability actions and workers in the region	The comment is a compliment to the project's actions, in line with what is presented throughout this report and the CCB's monitoring report. No action required.
Comment 2: The comment endorses the seriousness of the project.	The comment is a compliment to the project's actions, in line with what is presented throughout this report and the CCB's monitoring report. No action required.
Comment 3: The comment inserts a link to an article about an investigation into the alleged overlap of the Project area with public areas.	It is clarified: Fazenda Saracura has been classified as a private area since 1856 , having been acquired by Grupo Jari in 1948. The Grupo Jari has owned the area of Fazenda Saracura for more than 70 years and, in 2014, the activities of the Jari Pará REDD+ Project began.

	It should be noted that the Grupo Jari owns the area called Fazenda Saracura, which meets the requirement of “legal right to control and operate the project activities”, meeting the land requirement for implementing a carbon project. As also pointed out by a third party auditor, the validator and verifier of the project, the company RINA, the documentation presented to the auditors was “satisfactory” to demonstrate compliance with all of Verra’s requirements. In other words, ownership is sufficient to demonstrate that the project developer has rights over the area to implement a carbon project, and the Jari Pará REDD+ Project has documentation that has been verified by the third party and proves the Grupo Jari’s right and legitimacy not only over ownership of the area, but also for the conservation actions that result in the carbon project’s emission reductions. The land documents were also provided to the VVB.
Comment 4: The comment was about the absence of the <i>kml</i> file in the Verra databases	The Project Area delimitation file is registered with Verra, but it was found that in fact, it did not appear on the search screen with Project information. This request for inclusion had already been made in 2021 and was reiterated again on June 19, 2023. This conflict has now been resolved and the file is available for download. The supporting emails have been made available to the VVB.
Comment 5: The comment points out two relevant aspects of the NBS Brazil Alliance’s analysis of the report: the lack of detail on the calculation of GHG emissions in the CCB report, and on the	Regarding the emissions calculations, it is clarified that they are fully reported in this report, and that the CCB document mentions it. As for the land aspects, it is understood that the response to Comment 4 provides the necessary clarification on this issue, and the

land issues involving the Grupo Jari and the State of Pará.

section 2.4.1 of the CCB Monitoring Report provides more detail.

2.3.11 Stakeholder Consultation Channels (CCB, G3.5)

The Project's activities are designed and implemented considering the desires, characteristics, and limitations of each community as defined and verified during the exchange carried out at the Technical Assistance and Rural Extension Service (TARE) and other information channels, already explained in previous items.

As described in section 2.3.4, Public Consultations and meetings between the communities and the Project proponents have taken place. This communication and accessibility for discussion about the progress of the Project's activities between stakeholders and the proponents will occur continuously throughout the duration of the Project through various channels: visits by agricultural technicians through the Technical Assistance and Rural Extension (TARE), Information and Feedback Channels and Complaints Redress Procedures and Internal Ombudsman, Public Consultations and Technical Chambers with partner institutions.

2.3.12 Stakeholder Participation in Decision-Making and Implementation (VCS, 3.18, 3.19; CCB, 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. As mentioned before, involvement in the design, implementation, monitoring and evaluation of the Project takes place through presentation and consultation meetings, the Technical Assistance and Rural Extension Service (TARE), Information and Feedback Channels, and Complaint Redress Procedures and the Internal Ombudsman, in which all interested communities can participate.

Due to historical and cultural issues, it is noted that in relation to the productive decisions of the family, women and young people have little participation. Rural technicians are always oriented to include men and women, when this is the family configuration, in all activities to increase women's participation in these decisions. As a tool to boost these participations, Fundação Jari has created specific projects for these more marginalized groups, such as, for example, for the inclusion of young people, the Pacuí Family School Project is carried out, working with technical training in farming.

The work with women occurs through the Pintainhos Project, developed to generate income and nutritional security for families and in which women take the main role in the execution of the activities. In addition to the support and assistance to cooperatives and groups organized and led by women, such as the Versatile Needles [Agulhas Versáteis], focused on the production of professional uniforms for

companies sold to Grupo Jari and to other companies in the region and SEARA focused on vegetable production in the Pimental community.

2.3.13 Anti-Discrimination Assurance (VCS, 3.19; CCB, G3.7)

Bioflica Ambipar Environment follows the principles of the Grupo Ambipar's "Code of Conduct", based on the premise of respect for people, regardless of their hierarchical position, origin, color, ethnicity, culture, age, social level, physical capacity, religion, and sexual orientation, not being accepted any practice of discrimination. Some commitments are the encouragement of attitudes of respect for people, their traditions and values, as well as to guide the relationship by respecting the laws and conventions that deal with fundamental human rights.

Grupo Jari has a solid culture of Human Rights Policy and Social Responsibility, being a group that respects, protects, and supports human rights. This position is described in its internal rules, such as the "Integrated Policy of Grupo Jari" and "Code of Conduct - Principles and General Norms of Conduct".

The "Code of Conduct - General Principles and Standards of Conduct" has the purpose of guiding and directing the attitude of all employees of Grupo Jari concerning the contact with the internal and external public, and with the community. This document is based on principles protected by transparency and ethics, by local, state and federal laws, and by international treaties and conventions, such as the Universal Declaration of Human Rights, the International Labor Organization and United Nations Conventions. Several topics are covered in this document, such as ethical values and the law, conflicts of interest, human rights, the environment, workplace practices, external publics, and so on, thus addressing issues such as discrimination of any nature and moral and sexual harassment.

The commitment to the life, health, and safety of the workers is paramount, and no type of discrimination based on race, color, nationality, age, religion, sexual orientation, mental or physical disability, or moral or sexual harassment is allowed. The code also does not allow the exploitation and use of child labor, the consumption or carrying of illicit drugs or alcoholic beverages in the workplace, and the carrying of weapons of any kind on company premises.

Grupo Jari provides an internal communication channel, where complaints and manifestations about issues related to this document and to labor relations can be made. Complaints of this nature can be made through Contact Us channel or at the HR of Grupo Jari or also through the union, it is worth mentioning that no demand on this topic has been received to date. Communication with employees is done through suggestion boxes provided at strategic points in the service provider companies. The Environment Quality and Management team collects these boxes monthly, registers and analyzes them, sending the operation's managers a report containing the demands of the service providers for decision making as necessary.

2.3.14 Grievances (VCS, 3.18.4; CCB, G3.8)

Jari Pará REDD+ Project follows the procedures established by Grupo Jari, since it is located on their property, and they are developed already based on the local context. The Group has an accessible conflict resolution procedure called the Feedback and Complaint Redress Procedure ("Conflict Resolution Procedure"). It describes the procedures taken in the event of complaints, dissatisfaction, disagreement, and confrontation of opinions with respect to land, environmental or social issues. This practice, already consolidated by the Grupo Jari, serves as support for applying the same actions in the Jari Pará REDD+ project.

Complaints are forwarded by a committee composed of representatives of the Fundação Jari and the institutional relations, infrastructure management, land management, and legal departments of Grupo Jari. The committee's mission is to seek a solution to any and all types of land, environmental and social conflicts involving the forest management units under the management of Grupo Jari. The case is analyzed by the committee, which decides on how to forward the case and define a strategy to solve it. The search for a consensus between the parties is always the main purpose. If no agreement is reached, the Committee will decide whether to make a new negotiated attempt or to resort to a judicial instance. After the implementation of the actions provided for the resolution of the issues that generated the conflict, a critical analysis is made by the committee to verify the effectiveness of the actions/measures applied to the case; when it is proven that the conflict has been mitigated, the case will be closed and filed.

Conflicts and demands from other stakeholders are handled according to the Stakeholder Communication Procedure document, created in the Grupo Jari's Quality and Environmental Management sector, and recorded on a specific form. The forms are analyzed and forwarded for appropriate action, and subsequently returned to the communities.

The feedback and complaints redress are carried out according to the Procedure for Response to Communications with Stakeholders, available at the Department of Quality and Environmental Management. Although the planned Technical Chambers were not held in the monitored period, any community or stakeholder can submit comments, suggestions, complaints, through the communication channels described above and the feedback channel "Contact Us", which operates through e-mail, Whatsapp or telephone - virtual and verbal channels - and through "Stakeholder comment form", available at the office of Fundação Jari and taken to the field technicians at each TARE action - written channel.

Conflicts and demands from other stakeholders are dealt with according to the document "Communication with Stakeholders Procedure", created in the Grupo Jari's Quality Management and Environment sector, and recorded on the "Communication with the Community" form. The forms are analyzed and forwarded for appropriate action, and subsequently returned to the communities.

Communication with employees takes place through suggestion boxes provided at strategic points in the service companies.

In this monitoring period, thanks to the Feedback and Complaints Receipt and Conflict Resolution Procedure, 904 demands or complaints were registered by different stakeholders, and of these 898 were addressed in some way, representing 99.3% of answered demands. Most of these demands are requests for resources or equipment by the communities, however, in many cases it is explained that the Grupo Jari is not able to provide resources to families without counterpart or in some cases assuming the role of the State. In some cases, it was possible to make donations or form partnerships with local institutions and the government to meet the demand. All the records of complaints were shared with VVB.

2.3.15 Worker Training (VCS, 3.19; CCB, G3.9)

The qualification and empowerment of local actors are essential to assure quality in the implementation of the actions proposed by the Project, as well as to ensure the permanence of results and positive impacts in the long term.

It is understood that, to guarantee effectiveness in the implementation of REDD+ Project, it is essential to work on the generation of local human capital, focused mainly on the management responsible for natural resources.

The following describes the main activities that took place during the monitoring period, aiming to promote the training of local actors, income generation, and direct and indirect jobs. It is important to highlight that, among the activities listed, in addition to courses, workshops, and lectures, meeting spaces are considered as a form of capacity building for those involved, since the exchange of information in this environment generates learning for the participants.

- Strengthening family farming: During this period, Fundação Jari held 27 workshops and training sessions with producers and community associations in the project's region, covering topics such as: planting techniques and management of açaí, banana, cocoa; processing techniques, food hygiene; fish farming courses, poultry farming; hydroponics, among others. These training courses were divided into 12 courses focused on sustainable management and extractivism and good processing practices; 14 meetings on various topics: rural credit, public policies, crop plans, integrated production. These meetings were not only a space for discussion, but also for the presentation of terms, concepts, guidelines, and an important vehicle to clear up doubts among community members, and for this reason, they are considered forms of training; and 01 exchange between communities, enabling the exchange of experiences among stakeholders, resulting in a total of 353 participations.

- Improving forest monitoring techniques: Training for two technicians was provided at Fundação Jari, other teams at Grupo Jari and Biofílica can access the satellite images Web SSSCON platform. These

training improve the remote monitoring of the occurrence of deforestation and land invasions and of small farmers assisted by the Foundation, in addition to supporting the planning of field actions.

- Strengthening the Fundação Jari: Effective hiring was hampered in the monitored period due to financial difficulties of the Grupo Jari. In order not to generate major impacts on the Project's activities, Specialized Consultants were contracted for the Constitution, fiscal tax regularization, and Orientation of Organizations for the Defense and Guarantee of Rights, and for Technical Assistance and Rural Extension, in the development of technology and the strengthening of Public Policies, acting in the Administrative and Accounting area; Consultants for Advising in the regularization and formalization of organizations, associations, cooperatives and Social Projects, focused on working with civil society organizations that develop activities with children and adolescents and enterprises for the promotion of community-based and productive businesses that generate income for local communities; Specialized Consulting to develop the fishing chain in the region for small fish farmers and a veterinarian who provides clinical assistance, examinations and diagnoses to small animal producers that are assisted by the Foundation; Environmental Projects (focused on environmental education actions), Technology (development of the application for registering the actions of TARE, Figure 15); Development of Public Policies for the Food Purchase Program (PNAE) with the municipality and Georeferencing for the issuance of the Rural Environmental Registry - CAR, for producers advised by the Foundation.

These consultancies allowed the exchange and renewal of the team's knowledge and innovation in the provision of services to communities with specific demands, saving time and resources.

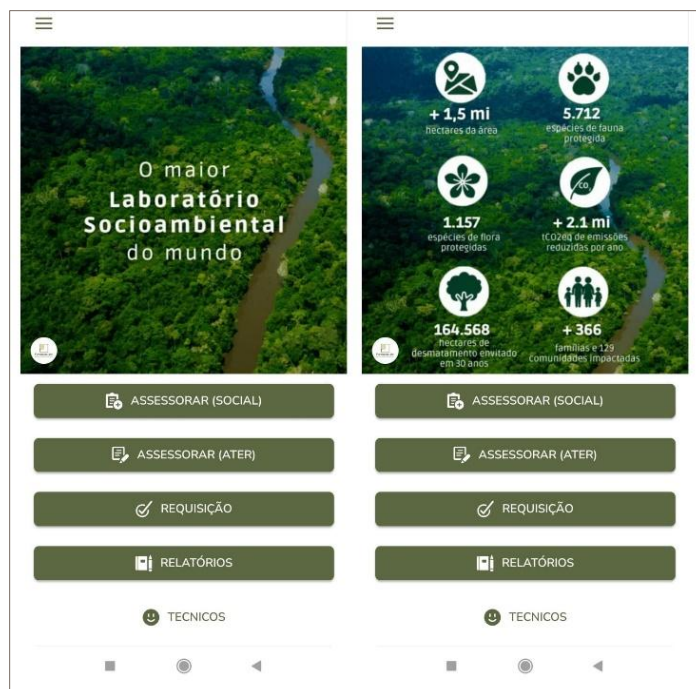


Figure 15: Home screen of the application developed for cell phones to register the TARE services.

In 2021, Fundação Jari received a training for VCS and CCB Certification, presented by Biofílica Ambipar Environment, which provided the Fundação's technicians with a broader training on the criteria for continuing to guarantee a good execution of the REDD+ Project.

Besides this, the training of the Monitoring Guide was also carried out, with the participation of about 20 people, divided among the employees of Fundação Jari and those responsible for the other sectors of the Grupo Jari (Asset Security, Quality, Certification and Environment, Nursery and Geoprocessing), of the company Agregue, responsible for low impact forest management in Amapá, and Biofílica Ambipar. The use of this tool will be essential to implement, monitor, control and constantly update the Project's good practices.

- Encouraging the participation of youth, women, and marginalized people: Activities are open to the participation of all residents of the project's working communities. The participation of women, youth and marginalized people is encouraged by the technicians of the Foundation, as well as the allocation of part of the resources of the Socio-environmental Agreement to include these less favored groups (inclusion of gender, youth, and vulnerable populations).

Cooperativa Versatile Needles [Agulhas Versáteis], is an environment of cooperation among women entrepreneurs from the Vila Planalto community, who work in the field of making and selling clothing and

accessories, which is assisted by the initiative Entrepreneur Station [Estação Empreender] by Fundação Jari, the counseling aims to transform its economic results into income and improved quality of life. The Cooperative provides uniforms (individual protection equipment - IPE), for Grupo Jari employees and more 10 third party service provider companies in the Vale do Jari. In 2021, 03 courses were offered, one of which was a training course on how to make masks, an action carried out to support the fight against covid-19, with 195 participants.



Figure 16: Cooperative members at Versatile Needles [Aguilhas Versáteis].

Women are also protagonists in the Pintainhos Project, developed for income generation and nutritional security of the families, in which they assume the main role in the execution of the activities.

The incentive to the young people of the communities is carried out through the Pacuí Family School Project (Figure 17), offering young people technical training in Agriculture and Livestock, 60 young people are contemplated in the project, which has as a requirement that all young people must be children of farmers or extractivists, and 30% of the vacancies were exclusively for women. Of the 60 young people approved, 15 are residents in the communities covered in the scope of the Project of which 06 are women.

It is also worth mentioning that in a partnership with SENAI, a program called Apprentice Generation [Geração Aprendiz] is developed, which annually assists 120 young people aged 14 to 24, offering professional training courses in several areas.



Figure 17. Young people from the Pacui Project.

- Support to the formation and structuring of community associations and cooperatives: Through the Entrepreneur Station [Estação Empreender] project, the Fundação Jari encourages social entrepreneurship through advising enterprises that are linked to agroforestry value chains. It assists planning, production and marketing, enabling agro-extractivists and small entrepreneurs to gain access to knowledge and tools adapted to management and marketing practices on their properties, learning good sustainable management practices through incentives, technological innovation and adding value to regional products, prioritizing agro-forestry crops and traditional production systems to supplement food and nutritional security of families and to be ensured in formal and institutional markets.

In the monitored period 06 associations/cooperatives were assisted: Versatile Needles [Agulhas Versáteis], COOPMAR, COPNHARIM, CYPOS, SEARA, Açaí Harvesters, two of which are community-based (SEARA and COOPMAR, from the Pimental community, as groups of cooperative producers). And helped in the regularization process of 04 associations/ cooperatives in Pará: APROSAN - Association of Agro-extractive Producers and Artisanal Fishermen of the Santa Luzia do Taiassuy community; APRAFA - Association of Rural Producers and Family Farmers, ATEAPA - Association of Extractive Workers of Pará and Amapá, and COOPABAN - Cooperative of Agro-extractive Producers and Producers of the Lower Amazon.

- Strengthening of associativism and cooperativism in the communities: In addition to supporting the formation and structuring of community associations and cooperatives, during the monitored period the Project offered training that allowed the communities the strengthening of Associativism and Cooperativism in the Communities. Forty-two training courses were held, with 679 participants, for training the community leaders, to raise awareness about the importance of the role of social organizations in community development, and to identify the main demands of the communities. These training were divided into 13 courses held by the Versatile Needles [Agulhas Versáteis] Cooperative to make masks to

fight the covid-19 pandemic; 03 courses held by the Versatile Needles [Agulhas Versáteis] Cooperative on quality control of uniforms; 02 workshops on rules for community use; 01 lecture on cooperativism; and 21 meetings and presentations with various objectives: presentation of results, election of directors, meetings with groups and leaders.

2.3.16 Community Employment Opportunities (VCS, 3.19.13; CCB, G3.10)

Employment opportunities offered by Grupo Jari are equal to the surrounding communities, including management positions, if the job requirements are met. All the job positions generated locally by the Project follow the parameters and guidelines of the "Recruitment and Selection System" procedure owned by the Grupo Jari, whose main purpose is to establish criteria for recruitment and selection, allowing transparency and effectiveness for all those involved.

No criteria of race, gender, sexual orientation, color, religion, age, ethnic origin, physical or mental disability or social class are adopted. All stages of the selection process, as well as hiring the professional, are based on criteria established in the description of positions offered and minimum qualification is desirable. It is worth mentioning that the project proponents already have teams composed mainly of people from the Vale do Jari, this for both direct employees of Grupo Jari, as well as for hired consultants, which highlights that the project will only reinforce the actions already taken in this regard.

Therefore, every selection process carried out has as standard to start with the internal recruitment program, which searches for suitable candidates for open positions among already hired employees. If the vacancy does not fill internally, the recruitment and selection is returned to the external process, where the selection processes are developed, applying the necessary and appropriate evaluation tools for each vacancy.

In addition to these processes, the proponents have a culture that aims to standardize and balance the selection of employees, including young people, new employees, and former employees who will take on new positions. Particularly noteworthy are the internship procedure for professional training for teenagers and young adults, designed to provide them with hands-on experience in training and technical, cultural, scientific, and interpersonal improvement, complementing their learning, and the Professional Training and Development procedure that guides the identification and management of internal and external training needs and the development of Grupo Jari employees.

The selection process is conducted by the human resources department, where candidates undergo specific assessments of the job in question, and the results obtained at these stages will be forwarded to the sectors responsible for the hiring request and the final selection of the candidates identified as suitable to fill the vacancy will be conducted.

2.3.17 Occupational Safety Assessment (VCS, 3.19; CCB, G3.12)

An important component of the Project involves strict and effective care for the safety of workers, considering the internal regulations and official norms established by the federal and state governments.

Bioflica Ambipar Environment, acts in compliance with the Policies of the Grupo Ambipar Integrated Management System, declaring its commitment to the continuous improvement of its Quality, Occupational Safety, and Environmental indicators. Through the *Environmental Management System Policy* and the *Response Management System Policy*, the company is committed to promoting the qualification of its employees through training and professional qualification, to meet the legal, contractual, and other applicable requirements of quality, environment, occupational safety and health, to promote health and safety by preventing injuries, accidents and occupational damage.

Grupo Jari has a complex quality management system, *Grupo Jari Integrated Policy*, in which all activities performed by the company are described through operating procedures, work instructions, and environmental procedures. All procedures are reviewed and updated annually. The Group also has an Internal Commission for Accident Prevention - CIPA, whose purpose is the prevention of accidents and work-related illnesses, to make work permanently compatible with the preservation of life and the promotion of workers' health.

There is a system of training and qualification aimed at preparing the company's own employees and third parties that work in the activities of sustainable forest management of eucalyptus. In the year 2021 alone and the first half of 2022, 30 training courses and lectures were held, with more than 670 participants, with various themes, from training for the execution of activities safely to the prevention of employee health.

With a purpose to promote health and safety, the training actions Daily Safety Dialogues - DDS are held, which allow the work to be done with more quality, improving the return for the company and the positive feedback for the employees. The DDS favor the engagement of the employees in the continuous improvement policies, provide the employees' well-being, and add professional knowledge, qualifying and adding value to the workforce. As a result, there is an increase in the motivation of employees to perform the work, improvement in the quality of products and services and in productivity.

In addition to the training, all personnel involved receive mandatory use of individual protection equipment (helmets, boots, leggings, ear protectors, gloves, among others) and collective (tents, when necessary). The company also has a third-party integration process underpinned by the Safety Integration Process, which lays out the standards and regulations for the subsequent development of the activities of the employees of the Grupo Jari service providers.

To welcome its workers, the Grupo Jari also provides a corporate number of the 24-hour call center in the Occupational Medicine sector, aiming at an efficient listening, care, and respect with its collaborators, who through this channel can also schedule periodical exams, return visits, among others.

The Group also has a Medical Control Program of Occupational Health (PCMSO), which aims to perform a continuous and systematic action on the determining and conditioning factors of health problems related to work processes and environments, in their technological, social, organizational, and epidemiological aspects, with the purpose of planning, executing, and evaluating interventions on these aspects, in order to eliminate or control them, thus being able to protect, prevent, and promote the worker's health. Therefore, by creating and maintaining a proper preventive culture for the company's social responsibility, at all hierarchical levels, acting to promote the health of all workers, in the prevention, tracking, and early diagnosis of work-related health problems, to reduce the rate of work-related accidents and diseases.

Through internal rules and improvements in occupational health and safety practices, all positions and situations that could pose some types of occupational risk were deeply avoided and mitigated. Other relevant tools are reported in the following documents:

- Covid-19 Protocol
- Description of PPEs by Function
- Action Plan
- Environmental Risk Prevention Program
- Occupational Health and Safety Newsletters – ISST.

2.4 Management Capacity

2.4.1 Required Technical Skills (VCS, 3.19; CCB, G4.2)

The main technical skills needed for the implementation Jari Pará REDD+ Project are knowledge about the development and management of forest conservation projects in the Amazon biome, experience in implementing, developing, and assisting programs for communities, implementing effective land security and asset surveillance. All proponents involved in the project have the required technical skills for the successful completion of Jari Pará REDD+ Project.

Based on principles from Grupo Ambipar Sustainability Policy, and committed to compliance with environmental legislation, with the circular economy by promoting research and development of new technologies and business models, with a strategic vision of risks and opportunities due to climate change,

Biofílica Ambipar Environment is a Brazilian company that promotes the management of forest areas in the Amazon biome.

The company has a specialized team and is a reference in the development of forest conservation projects, ensuring the quality and effectiveness of REDD+ activities being developed, and aims to reduce deforestation and carbon emissions into the atmosphere, conserve biodiversity and water resources, and promote the inclusion and social development of communities living in the Amazon biome through the sale of credits for environmental services, the development and financing of scientific research activities, and the development of sustainable business chains, making environmental conservation an economically interesting activity for forest owners, communities, and investors.

Fundação Jari is Grupo Jari's social institution which, together with a vast network of partners, develops programs and projects in the areas of education, health, human rights, environment, culture, employment, and income generation. Since 1994, it has reached over 6.8 million assistance services in Brazil, counting the units outside Vale do Jari that already existed, and has a track-record in the region, as well as experience in designing and implementing socio-economic development activities.

Fundação Jari has a great contribution in the execution and management of social activities, guaranteeing the inclusion of the communities in the Project's activities and in the Technical Assistance and Rural Extension activities (TARE). All the work of the Foundation has already been recognized by several awards throughout its existence, having great commitment and performance with the SELO [Seal] UNICEF, and holding the CEBAS certificate (Certification of Charitable Entities of Social Assistance in the Education Area) granted by the Federal Government, through the Ministries of Education, of Social and Agrarian Development, and of Health, to private non-profit legal entities recognized as charitable entities of social assistance that provide services in the areas of education, social assistance, or health.

Jari Celulose S.A. is a Grupo Jari company with two divisions: Pulp Division, which produces bleached eucalyptus pulp, and the second is the Paper and Packaging Division, serving almost all economic segments. In the project, it acts as the owner of the land and is responsible for the land security and patrimonial vigilance, because of its vast experience in the forestry market and in several certifications, the company has a range of procedures that encompass good practices for all its activities from the field operation to the mill and the relationship with stakeholders.

Jari Celulose has a land inspection team that monitors its properties, to restrict speculation and land invasion and, in the occurrence of an invasion, makes an official report to the police informing about the invasion of private property, which is sent to the company's legal department for the applicable measures and reports environmental crimes to the Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA).

2.4.2 Management Team Experience (VCS, 3.19; CCB, G4.2)

Below is the experience of the project management team.

Name	Position	Experience
Biofílica Ambipar Environmental Investments		
Claúdio Pádua	Scientific Director	He holds a degree in Business Administration and Biology, a Master's in Latin American Studies and a PhD in Ecology from the University of Florida in Gainesville (USA). Retired professor at the Univerdade de Brasília [University of Brasília], Pádua is currently dean of the Superior School of Conservation and Sustainability and vice-president of the Institute of Ecological Research (IPÊ). He is also Senior Associate Researcher at the Center for Environment and Conservation Studies at Columbia University (USA) and Director of International Conservation at the Wildlife Trust Alliance, as well as a consultant for the Brazilian Biodiversity Fund (FUNBIO) and WWF Brazil. Pádua is the Brazil's representative before the International Consulting Group (ICG) of Pilot Program G7. In 2003, together with his wife, Suzana Pádua, he was named "Herói do Planeta" [Hero of the Planet] by Time magazine for his activities in favor of biodiversity conservation. From 1997 to 2007, he won six conservation awards, three national and three international. Pádua has published two books and more than 30 articles in national and international scientific journals. Since 2008 he has directed Biofílica's involvement and scientific production as Scientific Director and advisor.
Plínio Ribeiro	Chief Executive Officer (CEO)	Graduated in Business Administration from the Instituto de Ensino e Pesquisa - INSPER and a master's degree in Public Administration and Environment from Columbia University and the Earth Institute (USA). He has attended several conservation projects on the lower Negro River, through the Institute of Ecological Research - IPÊ since 2005 and was one of the producers of the documentary "O retorno à Amazônia" [Back to Amazon], by Jean Michel Cousteau. He has been working at Biofílica since 2008, where he has led

Name	Position	Experience
		Projects, Operations and Business Management. Currently, he is Executive Director and shareholder of the company.
Soraya Pires	Operations Director	Agronomist Engineer from the Universidade de São Paulo (USP/ESALQ) and holds an MBA in Commercial Management from Fundação Getúlio Vargas. She has extensive experience in agribusiness, biofuels, renewable energy, and sustainability. She has worked in mergers and acquisitions, project development for resources optimization, management of agribusiness operations and financial modeling in sugarcane mills. She is active in new business development, project management and legal reserve compensation.
Caio Gallego	Intelligence Manager	Forestry Engineer graduated from the Universidade de São Paulo (USP/ESALQ). Specialist in geoprocessing and remote sensing focused on the area of environmental conservation, mapping, and analysis of changes in land use. He has knowledge focused on Sustainable Forest Management, environmental modeling, and the use of alternative 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 such as ArcGIS, QuantumGIS and DinâmicaEGO.
Paula Conde	Administrative Manager	Graduated in Business Administration from PUC of São Luís and a postgraduate degree in Accounting and Financial Administration from FAAP. She has extensive experience, most of it in one of the largest media and education groups in Latin America - Editora Abril, where she worked with Financial Control and Reporting, Treasury, Accounting and Financial Reconciliation, Accounts Payable and Receivable and Royalties. At Biofílca Ambipar Environment, she is responsible for administrative and financial activities, logistical support for the team and projects.
Laion Pazian	Sales Manager	Graduated in Economy from the Universidade de São Paulo (USP/ESALQ) and an MBA in Commercial Management from Fundação Getúlio Vargas. He manages the carbon credits commercial team, the main accounts, and the commercial

Name	Position	Experience
		policy and strategy of Biofíllica Ambipar. In addition, he monitors and directs the analysis of carbon market intelligence, being responsible for the area's pricing and planning policy.
Ricardo Cordeiro	Communication Coordinator	Advertising executive with over 14 years of experience in art direction (On and Offline), graduated in digital marketing by Anhanguera, works in web project management and web design, digital marketing strategies, SEO, Google Ads, Social Ads, with passage by digital agencies, trade and live marketing. During his career he has coordinated teams in projects for major players such as: Açúcar União, Senac, Camil, Cosan, Hospital Oswaldo Cruz, Gertec, Avis, Abiquim, EBBA (Maguary e DaFruta), VTEX, Mercado Bitcoin. At Biofíllica Ambipar, he leads the communication team with a focus on performance, branding, content marketing and endomarketing.
Renan Martins	Communication Analyst	Designer graduated from FAM with extensive experience in creation and advertising market, he has worked in the development of campaigns for brands such as Bitcoin Market, Lycée Pasteur and in the creation of online and offline pieces for Hospital Oswaldo Cruz, Gertec, Sociparques e Dreamworks (Universal). At Biofíllica Ambipar works in the creative part with the marketing area in campaigns and institutional pieces.
Luana Cordeiro	Project Manager	Forest engineer graduated from Universidade de São Paulo, post-graduate student in Project Management (PMI) from SENAC, and environmental technician graduated from the State Technical School of São Paulo. She has been working for more than 4 years at Biofíllica Ambipar where he acquired experience in the development, monitoring, and management of projects, preparing documentation that is audited, budget management, co-management with partners ranging from the private initiative to the third sector, conducting the hiring and management of suppliers, and

Name	Position	Experience
		participating in processes of consolidation of methodological intelligence and carbon standards.
Manoel Almeida	Project Coordinator	Forest engineer graduated from University of São Paulo – ESALQ, Lean Six Sigma Greenbelt. With over 5 years of experience in project management and forest planning, has worked with planted forests and nature-based solutions on assessing priorities and building workplans for projects involving operations, technology and change management.
Liliane Lobo	Project Analyst	Biologist, master's degree in planning and use of renewable resources from UFSCar, postgraduate in Environment and Sustainability from FGV, and certified in social project management. She has worked in sustainable development projects in the scope of the Secretariat of Environment of the State of São Paulo, with rural, indigenous, and “quilombola” communities, and in the implementation of payment for environmental services projects. Broad experience with environmental public policies and experience in due diligence and Environmental Licensing of enterprises. Currently integrates Biofílica's operational team as Project Analyst.
Laura Rossini	Project Analyst	Environmental Manager, graduated from USP (ESALQ Campus). She has been working directly with activities related to implementation, maintenance and monitoring of ecological restoration projects, organic waste management and scientific research with native tree species. Previously worked in the commercial area of Biofílica, as Commercial Analyst of forest carbon credits, and currently integrates the operational team as Project Analyst.
Marcela Gomes	Project Analyst	Forest Engineer, MSc student in Forest Sciences at UFV, Project Analyst of Cycle 2 funding from EMBRAPA (Brazilian Company for Research and Industrial Innovation) in the Forest Fibers Unit. Developed research in the forest bioenergy sector and monitoring of charcoal production. She has developed research in the areas related to forestry, harvesting, production and forest management and participated in the data survey for the GHG emissions

Name	Position	Experience
		inventory at the multinational company Saint-Gobain, in the Bioenergy Unit. Currently integrates Biofílica's operational team as Project Analyst.
Fabio Souza	Geoprocessing Coordinator	Geographer, master in use and conservation of natural resources, specialized in climate analysis, technologist in big data and analytical intelligence, worked in environmental diagnostics, development of geotechnology services and geoprocessing team management. Specialist in PostGIS database modeling, webgis platform development, business intelligence and geoprocessing process automation. Currently integrates the Biofílica operational team as geoprocessing coordinator.
Franciane Almeida	Geoprocessing Analyst	Forestry Engineer graduated from the Universidade Federal de Lavras (UFLA). She has experience in geoprocessing and remote sensing applied to the areas of forestry planning, forestry and harvesting, recovery of degraded areas, and land tenure regularization.
Fundação Jari		
Jorge Rafael de Almeida	General Coordinator (Social Operations)	Graduated in Pedagogy from the Universidade Federal do Pará [Federal University of Pará] and started his post-graduation in Cooperative Production Management at the Universidade Federal Rural de Pernambuco [Federal Rural University of Pernambuco]. Works at Grupo Jari since 2007 as Social Operations Coordinator for Fundação Jari, former Fundação Orsa, at Jari unit, leading the social responsibility program management at Grupo Jari in Jari region.
Sônia Varela	Monitoring and Community Development	Environmental Manager with a post-graduate degree in Integrated Environmental Systems Management. She has been part of the TARE team at the Fundação Jari for 12 years and is currently responsible for maintaining Environmental Certifications and Monitoring and Controlling Projects developed by Fundação Jari in the Vale do Jari.
Arnaldo Barbosa	Planning	Agronomic Engineer, Social Project Analyst at the Fundação Jari, working in technical and managerial advice to technical teams in the business, environmental and social areas,

Name	Position	Experience
		project preparation and provision of Technical Assistance and Rural Extension Services (ATER). Studying 8th and final semester in Business Administration at the International University Center UNINTER, began his professional career as a Young Apprentice in the Controller sector in the Grupo Jari Celulose in 2015, currently holding the position of Administrative Analyst at the Fundação Jari on a CLT regime, performing activities in administrative support and control of area information relevant to the Organization.
Luan Nascimento da Silva	Administrative Analyst	Studying 8th and final semester in Business Administration at the International Centro Universitário UNINTER, he started his professional career as a Young Apprentice in the Controller department in Grupo Jari Celulose in 2015, currently working as an Administrative Analyst at the Fundação Jari in a CLT regime, performing activities in administrative support and control of information from the area relevant to the Organization. Jari Celulose
Ricardo Aragones	CEO	Professional with over 20 years in the financial and capital markets, with long experience in the corporate commercial area, responsible for managing client portfolios for structured and credit operations. Actively participated in the structuring and distribution of more than R\$ 1 billion in credit funds and multi-market. Deep knowledge in sectors such as Construction, O&G and Agribusiness. In the last 7 years he was responsible for the restructuring, financial and operational, of companies in Distress.
Hamilton C. Barbosa	Chief Financial Officer (CFO)	20 years' experience as Senior Director (Accounting, Finance, Legal, IT, Project Management, Human Resources) - automotive, construction, telecommunications, real estate, services, concessions, agribusiness; Effective participation in M&A (especially Real Estate, Renewable Energy, Road Concessions, Construction and Infrastructure), due diligence, corporate governance and risk assessment; Over R\$ 800 million in debt, equity and quasi-equity structured and raised

Name	Position	Experience
		in the last 6 years. High-level relations with top management of national and international banks; company diagnostics (business processes, risk management, business management reporting, cost structure analysis, cash flow and variance analysis, working capital monitoring, people, and leadership).
Vinicius Montagnana Garcia	Advisor	With a bachelor's degree in business administration from FGV-SP, an MBA from INSPER-SP and post-graduate studies in economics from FGV-SP, he has held various managerial positions at Grupo Jari: planning, corporate governance, market intelligence, planning and control.
João Alberto da Cunha Marins	Legal Director	Lawyer, with an MBA in Tax Law from PUC-RJ and an MBA in Corporate Law from FVG-SP, he has over 15 years of experience working as a tax consultant and in-house counsel for companies in Brazil.
Augusto Praxedes Neto	Environment and Institutional Relations Manager	He has a degree in Business Administration and a Specialization in Auditing and Environmental Management. He has 30 years of experience in agro-forestry activities in the Amazon, specifically in Vale do Jari. He is in charge for Institutional and Government Relations at Grupo Jari since the Group took the controlling interest in Jari Celulose, in 2000. He is responsible for managing ISO 9001, ISO 14001, and FSC certifications for forestry activities, in addition to environmental licensing and monitoring. For two years he has been a member of the economic chamber of FSC Brasil, and Chairman of Association of Certified Amazon Producers and Grupo Jari's representative at Fórum Amazônia Sustentável (FAS) [Sustainable Amazon Forum].
Paulo Roberto da Silva	Infrastructure and Asset Security Manager	Post-graduate in Corporate Security Management from Faculdade [College] Gama Filho and MBA in Research, Auditing and Environmental Management from Faculdade Oswaldo Cruz. He works at Jari Celulose, Papel e Embalagens since 1984, where he leads the Corporate Security and Land Tenure area. Currently, he is responsible for forest control, land tenure, and land security at Grupo Jari in the region of

Name	Position	Experience
		Jari, being responsible for the areas of industrial operations, natural forests, and plantations in a total of 1,300,000 hectares in the states of Pará and Amapá.
Lídia Cecília Herrera da Silva	Corporate Legal	She is graduated in Law from Faculdades Integradas Vianna Júnior (FIVJ) - Juiz de Fora - MG. Post-graduate degree in Civil Law and Civil Procedure from Complexo Damásio de Jesus. Post-graduation in Public Law from Faculdade Arnaldo Janssen. Duly enrolled as attorney with OAB/MG no. 163.586.
Katiuschia Barros Martins Rodrigues	Legal Coordinator	Graduated in Law since 2004 from the Universidade da Amazônia, she has been working in the area of individual and collective labor law for over 17 years. She has a post-graduate degree in Material and Procedural Labor Law and is currently taking a Specialization course in Personnel Department Management and Labor Legislation. She took the coordination the local Legal Department at Jari Celulose in 2014 and since then has been acting in the most diverse areas, such as land and environmental law, besides acting in the due diligence of several projects developed by the company.
Edson Lanes	Land Management and Property Security	Graduated in Business Administration. He works for 19 years at Grupo Jari where he worked in the Institutional Relations and Sustainability area as Institutional Relations and Community Analyst and Lead Auditor for ISO 9001, ISO 14001, and FSC certifications. He is currently working in the Land Management area as Supervisor of Property and Land Security.
Lindomar Francisco Cunha Miranda	Forest Planning Coordinator	Cartographic Engineer from UFPR - Universidade Federal do Paraná and Specialist in Geoprocessing and Georeferencing of Rural Properties. With over 23 years of experience in surveying, and expertise in geoprocessing, management of geoprocessing, surveying, and forestry teams, and aerophotogrammetric surveys with drone. Technical Supervisor at Jari Celulose with CREA, SEMAS, INCRA, ITERPA e SIGEF.

Name	Position	Experience
Francisco de Assis da Silva Ferreira	Senior Geoprocessing Analyst	Forestry Technician, responsible for maintaining, editing and consolidating the forest database and geoprocessing system at Jari Celulose. With over 30 years of experience in planning and carrying out topographic and cartographic technical services for forestry and forest harvesting, and experience in geoprocessing and obtaining and processing cartographic data

2.4.3 Project Management Partnerships/Team Development (VCS, 3.19; CCB, G4.2)

The purpose of the partner institutions is to provide support in carrying out the Project's activities, mainly focused on rural extension support and improving the well-being of the communities, as well as monitoring long-term biodiversity and possible environmental impacts.

In this sense, the partnerships are responsible for conducting studies, supporting technical assistance actions, and providing training for community members, with the aim of encouraging participation and improving their knowledge on various topics.

It is worth mentioning that some of the partner institutions in this project are in the state of Amapá, both REDD+ Jari Pará and Amapá Projects, and and the geographical location of the Jari property, which is on the border between the states. A description of these partnerships and their responsibilities is presented below.

Socio-Environmental Harmony: In the Project, the company carried out the first social consultation for the socio-economic and environmental diagnosis and socio-economic module.

Brazilian Agricultural Research Corporation - EMBRAPA (AMAPÁ): It is one of the 42 Decentralized Units of the Brazilian Agricultural Research Corporation (Embrapa), linked to the Ministry of Agriculture, Livestock and Supply (MAPA). Embrapa/AP carries out studies and research regarding the Project's interventions and other management activities, and their impacts, with feedback to the local/regional society and to the actors involved. In the project, it works in the Production Technology Transfer (TT) to Agro-extractivist Producers in the Vale do Jari Region, focused on farmers and extractivists through training and implementation of new technologies in the field, as well as carrying out studies and research focused on optimizing production in the field. Embrapa is also one of the institutions responsible for providing training to the project's TARE team.

Federal Institute of Education, Science and Technology of Amapá (abbreviated in Portuguese to IFAP) (Laranjal do Jari Campus): IFAP is an autonomous body linked to the Ministry of Education, equal to the federal universities, with the goal of contributing to the development of the State of Amapá and

promotes scientific and technological research, taking into account the advancement of technology and the needs of society. In the Project scope, it carries out Biodiversity monitoring activities (fauna and flora), scientific publications, and provides internship and scholarship programs for students from the region.

Chico Mendes Institute for Biodiversity Conservation (abbreviated in Portuguese to ICMBIO): ICMBIO is an autarchy linked to the Ministry of Environment (MMA), responsible for managing, protecting, monitoring and inspecting the Federal Conservation Units (UCs). In the Project, it acts in the Advisory Board of the Conservation Unit of the Jari Ecological Station, which has representation from the Fundação Jari, due to the strong influence of the activities of both areas, for being geographically in a situation of boundary with the project area.

Technical Assistance and Rural Extension Company of the State of Pará (abbreviated in Portuguese to EMATER Pará): EMATER is an Indirect Administration Public Company of the State of Pará, linked to the State Secretary of Agricultural and Fishery Development (SEDAP), it is the official TARE agency of the State of Pará that provides specialized services in the areas of agricultural sciences and humanities, spreading knowledge and technological information in the rural environment. It acts as a partner in the Technical Assistance activities, supporting the complementary actions for the Project's implementation, such as issuing the DAP and providing services, strengthening the capacity to provide rural technical assistance.

Amapá State Secretariat for Rural Development (abbreviated in Portuguese to SDR): Its purpose is to formulate and coordinate Amapá's state policy for agricultural, livestock, aquaculture, fishing, forestry, extraction, agroindustry and supply, animal and plant defense and inspection. In the scope of the Project it acts guiding and making possible the financing of the Integrated Food Production Program (FPP), and also acts in capacity building activities

Amapá Institute for Extension, Assistance and Rural Development (abbreviated in Portuguese to RURAP) - Vitória do Jari & Laranjal do Jari: RURAP is a State Autarchy of the indirect administration of the State of Amapá, with financial administrative autonomy, linked to the Secretary of State for Rural Development. It provides technical assistance and rural extension services to Project beneficiaries, including training support.

Vitória do Jari Municipal Government: Although it is located in Amapá, the municipal government works in the development of joint actions to promote and strengthen sustainable development, especially actions focused on strengthening associative and cooperative activities in the communities located in Almeirim/PA. This is due both to the partnership consolidated in the Jari Pará and Amapá REDD+ Projects, and to the geographical location of the Jari property, which is on the border between the two states, as explained above.

Almeirim Municipal Government: The project works with the development of joint actions to promote and strengthen sustainable development for rural producers in Almeirim, Pará, and meet their demands.

National Service of Industrial Learning (abbreviated in Portuguese to SENAI) AP: SENAI is the largest private professional education complex in Latin America. It promotes the development of skills and abilities of young people for the world of work, for example through the Generation Apprentice Program, which is one of these opportunities created in the region by the Fundação Jari, developed in partnership with SENAI, which attends 120 young people aged 14 to 24 each year, offering professional training courses in a variety of fields.

Banco da Amazonia: It's a bank that manages the Constitutional Financing Fund of the North (FNO) in line with government policies, through credit support to productive activities that have an impact on the socioeconomic indicators of the region, such as the generation of employment and income. In the scope of the Project, it guides and makes feasible the financing of agro-extractivist production via rural credit repayable by PRONAF, being the main partner bank to promote credit lines with farmers.

Association of Family Farm School Families of the (abbreviated in Portuguese to AFEFARP): AFEFARP is a social organization and in the Project it works with basic and professional education for young adults by offering elementary, high school, and technical education, prioritizing the children of farmers and agro-extractivists.

Rural Workers and Family Farmers Union of Almeirim - PA (abbreviated in Portuguese to STTRA): The Union articulates with other actors, especially members of the communities to expose and defend their rights. It supports and guides the actions of social mobilization and documentation of the rural farmers of the Almeirim municipality.

Di Ciero Intelligence in Sustainability: Di Ciero is a private company specialized in proposing solutions for sustainability issues. In the project, it carried out technical studies to evaluate the impacts of social projects, perception of social impacts, historical-cultural, socioeconomic-environmental characterization of the communities, socioeconomic-environmental diagnosis of the municipalities, and mapping of the rural productive chains.

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

A Biofíllica Ambipar Environmental Investments S.A. ("Company"), former Biofíllica Investimentos Ambientais S.A., is a privately held corporation, domiciled at Av. Angelica, 2330 - Ed. New England 5º floor - Higienópolis, São Paulo - SP, with the predominant activity of developing and commercializing environmental service credits.

The Company manages and conserves forests in the Amazon through the commercialization of environmental services, investments in research and the socioeconomic development of the people and communities that inhabit the areas under management. With the purpose to contribute to the creation and development of a solid and reliable market for environmental credits, the Company invests in an innovative business model that allows for the reduction of deforestation, the valuation of standing forests and the environmental services they provide, the protection of biodiversity and the reduction of carbon emissions, making environmental conservation an economically interesting activity for forest owners, communities, governments and investors.

Currently Biofílica has several active projects and several opportunities in its pipeline focused on generating REDD+ (Reducing Emissions from Deforestation and Forest Degradation) forest carbon credits. In addition, the company is also beginning to act on other fronts NBS (Nature Based Solutions): AR - Afforestation/Reforestation, ALM - Agricultural Land Management, and wetlands carbon (Blue Carbon).

In this context of accelerated expansion, Biofílica also signed the partnership with Ambipar, with a massive investment plan in the development of carbon projects and programs *Nature Based Solutions* (NBS), in addition to the investment in the development of Biofílica Platform, that will use state-of-the-art technology to originate credits in agriculture and trading environmental services.

The Fundação Jari ("Foundation"), headquartered at Rua Cem, S/N - Quadra 121 - Lote 09 - Área Industrial - Almeirim - PA - Brazil, is a non-profit Social Assistance Charity established in April 1994.

The Foundation has extensive regional experience, having matured after working in the promotion of rights, professionalization of youth, support for education, innovative methods in health, and especially, empowerment and development of socio-economic activities in communities. Such pillars and evolution enable it to be a preponderant actor in the development of local activities and, today, focused on the work with local communities, it seeks the protection of the native forest through income generation via traditional or innovative cultures, environmental awareness, and the pursuit of civil rights of forest dwellers, being an indispensable cog for carbon projects.

Operating in the Vale do Jari region since 2000, it has trodden a path initially based on serving children, adolescents and families in situations of social vulnerability directly, with Jari Celulose as the mainstay.

Over 20 years of activities in the Amazon, the Foundation has broadened its vision and mission, evolving from a model based on direct social assistance for children and adolescents, to a strategic form of action, aimed at promoting the sustainability of the communities that inhabit the forest; developing wealth generation projects based on the rational economic use of the soil and forest products, through solid socio-environmental education and agro-forestry technical assistance provided to the communities.

The acquisition of this know-how has broadened the range of partnerships and alliances in the operations of the Foundation, which now signs annual agreements with federal and Pará and Amapá State Government agencies, local governments, companies, universities, NGOs and international organizations, gradually reducing the dependency of the Fundação Jari on its sponsor Jari Celulose, with part of its annual budgets financed through contracts and agreements with partner institutions.

Finally, over the past five years, it has taken its place and assumed the leadership of the REDD+ forest carbon credit project, managing all the operational activities for forest conservation and engaging local communities and public and private entities in the commitments and co-benefits of the program, making the financial results from marketing the existing carbon stock the main source of self-support for the Foundation's activities in the Jari valley, regardless of the Judicial Recovery process of Jari Celulose.

Jari Celulose, Papel e Embalagens S.A. ("Jari Celulose") is a privately held corporation headquartered in Almeirim, Pará State. Its main parent company is Saga Investimento e Participações do Brasil S.A. and, together with its subsidiaries and affiliates, shares the management and operating structures and corporate costs. Jari Celulose and its subsidiaries (together, the "Group") are in Brazil and operate in the pulp market for the textile industry, exporting all their production.

Jari Celulose is engaged in producing soluble cellulose, a product destined for the overseas market and used mainly by the textile industry, though it can also be an input for the pharmaceutical and food industries in purer forms of the product. The Company's industrial facilities are in Almeirim, in the state of Pará. Additionally, the Company has approximately 39,142 hectares of planted eucalyptus in the States of Pará and Amapá, and 703,450 hectares composed of native tropical forest subject to the sustainable management regime in the States of Pará and Amapá.

Jari Celulose has been expanding its area of operation since the start of its production in 1981, following a path of expansion and integration in the pulp, corrugated cardboard, paper and forestry markets. In 2012, the Group carried out a strategic reorientation, focusing entirely on its activities in the Amazon region, and, in 2016, it finalized the conversion of the paper pulp mill to the production of Dissolving Wood Pulp (DWP); a niche commodity in which the Jari plant has adequate scale, and the product has a market price significantly higher than paper pulp.

It is worth pointing out the immense and unquestionable economic relevance of Jari Celulose in the region, as it has approximately 800 direct employees and approximately 2,000 indirect ones, connected to third-party companies and allocated exclusively to the Company. Despite the pandemic in the years 2020 to 2022, the demand for soluble cellulose (DWP) remained firm, with prices sustaining the profitability of the sector and indicating steady growth with the resumption of economic activity in Asia, especially. Also in the first half of 2023, Jari Celulose seeks approval of its judicial reorganization plan, seeking to obtain

funds through a DIP (Debtor In Possession) to organize its industrial park and produce at levels considered ideal in a solid manner, making its activities in Vale do Jari lasting.

Documents proving the financial health of both institutions are classified as commercially sensitive information and were shared with the audit team on a confidential basis.

2.4.5 Avoidance of Corruption and Other Unethical Behavior (VCS, 3.19; CCB, G4.3)

Biofílica Ambipar Environment maintains a legal team responsible for implementing and monitoring the good practices established in the "Ambipar Group's Code of Conduct and Compliance", among them in particular the "Anti-Money Laundering Anti-Corruption Policy", which is in perfect harmony with the Brazilian Anti-Corruption Law (Law no. 12. 846/13), with Law No. 9613/98 (Money Laundering Law) as well as with the International Anti-Corruption Conventions (UN, OECD, Transnational Convention on Combating Money Laundering in International Civil Service, Mérida Convention, Palermo Convention, Convention against Organized Crime); as well as observes the precepts contained in the FCPA (Foreign Corrupt Practices Act) and the UK Bribery Act.

Therefore, it can be seen that Biofílica Ambipar clearly states its position against the practice of acts of corruption and/or conducts that aim at personal benefit to the detriment of the company, society or the Government, strictly complying with the national and international anti-corruption precepts, as well as Ambipar Group's main guidelines and positions regarding the fight against money laundering, terrorism financing and all forms of corrupt conducts, such as bribery (Active and Passive Corruption), embezzlement and granting of undue advantages (administrative improbity), and restraining acts of its employees that hinder investigation and inspection activities.

It should also be noted that the Biophilic Ambipar Environment supports annual financial auditing processes to ensure that its resources are allocated responsibly and free of corruption.

In turn, just like Biofílica Ambipar Environment, the Grupo Jari does not tolerate any type of corruption such as kickbacks, bribes, nepotism, favors, fraud, favoritism, extortion, money laundering, among others, and has a "Human Rights and Social Responsibility Policy: passive and active corruption inside and outside the company".

Additionally, the Jari Group has a solid Human Rights and Social Responsibility Policy culture, and is a group that respects, protects and supports human rights. This position is described in its internal regulations, such as the "Integrated Policy of the Grupo Jari" and the "Code of Conduct - Principles and General Rules of Conduct".

The purpose of this "Code of Conduct - General Principles and Standards of Conduct" is to guide and direct the attitudes of all Grupo Jari Group employees in their dealings with the internal and external publics, as well as the community. This document is based on principles backed by transparency and ethics,

as well as by local, state and federal laws, international treaties and conventions such as the Universal Declaration of Human Rights, the International Labor Organization and United Nations Conventions.

Should situations such as these arise, all the information is checked, and those responsible are prosecuted and removed from the company. The Jari Group also has a communications channel, mentioned above, that facilitates accusations of corruption, among other functions. Reports and complaints can be filed anonymously through two telephone numbers and suggestion boxes.

2.4.6 Commercially Sensitive Information (VCS, 3.5.2-3.5.4; CCB Program Rules, 3.5.13 – 3.5.14)

Some information required by the certification standards are considered confidential or commercially sensitive and cannot be publicly disclosed by the Project Proponents. These informations were fully provided to the VVB during the validation process attached to this Monitoring Document, but was not included in the public version. Below is the list of information that was only available to VVB:

- Financial Performance Spreadsheet and other related documents;
- Agreements and contracts signed between the parties involved;
- Land Documents and Legal Situation of Grupo Jari;
- Minutes of meetings with Biofílica Ambipar, Grupo Jari, and Fundação Jari;
- Financial Statements of Grupo Jari (Jari Celulose and Fundação Jari);
- Financial Statements of Biofílica Ambipar Environment;
- Operating and Environmental Procedures of Grupo Jari used in the Project during the monitored period.

2.5 Legal Status and Property Rights

2.5.1 National and Local Laws (VCS, 3.1, 3.6, 3.7, 3.14, 3.18, 3.19; CCB, G5.6)

Compliance with Laws, Statutes and other significant regulatory instances for the Jari/ParÁREDD+ Project is related to the forest management activity. In the State of Pará, the activities of the enterprise are being licensed by the Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA), thus having to apply federal legislation. Subordinated to the federal legislation, the legislation at the state level applies.

Regarding REDD+ activities, there is nothing establishing or regulating officially any legislation related to this subject up to the present moment. One can note a history of initiatives despite the construction and negotiation of this concept through agreements and meetings in the United Nations Framework Convention on Climate Change (UNFCCC).

So far, the most relevant initiative at the national level has been the submission of Bill No.225/2015 which “Establishes the national system for reducing emissions from deforestation and degradation, conservation, sustainable forest management, maintenance and increase of forest carbonstocks (REDD+) e and other measures”, but is still under way.

In addition, in December 2015, the National Strategy for REDD+ of Brazil (ENREDD+) was instituted by MMA Ordinance No. 370, a document that formalizes to Brazilian society and the UNFCCC signatory countries how the Brazilian government has structured its efforts and aims to improve them by 2020, contributing to climate change mitigation by controlling deforestation and forest degradation, promoting forest recovery and promoting sustainable development.

Below are the main relevant laws and regulations at the federal and state levels listed and detailed. In addition, a brief review of international climate agreements has been conducted that has led to the creation and development of REDD+ initiatives around the world.

Federal Legislation

- **Law no. 13,123, of 05/20/2015:** regulates item II of § 1 and § 4 of art. 225 of the Federal Constitution, Article 1, Article 8 (j), Article 10 (c), Article 15, and Article 16, Paragraphs 3 and 4, of the Convention on Biological Diversity, promulgated by Decree No. 2,519 of 16 March 1998; provides for access to genetic heritage, protection and access to associated traditional knowledge and benefit-sharing for conservation and sustainable use of biodiversity; repeals Provisional Measure No. 2,186-16 of August 23, 2001; and makes other arrangements.

- **Law no. 12,651, of 05/25/2012:** Provides for the protection of native vegetation; amends Laws 6,938 of August 31, 1981; 9,393 of December 19, 1996; and 11,428 of December 22, 2006; revokes Laws Nos. 4,771, September 15, 1965; and 7,754, April 14, 1989; and Provisional Measure No. 2,166-67 of August 24, 2001; and other measures.

- **Law no. 12,187, of 12/29/2009:** It establishes the National Policy on Climate Change – PNMC and other measures.

- **Provisional Measure no. 571, of 05/25/2012:** Amends Law No. 12,651, of May 25, 2012; which provides for the protection of native vegetation; amends Laws 6,938 of August 31, 1981; 9,393 of December 19, 1996; and 11,428 of December 22, 2006; revokes Laws Nos. 4,771, September 15, 1965; and 7,754, April 14, 1989; and Provisional Measure No. 2,166-67 of August 24, 2001.

- **Decree no. 58,054, of 03/23/1966:** It promulgates the Convention for the protection of flora, fauna and the scenic beauties of the countries of America.

- **Decree no. 96,944, of 10/12/1988:** It creates the Program for the Defense of the Complex of Ecosystems of the Legal Amazon and other measures.

- **Decree no. 2,661, of 07/08/1998:** It regulates the sole paragraph of art. 27 of Law No. 4.771, of September 15, 1965 (Forest Code), through the establishment of precautionary standards regarding the use of fire in agropastoral and forestry practices, and other measures.

- **Decree no. 2,959, of 02/10/1999:** Provides for measures to be implemented in the Legal Amazon, for monitoring, prevention, environmental education and forest firefighting.

- **Decree no. 5,975, of 11/30/2006:** It regulates the art. 12, final part, 15, 16, 19, 20 and 21 of Law 4,771, dated September 15, 1965; art. 4, item III, of Law 6.938, dated August 31, 1981; art. 2 of Law 10.650 of April 16, 2003; amends and adds provisions to Decrees 6,514/08 and 3,420/00, and other provisions.

- **Decree no. 7,390, of 12/09/2010:** It regulates arts. 6, 11 and 12 of Law No. 12,187, of December 29, 2009, which establishes the National Policy on Climate Change - PNMC and other measures.

- **CONAMA Resolution No. 16, of 12/07/1989:** Establishes the Integrated Program for Environmental Assessment and Control of the Legal Amazon.

- **CONAMA Resolution No. 378, of 10/19/2006:** Defines those ventures potentially causing national or regional environmental impact for purposes of the provisions of item III, § 1, art. 19 of Law No. 4.771, of September 15, 1965, and other provisions.

- **CONAMA Resolution No. 379, of 10/19/2006:** Creates and regulates data and information system on forest management under the National Environmental System - SISNAMA.

- **IBAMA Ordinance No. 218, of 05/04/1989:** Provides for the clearing and exploitation of native forests and forest formations that are native successors of the Atlantic Forest, and other measures.

- **IBAMA Ordinance No. 37-N, of 04/03/1992:** It recognizes as Official List of Species of the Brazilian Flora Threatened of Extinction the relation that is presented in the Ordinance.

- **MMA Ordinance No. 103, of 04/05/2006:** Provides for the implementation of the Document of Forest Origin - DOF, and other measures.

- **MMA Ordinance No. 253, of 08/18/2006:** Establishes, as of September 1, 2006, the Forest Origin Document - DOF in substitution of the ATPF Forest Products Transport Authorization, under the Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA).

- **Ordinance No. 8896, of 12/09/2013:** Amendments to Regulatory Norm no. 31.

- **Normative Instruction MMA no. 1, of 09/05/1996:** Provides for the Mandatory Forest Replenishment and the Integrated Forest Plan.

- **Normative Instruction MMA no. 07, of 04/27/1999:** Provides for authorization for deforestation in the States of the Legal Amazon.

- **Normative Instruction MMA no. 02, of 05/10/2001:** Provides for the economic exploitation of forests, in the rural properties located in the Legal Amazon, including the Legal Reserve areas and excluding those of permanent preservation established in the current legislation that will be realized through practices of sustainable forest management of multiple use.

- **Normative Instruction IBAMA no. 30, of 12/31/2002:** It disciplines the calculation of the geometric volume of standing trees, through the volume equation that specifies and other measures.

- **Normative Instruction IBAMA no. 112, of 08/21/2006:** It regulates the Document of Forest Origin - DOF, established by Ordinance/MMA/ no. 253, of August 18, 2006. (Amended by Normative Instruction No. 134 IBAMA, of 11/22/2006).

- **Normative Instruction MMA no. 06, of 12/15/2006:** Provides for forest replenishment and the consumption of forest raw material, and other measures.

- **Normative Instruction IBAMA no. 178, of 06/23/2008:** Defines IBAMA guidelines and procedures for assessment and consent regarding the issuance of permits for the suppression of forests and other forms of native vegetation in an area of more than 2,000 hectares in rural properties located in the Legal Amazon and 1,000 hectares in rural properties located in other regions of the country.

- **Regulatory Norm no. 31, of 03/03/2005:** It approves the Regulatory Norm of Safety and Health in the Work in Agriculture, Livestock, Forestry, Timber Harvesting and Aquaculture.

State Legislation

- **State Law no. 7,389, of 04/01/2012:** Defines the activities of local environmental impact in the State of Pará and other measures.
- **State Law no. 7,381, of 3/19/2010:** Provides for the restoration of the vegetation cover, of the riparian forests of the State of Pará.
- **State Law no. 6,745, of 6/6/2005:** Establishes the Ecological-Economic Macro zoning of the State of Pará and other measures.
- **State Law no. 6,506 of 12/02/2002:** It establishes the basic guidelines for the realization of the Ecological-Economic Zoning (EEZ) in the State of Pará and other measures.
- **State Law no. 6,462, of 7/4/2002:** Provides for the State Policy on Forests and other forms of vegetation.
- **State Law no. 5,977, of 7/10/1996:** Provides for the protection of wildlife in the State of Pará.
- **State Law no. 5,887, of 5/9/1995:** Provides for the State Environmental Policy and other measures.
- **State Decree no. 518, of 09/05/2012:** Establishes the Para-Forum of Climate Change and other measures.
- **State Decree no. 216, of 9/22/2011:** Provides for the environmental licensing of agrosilvo pastoral activities carried out in altered and/or underutilized areas outside the legal reserve area and permanent preservation area in the rural properties of the State of Pará.
- **State Decree no. 2,436, of 8/11/2010:** Regulates the actions related, directly or indirectly, to agrosilvopastoral activities, carried out within the areas of alternative land use, considered to be of low environmental impact.
- **State Decree no. 2,099, of 1/27/2010:** It provides for the maintenance, recomposition, conduction of natural regeneration, compensation and composition of the Legal Reserve area of rural properties in the State of Pará and other measures.
- **State Decree no. 1,697, of 6/5/2009:** Establishes the Prevention, Control and Alternatives Plan for the deforestation of the State of Pará and other measures.
- **State Decree no. 1,148, of 7/17/2008:** Provides for the Rural Environmental Registry - CARPA, Legal Reserve area and other measures.

- **State Decree no. 58, of 11/27/2006:** Establishes the Register of Explorers and Consumers of Forest Products of the State of Pará - CEPROF-PA and the System of Commercialization and Transportation of Forest Products of the state of Pará SISFLORA-PA and its operational documents and other measures.
- **State Decree no. 56, of 3/31/2006:** Regulates provisions of State Law No. 6,462 of July 4, 2002; which provides for the State Policy on Forests and Other Forms of Vegetation and provides other measures, aiming at encouraging the recovery of altered and/or degraded areas and restoring legal reserve, for energy, wood, fruit, industrial or other purposes, through reforestation and agroforestry with native and exotic species and other measures. - **State Decree no. 856, of 01/30/2004:** Regulates the Register of Forest Activity.
- **Resolution no. 54, of 10/24/2007 (APPENDIX1):** Homologates the list of endangered species of flora and fauna in the State of Pará. International Agreements
- **FCCC/CP/2005/Misc.1:** Reducing emissions from deforestation in developing countries: approaches to stimulate action. Submission from Parties. (In Portuguese: Reduzindo emissões de desmatamento em países em desenvolvimento: abordagem para estimular ação. Submissão das partes. COP 11, Montreal, 2005.)
- **FCCC/CP/2007/6/add.1:** Report of the Conference of the Parties on its thirteenth session, held in Bali from 3 to 15 December 2007. Addendum. Part two: Action taken by the Conference of the Parties at its thirteenth session. (In Portuguese: Relatório da Conferência das Partes sobre sua décima terceira sessão, ocorrida em Bali de 3 a 5 de dezembro de 2007. Addendum. Part Two: Ação tomada pela Conferência das Partes em sua décima terceira sessão ou "Action Bali Plan". COP 13, Bali, 2007.)
- **FCCC/CP/2009/Add.1:** Report of the Conference of the Parties on its fifteenth session, held in Copenhagen from 7 to 19 December 2009. Addendum. Part Two: Action taken by the Conference of the Parties at its fifteenth session. (In Portuguese: Relatório da Conferência das Partes sobre sua décima quinta sessão, ocorrida em Copenhagen de 7 a 19 de dezembro de 2009. Addendum. Part Two: Ação tomada pela Conferência das Partes na sua décima quinta sessão ou "Copenhagen Accord". COP 15, Copenhagen, 2009.)
- **FCCC/CP/2010/7/Add. 1:** Report of the Conference of the Parties on its sixteenth session, held in Cancun from 29 November to 10 December 2010. Addendum. Part Two: Action taken by the Conference of the Parties at its sixteenth session. (In Portuguese: Relatório da Conferência das Partes sobre sua décima sexta sessão, ocorrida em Cancun de 19 de novembro a 10 de dezembro de 2010. Addendum. Parte Dois: Ação tomada pela Conferência das Partes na sua décima sexta sessão ou "Cancun Agreement". COP 16, Cancun, 2010.)

- **FCCC/CP/2011/9/Add. 1:** Report of the Conference of the Parties on its seventeenth session, held in Durban from 28 November to 11 December 2011. Addendum. Part Two: Action taken by the Conference of the Parties at its seventeenth session. (In Portuguese: Relatório da Conferência das Partes sobre sua décima sétima sessão, ocorrida em Durban de 28 de novembro a 11 de dezembro de 2011. Addendum. Parte Dois: Ação tomada pela Conferência das Partes em sua décima sétima sessão. COP 17, Durban, 2011.)

- **FCCC/CP/2012/8/Add.1:** Report of the Conference of the Parties on its eighteenth session, held in Doha from 26 November to 8 December 2012. Addendum. Part two: Action taken by the Conference of the Parties at its eighteenth session. (In Portuguese: Relatório de Conferência das Partes sobre sua décima oitava sessão, ocorrida em Doha de 26 de novembro a 8 de dezembro. Addendum. Parte Dois: Ação tomada pela Conferência das Partes em sua décima oitava sessão.)

- **FCCC/CP/2013/Add.1:** Warsaw Framework for REDD-plus, held in Warsaw, Poland, from 11 to 22 November 2013 (In Portuguese: Pacote de Varsóvia para REDD+, ocorrida em Varsóvia, Polônia, de 11 a 22 de Novembro de 2013), in particular the following decisions:

- **Decision9/CP.19:** Work programme on results-based finance to progress the full implementation of the activities referred to in decision 1/CP. 16, paragraph 70. (In Portuguese: Programa de trabalho em financiamento baseados em resultados para o progresso da implementação completa das atividades referidas na decisão 1/CP. 16, parágrafo 70.)

- **Decision10/CP.19:** Coordination of support for the implementation of activities in relation to mitigation actions in the forest sector by developing countries, including institutional arrangements. (In Portuguese: Coordenação do suporte para a implementação de atividades relacionadas a ações de mitigação no setor florestal por países em desenvolvimento, incluindo arranjos institucionais.)

- **Decision12/CP.19:** The timing and the frequency of presentations of the summary of information on how all the safeguards referred to in decision1/CP.16, appendix I, are being addressed and respected. (In Portuguese: O tempo e a frequência na qual são apresentadas as informações resumidas de como todas as salvaguardas referidas na decisão1/CP.16, apêndice I, estão sendo abordadas e respeitadas.)

- **Decision13/CP.19:** Guidelines and procedures for the technical assessment of submissions from Parties on proposed forest reference emission levels and/or forest reference levels. (In Portuguese: Guia e procedimentos para avaliação técnica das submissões das Partes em propostas de níveis de referência em emissões florestais e/ou níveis de referência florestal.)

- **Decision14/CP.19:** Modalities for measuring, reporting and verifying. (In Portuguese: Modalidades para medir, reportar e verificar.)

- **Decision15/CP.19:** Addressing the drivers of deforestation and forest degradation. (Approach of deforestation and forest degradation drivers.)
- **FCCC/CP/2015/Add.1:** Report of the Conference of the Parties on its twenty-first session, held in Paris from 30 November to 13 December 2015. Addendum. Part two: Action taken by the Conference of the Parties at its twenty-first session. (In Portuguese: Relatório de Conferência das Partes sobre sua vigésima primeira sessão, ocorrida em Paris de 30 de novembro a 13 de dezembro. Addendum. Parte Dois: Ação tomada pela Conferência das Partes em sua vigésima primeira sessão).
- **Nationally Determined Contribution** – Brazilian NDC submitted in September 2015 to the United Nations Framework Convention on Climate Change for mitigation, adaptation and means of implementation consistent with the purpose of the contributions to achieve the ultimate objective of the Convention, in accordance with decision 1/CP.20, paragraph 9.
- **CITES, of 03/03/1973:** “Convention on International Trade in Endangered Species of Wild Fauna and Flora”, signed in Washington D.C. on March 3, 1973, amended in Bonn on June 22, 1979.

2.5.2 Relevant Laws and Regulations Related to Worker's Rights (VCS, 3.18, 3.19; CCB, G3.11)

It is assumed that all employees at Grupo Jari, Biofílica Ambipar Environment, and service companies are legally contracted in compliance with the Brazilian labor legislation. In addition, international agreements ratified by Brazil and issues related to worker well-being are observed.

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

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

Federal Law and Regulations

- Decree-Law nº 5,452, dated May 1, 1943: Approves the Consolidation of Labor Laws.
- Law No. 6514, dated December 22, 1977: Amendments to Chapter V of Title II of the Consolidation of Labor Laws, on occupational health and safety and other measures.

- Law No. 13467, dated July 13, 2017: Amends the Consolidation of Labor Laws (CLT), approved by Decree-Law 5,452, dated May 1, 1943, and Laws 6,019, dated January 3, 1974, 8,036, May 11, 1990, and 8,212, July 24, 1991, in order to adapt the legislation to the new labor relations.

International agreements ratified by Brazil

- Convention of the International Labor Organization No. 29 of 1930, ratified by Brazil on 04/25/1957: Provides for the abolition of forced labor.

- International Labor Organization Convention No. 87 of 1940: Provides on union freedom.

- Convention of the International Labor Organization No. 97 of 1949, ratified by Brazil on 18/06/1965: Provides on migrating workers,

- Convention of the International Labor Organization No. 98 of 1949, ratified by Brazil on 11/18/1952: Provides for the right to unionize and collective bargaining.

- Convention of the International Labor Organization No. 100 of 1951, ratified by Brazil on 04/25/1957: Provides for equal pay for men and women.

- Convention of the International Labor Organization No. 105, ratified by Brazil on 06/18/1965: Provides for the abolition of forced labor.

- Convention of the International Labor Organization No. 111 of 1958, ratified by Brazil on 03/01/1965: Provides for discrimination in employment and occupation.

- Convention of the International Labor Organization No. 131 of 1970, ratified by Brazil on 05/04/1983: Provides for the setting of minimum wages, especially in developing countries.

- Convention of the International Labor Organization No. 138 of 1973, ratified by Brazil on 06/28/2001: Provides for the minimum age for admission.

- Convention of the International Labor Organization No. 142 of 1975, ratified by Brazil on 11/24/1981: Provides for the development of human resources.

- International Labor Organization Convention No. 143 of 1975: It addresses abusive immigration and the promotion of equal opportunities for migrant workers.

- Convention of the International Labor Organization No. 155 of 1981, ratified by Brazil on 05/18/1992: Provides for the safety and health of workers.

- Convention of the International Labor Organization No. 169 of 1989, ratified by Brazil on 07/25/2002: Provides for indigenous and tribal rights.

- Convention of the International Labor Organization No. 182, ratified by Brazil on 02/02/2000: Provides for the prohibition of the worst forms of child labor and immediate actions for its elimination.

In addition to complying with the above legislation, the labor certificates of the Project's proponents were shared with VVB.

2.5.3 Human Rights (VCS, 3.19)

The Jari Pará REDD+ Project recognizes, respects and promotes the protection of human rights.

Both Biofílica Ambipar Environment and the Grupo Jari are committed to fostering an attitude of respect for people, their traditions and values, as well as guiding relationships by respect for the laws and conventions that deal with fundamental human rights.

Biofílica Ambipar Environment follows the principles of the Ambipar Group's "Code of Conduct", whose basic premise is respect for people, regardless of their hierarchical position, origin, color, ethnicity, culture, age, social level, physical ability, religion and sexual orientation, and does not accept any practice of discrimination.

The Grupo Jari has a solid culture of Human Rights Policy and Social Responsibility. The description of this position can be found in its internal rules, such as the "Integrated Policy of the Jari Group" and the "Code of Conduct - General Principles and Rules of Conduct" of the Jari Group, and in the document "Code of Conduct" of the Ambipar Group. Indigenous Peoples and Cultural Heritage

The Project recognizes, respects and supports the rights to lands, territories and resources, including the statutory and traditional rights of Indigenous Peoples and others within Communities and Other Stakeholders

2.5.4 Indigenous Peoples and Cultural Heritage (VCS, 3.18, 3.19)

The Project recognizes, respects and supports the rights to lands, territories and resources, including the statutory and traditional rights of indigenous peoples and others within communities and other stakeholders.

2.5.5 Recognition of Property Rights (VCS, 3.7, 3.18, 3.19; CCB, G5.1)

Disputes over rights to territories and resources

Administrative blockade, provisional and totally reversible, since these actions are a preventive measure by the Corregedoria of the State of Pará, in order to enable the regularization of public registries throughout the state: Jari

	Celulose expects to complete the requalification processes for all its rural properties, or the vast majority of them, by the end of 2025, when the registrations will be ready for any registration or notary changes. The Public Prosecutor's Office of the State of Pará filed a Public Civil Action, against Jari Celulose, the Pará Land Institute (ITERPA) and the State of Pará, alleging irregularities in the chain of ownership of the Santo Antônio da Cachoeira property: Jari Celulose and ITERPA are focused on the requalification of the Santo Antônio da Cachoeira Gleba - PA, which is very large and of great importance to the Redd+ Pará Project, and that the ITERPA Certificate attesting to the regularity of the title of this property has already been issued. The State of Pará filed against Jari a Declaratory Action of Non-existence of Domain of the Fazenda Saracura: A writ of possession was issued for the Saracura Farm in favor of Jari Celulose. These disputes are described in full throughout this section.
Respect for property rights	Jari Pará REDD+ Project recognizes and respects all property rights by complying with significant statutory and regular requirements, and by having the required approvals from the appropriate state, local, and indigenous authorities. The Project recognizes and supports any rights to lands, territories and resources, including the statutory and traditional rights of indigenous peoples, communities and other actors. Jari Celulose, Papel e Embalagens S/A, a company controlled by Grupo Jari, is the legitimate owner of the property Gleba Jari I, where the Jari Pará REDD+ Project is located. The properties of Jari Celulose located in the States of Pará and Amapá were acquired by means of public deeds of purchase and sale, as can be seen in the deeds themselves (1948/1949), as well as in the Evolution of Corporate Changes - Jari Celulose S / A - Land Title" and Notifications attached to the PDD. These documents are intended to attest

	the process of buying and selling the properties and the location of the registry offices where the deeds to the respective properties were written, proving the legitimate ownership. The Project activities are developed as well as the Right of Use of the Project area is respected according to the criteria of the VCS Standard v3.2 (page 17): "1) A right of use arising or granted under statute, regulation or decree by a competent authority. 2) A right of use arising under law. 4) A right of use arising by virtue of a statutory, property or contractual right in the land, vegetation or conservation, or management process that generates GHG emission decreases and/or removals (where such right includes the right of use of such decreases or removals and the Project proponent has not been divested of such right of use)."
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The processes and disputes involving the Project area were explained in the section 2.2.5 Project Description Deviations (VCS, 3.21; CCB Program Rules, 3.5.7 – 3.5.10), and will also be elucidated throughout this section.

The Jari I land parcel comprises ninety-nine properties, of which 50 fall geographically within the project area. However, of these 50 properties, 33 have inexpressive areas, which correspond to edge clippings, when their limits are superimposed on the Project area. Together, they total 241.34 hectares, or less than 0.05% of the Project area. It is expected that in the baseline reassessment these limits will be revised in order to provide a more accurate representation of the project area, which is committed to continuous improvement in its area management. Thus, there are 17 relevant plots effectively covered by the Project and that have already been indicated in the PDD, as indicated below:

Table 4. Larger area enrollments, covering more than 99.9% of the Project area.

Gleba	Register	Project overlap area (ha)	Status
Pau Grande	2253	1.467,80	-
Serra Grande	2247	1.725,86	-
Ayres Julio da Fonseca	4521	2.091,24	-

Gleba	Register	Project overlap area (ha)	Status
Maria de Nazare de Almeida Guedes	4539	2.723,69	In process of requalification (registered at the Registry Office)
Benedito de Oliveira Feitosa	4529	2.880,71	In process of requalification (registered at the Registry Office)
Cajueiro Serra de Almeirim	375	3.051,64	-
Flávia Freitas de Almeida Maia	4518	3.278,57	In process of requalification (registered at the Registry Office)
Crispim Joaquim de Almeida	4530	3.647,63	-
José Fernandes Fonseca	4520	3.937,21	-
Alzira Antunes Martins	4538	4.005,02	-
Terra Preta do Castanhal	2254	5.175,06	
Castanhal do Urucurituba	Transc. n° 829	16.578,00	-
Santo Antônio do Urucurituba	Transc. n° 829	17.200,20	-
Panama ou Mapau	Transc. n° 829	31.719,50	-
Campo Saracura	4532	40.302,50	-
Santo Antonio da Cachoeira-01	360	70.557,00	-
Fazenda Saracura	2259	285.891,00	-

As already mentioned in section 2.2.5, the land tenure of the rural properties of Jari Celulose faces an administrative blockade, provisional and totally reversible, since these actions are a preventive measure by the Corregedoria of the State of Pará, in order to enable the regularization of public registries throughout the state.

This state strategy was based on evidence of fraud in the system, having found that in several inland municipalities there were properties registered with unreal and over-dimensioned areas. However, none of these cases concern, in any way, the properties of Jari Celulose and, due to the impossibility of performing an individualized analysis, a general (statewide) blockage was chosen for each applicant in

order to make the appropriate proofs with the competent agencies. In addition, several Jari real estate records were improperly blocked by the Monte Alegre notary clerk. Since the notary office cannot act on its own initiative to correct such acts, Jari is obliged to provide administrative requalification of the registration. Even so, these actions do not prove any kind of alienation of Grupo Jari in the region, since all the certificates and records of the property are in his name.

For regularization of the enrollments, the Judicial Administrative Department of Countryside Jurisdiction (CJCI - PA) began to issue, since 2010, normative acts and currently, after several improvements, the requalification procedures are regulated by the Joint Provision CJCI-CJRMB 004/2021, which states that the requalification procedure consists in an administrative request for the restoration of blocked and canceled enrollments and registrations, and must be presented directly to the competent real estate registry unit, accompanied by pertinent documents, including the certificate of regularity of the property, the main document in the process of re-qualifying the enrollments, which attests to the regularity of the detachment of the property from the public patrimony, its boundaries and confrontations.

In view of the above, Jari Celulose has been conducting a major land title regularization process for its rural properties located in Pará State, specifically at the Pará State Land Institute ("ITERPA"), the agency responsible for issuing the aforementioned certificate. Since the end of 2021, Jari Celulose has been successful with ITERPA the issuance of Certificates of Regularity for its properties.

After obtaining these documents, in 2022 the company began the final requalification stage for 18 of the 99 Glebas owned by it, namely, the registration of the requalification request and restoration of their real estate registrations with the Almeirim Real Estate Registry Office. Of the 17 Glebas of land mentioned in Table 1 that are located in the Project Area, 3 are in the process of reclassification and all the protocols proving that the application has been filed with the Land Registry have been made available to the VVB.

The following criteria were used to define the first lots to be reclassified: 1st Nature of the Gleba in the following order: 1. properties, 2. leases, 3. legitimate possessions and 4. Possessions to be legitimized; 2nd Being an area of Jari eucalyptus plantations.

These criteria were essential, particularly given the current financial situation of the Jari Group; the areas chosen are essential for the company to continue its economic activities in the region, in order to be successful in the judicial rehabilitation process.

The areas subject to reclassification requests registered with the Almeirim Real Estate Registry Office have already had new registrations issued, based on the ITERPA Regularity Certificate, and will soon enter the final phase of the reclassification procedure, which is their unblocking, ordered by the competent Agrarian Judge. The notarizations at the Land Registry, which prove this advance for these areas in the requalification process, were made available to the VVB.

It should be noted that since 2024 the Jari Group and ITERPA have been focused on the redevelopment of the Santo Antônio da Cachoeira Gleba - PA, which is very large and of great relevance to the REDD+ Project. The ITERPA certificate attesting to the regularity of the title to this property has already been issued, and the Jari Group, the company, ITERPA and the Public Prosecutor's Office (MP) - PA are in negotiations to conclude the redevelopment of this property in the shortest possible time. The participation of the MP-PA in this requalification is justified by the fact that it is the author of ACP No. 0812867-37.2021.8.14.0051, in which an agreement was negotiated to extinguish this lawsuit, which will bring more security to the REDD+ Project and will certainly speed up the conclusion of the requalification of this area with the competent Real Estate Registry and the Agrarian Court itself.

Jari Celulose expects to complete the requalification processes for all its rural properties, or the vast majority of them, by the end of 2025, when the registrations will be ready for any registration or notary changes.

It should be pointed out that the Conduct Adjustment Agreement signed between the Group and ITERPA (the body responsible for land title regularization in the State), mentioned in the PDD, has been terminated, but an administrative process is still underway for each tract of land, in the records of these administrative processes, ITERPA issues the certificates that allow Jari to carry out the aforementioned requalification process.

Still on the subject of ownership of properties, it should be clarified that Jari Celulose has the documentation that expresses the chain of ownership of the properties in the Project area, as well as 15 of the 17 properties registered with the Land Management System (abbreviated in portuguese SIGEF). SIGEF is the electronic tool used by Incra⁶² to receive, validate, organize, regularize and make available georeferenced information on the boundaries of rural properties, both public and private, in Brazil.

The two Glebas that are currently unregistered in SIGEF are Fazenda Saracura and Campo Saracura. Both areas were registered in the past, but were cancelled by Incra itself. About these areas, it is clarified:

Fazenda Saracura

The main legal procedures surrounding the Fazenda Saracura area deal with the fact that (i) it is not classified as a public area and (ii) it is owned by the Jari Group. The timeline of the land tenure process

⁶² The National Institute of Colonization and Agrarian Reform ((abbreviated in portuguese Incra) [Instituto Nacional de Colonização e Reforma Agrária] is a federal autarchy whose primary mission is to carry out agrarian reform and national land regulation.

of Fazenda Saracura under the Jari Group is described below, reinforcing what was presented in the 2.2.5 section.

- Fazenda Saracura has been classified as a private area since 1856
- The Judiciary of the Interior Courts of Pará (CJCI-PA) established a first statewide infralegal rule, blocking all rural property titles located in the interior of the State of Pará, including the Saracura Farm.
- Subsequently, in 2010, the CJCI-PA decided to establish a second infralegal rule and convert the blockade carried out in 2006 into cancellation. In this act, the registration of Fazenda Saracura is also canceled, maintaining the possibility of requalification of the properties unduly canceled.
- In 2011, the State of Pará filed against Jari a Declaratory Action of Non-existence of Domain of the Fazenda Saracura.
- Even before the final judgment of the Declaratory Action of Non-existence of Domain of Fazenda Saracura and going beyond the limits of the court decision, the State Attorney's Office of Pará collected the area of Fazenda Saracura through a summary process with the Land Institute of Pará (ITERPA) and then opened a new registration with the Real Estate Registry Office of Almeirim called "Fazenda Arraiolos", with the exact vertices and with the same area as Fazenda Saracura. In December 2018, just two (2) months after the collection and opening of the registration of Fazenda Arraiolos, on the same portion of land as Fazenda Saracura, the certification in SIGEF of Fazenda Saracura was certified in SIGEF on 11/25/2013 and canceled by INCRA of Santarém-PA on 12/17/2018.
- Despite the efforts of the State of Pará to have this area declared public, the fact is that the final decision, issued by the Superior Court of Justice (STJ) in 2019, did not fulfill this request.
- The request to cancel the certification of Fazenda Saracura in SIGEF was made by an owner who sought to certify his property, which was geographically overlapping with Jari. The legitimacy of the registration of this owner's area was questioned with SIGEF, however, as the registration of Fazenda Saracura was also canceled, the analysis culminated in the cancellation with the following final decision: "Grant the cancellation of certification (...), Fazenda Saracura / PART 1 held by Jari Celulose Papel e Embalagens S.A (...). We emphasize that the manifestation inserted in SIGEF on 04/12/2018 does not characterize requalification of the registration, so this Committee and the Rural Cadastre Service is waiting for the documentary regularization by the company in the rural property."
- Despite the efforts of the State of Pará to have this area declared public, the fact is that the final decision, issued by the Superior Court of Justice (STJ) in 2019, did not fulfill this request.

- After Jari Celulose filed the judicial reorganization action in 2019, resigned to such arbitrariness, the company filed a request for Urgent Relief before the Court of the District of Monte Dourado, District of Almeirim, State of Pará, the same court in which its Judicial Reorganization process is being carried out.
- The Jari Celulose obtained a court decision in December 2021, which determined: (i) prevent the State from threatening Jari Celulose's possession of the Saracura Farm; (ii) prevent the performance of acts of concession in favor of third parties of any portion of the Saracura Farm area; and (iii) guarantee Jari Celulose the right to propose the necessary measures to obtain the property originally through the acquisitive prescription.
- In 2022, the Pará State Attorney's Office appealed against the decision of the state judiciary in the above-mentioned case, but was unsuccessful in overturning the decision in favor of the Jari Group before the Pará Court of Justice.
- In August 2024, a writ of possession was issued for the Saracura Farm in favor of Jari Celulose.

Thus, as previously stated, we **reinforce our position that the Jari Group meets the requirement of “legal right to control and operate the project's activities”**, meeting the land requirement to implement a carbonproject and maintains the right to carry out the regularization of the Fazenda Saracura property.

Santo Antonio da Cachoeira

In 2021, the Public Prosecutor's Office of Pará filed a Public Civil Action against Jari Celulose, ITERPA and the State of Pará, alleging irregularities in the ownership of the Santo Antônio da Cachoeira property. He asked for the property title to be annulled and for the area to be allocated to local communities. The defendants contested, demonstrating the legality of the ownership, and the Santarém Agrarian Court denied the injunction, recognizing the validity of the title issued in 1937.

The MP appealed and, in 2022, a judge granted an injunction provisionally blocking the farm's title. Despite this, the decision does not prevent Jari Celulose from possessing and exploiting the property. Since 2024, the company and ITERPA have been working on requalifying the area, which is essential for the REDD+ Pará Project. The MP is taking part in negotiations for an agreement that will extinguish the lawsuit and give legal certainty to the requalification.

Conclusion

Land title regularization in Amazonia is a real problem, and uncertainty over land ownership covers a large part of the territory, although it depends on actions taken by the Federal and State Governments.

Clarity over property rights is of interest to society as a whole, since it contributes to socio-economic development and to the environmental preservation of the land, since the holder is responsible for compliance with the Forestry Code within his area and is legally liable for infringing its provisions.

In this context, regarding the land ownership issue at Jari properties, in addition to rural property ownership, which is proven by registering the documents at the notary's office (undergoing a process of requalification, as explained above), Jari also has proven ownership of the areas, Jari has proven ownership of the areas, either through possession by legal title (with documents that can be filed for registration), or simple possession through occupation of the areas through management of extensive eucalyptus forests, with operating licenses and rural activity licenses for silvicultural management dating back to 2000, i.e., it has held and occupied the land for at least twenty years, In order to keep the forest standing, generating benefits for the acknowledged communities living in this territory and persisting with environmental preservation and conservation, the company runs a vigilance team to curb land invasions, as well as a technical team from the Fundação Jari through projects and social assistance in order to underpin the sustainable development of this region, particularly within the limits of the company properties, while also ensuring good relations with neighboring areas such as conservation units.

Moreover, Jari Celulose is responsible for paying the Rural Land Tax (ITR), which is a Federal Tax payable annually and whose triggering event is ownership, useful domain or possession of real estate by nature, located outside the urban zone of the municipality. Jari Celulose has paid this tax for many years throughout its entire area in Pará State, providing VVB with proof of these payments over the past 22 years.

Therefore, through documentary research, it was concluded that there is no impediment, encumbrance, charge or limitation for Jari Pará REDD+ Project. Biofílica Ambipar Environment has an agreement with Jari Celulose, owner of properties, to execute the Jari Pará REDD+ Project, therefore, Biofílica Ambipar Environment is the sole and exclusive developer of Jari Pará REDD+ Project concerning environmental services and other related benefits.

2.5.6 Benefit Sharing Mechanism (VCS, 3.18, 3.19)

The Project is developed on private land owned by the Jari Group and therefore does not affect property rights.

Summary of the benefit sharing plan	The project does not affect ownership rights and freedom of access, use and right of resources to stakeholders and beneficiaries. The Jari Pará REDD+ Project also complies with the CCB standard. All the information regarding the work with communities and the benefits provided can be found in the PDD VCS CCB, and in the latest MR CCB.
Benefit sharing during the monitoring period	The project did not directly impact property rights during the monitoring period; therefore, no stakeholder was affected.

2.5.7 Free, Prior, and Informed Consent (VCS, 3.18, 3.19; CCB, G5.2)

Consent	The Project did not carry out any activities on private property or property belonging to indigenous and traditional communities or the government, only on properties belonging to the Grupo Jari. The property where the Project is located has a much larger area than the area used for Project activities and there was no interference with neighboring properties. Consultation with the communities present on the property where the project is located and with government representatives in all areas has been applied since the implementation period of the Jari Pará REDD+ Project. About social and biodiversity monitoring activities, no activity has been carried out without the consent of the parties involved.
Outcome of FPIC	The project's actions were only carried out on properties belonging to the Grupo Jari. No project-related activities have resulted in the involuntary removal or relocation of property rights holders from their lands or territories, nor have they forced them to relocate activities important to their culture or livelihoods, since no party has been affected by the project, no restitution or compensation of any kind has been demanded.

2.5.8 Property Right Protection (VCS, 3.18, 3.19; CCB, G5.3)

The development of activities related to Jari Pará REDD+ Project has not led to the involuntary removal or relocation of any part of their lands or territories, and activities important to the culture and livelihoods of communities living within the boundaries of the Project Area have been respected and supported by the Project.

As mentioned previously, the land tenure regularization of the communities working in the Project is supported and sustained by Grupo Jari with the responsible public institutions, through the actions that were carried out by Fundação Jari.

Another measure to prevent and inhibit land invasions in the project area were the activities of monitoring the perimeter of the properties, carried out by a land surveillance team. When land invasions were identified, a police record was made, formalizing the report of invasion of private property, which was forwarded to the company's legal department for appropriate measures, and to the Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA) for investigation of environmental crimes, as appropriate, all evidence of the reports made will be provided to the VVB.

2.5.9 Identification of Illegal Activity (VCS, 3.19, CCB, G5.4)

Deforestation is the main illegal activity that can negatively impact the development of Jari Pará REDD+ Project. The mechanisms and procedures of land inspection are summarized in Table 5, the activities of a socio-economic nature are better described in section 4.

Table 5. Summary of land law enforcement mechanisms in the Jari Pará REDD+ Project area.

Surveillance in the Project area	
Purpose	Determine inspection conditions for lands owned by Jari Celulose S.A.
General conditions	Patrols: - Carry out regular patrols in order to ensure the protection of the land holdings owned by Jari; - Avoid deforestation, forest fires or other acts that harm the environment; - Prevent illegal logging and trade in timber and other products, as well as predatory hunting and fishing; - Maintain good relations with squatters and existing communities; - Promote social actions; - Provide support to the police and inspection authorities, when necessary; - The river patrol is carried out with speedboats that travel the main water basins in the region; - Road patrolling is carried out by vehicles through the main roads, side roads and contours for monitoring the forest areas and existing communities in the company's areas of operation. Action method: - Sending a team to the site of the occurrence to investigate the fact and apply the appropriate measures; - Reporting the legal department to take action; - Registration of incidents involving property invasions, damage to property and irregular extraction of forest products at the police station by the Property Security Coordinator; - Occurrences involving damage to the environment must be registered with the responsible bodies (IBAMA, Environmental Police, etc.) by the Property Security Coordinator; - In all situations involving land conflicts, it is necessary to avoid confrontation between the parties, respecting the laws in force in the country.
Specific Conditions	- The patrol itinerary is elaborated according to an Inspection Program;

	- When the land inspection detects illegal activities, the Property Security must take the appropriate measures, as well as collect the geographic coordinates to be sent to the Geoprocessing sector. Forest Fire Surveillance - During the patrols, openings that may cause fire risks to the forests are taken into consideration, and the person responsible must be warned and oriented about the risks and the necessary precautions must be taken by the forestry area. HCVA - High Conservation Value Areas - After the proven validation of an HCVA, specific precautions are taken in order to protect the identified HCVAs. Ecological Corridors - Areas of ecological importance for the passage of fauna are monitored during surveillance.
Records	- Protocol of occurrences registered with IBAMA; - Police report; - Photographic record of occurrences; - Regular inspection program; - Report of Activities of Property Security.
Surveillance Intelligence Strategies	Planned actions for investment in intensification and intelligence in the activities of Property Security: - Monitoring via high-resolution satellite images, with monthly issuance of deforestation alerts in risk areas, enabling the generation of monthly reports of altered areas; - Acquisition of support equipment for the patrolling team; - Additional financial support for logistics costs and vehicle maintenance.

2.5.10 Ongoing Disputes (VCS, 3.18, 3.19; CCB, G5.5)

As described in section 4.1.1, the area is subject to a lawsuit filed by the State of Pará on May 27, 2011, which aimed to declare the non-existence of domain/ownership by Jari Celulose over the area, in order to declare that this area would be public. However, the final decision issued by the Superior Court of Justice (STJ) in 2019 did not grant this request.

Apart from the above there are no major agrarian conflicts in the area allocated to the Jari Pará REDD+ Project. Some repossession suits are filed by Jari Celulose when third parties invade small fractions of land owned by Jari Celulose S.A., and the success rate of these suits is high, not resulting in loss of areas.

Due to the vast size of the property, such invasions may occur, though they are mostly kept in check by the actions of the land inspection and asset surveillance team at the Jari Group, which can be found in detail in section 2.2.1.2.

The Jari Group follows the prepared mechanism for solving problems, present in the "Conflict Management" document, to deal with any possible dispute in the region. Additionally, the Group has a cooperative dialogue with government agencies to support the regularization of the land title situation of the communities where the Project operates, also mentioned above. The company has no conflicts with traditional communities, and works in partnership with them, recognizing and respecting their areas and including them in the social projects run by the Fundação Jari.

3 CLIMATE

3.1 Monitoring GHG Emission Reductions and Removals

3.1.1 Data and Parameters Available at Validation (VCS, 3.16)

Data / Parameter	Ctot
Data unit	tCO2e ha-1
Description	Average stock of carbon per hectare in all forest class carbon pools used in the baseline scenario
Source of data	Calculated by allometric equations, expansion factors from the literature and on-field measured data
Value applied	413.67 tCO2e ha-1
Justification of choice of data or description of measurement methods and procedures applied	Above and below ground biomass estimates were made using forest inventory data and allometric equations performed in areas similar to the Project Area (Nogueira et al., 2008)
Purpose of the data	- Determination of the baseline scenario
Comments	- Calculation of baseline emissions

Data / Parameter	DAP
Data unit	cm
Description	Diameter at breast height (130 cm) for each tree with DBH equal to or greater than 15 cm in each forest inventory plot
Source of data	Measured on field by FRM Brazil
Value applied	See worksheet with field data

Justification of choice of data or description of measurement methods and procedures applied	Requirement demanded by VCS methodology VM0015. Forest inventory data collected less than 10 years ago in multiple plots located in wide spatial distribution.
Purpose of the data	- Determination of the baseline scenario
Comments	- Calculation of baseline emissions

Data / Parameter	$B = \exp(-1,716 + 2,413 \cdot (\ln(DAP)))$
Data unit	Kg (weight)
Description	Equation to convert DAP into biomass
Source of data	Nogueira et al. (2008). Forest biomass estimates in the Brazilian Amazon: New allometric equations and biomass adjustments from wood volume inventories. Forest Ecology and Management, v. 256, n. 11, p. 1853-1867, 2008
Value applied	$B = \exp(-1,716 + 2,413 \cdot (\ln(DAP)))$
Justification of choice of data or description of measurement methods and procedures applied	Equation elaborated for forests with characteristics similar to those from forests in the reference region
Purpose of the data	- Baseline Scenario Determination (AFOLU projects only)
Comments	- Calculation of baseline emissions

Data / Parameter	CF
Data unit	t
Description	Carbon contained in dry biomass
Source of data	Nogueira et al. (2008). Forest biomass estimates in the Brazilian Amazon: New allometric equations and biomass adjustments from wood volume inventories. Forest Ecology and Management, v. 256, n. 11, p. 1853-1867, 2008
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	- Determination of the baseline scenario
Comments	- Calculation of baseline emissions

Data / Parameter	42/12
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Data unit	tCO ₂ e
Description	Conversion factor from mass of carbon to mass of CO ₂ e
Source of data	Scientific Literature 2006 IPCC Guidelines for National Greenhouse Gas Inventories Volume 4 AFOLU
Value applied	42/12
Justification of choice of data or description of measurement methods and procedures applied	IPCC default value
Purpose of the data	- Determination of the baseline scenario
Comments	- Calculation of baseline emissions

3.1.2 Data and Parameters Monitored (VCS, 3.16)

VData / Parameter	ABSLPA _{icl,t}
Data unit	Hectare (ha)
Description	Forest cover areas converted into non-forest cover areas within the Project Area in of Jari Pará REDD+ Project
Source of data	<u>Prodes</u> Calculated using LANDSAT8 satellite images used by PRODES project corresponding to the orbit/point: • 2018 – 226/61; • 2019 – 226/61; • 2020 – 226/61; • 2021 – 226/61; • 2022 – 226/61; <u>Mapbiomas</u> Calculated using MapBiomas Alert . Brazil is covered by more than a dozen deforestation alert systems, including DETER/INPE (Amazon and Cerrado), SAD/IMAZON, GLAD/Univ. Maryland (all biomes). Together, these systems generate tens of thousands of alerts based on the analysis of medium spatial resolution satellite images (20 to 60 m). Given the medium resolution used in these systems, the alerts need to go through a detailed validation process, often followed by field checks before they can be useful for directing measures such as embargoes and notices of illegal deforestation. Currently, the alerts generated by the various providers are collected and used as a reference to

	locate the deforestation alerts in the daily high-resolution satellite images (3 m). Each alert is validated, refined and defined within a time window of occurrence.												
Description of measurement methods and procedures to be applied	The forest cover was monitored in the subject areas by overlaying the vector data from PRODES with the boundaries of the Jari Pará REDD+ Project Area. The polygons mapped as deforestation since 2018 to 2022 were selected for quantification of the deforested area and subsequent field verification activities.												
Frequency of monitoring/recording	Annual												
Value monitored	<table border="1"> <thead> <tr> <th>Year</th><th>Area (hectares)</th></tr> </thead> <tbody> <tr> <td>2018</td><td>578</td></tr> <tr> <td>2019</td><td>420</td></tr> <tr> <td>2020</td><td>609</td></tr> <tr> <td>2021</td><td>305</td></tr> <tr> <td>2022</td><td>539</td></tr> </tbody> </table>	Year	Area (hectares)	2018	578	2019	420	2020	609	2021	305	2022	539
Year	Area (hectares)												
2018	578												
2019	420												
2020	609												
2021	305												
2022	539												
Monitoring equipment	Remote sensing images from digital processing program, geographic information system and navigational GPS												
QA/QC procedures to be applied	Images with special resolution of 30 meters or higher were used in mapping and the minimum mapping unit is 1 ha. Ratings were assessed through data collected in the field using GPS navigation. The minimum accuracy of the land use and land cover classification map is 80%.												
Purpose of the data	Calculation of project emissions												
Calculation method	Where unplanned deforestation was detected, the Forest Cover Reference Mark Map was updated by map algebra.												
Comments	- PRODES Project: http://www.dpi.inpe.br/prodesdigital/prodes.php - More information on quality control and quality assurance is available at: Camara et al. 2006. Calculation methodology for annual deforestation rate in the Legal Amazon.												
Data / Parameter	ABSLLK _{icl,t}												
Data unit	Hectare (ha)												

Description	Forest cover areas converted to non-forest cover areas within the Leakage Belt in of Jari Pará REDD+ Project
Source of data	<u>Prodes</u> Calculated using LANDSAT8 satellite images used by the PRODES project corresponding to the orbit/point: • 2018 – 226/61; • 2019 – 226/61; • 2020 – 226/61; • 2021 – 226/61; • 2022 – 226/61; <u>Mapbiomas</u> Calculated using MapBiomas Alert⁶³. Brazil is covered by more than a dozen deforestation alert systems, including DETER/INPE (Amazon and Cerrado), SAD/IMAZON, GLAD/Univ. Maryland (all biomes). Together, these systems generate tens of thousands of alerts based on the analysis of medium spatial resolution satellite images (20 to 60 m). Given the medium resolution used in these systems, the alerts need to go through a detailed validation process, often followed by field checks before they can be useful for directing measures such as embargoes and notices of illegal deforestation. Currently, the alerts generated by the various providers are collected and used as a reference to locate the deforestation alerts in the daily high-resolution satellite images (3 m). Each alert is validated, refined and defined within a time window of occurrence.
Description of measurement methods and procedures to be applied	The monitoring of forest cover in the monitored area was done by overlaying the vector data from PRODES with the boundaries of Jari Pará REDD+ Project. The polygons mapped as deforestation since 2018 to 2022 were selected for quantification of the deforested area and subsequent field verification activities.
Frequency of monitoring/recording	Annual

⁶³ Available at: <https://plataforma.alerta.mapbiomas.org/>.

Value monitored	Year	Area (hectares)
	2018	257
	2019	678
	2020	288
	2021	415
	2022	383
Monitoring equipment	Remote sensing images from the digital processing program, geographic information system, and GPS navigation.	
QA/QC procedures to be applied	Images with special resolution of 30 meters or higher were used in mapping and the minimum mapping unit is 1 ha. Ratings were assessed through data collected in the field using GPS navigation. The minimum accuracy of the land use and land cover classification map is 80%.	
Purpose of the data	Leakage calculation	
Calculation method	Where unplanned deforestation was detected, the Forest Cover Reference Mark Map was updated by map algebra	
Comments	- PRODES Digital Project: http://www.dpi.inpe.br/prodesdigital/prodes.php - More information on quality control and quality assurance is available at: Camara et al. 2006. Calculation methodology for annual deforestation rate in the Legal Amazon.	

Data / Parameter	APDPA _{Aicl,t}
Data unit	Hectare (ha)
Description	Survey and mapping of forest cover areas converted to non-forest cover areas due to construction of forest management infrastructure.
Source of data	Remote sensing images, technical maps, and field maps to monitor the construction of roads, tracks, and log decks for sustainable forest management activities.
Description of measurement methods and procedures to be applied	If low-impact forest management is carried out in the project area again, the monitoring of forest cover areas will be carried out through the analysis of satellite images, maps of construction of roads, tracks and patios for forest management, and field verifications. If planned deforestation occurs the Forest Cover Reference Map will be updated using the algebraic map. The reduction in

	carbon stock in the project area will be reported during the verification process.												
Frequency of monitoring/recording	During the management year of each APU (Annual Production Unit)												
Monitored value	<table border="1"> <thead> <tr> <th>Year</th><th>Area (hectares)</th></tr> </thead> <tbody> <tr> <td>2018</td><td>0</td></tr> <tr> <td>2019</td><td>0</td></tr> <tr> <td>2020</td><td>0</td></tr> <tr> <td>2021</td><td>0</td></tr> <tr> <td>2022</td><td>0</td></tr> </tbody> </table>	Year	Area (hectares)	2018	0	2019	0	2020	0	2021	0	2022	0
Year	Area (hectares)												
2018	0												
2019	0												
2020	0												
2021	0												
2022	0												
Monitoring equipment	Field sheets, post-exploration reports, and geographic information system.												
QA/QC procedures to be applied	The mapping of areas of planned deforestation for the implementation of sustainable Forest Management infrastructure was carried out by means of high-resolution images and field checking												
Purpose of the data	Calculation of project emissions												
Calculation method	Where unplanned deforestation was detected, the Forest Cover Reference Mark Map was updated by map algebra												
Comments	There were no conversions of non-forest cover areas due to forest management infrastructure construction in the monitored period.												

Data / Parameter	$\Delta \text{CabBSLLKt}$
Data unit	tCO ₂ -e
Description	Changes in total carbon stock in the leakage belt area
Source of data	Calculated
Description of measurement methods and procedures to be applied	- Leakage prevention activities were listed; - Production of a map showing the intervention areas and the type of intervention; - Identification of areas where leakage prevention activities have an impact on the carbon stock; - The existing non-forest classes identified in these areas in the baseline case;

	- Measured carbon stock in the identified classes; - Reported in Table 30.b of Methodology VM0015 carbon stock changes in the leakage management areas under the project scenario; - Calculation of net changes in carbon stock caused by leakage prevention measures during the fixed period of the project baseline and crediting period; - The calculation results reported in Table 30.c of the approved Methodology VM0015.												
Frequency of monitoring/recording	Annual												
Value monitored	No leakages were identified during the monitored period. <table border="1"> <thead> <tr> <th>Year</th><th>tCO₂-e</th></tr> </thead> <tbody> <tr> <td>2018</td><td>0</td></tr> <tr> <td>2019</td><td>0</td></tr> <tr> <td>2020</td><td>0</td></tr> <tr> <td>2021</td><td>0</td></tr> <tr> <td>2022</td><td>0</td></tr> </tbody> </table>	Year	tCO ₂ -e	2018	0	2019	0	2020	0	2021	0	2022	0
Year	tCO ₂ -e												
2018	0												
2019	0												
2020	0												
2021	0												
2022	0												
Monitoring equipment	Digital processing program remote sensing images and calculation tables.												
QA/QC procedures to be applied	Images with a special resolution of 30 meters or higher were used in mapping and the minimum mapping unit is 1 ha. Ratings were assessed through data collected in the field using GPS navigation. The minimum accuracy of the land use and land cover classification map is 80%.												
Purpose of the data	Leakage calculation												
Calculation method	Evaluation of ex-post estimates in the Leakage Belt regarding the ex-ante estimate of the project (Table 35 of VM0015).												
Comments	No changes in total carbon stock in the Leakage Belt area were identified in the monitored period.												
Data / Parameter	Frequency of surveillance and patrol operations												
Data unit	Number of operations per year												
Description	Recording of the number of surveillance operations carried out in the project area and leakage belt during the monitoring period												

Source of data	Property Surveillance Report												
Description of measurement methods and procedures to be applied	The surveillance team at Grupo Jari executes patrols by waterways and land, to carry out field verification of irregularities on the property, such as arson burning and land possession by third parties. All patrols are registered and filed by the property surveillance team at Grupo Jari.												
Frequency of monitoring/recording	Annual												
Value monitored	<table border="1"> <thead> <tr> <th>Year</th><th>Surveillance operations</th></tr> </thead> <tbody> <tr> <td>2018</td><td>271</td></tr> <tr> <td>2019</td><td>262</td></tr> <tr> <td>2020</td><td>269</td></tr> <tr> <td>2021</td><td>280</td></tr> <tr> <td>2022</td><td>274</td></tr> </tbody> </table>	Year	Surveillance operations	2018	271	2019	262	2020	269	2021	280	2022	274
Year	Surveillance operations												
2018	271												
2019	262												
2020	269												
2021	280												
2022	274												
Monitoring equipment	Surveillance team field sheets												
QA/QC procedures to be applied	Preparation of reports with photos, maps, records of the complaints at the responsible public agencies, and a descriptive sheet of the situation found in the field that contains: type of action taken by the surveillance team, name and address of the offender, qualification of the activity found, and detailed information about the invasion.												
Purpose of the data	Evaluation of the surveillance operation efficiency												
Calculation method	-												
Comments	The control of the asset surveillance reports was implemented by Project validation												

Data / Parameter	Monitoring of forest cover via high resolution satellite images
Data unit	Number of alerts issued and number of occurrences registered
Description	In 2020, the license to use orbital images from the PlanetScope constellation in daily view was contracted for a period of 12 continuous months (which was renewed annually starting in 2020) of monitoring with the visualization in natural colors, 4.77 meters and 8 bits of radiometric resolution, provided through the Web Platform. The contract also included the supply of a service to generate monthly change detection alerts for the area of interest delivered in shapefile format and through a Web

	Panel. The generation of this data serves as a basis to support strategic actions of the surveillance team that was able to aggregate greater efficiency in surveillance activities on the property, in areas of higher risk, according to the knowledge of the local context.																		
Source of data	Monthly deforestation alerts (distributed in a Web Platform) and asset surveillance reports																		
Description of measurement methods and procedures to be applied	Initially priority areas were defined for monitoring on the property based on the deforestation rates that have occurred in recent years, areas close to communities, areas where management activities occur, and risk areas based on knowledge of the local reality. From the definition of the areas, Alerts of Native Vegetation Alteration Detection are generated for the areas of interest (based on the daily Planet images, also visualized in the Web Platform), these are generated and made available monthly with deliveries in shapefile format and disclosed in the alert panel for consultation and via e-mail. After the dissemination to those responsible, the geoprocessing team prepares maps with the location of the alerts that are directed to the Property Surveillance team. Using this material, the surveillance team carries out field checks in the areas and prepares a report that contains photos, a description of the situation found in the field with the type of action taken by the surveillance team, the name and address of the offender, qualification of the activity found and detailed information about the invasion, and if applicable, the records of the complaints at the responsible government agencies.																		
Frequency of monitoring/recording	Monthly																		
Monitored value	<table><tr><td>Year</td><td>Alerts</td><td>Number of occurrences</td></tr><tr><td>2018</td><td>-</td><td>-</td></tr><tr><td>2019</td><td>-</td><td>-</td></tr><tr><td>2020</td><td>31</td><td>10</td></tr><tr><td>2021</td><td>11</td><td>4</td></tr><tr><td>2022</td><td>67</td><td>8</td></tr></table>	Year	Alerts	Number of occurrences	2018	-	-	2019	-	-	2020	31	10	2021	11	4	2022	67	8
Year	Alerts	Number of occurrences																	
2018	-	-																	
2019	-	-																	
2020	31	10																	
2021	11	4																	
2022	67	8																	
Monitoring equipment	The images from the Planet Monitoring System and the deforestation alerts are available via Web Platform and via XYZ service, and are later processed via service in GIS software, such as QGis, ArcGIS. For the field activities, tokens and navigation GPS are used.																		

QA/QC procedures to be applied	Special resolution images of 3.125 m (Planet) and 5 m (RapidEye) with a ground sample distance (GSD) better than 4.5 m and 6.5 m respectively were used for mapping, and the minimum mapping unit was 1 ha. The ratings will be assessed and validated through data collected in the field using GPS navigation and recorded in reports containing photos, maps, complaints filed with the relevant government agencies (when applicable), and a description of the situation found in the field that includes the type of action taken by the surveillance team, the name and address of the trespasser, details of the activity encountered, and detailed information about the invasion.
Purpose of the data	The monitoring with high resolution images will be used to complement the official deforestation information of the area collected by PRODES (INPE), the main objective of using these images is to optimize the process of patrimonial surveillance in the Project Area. The official deforestation data for the project will continue to be from the PRODES Project.
Calculation method	Counting the number of alerts issued monthly and the number of registrations to environmental agencies made in the areas identified by the system.
Comments	This activity started in 2020, so there is no information from previous years.

Data / Parameter	Non-CO2 emissions from fires (Methane (CH ₄) and nitrous oxidate (N ₂ O) inside the Project Area
Data unit	tCO ₂ -e e yr-1
Description	Emissions from forest fires associated with deforestation year t
Source of data	Remote sensing data
Description of measurement methods and procedures to be applied	• Annual areas that have been deforested using fire will be specified. • Emissions from those areas will be quantified using the non-CO₂ rates from the VM00015. • Significance of the emissions will be evaluated to decide over reporting or not the emissions.

	•Years with significant non-CO2 emissions (over 5% of the baseline) will be accounted as part of the ex-post emissions The sections 3.2.2.6 and 3.2.2.7 in this document demonstrate the calculation methodology used to obtain the degradation numbers for forest fires. As described in the sections indicated above, the significance of non-CO2 emissions was not significant (below 5%), therefore, they are being reported but will not be counted as ex-post emissions.			
Frequency of monitoring/recording	Annually			
Value monitored		AUFPAicl,t (ha)	ΔCPDdPA _t (tCO2e	Significance
	2018	265	1507	0.33%
	2019	71	402	0.08%
	2020	215	1222	0.25%
	2021	74	422	0.08%
	2022	152	863	0.15%
Monitoring equipment	Spreadsheets and remote sensing data			
QA/QC procedures to be applied	N/A			
Purpose of the data	- Quantified hectares - Calculating project emissions			
Calculation method	VM0015 report methodology will be used.			
Comments	-			

Data / Parameter	Stock decrease inside the Project Area due to degradation
Data unit	tCO2-e e yr-1

Description	Emissions from forest fires and other degradations that didn't cause entirely deforestation will be monitored at year t																										
Source of data	Remote sensing data																										
Description of measurement methods and procedures to be applied	• Annual degraded areas will be specified. • Emissions from those areas will be quantified using rates of biomass loss from IPCC, 1995⁶⁴. • Significance of the emissions will be evaluated to decide over reporting or not the emissions. • Years with significant emissions (over 5% of the baseline) will be accounted as part of the ex post emissions The sections 3.2.2.6 and 3.2.2.7 in this document demonstrate the calculation methodology used to obtain the degradation numbers for forest fires. As described in the sections indicated above, the significance of the stock decrease in the Project Area was significant (above 5%) only for the year 2022, which will be accounted as ex-post emissions. The emissions for 2021 are being reported but will not be counted as ex-post emissions, considering it was not significant.																										
Frequency of monitoring/recording	Annually																										
Value monitored		<table border="1"> <thead> <tr> <th></th><th>AUFPA_{icl,t} (ha)</th><th>ΔCUF_{dPA} (tCO_{2e})</th><th>Significance</th></tr> </thead> <tbody> <tr> <td>2018</td><td>265</td><td>14928</td><td>3.32%</td></tr> <tr> <td>2019</td><td>71</td><td>3980</td><td>0.82%</td></tr> <tr> <td>2020</td><td>215</td><td>12103</td><td>2.49%</td></tr> <tr> <td>2021</td><td>74</td><td>4184</td><td>0.77%</td></tr> <tr> <td>2022</td><td>152</td><td>8551</td><td>1.50%</td></tr> </tbody> </table>		AUFPA _{icl,t} (ha)	ΔCUF _{dPA} (tCO _{2e})	Significance	2018	265	14928	3.32%	2019	71	3980	0.82%	2020	215	12103	2.49%	2021	74	4184	0.77%	2022	152	8551	1.50%	
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⁶⁴ IPCC reference was used to access the article: Kauffman, J., Cummings, D., Ward, D. and Babbitt, R. (1995). Fire in the Brazilian Amazon: 1. Biomass, nutrient pools, and losses in slashed primary forests. *Oecologia*, 104: p. 397-408.

Monitoring equipment	Spreadsheets and remote sensing data
QA/QC procedures to be applied	N/A
Purpose of the data	- Quantified hectares - Calculating project emissions
Calculation method	Calculation method VM0015 and IPCC rates methodology will be used.
Comments	-

3.1.3 Monitoring Plan (VCS, 3.16, 3.20)

3.1.3.1 Organizational structure, responsibilities and competencies

The monitoring plan for Jari Pará REDD+ Project is a combination of three components: climate, community, and biodiversity. The proponents' competencies and responsibilities are described below, complementarily, the experience of the project management team members is detailed in section 2.3.2 of the CCB monitoring report.

- Biofílica Ambipar Environment:** is a Brazilian company that has been operating in the voluntary carbon market for 14 years, focused on forest management and conservation of the Amazon biome. In the Jari Pará REDD+ Project, Biofílica acts as co-manager and party responsible for the commercialization of carbon credits.
 Biofílica's work is guided by the Operational team (which works in all stages of the project, from design, implementation, monitoring and management), Commercial team (which works mainly in raising financial resources for the project, from the sale of carbon credits generated in the verifications) and Marketing team (which is present throughout the journey of the REDD projects carbon credits buyer and provides technical support for the creation of materials).
- Jari Celulose:** is the owner of the properties where the Jari Pará REDD+ Project is located, and, in addition to reforestation using eucalyptus, is responsible for co-managing the project, providing infrastructure and logistics support to Biofílica and other professionals involved in the project, and for land security and asset surveillance.
- Fundação Jari:** the social enterprise of the Grupo Jari that, together with a vast network of partners, runs programs and projects in the areas of education, health, human rights assurance, the environment, culture and job and income generation. It manages the social and environmental activities of the projects, providing Technical Assistance and Rural Extension (ATER) to farmers in the Vale do Jari region through activities focused on reducing negative impacts and generating positive ones.

Its activities are essential for the development, monitoring and control stages of the project activities, as it has updated its organizational structure in recent years, aligning and adapting the projects that already existed in the institution and updating its results with the REDD+ Project activities and indicators.

The Fundação Jari is also responsible for monitoring the activities carried out by other stakeholders within REDD+ projects. The activities monitored are Asset and Land Security, Geoprocessing, Forestry Operation, Quality and Environment, and Forestry Research. This way, the Jari Foundation is mainly responsible for the social and biodiversity aspects of the projects, together with the support of the partnerships and suppliers contracted for various demands.

3.1.3.2 Internal audit carried out

The Jari Pará REDD+ Project does not undergo any type of internal audit, besides the one applied in the verification processes of the VCUs. The project proponents monitor the development of the project through alignments and exchange of information regarding the activities carried out and apply the monitoring processes of the activities and indicators as described in the project design document and based on annual planning of activities.

Additionally, among the bidders, Biofílica Ambipar Environment Investments only performs annual financial audit processes, ensuring that its resources are allocated responsibly and free of corruption. No other types of internal audits are performed.

As far as the Grupo Jari is concerned, the Fundação Jari holds the CEBAS (Charitable Entity Certification for Social Assistance in the Education Area) certificate awarded by the Federal Government through the Ministries of Education, Social and Agrarian Development and Health, to private non-profit entities recognized as charitable social assistance entities that provide services in the education, social assistance or health areas. Jari Celulose holds CERFLOR certification, which is the Brazilian Forestry Certification Program developed within the structure of the National Metrology, Standardization and Industrial Quality System (Sinmetro) for forest management and cellulose pulp production.

3.1.3.3 Climate Impact Monitoring Plan

The Climate Impacts Monitoring Plan will encompass key issues for demonstrating the reduction of emissions from deforestation and degradation due to avoided unplanned deforestation, in accordance with the applied methodology VM0015). As such, it brings information from monitoring reductions in greenhouse gas (GHG) emissions and changes in carbon stock over the project's lifetime resulting from land use changes within the Project Area and the Leakage Belt.

Two tasks are covered in the Climate Impacts Monitoring Plan: 1) Monitoring of carbon stock changes and GHG emissions for periodic checks; and 2) Revisiting the baseline projections established for

the fixed future period. During this monitoring period, only Task 1 was performed, this is described in detail below.

TASK 1: Monitoring Changes in Carbon Stocks and GHG Emissions For Periodic Verifications

1.1. Monitoring current changes in carbon stock and GHG emissions within the Project Area

a. Technical description of the monitoring tasks

In the Project Area, the monitoring changes in carbon stock and GHG emissions was conducted through analysis of avoided unplanned deforestation.

Biofílica Ambipar Environment worked in actions to monitor the REDD+ activities by locating the areas of unplanned deforestation, through verification of the areas of forest cover by satellite images available from PRODES in the period from 2018 to september 2022, and MapBiomass in the period from October, 2022 to March, 2023.

The field checking of the deforestation polygons detected by the satellite image analyses was done by the Grupo Jari surveillance team.

b. Data to be collected in the project area

Table 6. Data collected for monitoring changes in carbon stock and GHG emissions for periodic checks at Jari Pará REDD+ Project

Data/Parameter	Description	Unit	Source	Frequency
$C_{tot_{icl}}$	Average carbon stock for all carbon pools in the forest class icl	Ton of carbon dioxide equivalent (tCO ₂ -e)	Calculated by allometric equations and field-measured data	Collected over periods of up to 10 years
$APDPA_{icl,t}$	Planned deforestation areas in forest class icl in year t in the Project Area	Hectare (ha)	Calculated using remotely sensed images, technical maps and data, field and post-exploration management information	Annual
$\Delta CPLdPA_t$	Total decrease in carbon stock due to planned logging activities in 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 forest class icl in year t	Hectare (ha)	Calculated using remote sensing images	Each time a catastrophic event occurs
$AUFPA_{icl,t}$	Areas affected by forest fires in the initial icl forest class in which carbon stock recovery occurs in year t	Hectare (ha)	Calculated using remote sensing images	Each time a forest fire event occurs
$\Delta CUFdPA_t$	Total reduction in carbon stock due to unplanned forest fires in year t in the Project Area	Ton of carbon dioxide equivalent (tCO_2-e)	Calculated	Each time a forest fire event occurs
$\Delta CUCdPA_t$	Total reduction in carbon stock due to catastrophic events in year t in the Project Area	Ton of carbon dioxide equivalent (tCO_2-e)	Calculated	Each time a catastrophic event occurs
$\Delta CUDdPA_t$	Total current change in carbon stock due to planned deforestation not avoided in year t in the project area	Ton of carbon dioxide equivalent (tCO_2-e)	Calculated	Annual
$\Delta CPSPA_t$	Total change in stock of in the Project area in year t	Ton of carbon dioxide equivalent (tCO_2-e)	Calculated	Annual

c. Overview of data collection procedures

The monitoring of unplanned deforestation in the project area was based on the data processed by the PRODES and MapBiomas, the procedures performed for data collection and processing are described in this section.

The monitoring of planned deforestation caused by forest management activities was not performed because during the monitored period, these activities were not carried out in the Project Area.

d. Quality control and quality assurance procedures

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

methodology employed for validation is the achievement of accuracy. The minimum accuracy of land use and land cover classification map is 80%.

Regarding the MapBiomas database, each alert was validated and refined by the team responsible for the platform before becoming public. All evidence of this process is available to VVB.

e) Data archiving

Biofílica Ambipar Environment will store all data and reports from Jari Pará REDD+ Project in digital files during the entire duration of the Project. The original reports and collected field sheets produced by the asset security activity are stored by Grupo Jari. All documents related to the monitoring of the Jari Pará REDD+ Project are compiled into paper and/or digital files and made available to verifiers at each verification event.

1.1.1 Monitoring Project Implementation

When it comes to the "climate" component, the actions contemplated for monitoring the activities of the Jari Pará REDD+ Project have as main objectives to avoid deforestation and GHG emissions into the atmosphere. To this end, the activities included in the "Forest Monitoring Intelligence" theme were carried out during the monitoring period and will continue to be applied and improved throughout the project's life cycle. Thus, a detailed description of the activities is given in section 2.2.1.

The implementation of REDD+ activities were monitored through physical-financial schedules, performance and quality monitoring reports, forest cover maps, meeting reports, police reports of land invasion and other actions to control illegal deforestation, and other relevant documents, all available to VVB.

1.1.2 Monitoring of actual carbon stock changes and GHG emissions within the project area

The monitoring of planned and unplanned deforestation was developed by mapping the forest cover of the Project area, and data was made available annually by PRODES. Subsequently, the mapping was validated by assessing the accuracy using Planet satellite images. Deforestation data from the MapBiomas Alerta database were also used to complement the quantification of deforestation, especially the accounting of deforestation smaller than 6 ha and greater than 1 ha.

PRODES database

PRODES performs the annual monitoring of the Legal Amazonia since 1988. Today, it uses images of the LANDSAT 8/OLI (30m spatial resolution and 16-day revisit rate), CBERS 4 and IRS-2 satellites, a combination to minimize the cloud coverage problem and assure interoperability criteria (PRODES-INPE,

2022⁶⁵). The project counts on the collaboration of the Ministry of Environment (MMA) and the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA). The images used for PRODES monitoring made available by the providers already orthorectified, with geometric system correction by using control points and digital terrain elevation models. This corresponds to the highest level of geometrical correction and means that images are ready for use without requiring any additional processing (SOUZA et. al., 2019). The annual period of PRODES monitoring is from August 1 of the previous year to July 31 of the current one.

The methodology used by PRODES to identify deforestation polygons in the Legal Amazonia is divided into three major phases;

- 1) Image selection: The image selection occurs from August and searches for images with lower cloud coverage and data acquisition nearest to the dry season in Amazonia;
- 2) Deforestation polygon mapping: Trained specialists interpret image photos, identifying and delimiting deforested area polygons. They observe three key points in the image to assist the identification of affected areas: hue, texture and context;
- 3) Annual deforestation rate calculation: An estimation is made for the annual rate of deforestation occurred within the period monitored by PRODES (starting in August and ending in July of each calendar year).

MapBiomas database

MapBiomas Alert is a system for validating and refining deforestation alerts using high-resolution images. Brazil is covered by more than a dozen deforestation alert systems, including DETER/INPE (Amazon and Cerrado), SAD/IMAZON, GLAD/Univ. Maryland (all biomes). Together, these systems generate tens of thousands of alerts based on the analysis of medium spatial resolution satellite images (20 to 60 m). Given the medium resolution used in these systems, the alerts need to go through a detailed validation process, often followed by field checks before they can be useful for directing measures such as embargoes and notices of illegal deforestation (MAPBIOMAS, 2023)⁶⁶.

Currently, the alerts generated by the various providers are collected and used as a reference to locate the deforestation alerts in the daily high-resolution satellite images (3 m). Each alert is validated, refined and defined within a time window of occurrence. For each validated alert, a report is generated

⁶⁵ SOUZA, Arlesson et al. Metodologia utilizada nos projetos PRODES e DETER. INPE: São José dos Campos, Brazil, 2019

⁶⁶ MAPBIOMAS. Projeto MapBiomas Alerta - Sistema de Validação e Refinamento de Alertas de Desmatamento com Imagens de Alta Resolução. 2023. <<https://alerta.mapbiomas.org/>>.

identifying images from before and after deforestation, possible cross-references with areas in the Rural Environmental Registry (CAR), National Registry of Conservation Units (CNUC), Indigenous Lands and other geographical boundaries (e.g. biomes, states, municipalities, river basins) (MAPBIOMAS, 2023). The data produced is public and free and can be accessed on the MapBiomias platform.

As mentioned earlier, PRODES data covered the bigger part of the monitoring period, so MapBiomias Alerts was used as a complementary source of deforestation data from October 2022 to March 2023. During this evaluation, 82 alerts were validated by MapBiomias Alerts within the Project Area and the project's Leakage Belt. 35 alerts were identified within the PA, total 239.6 hectares, and 47 alerts LB, total 216.6 hectares. These areas were reported as part of the project's emissions for the year 2022.

The monitoring of land use and land cover changes within the Project Area was also supported by the activities carried out by the surveillance team, as indicated in section **2.2.1.2** The indicators that are directly related to this activity correspond to the indicators "Frequency of surveillance and patrol operations" and "Monitoring of forest cover via high resolution satellite images", their results were presented in section **3.1.2** **Erro! Fonte de referência não encontrada.**, and their details were presented in sections **2.2.1.2** and **2.2.1.3**

The planned deforestation for construction of roads, tracks, and storage yards within the Project Area was not monitored because this activity did not occur during the monitored period.

Data on deforestation events were compared to the baseline scenario, and the emission reduction values for the monitored period were based on comparison between predicted and actual deforestation.

1.1.3 Monitoring of carbon stock changes

In the Project Area Although the ex-ante carbon stock estimate by forest class is not expected to change during the baseline period, VCS Methodology VM0015 requires the monitoring of carbon stock in the Project Area when it is subject to a significant reduction in carbon stock under the project scenario - concerning the ex-ante assessment. This reduction may occur in areas subject to planned deforestation according to planned forest management activities or in areas subject to unplanned depletion of carbon stock, such as in cases of catastrophic events or forest fires.

The total variation in carbon stock due to unplanned and unavoided deforestation in the Project Area was calculated according to equation 1.

$$\Delta CUDdPA_t = \sum_{y=1}^t \left(\sum_{icl=1}^{icl} AUDPA_{icl,y} * \Delta Ct_{tot_{icl,t-y}} - \sum_{fcl=1}^{fcl} AUDPA_{fcl,y} * \Delta Ct_{tot_{fcl,t-y}} \right) \quad (1)$$

Where:

ΔCUDdPA_t : Total change in carbon stock due to unplanned and unavoided deforestation in the Project Area in year t :

$\text{AUDPA}_{icl,y}$: Unplanned deforestation area of initial forest class icl in year t in the Project Area within the project scenario;

$\Delta\text{Ctot}_{icl,Ac}$: Loss of carbon stock in the initial forest class icl at change age Ac (number of years after changing soil use and coverage);

$\text{AUDPA}_{fcl,y}$: Final non-forest class area fcl in year t in the Project Area after unplanned deforestation within the project scenario;

$\Delta\text{Ctot}_{fcl,Ac}$: *Gain of carbon stock in the final non-forest class icl after deforestation at change age Ac (number of years after changing soil use and coverage).*

If, within the project area, a significant reduction in carbon stock is identified due to low impact forest management activities (which during the monitored period did not occur), this reduction will be reported in subsequent verification processes, through table 29 of Methodology VM0015.

Within leakage management areas: Under the Project scenario, no areas are subject to planned carbon stock depletion within the Leakage Management Areas.

Ex-post estimation of non-CO₂ emissions due to forest fires: Emissions from biomass burning are monitored, reported in the calculation spreadsheets, and accounted for in the project's total emissions when significant. The non-CO₂ emissions considered refer to the burning of forest biomass due to fire events. In the Amazon region the occurrence of natural fires is rare, and there are predominantly occurrences of anthropic fires related to human occupation (SCHROEDER et al, 2009⁶⁷).

1.1.4 Monitoring of natural disturbances and other catastrophic events

Reductions in carbon stocks and increases in CO₂ emissions caused by fire, natural disturbances or catastrophic events were ascertained through satellite monitoring of forest cover using the same methods applied for monitoring forest cover in the Project Area.

The main activities to be developed for data collection and processing are:

- Selection of optical satellite images with less cloud coverage, taken at times close to the Amazon dry season and with adequate radiometric quality;

- Georeferencing of the satellite images with topographic charts at a scale of 1:100,000 or NASA images in MrSID in orthorectified format;

⁶⁷ SCHROEDER, W. et al. **The Spatial Distribution and Interannual Variability of Fire in Amazonia**. Amazonia and Global Change, v. 186, p. 43 60, 20 09.

- Mapping of the affected forest cover areas.

Emissions caused by fire events are estimated by multiplying the mapped area of forest loss by the CO₂ emission parameter EBBCO₂icl,t (calculated in Table 23 of the VM0015 v1.1).

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 reduction in carbon stock due to natural disturbances or catastrophic events was identified during forest cover monitoring.

1.2 Leakage monitoring

a. Technical description of the monitoring tasks

The Jari Pará REDD+ Project has two leakages source monitoring activities:

- Monitoring of the reduction in carbon stocks and/or increase in GHG emissions correlated to the leakage prevention measures if the Project proponents implement activities such as tree planting, agricultural intensification, fertilization, fodder production and/or other improvement measures in agricultural and pasture areas.

In case these activities imply a reduction in carbon stocks and/or an increase in GHG emissions in the leakage management areas, these changes in carbon stocks and/or GHG emissions will be calculated by the technical team of Biofílica Ambipar Environment.

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

- Monitoring of forest cover in the Leakage Belt using satellite images, carried out by Biofílica Ambipar Environmental Investments. Biofílica Ambipar Environment conducted monitoring of forest cover in the Leakage Belt using satellite imagery from the PRODES program and MapBiomass to account for the reduction in carbon stock and the increase in GHG emissions due to leakage displacement.

b. Data to be collected

Table 7. Data collected for leakage monitoring for Jari Pará REDD+ Project.

Data	Description	Unit	Source	Frequency
ABSLK _{fcl,t}	Area of final <i>icl</i> forest class deforested at year <i>t</i> within the Project Area in case of baseline	Hectare (ha)	Calculated	Annual

ΔCLPMLK_t	Decrease in carbon stock due to leakage prevention measures	Ton of carbon dioxide equivalent (tCO ₂ -e)	Calculated	Annual
ELPMLK_t	Total annual increase of GHG emissions due to leakage prevention measures in the year t	Ton of carbon dioxide equivalent (tCO ₂ -e)	Calculated	Annual
$\Delta\text{CabBSLLK}_t$	Total change in carbon stock in the Leakage Belt area	Ton of carbon dioxide equivalent (tCO ₂ -e)	Calculated	Annual

c. Overview of data collection procedures

Monitoring of carbon stock changes and GHG emissions associated with leakage prevention activities: No reduction in carbon stocks due to activities in the leakage management area has occurred, as no activities to improve agricultural techniques, or management of grassland areas, that may change the carbon stocks and increase GHG emissions compared to the baseline scenario were not implemented during this monitoring period.

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

In the event that leakage prevention activities are implemented at AMV, some major activities will be undertaken to collect and process data to monitor carbon stock changes:

- Leakage prevention activities will be listed;
- A map showing the areas and the type of intervention will be prepared;
- Areas, where leakage prevention activities have an impact on the carbon stock, will be identified;
- The existing non-forest classes in these areas in the baseline case will be identified;
- Carbon stocks will be measured in the identified classes or conservative literature estimates will be used;
- Change in carbon stock in the leakage management areas under the project scenario will be reported using Table 30b of VM0015;

- The changes in net carbon stock that leakage prevention measures cause during the fixed baseline period and, optionally, the project crediting period will be calculated;
- The calculation results will be reported by Table 30.c of VM0015.

Monitoring of carbon stock depletion and incremental GHG emissions due to leakage displacement: Activity data for the Leakage Belt was determined using the same methods applied for monitoring deforestation in the Project Area (item 1.1).

If during the monitoring process a larger event than expected at baseline is identified in the leakage belt (this was not the case during this monitoring period), and this deforestation is attributed to deforestation agents from the Project Area, losses in carbon stock will be accounted for and reported using tables 22c and 21d, as recommended by VCS VM0015, Section 1.2 - Leakage Monitoring.

d. Quality control and quality assurance procedures

Monitoring of carbon stock changes and GHG emissions associated with spill prevention activities: to be determined by activity, if implemented. These types of activities were not implemented in this monitoring period.

Monitoring of carbon stock depletion and incremental GHG emissions due to leakage displacement: Quality control and quality assurance procedures were conducted using the same methods used for monitoring deforestation in the Project Area (item 1.1).

e) Data archiving

Biofílica Ambipar Environment will store all data and reports from Jari Pará REDD+ Project in digital files during the entire duration of the Project. The original reports and collected field sheets produced by the asset security activity are stored by Grupo Jari. All documents related to the monitoring of the J Para REDD+ Project are compiled into paper and/or digital files and made available to verifiers at each verification event.

1.2.1 Monitoring of carbon stock changes and GHG emissions associated to leakage prevention activities

No depletion due to activities in leakage management areas occurred, as no activities to improve agricultural techniques or grazing land management that could alter carbon stocks and increase GHG emissions compared to the baseline scenario were implemented during this monitoring period.

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

The following activities may cause reductions in carbon stocks or increases in GHG emissions in leakage management areas:

- Changes in the carbon stock due to activities implemented in the leakage management areas;

- Methane (CH₄) and nitrous oxide (N₂O) emissions from livestock intensification (involving a change in animal diet and/or number of animals).

Nitrous oxide (N₂O) emissions from nitrogen fertilization are always considered insignificant, according to the latest version of the VCS standard. Consumption of fossil fuels is always considered insignificant in the AUD of the project activities and should not be considered.

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

1.2.2 Monitoring of carbon stock decrease and increases in GHG emissions due to activity displacement leakage

Activity data for the leakage belt area was determined using the same methods applied to monitoring deforestation in the Project area (Section 1.1).

In case there is a deforestation event larger than expected for the baseline scenario during the monitoring process and it is recognized in the leakage belt, and the deforestation is attributed to deforestation agents from the Project area, the carbon stock losses will be accounted and reported using Tables 22c and 21c of the approved Methodology VM0015 version 1.1, which did not occur during the monitored period in this report.

The total change in carbon stock due to unplanned and avoided deforestation in the Leakage Belt was calculated as follows:

$$\Delta\text{CBSLLK}_t = \sum_{y=1}^t \left(\sum_{icl=1}^{icl} \text{AUDLK}_{icl,y} * \Delta\text{Ctot}_{icl,t-y} - \sum_{fcl=1}^{fcl} \text{AUDLK}_{fcl,y} * \Delta\text{Ctot}_{fcl,t-y} \right) \quad (2)$$

Where:

ΔCBSLLK_t : Total change in carbon stock due to unplanned and unavoids deforestation in the Leakage Belt was calculated in year t:

$\text{AUDLK}_{icl,y}$: Unplanned deforestation area of initial forest class *icl* in year *t* in the Leakage Belt within the project scenario;

$\Delta\text{Ctot}_{icl,Ac}$: Loss of carbon stock in the initial forest class *icl* at change age *Ac* (number of years after changing soil use and coverage);

$\text{AUDLK}_{fcl,y}$: Final non-forest class area *fcl* in year *t* in the Leakage Belt after unplanned deforestation within the project scenario;

$\Delta\text{Ctot}_{fcl,Ac}$: Gain of carbon stock in the final non-forest class *icl* after deforestation at change age *Ac* (number of years after changing soil use and coverage).

1.2.3 Total ex post estimated leakage

The results were demonstrated to the verifiers using Table 35 of the approved Methodology VM0015 version 1.1.

1.3 Ex post net anthropogenic GHG emission reductions

a. Technical description of the monitoring tasks

In the verification procedures, results were represented using Table 36 of approved Methodology VM0015 version 1.1 with spatial data (deforestation maps, when available).

b. Data to be collected

Table 8. Data collected for monitoring ex-post net GHG reductions for Jari Pará REDD+ Project.

Data	Description	Unit	Source	Frequency
ΔREDD_t	Reductions in net GHG emissions attributable to Project AUD activities in year t	Ton of carbon dioxide equivalent ($\text{tCO}_2\text{-e}$)	Calculated	Annual
VCU_t	Number of Verified Carbon Units (VCU's) to be made available for trading in year t	Ton of carbon dioxide equivalent ($\text{tCO}_2\text{-e}$)	Calculated	Annual

c. Overview of data collection procedures

The calculation of the quantity of Verified Carbon Units (VCUs) that were produced by the activities of the Jari Pará REDD+ Project in the years 2018, 2019, 2020, 2021 and 2022 was done using equations 19 and 20 of the VM0015 Methodology version 1.1.

d. Quality control and quality assurance procedures

All tasks and tools listed in part 2 of the approved VM0015 Methodology were used to ensure that the data is adequate for the verification process and the number of Verified Carbon Units is reliable.

Data archiving

All data and reports related to Jari Pará REDD+ Project were stored by Biofílica Ambipar Environment in digital files throughout the Project execution term. All documents related to the monitoring of the Jari Pará REDD+ Project are compiled into paper and/or digital files and made available to verifiers at each verification event.

3.1.4 Dissemination of Monitoring Plan and Results (VCS, 3.18; CCB, CL4.2)

The results were disseminated in a virtual version where the documents related to the monitoring were made available through Verra's website and website, newsletter and social media of Biofílica. In addition, presentations on the results of the project were disseminated orally during the process of Technical Assistance and Rural Extension (ATER), and it is planned that the results will be disseminated to communities in a more didactic way, through a summary of the Monitoring Guide and in annual public consultations, where the results of the project will be discussed, promoting a participatory evaluation of

deliveries and suggestions, and points for improvement will be raised that can be increased in the planning of the following year, ensuring the engagement of communities in the decision-making process.

3.2 Quantification of GHG Emission Reductions and Removals

3.2.1 Baseline Emissions (VCS, 3.15)

The estimation of unplanned deforestation in the project area under the without-project scenario was implemented by applying the following four steps:

- Analysis of the historical land cover change between 2000 and 2014 in the reference region of the Jari Pará REDD+ Project area;
- Estimation of the annual areas of unplanned baseline deforestation in the Reference Region (RR);
- Estimation of the annual areas of unplanned baseline deforestation in the Project Area (PA);
- Analysis of the ex-post scenario that occurred during the monitored period.

The entire detailed process is described in the Jari Pará REDD+ Project Design Document and the results for the monitoring period 2018 to 2022 are presented in the tables on the next pages. For the determination of the reduced emissions, the stock estimated in the inventory, previously performed and described in the project design document, was multiplied by 3.6667 (44/12), due to 1 kg of C equals to 3.66667 kg of CO₂ (CO₂ mass = 44 and C mass = 12; 44/12 = 3.66667).

Considering that the Methodology VM0015, Version 1.1, does not require the revision of the baseline carbon stocks in most cases (in *Part 3 – Task 2 – Item 2.3 Adjustment of the carbon component of the baseline*), the proponent understand that, for this monitored period, the Jari Pará REDD+ Project does not present any of the mandatory conditions, in view of the fact that there was no significant decrease in carbon stocks due to the activities or catastrophic events indicated in the methodology. Additionally, the proponents understand that the methods applied for calculating carbon stocks in the project area are meaningful to date.

In this scenario, the average carbon values per hectare for each initial land use and land cover class considered for the baseline scenario present in the project area and leakage belt can be seen in the table below.

Table 9. Carbon stock per hectare for existing initial icl class in the Project area and leakage belt (Table 15. VM0015)

Initial forest class <i>icl</i>

Boundaries	Average carbon stock 90% CI							
	Name	Forest						
	ID _{icl}	1						
	Cab _{icl}		Cbb _{icl}		Cdw _{icl}		Ctot _{icl}	
	C stock	±90% CI	C stock	±90% CI	C stock	±90% CI	C stock	±90% CI
	tCO ₂ e/ha	tCO ₂ e/ha	tCO ₂ e/ha	tCO ₂ e/ha	tCO ₂ e/ha	tCO ₂ e/ha	tCO ₂ e/ha	tCO ₂ e/ha
Project Area	328.83		84.84				413.67	20.88
Leakage Belt	328.83		84.84				413.67	20.88

Cab_{icl} = Average equivalent carbon stock per hectare for the above ground biomass pool for the initial forest class (tCO₂-e/ha);

Cbb_{icl} = Average equivalent carbon stock per hectare for the above ground biomass pool for the initial forest class (tCO₂-e/ha);

Cdw_{icl} = Average equivalent carbon stock per hectare for the above ground biomass pool for the initial forest class (tCO₂-e/ha);

Ctot_{icl} = Average equivalent carbon stock per hectare for the above ground biomass pool for the initial forest class (tCO₂-e/ha).

For the baseline calculations, annual baseline deforestation maps created for each future year were combined with the land use and land cover map for the baseline status, prepared in step 2 of the project design document, to produce a set of maps showing, for each forest class, the polygons that would be deforested each year in the absence of the project activity. The number of hectares for each forest class that could be deforested was extracted from these maps, and the results of the baseline projections show deforestation of 7,261 hectares in the Project Area between 2018 and 2022 (Table 10) and 11,650 hectares in the Leakage Belt (Table 11).

Table 10. Annual areas deforested in each zone within the project area in the monitored period 2018-2022.

Total baseline deforestation in the Project Area	
ABSLPat annual (ha)	ABSLPat cumulative (ha)

1,306	1,306
1,399	2,705
1,394	4,099
1,547	5,646
1,615	7,261

Table 11. Annual areas deforested in each zone within the leakage belt in the monitored period 2018-2022.

Total baseline deforestation in the Leakage Belt	
ABSLKt annual (ha)	ABSLKt cumulative (ha)
2,464	2,464
2,411	4,875
2,319	7,194
2,246	9,440
2,210	11,650

To calculate the baseline carbon stock changes in the Project Area (Table 12) and Leakage Belt (Table 13) for year t, method 1 of VM0015 version 1.1 was used, according to equation 10 on page 72, shown below:

$$\Delta C_{BSLPA_t} = \sum_{p=1}^P \left(\sum_{i=1}^{Icl} ABSLPA_{i,t} * \Delta Cp_{i,t=t*} - \sum_{z=1}^Z ABSLPA_{z,t} * \Delta Cp_{z,t=t*} \right. \\ + \sum_{i=1}^{Icl} ABSLPA_{i,t-1} * \Delta Cp_{i,t=t*+1} - \sum_{z=1}^Z ABSLPA_{z,t-1} * \Delta Cp_{z,t=t*+1} \\ + \sum_{i=1}^{Icl} ABSLPA_{i,t-2} * \Delta Cp_{i,t=t*+2} - \sum_{z=1}^Z ABSLPA_{z,t-2} * \Delta Cp_{z,t=t*+2} + \dots \\ \left. + \sum_{i=1}^{Icl} ABSLPA_{i,t-19} * \Delta Cp_{i,t=t*+19} - \sum_{z=1}^Z ABSLPA_{z,t-19} * \Delta Cp_{z,t=t*+19} \right) \quad (3)$$

Where:

ΔCBSLPA_t : Total variation in baseline carbon stock within the Project Area in year t ($\text{tCO}_2\text{-e}$)

$\text{ABSLPA}_{\text{icl},t}$: Area of initial *icl* forest class deforested at year t within the Project Area in case of baseline (ha);

$\text{ABSLPA}_{\text{icl},t-1}$: Area of initial *icl* forest class deforested at year $t-1$ within the Project Area in case of baseline (ha);

$\text{ABSLPA}_{\text{icl},t=t-19}$: Area of initial *icl* forest class deforested at year $t-19$ within the Project Area in case of baseline (ha);

$\Delta\text{Cp}_{\text{icl},t=t^*}$: Average carbon stock variation factor for the initial forest class fixed carbon pool *icl* applied in the year t (according to Table 20.a) ($\text{tCO}_2\text{-e.ha}^{-1}$);

$\Delta\text{Cp}_{\text{icl},t=t^*+19}$: Average carbon stock variation factor for the initial forest class fixed carbon pool *icl* applied in the year $t=t^*+19$ (20th year after deforestation, as shown in Table 20.a) ($\text{tCO}_2\text{-e.ha}^{-1}$);

$\text{ABSLPA}_{z,t}$: Area of zone z “deforested” at year t within the Project Area in the baseline case (ha);

$\text{ABSLPA}_{z,t-1}$: Area of zone z “deforested” at year t within the Project Area in the baseline case (ha);

$\text{ABSLPA}_{z,t-19}$: Area of zone z “deforested” at year t within the Project Area in the baseline case (ha);

$\Delta\text{Cp}_{\text{icl},t=t^*}$: Average carbon stock variation factor for the z -zone fixed carbon pool applied in year $t = t^*$ (according to Table 20.b) ($\text{tCO}_2\text{-e.ha}^{-1}$);

$\Delta\text{Cp}_{z,t=t+1}$: Average carbon stock variation factor for the initial forest class fixed carbon pool *icl* applied in the year $t=t^*+1$ (2nd year after deforestation, as shown in Table 20.b) ($\text{tCO}_2\text{-e.ha}^{-1}$);

$\Delta\text{Cp}_{z,t=t^*+19}$: Average carbon stock variation factor for the z -zone fixed carbon pool applied in year $t=t^*+19$ (20th year after deforestation, as shown in Table 20.b) ($\text{tCO}_2\text{-e.ha}^{-1}$).

The total emissions in the Project Area and Leakage Belt baseline scenario are presented in the tables below.

Table 12. Total carbon stock changes of the Project Area baseline scenario (table 21.b. VM0015).

Carbon stock changes in the initial forest class <i>icl</i>		Total carbon stock change in the initial forest classes in the Project Area		Total change in post-deforestation carbon stock by zone z		Total carbon stock change in the post-deforestation zones in the Project Area		Total net carbon stock change in the Project Area	
ID _{icl} >	1	$\Delta\text{CBSLPA}_{\text{icl},t}$	$\Delta\text{CBSLPA}_{\text{icl}}$	ID _{iz} >	1	$\Delta\text{CBSLPA}_{z,t}$	ΔCBSLPA_z	ΔCBSLPA_t	ΔCBSLPA
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
2018	473,560	473,560	473,560	2018	23,390	23,390	23,390	450,170	450,170
2019	516,011	516,011	989,571	2019	31,237	31,237	54,627	484,774	934,944
2020	526,193	526,193	1,515,764	2020	39,642	39,642	94,269	486,551	1,421,495
2021	589,629	589,629	2,105,393	2021	48,017	48,017	142,286	541,611	1,963,106
2022	625,691	625,691	2,731,084	2022	57,312	57,312	199,598	568,379	2,531,485

Table 13. Total carbon stock changes in the Project Area baseline scenario of Leakage Belt (table 21.c. VM0015).

Carbon stock changes in the initial forest class i		Total carbon stock change in the initial forest classes in the Leakage Belt		Total change in post-deforestation carbon stock by zone z		Total carbon stock change in the post-deforestation zones in the Leakage Belt		Total net carbon stock change in the Leakage Belt	
ID _{icl} >	1	ΔCBSLPA _{icl,t}	ΔCBSLPA _{icl}	ID _{iz} >	1	ΔCBSLPA _{z,t}	ΔCBSLPA _z	ΔCBSLPA _t	ΔCBSLPA
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
2018	894,195	894,195	894,195	2018	44,653	44,653	44,653	849,542	849,542
2019	897,222	897,222	1,791,417	2019	59,457	59,457	104,110	837,765	1,687,307
2020	886,644	886,644	2,678,061	2020	73,943	73,943	178,053	812,701	2,500,008
2021	881,694	881,694	3,559,755	2021	87,876	87,876	265,929	793,818	3,293,826
2022	888,606	888,606	4,448,361	2022	101,370	101,370	367,299	787,236	4,081,062

3.2.2 Project Emissions (VCS, 3.15)

3.2.2.1 Emissions due to unplanned and unavoided deforestation

Total unplanned and unavoided deforestation in the Project Area during the monitored period was 2,450 hectares, according to PRODES data for the years 2018, 2019, 2020, 2021, and 2022, as presented in Table 14.

Table 14. Deforested areas observed annually in each zone within the Project Area (Table 13.b. VM0015).

Area established after deforestation per zone within the project area		Total monitored deforestation in the project area	
Idz>	1		
Name>	Zone 1	Annual	Accumulated
Project year t	ha	ha	ha
2018	578	578	578
2019	420	420	997
2020	609	609	1,606
2021	305	305	1,911
2022	539	539	2,450

3.2.2.2 Carbon stock changes (ex-post) in the Project Area

The calculation of the ex-post carbon stock change 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 during the monitoring period.

Table 15. Carbon stock change in the ex-post Project Area (Table of 21.b.2 VM0015).

Carbon stock changes in the initial forest class icl		Total carbon stock change in the initial forest classes in the Project Area		Total change in post-deforestation carbon stock by zone z		Total carbon stock change in the post-deforestation zones in the Project Area		Total net carbon stock change in the Project Area	
ID _{icl} >	1	$\Delta\text{CBSLPA}_{icl,t}$	$\Delta\text{CBSLPA}_{icl}$	ID _{iz} >	1	$\Delta\text{CBSLPA}_{z,t}$	ΔCBSLPA_z	ΔCBSLPA_t	ΔCBSLPA
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
2018	201,844	201,844	201,844	2018	4,953	4,953	4,953	196,891	196,891
2019	153,414	153,414	355,258	2019	8,424	8,424	13,378	144,990	341,880
2020	220,979	220,979	576,237	2020	10,945	10,945	24,322	210,035	551,915

2021	123,426	123,426	699,663	2021	14,606	14,606	38,928	108,821	660,736
2022	204,954	204,954	904,618	2022	16,437	16,437	55,365	188,518	849,253

3.2.2.3 Emissions due to planned logging activities

There were no emissions associated with planned logging activities in the Project Area from 2018 to 2022 because, during the monitored period, no forest management activities were conducted in the area.

Table 16. Decrease in carbon stock 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	cumulative
	APDPA _{lcl,t}	C _{totlcl,t}	ΔCPDdPA _t	ΔCPDdPA
	ha	tCO _{2e} ha ⁻¹	tCO _{2e}	tCO _{2e}
2018	0	0	0	0
2019	0	0	0	0
2020	0	0	0	0
2021	0	0	0	0
2022	0	0	0	0

Table 17. Decrease in carbon stock due to planned logging extraction activities in the Project Area (Table 25.b. VM0015).

Project Year t	Areas of planned logging activities x Carbon stock change (decrease) in the project area		Total carbon stock decrease due to planned logging activities	
	ID _{cl} =	1	Annual	Accumulated

	APLPA _{icl,t}	Ctot _{icl,t}	ΔCPLdPA _t	ΔCPLdPA
	ha	tCO ₂ e ha ⁻¹	tCO ₂ e	tCO ₂ e
2018	0	0	0	0
2019	0	0	0	0
2020	0	0	0	0
2021	0	0	0	0
2022	0	0	0	0

3.2.2.4 Emissions due to planned fuel wood collection and charcoal production activities

There were no emissions associated with planned firewood collection and charcoal production activities in the Project Area.

Table 18. Decrease in carbon stock due to planned firewood collection activities 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 areas		Total carbon stock decrease due to planned fuel-wood and charcoal activities	
	ID _{cl} =	1	Annual	Accumulated
	APFPA _{icl,t}	Ctot _{icl,t}	ΔCPFdPA _t	ΔCPFdPA
	ha	tCO ₂ e ha ⁻¹	tCO ₂ e	tCO ₂ e
2018	0	0	0	0
2019	0	0	0	0
2020	0	0	0	0
2021	0	0	0	0
2022	0	0	0	0

3.2.2.5 Total ex-post carbon stock decrease due to planned activities

The carbon stock increase due to planned activities in areas that would be deforested in the baseline has been omitted.

Table 19. Decrease in total carbon stock (ex-post) 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	Aumulated	Annual	Accumulated	Annual	Accumulated	annual	acumulative
	ΔCPDdPA_t	ΔCPDdPA	ΔCPLdPA_t	ΔCPLdPA	ΔCPFdPA_t	ΔCPFdPA	ΔCPAdPA_t	ΔCPAdPA
	tCO _{2e}	tCO _{2e}	tCO _{2e}	tCO _{2e}	tCO _{2e}	tCO _{2e}	tCO _{2e}	tCO _{2e}
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0

3.2.2.6 Emissions due to forest fires and catastrophic events

The analysis of degradation and impacts caused by fire during the monitoring period was conducted jointly, with the aim of identifying which deforested areas had deforestation associated with fires and which areas were degraded by fire but did not cease to be forest.

The analysis began with data collection on the monitoring period from official sources that track fires and fire impacts in the Amazon:

- The main source used for this period was MapBiomas Fire (Collection 2)⁶⁸, Landsat satellites with a spatial resolution of 30 meters. The available time series ranges from 1985 to Dec/2022, providing monthly and annual data on wildfires for Brazil. RNP (National Network of Environmental Information) uses artificial intelligence technologies and machine learning algorithms to analyze complex phenomena, achieving high-quality results, including fire identification.

The process of image analysis and classification of areas with fire occurrence uses annual

⁶⁸ COLEÇÕES MAPBIOMAS. **MapBiomas Brasil**, 2024. Available at: <<https://brasil.mapbiomas.org/colecoes-mapbiomas/>>.

Landsat mosaics, which are classified based on training samples containing spectral patterns of burned and unburned areas. These samples are used to train and develop RNP's prediction model, which is further refined through post-classification routines using masks and filters. Finally, an accuracy assessment is conducted to validate the results obtained.

- Deforestation data used to report non-prevented deforestation in this document comes from PRODES and MapBiomass⁶⁹.

Using the above data, the quantification followed the following steps:

1. Validation of coverage for the entire period by sampled data;
2. Overlay, using QGIS software, between PRODES deforestation polygons and the delineations identified by the data sources;
3. Identification and segregation between areas with and without overlap between the identified classes;
4. Elimination of deforestation areas without overlap with fire incidence;
5. Quantification of areas for each class (deforestation overlapped with fire and fire without overlap) (Table 20);
6. Removal of polygons smaller than 1 ha, following the definition of forest in VM0015: "1.0 hectares with tree crown cover" (VM0015 – Forest Definition page 124 – referring to Kyoto Protocol's Forest definition). The results obtained are in the table and map below. The average combustion efficiency of the carbon pool p in the forest class was considered 30% (IPCC, 2003⁷⁰)
7. The emissions from those areas were calculated considering the average loss carbon stock per hectare in the carbon pool burnt in the forest class icl from IPCC (1995)⁷¹ 57% of the carbon from above-ground and deadwood pools.

⁶⁹ Algorithm Theore cal Basis Document (ATBD). MapBiomass Brasil – Fogo. Available at:

<https://brasil.mapbiomas.org/wp-content/uploads/sites/4/2023/08/ATBD_-_MapBiomass_Fogo_-_Colecao_2.pdf>

⁷⁰ IPCC Good Practice Guidance for LULUCF (Table 3A.1.14), 2003.

IPCC reference was used to access the article: Kauffman, J., Cummings, D., Ward, D. and Babbitt, R. (1995). Fire in the Brazilian Amazon: 1. Biomass, nutrient pools, and losses in slashed primary forests. *Oecologia*, 104: p. 397-408.

Table 20. Identified areas of deforestation by fire and degradation associated with forest fires

Year	Fire degradation areas (ha)
2018	265
2019	71
2020	215
2021	74
2022	152
Total	778

As studied in the analysis above, the results of carbon stock reduction (degradation) due to fire degradation in the years monitored represented a low significance rate when compared to the baseline prediction being below 5%. In this case, according to the applied methodology VM0015 v1.1, 778 hectares and its emission associated will not be deducted as part of project emissions for this monitoring period.

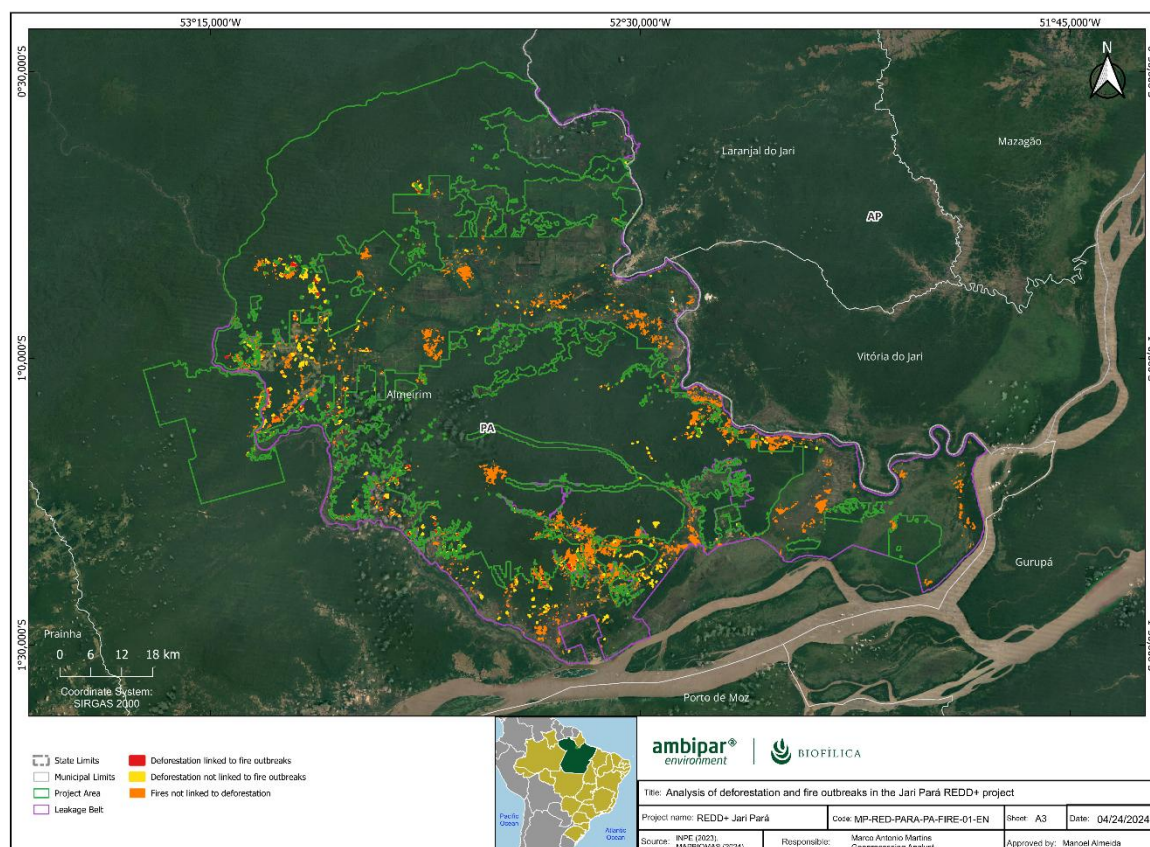


Figure 18. Overlay between fire and deforestation data during analysis in the Jari Pará REDD+ Project.

Additionally, no catastrophic events were reported; however, such data will be periodically monitored as described in the methodology.

The tables below demonstrate the data on emissions due to forest fire and catastrophic events, where in Table 21 are presented only the significant emissions which will be reported.

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 Carbon stock change (decrease) due forest fires		Total carbon stock decrease due to forest fires	
	IDcl =	1	annual	cumulative
	AUFPAicl,t	$\Delta C_{totali,t}$	$\Delta CUFdPA_t$	$\Delta CUFdFA$

	ha	tCO ₂ e ha ⁻¹	tCO ₂ e	tCO ₂ e
2018	265	56	14,928	14,928
2019	71	56	3,980	18,909
2020	215	56	12,103	31,012
2021	74	56	4,184	35,195
2022	152	56	8,551	43,747

Table 22. Ex post 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	
	IDcl =	1	annual	cumulative
	APDPAicl,t	ΔCtoticl,t	ΔCUCdPA _t	ΔCUCdPA _t
	ha	tCO ₂ e ha ⁻¹	tCO ₂ e	tCO ₂ e
2018	0	56,23	0	0
2019	0	56,23	0	0
2020	0	56,23	0	0
2021	0	56,23	0	0
2022	0	56,23	0	0

Table 23. Total significant ex post carbon stock decrease due to forest fires and catastrophic events (Table 25.g. VM0015).

Project Year t			
----------------	--	--	--

	Total carbon stock decrease due to forest fires		Total carbon stock decrease due to catastrophic events		Total carbon stock decrease due to forest fires and catastrophic events	
	annual	cumulative	annual	cumulative	annual	cumulative
	$\Delta\text{CUF}_{\text{dPat}}$	$\Delta\text{CUF}_{\text{dPat}}$	$\Delta\text{CUC}_{\text{dPat}}$	$\Delta\text{CUC}_{\text{dPat}}$	$\Delta\text{CFC}_{\text{dPat}}$	$\Delta\text{CFC}_{\text{dPat}}$
	tCO ₂ e	tCO ₂ e	tCO ₂ e	tCO ₂ e	tCO ₂ e	tCO ₂ e
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
2021	0	0	0	0	0	0
2022	0	0	0	0	0	0

3.2.2.7 Non-CO₂ emissions from forest fires

Based on the methodology for identifying degradation from forest fires, described in section 3.2.2.6 the proponent identified 778 hectares of forest degradation caused by fires in the years monitored. Non-CO₂ emissions associated with this fire forest degradation were calculated following the steps of VM0015 v1.1. Through analysis, these emissions did not demonstrate substantial significance to be accounted for ex-post as non-CO₂ emissions. The table below presents the number of emissions identified and not accounted as part of the total carbon stock decrease for this monitoring period.

Nevertheless, the PP will continue to monitor and report this class of emissions whenever significant volumes are identified.

Table 24. Ex post estimated non-CO₂ emissions from forest fires in the project area (Table 24.a. VM0015).

Project Year t	Emissions of non-CO ₂ gasses from ex-post forest fires		Total ex-post non-CO ₂ emissions from forest fires in the project area	
	IDcl =	1	annual	cumulative
	$\text{APDPA}_{\text{icl},t}$	$\Delta\text{C}_{\text{total},t}$	$\Delta\text{CPD}_{\text{dPat}}$	$\Delta\text{CPD}_{\text{dPA}}$
	ha	tCO ₂ e ha ⁻¹	tCO ₂ e	tCO ₂ e
2018	265	5.68	1,507	1,507
2019	71	5.68	402	1,909

2020	215	5.68	1,222	3,130
2021	74	5.68	422	3,552
2022	152	5.68	863	4,416

3.2.2.8 Decrease in total carbon stock (ex-post) in the Project Area

No carbon stock reductions associated with project activities have occurred in the Project Area during the monitored period.

Table 25. Total (ex-post) estimated actual net carbon stock changes and emissions of non-CO₂ in the Project Area (Table 29. VM0015)

Project Year t	Total carbon stock decrease due to planned activities		Total ex post carbon stock decrease due to unavoided unplanned deforestation		Total carbon stock decrease due to fires and catastrophic events		Total ex post carbon stock change		Total ex post estimated actual non-CO ₂ emissions from forest fires in the project area	
	annual	cumulative	annual	cumulative	annual	cumulative	annual	cumulative	annual	cumulative
	ΔCPAdPA_t	ΔCPAdPA	ΔCUDdPA_t	ΔCUDdPA	ΔCFCdPA_t	ΔCFCdPA_t	ΔCPSPA_t	ΔCPSPA	EBBPSPA_t	EBBPSPA
	tCO _{2e}	tCO _{2e}	tCO _{2e}	tCO _{2e}	tCO _{2e}	tCO _{2e}	tCO _{2e}	tCO _{2e}	tCO _{2e}	tCO _{2e}
2018	0	0	0	0	196,891	196,891	196,891	196,891	0	0
2019	0	0	0	0	144,990	341,880	144,990	341,880	0	0
2020	0	0	0	0	210,035	551,915	210,035	551,915	0	0
2021	0	0	0	0	108,821	660,736	108,821	660,736	0	0
2022	0	0	0	0	107,685	849,253	107,685	849,253	0	0

3.2.3 Leakage Emissions (VCS, 2.5, 3.2, 3.6, 3.15, 4.3)

As defined in the VCS VM0015 methodology, deforestation detected above the baseline in the Leakage Belt area was considered displacement leakage. Activity data for the Leakage Belt area were determined using the same methods applied in mapping deforestation in the Project Area.

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

During the monitored period total deforestation in the Leakage Belt was 1,804 hectares, according to PRODES data for the years 2018, 2019, 2020, 2021 and 2022, as presented in Table 26.

Table 26. Deforested areas observed annually in each zone within the Leakage Belt (Table 13.c. VM0015).

Area established after deforestation per zone within the Leakage Belt		Total monitored deforestation in the Leakage Belt	
Name>	Zone 1		
IDz>	1	Annual	Accumulated
Project Year t	ha	ha	ha
2018	257	257	257
2019	678	678	935
2020	288	288	1,223
2021	415	415	1,638
2022	383	383	2,021

Table 27. Ex-post carbon stock change in the Leakage Belt Area (Table of 21.c.2 VCS VM0015).

Carbon stock changes in the initial forest class icl		Total carbon stock change in the initial forest classes in the Leakage Belt		Total change in post-deforestation carbon stock by zone z		Total carbon stock change in the post-deforestation zones Leakage Belt		Total net carbon stock change in the Leakage Belt	
IDicl>	1	$\Delta\text{CBSLLK}_{icl,t}$	$\Delta\text{CBSLLK}_{icl}$	IDiz>	1	$\Delta\text{CBSLLK}_{z,t}$	ΔCBSLLK_z	ΔCBSLLK_t	ΔCBSLLK
Name>	Forest	annual	cumulative	Name>	Zone 1	annual	cumulative	annual	cumulative
	Project Year t	tCO ₂ -e	tCO ₂ -e		Project Year t	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e
2018	96,741	96,741	96,741	2018	7,208	7,208	7,208	89,533	89,533
2019	241,058	241,058	337,799	2019	8,750	8,750	15,957	232,308	321,841
2020	115,260	115,260	453,059	2020	12,823	12,823	28,780	102,437	424,278
2021	160,694	160,694	613,753	2021	14,554	14,554	43,334	146,141	570,419
2022	153,131	153,131	766,884	2022	17,050	17,050	60,384	136,081	706,500

3.2.3.2 Total ex post leakage

The total ex post carbon stock changes in the Leakage Belt due to displacement activities in this monitored period are presented in Table 28. Leakage was calculated by the difference between the ex-post and ex ante analyses.

In this case, as a result, the value of carbon stock changes in the monitoring period from 2018 to 2022 was less than zero (<0), so ex post leakage was set to zero in these years, as recommended by item 1.2 - Leakage Monitoring, from VCS VM0015.

Table 28. Total ex-post and ex-post baseline carbon stock changes in the Leakage Belt.

Project Year t	Total carbon stock change in the baseline case		Total carbon stock change in the project case		Net carbon stock change due to leakage prevention measures	
	$\Delta\text{CBSLLKt}$	ΔCBSLLK	$\Delta\text{CBSLLKt}$	ΔCBSLLK	$\Delta\text{CBSLLKt}$	ΔCBSLLK
	annual	cumulative	annual	cumulative	annual	cumulative
	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e
2018	849,542	849,542	89,533	89,533	0	0
2019	837,765	1,687,307	232,308	321,841	0	0
2020	812,701	2,500,008	102,437	424,278	0	0
2021	793,818	3,293,826	146,141	570,419	0	0
2022	787,236	4,081,062	136,081	706,500	0	0

3.2.4 GHG Emission Reductions and Carbon Dioxide Removals (VCS, 3.15, 4.1)

The risk factor used to calculate the VCS credit buffer (VBC) was 20%, as calculated in the Non-Permanence Risk Tool (Table 29).

Table 29. Risk Rating of the Jari Amapá REDD+ project for this monitoring.

Risk Category	Rating
a) Internal Risk	1

b) External Risk	16
c) Natural Risk	2.8
Overall Risk Rating (a + b + c)	20

State the non-permanence risk rating (%)	20
Has the non-permanence risk report been attached as either an appendix or a separate document?	☒ Yes ☐ No

The anthropic GHG emission reductions were calculated according to equations 19, 20 and 21 from VCS VM0015 version 1.1, shown below.

The calculated ex-post GHG emission reductions are presented in Table 31.

$$\Delta REDD_t = (\Delta CBSLPA_t + EBBBSLPA_t) - (\Delta CPSPA_t + EBBPSPA_t) - (\Delta CLK_t + ELK_t) \quad (4)$$

Where:

$\Delta REDD_t$: Reduction of ex post anthropic GHG emissions attributed to the AUD activity of the project in year t (tCO₂e);

$\Delta CBSLPA_t$: Sum of changes in baseline carbon stock in the Project Area in year t (tCO₂e);

$EBBBSLPA_t$: Sum of changes in baseline caused by the burning of biomass in the Project Area in year t (tCO₂e);

$\Delta CPSPA_t$: Sum of ex-post changes in carbon stock in the Project Area in year t (tCO₂e);

$EBBPSPA_t$: Sum of ex-post emissions caused by the burning of biomass in the Project Area in year t (tCO₂e);

ΔCLK_t : Sum of ex-post changes in carbon stock due to leakage in year t (tCO₂e);

ELK_t : Sum of ex-post emissions due to leakage in year t (tCO₂e);

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

$$VCU_t = \Delta REDD_t - VBC_t \quad (5)$$

$$VBC_t = (\Delta CBSLPA_t - \Delta CPSPA_t) * RF_t \quad (6)$$

Where:

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

$\Delta REDD_t$: Reduction of ex post anthropic GHG emissions attributed to the AUD activity of the project in year t (tCO₂e);

VBCt: Number of buffer credits deposited in the VCS buffer in year t (t CO₂-e);

$\Delta CBSLPA_t$: Sum of changes in baseline carbon stock in the Project Area in year t (tCO₂e);

$\Delta CPSPA_t$: Sum of ex post changes in carbon stock in the Project Area in year t (tCO₂e);

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

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

Table 30. Ex-post estimate of net anthropic GHG emission reductions (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 from biomass burning		Ex post leakage carbon stock changes		Ex post leakage GHG emissions		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	annual	cumulative
	ΔCBSLPA_t	ΔCBSLPA	ΔCPSPA_t	ΔCPSPA	EBBPSPA_t	EBBPSPA	ΔCLK_t	ΔCLK	ELK_t	ELK	ΔREDD_t	ΔREDD	VCU_t	VCU	VCB_t	VCB
	tCO ₂ -e	tCO ₂ -e	tCO ₂ e	tCO ₂ e	tCO ₂ e	tCO ₂ e	tCO ₂ e	tCO ₂ e	tCO ₂ e	tCO ₂ e	tCO ₂ e	tCO ₂ e	tCO ₂ e	tCO ₂ e	tCO ₂ e	tCO ₂ e
2018	450,170	450,170	196,891	196,891	-	-	-	-	-	-	253,279	253,279	202,623	202,623	50,656	50,656
2019	484,774	934,944	144,990	341,880	-	-	-	-	-	-	339,784	593,064	271,828	474,451	67,957	118,613
2020	486,551	1,421,495	210,035	551,915	-	-	-	-	-	-	276,516	869,580	221,213	695,664	55,303	173,916
2021	541,611	1,963,106	108,821	660,736	-	-	-	-	-	-	432,790	1,302,370	346,232	1,041,896	86,558	260,474
2022	568,379	2,531,485	188,518	849,253	-	-	-	-	-	-	379,861	1,682,232	303,889	1,345,785	75,972	336,446

Table 31. Ex-post estimate of net anthropic GHG emission reductions (ΔREDD_t) and Verified Carbon Units (VCU_t), as requested by the VCS 4.4 template.

Vintage period	Baseline emissions (tCO ₂ e)	Project emissions (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Buffer pool allocation (tCO ₂ e)	Reductions VCU _s (tCO ₂ e)	Removals VCU _s (tCO ₂ e)	Total VCU issuance (tCO ₂ e)
23-Oct-2017 to 31-Dec-2017	72,441	31,684	-	8,152	32,606	-	32,606
01-Jan-2018 to 31-Dec-2018	377,729	165,207	-	42,504	170,017	-	170,017
01-Jan-2019 to 31-Dec-2019	484,774	144,990	-	67,957	271,828	-	271,828
01-Jan-2020 to 31-Dec-2020	486,551	210,035	-	55,303	221,213	-	221,213
01-Jan-2021 to 31-Dec-2021	541,611	108,821	-	86,558	346,232	-	346,232
01-Jan-2022 to 31-Dec-2022	482,461	160,021	-	64,488	257,952	-	257,952
01-Jan-2023 to 06-Mar-2023	85,918	28,497	-	11,484	45,937		45,937
Total	2,531,485	849,253	0	336,446	1,345,785	0	1,345,785

Table 32. Declaration of estimated ex-ante GHG emissions reductions and removals and the achieved reductions and removals for this monitoring period, with percentage difference and justification.

Vintage period	Ex-ante emissions reductions/removals	Achieved emissions reductions/removals	Percent difference	Justification for the difference
23-Oct-2017 to 06-Mar-2023	1,961,662	1,682,232	14%	During the monitored period, emissions in the Project Area were higher than expected compared to the project scenario (ex-ante). As a consequence, during the monitored period, a positive percentage difference was identified for the project (14% loss of effectiveness), indicating that fewer emissions were avoided in the monitored period than expected. On the other hand, deforestation in the Project Area during the monitored period remained lower than the baseline projections. Additionally, no leakage was detected.

3.3 Optional Criterion: Climate Change Adaptation Benefits

3.3.1 Activities and/or processes implemented for Adaptation (CCB, GL1.3)

The project aims to achieve Gold Level certification for Climate Change Adaptation Benefits, based on the measures taken to significantly support communities and biodiversity to adapt to the likely impacts of climate change, which are described below.

Project activity	Climate change risks and concerns addressed	Project achievements during the monitoring period
Deforestation monitoring and surveillance	- Unstructured land use conversion - Damage caused by forest fires - Increased CO2 emissions - Loss of Biodiversity	- Inhibition of illegal activities (deforestation, hunting and illegal fishing) in the Project Zone. - Prevention of wildfire outbreaks.
Strengthening of Family Agriculture and Sustainable Extractivism	- Threat to the food sovereignty of families - Decreased income generation - Soil depletion - Loss of biodiversity	- Technical assistance and rural extension - Courses and training - Donation of supplies - Environmental regularization
Promotion of environmental education	- Environmental degradation - Forest fire - Loss of biodiversity	Lectures, workshops, training
Strengthening associativism and cooperativism in the communities	- Population migrations - Difficult access to public policies	- Encouraging the participation of young people and women - Creation of a Community Council - Construction of rules for community use - Courses and training
Construction of infrastructure for the communities	- Isolation - Energy Crisis	- Deployment of Electricity System - Donation of solar panels and lanterns - Deployment of telephony and internet
Biodiversity monitoring	- Habitat fragmentation - Population decline - Species extinction	- Flora monitoring - Fauna monitoring - Monitoring of the HCVAs

4 COMMUNITY

4.1 Net Positive Community Impacts

4.1.1 Community Impacts (CCB, CM2.1)

The main assumptions, fundamentals and methodological choice regarding the impacted communities were due to the large number of communities assisted, priority was given to highlighting the impacts of the communities located in the Project Zone (Project Area and Leakage Belt), grouped by the Glebas⁷² owned by the Grupo Jari. The list of communities by parcel can be found in Appendix 2.

The number of communities under the Project's scope is in process of expansion and, from now on, the Jari Pará REDD+ understands that there are 52 communities inside the project's interest of action. It is worth pointing out that, since the expansion takes time to engage and carry activities and action we conservatively chose to present in this section the communities with the most expressive benefits by the Glebe in the Project Zone, representing a total of 35 communities, but this does not mean that those (other 17) not described below have not been impacted by the Project's actions, mainly because there is an open channel and the opportunity to participate and partner with the project and the teams is actively involved in developing the relationships and implementing REDD+'s benefits to all 52, since many of the actions also depend on the engagement of the communities, and that the actions are also prioritized according to the demands forwarded by them.

The process of ongoing consultation with community members took place mainly through the ATER viistas, as indicated in section 2.3.10. Through this follow-up, the stakeholders had direct and permanent contact with the Fundação Jari staff, having the opportunity to discuss the planning, strategies, propose changes and adaptations, being kept abreast of the impact assessment process, as well as having the opportunity to express and indicate their considerations to the technical team.

In addition to the TARE actions, in 2021 a socio-environmental study was carried out focused on evaluating the impacts of the social projects on the communities, and a total of 129 communities in Pará and Amapá were consulted about the existence of social projects carried out by the Fundação Jari and/or Jari Celulose, in other words, subsidized by the REDD+ Project.

Also noteworthy are the 39 communities consulted in Jari Para's region (34 of which are in the Project's scope of work and 5 are external) in the 2023 Public Consultation, involving 312 people, aiming to level information and provide publicity about the Jari Pará REDD+ Project, together with rural producers, family farmers and extractivists, residents of rural communities, located in the area of coverage or surroundings, collecting their manifestations, opinions, questions and suggestions related to the interventions of the program at the community level.

The details of the results and impacts achieved by the Project's actions are better described in section 4.3. The Figure 19 shows the location of these 52 communities that are within the scope of the project's actions, highlighting 35 communities with benefits listed below.

⁷² The Glebas refer to the territorial subdivisions given the total area owned by the Jari Group.

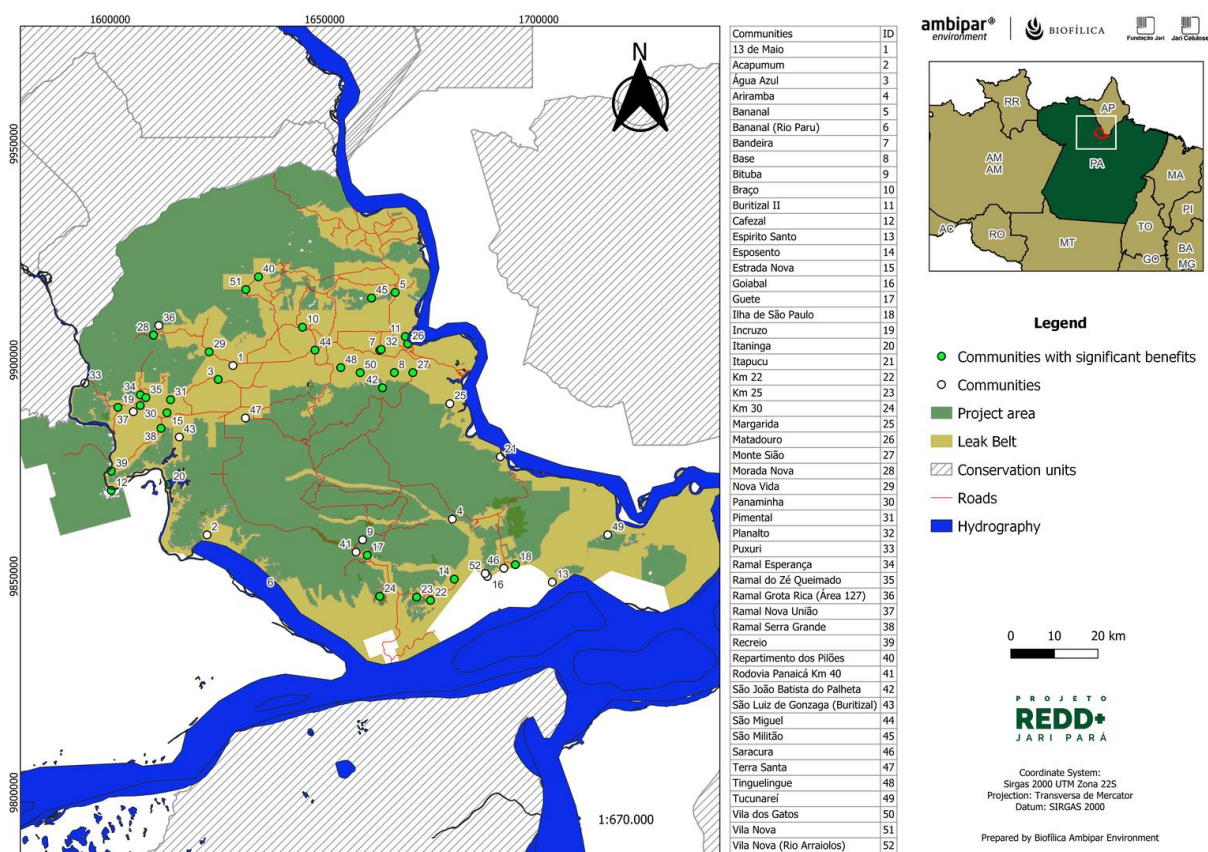


Figure 19. Map of the communities located in the state of Pará that could benefit from the Project's actions.

Community Group	Gleba Antônio Fernandes da Fonseca Teixeira (Community: Água Azul)
Impact	1. Access to technical assistance and rural extension services; 2. Qualification of community members; 3. Increased food safety and facilitation in production processes; 4. Conflict mediation.
Type of Benefit/Cost/Risk	Actual direct benefit
Change in Well-being	1. Community members had access to knowledge and technologies through the provision of technical assistance and rural extension services (TARE). The purpose was to introduce good cultivation practices and integrated management on the properties, aiming at improving quality, increasing productivity, and diversifying family production;

	2. 15 families were trained in agro-extractive techniques for native açaí plantation management, with sustainable and productive management techniques, reducing the pressure on the forest, contributing with the ecosystem services and promoting the well-being of the communities; 3. Community members received donations of seedlings and inputs, helping in agricultural production, as one of the means of guaranteeing the maintenance of the means of production and subsistence. 4. The services provided for conflict mediation are carried out according to the spontaneous demands of the community members, in the search for a conciliatory solution to disputes over tenure rights or the use of natural resources, and promote a friendlier environment among the community members, especially when an agreement is reached through mediation, directly strengthening the community.
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Community Group	Gleba Cajueiro Serra de Almeirim (Communities: Km 22, Km 25 and Esposento)
Impact	1. Access to technical assistance and rural extension services; 2. Qualification of community members; 3. Access to guidance on rural credit and financing.
Type of Benefit/Cost/Risk	Actual direct benefit
Change in Well-being	1. Community members had access to knowledge and technologies through the provision of technical assistance and rural extension services (TARE). The purpose was to introduce good cultivation practices and integrated management on the properties, aiming at improving quality, increasing productivity, and diversifying family production; 2. 26 families were trained in agro-extractive techniques for native açaí plantation management, with sustainable and productive management techniques, reducing the pressure on the forest, contributing with the ecosystem services and promoting the well-being of the communities; 3. One of the objectives of the services provided by TARE is to improve the income and quality of life of rural families by means of mechanisms for access to resources. In this context, the meetings on access to credit and financing are an important channel for clarifying doubts of the communities and providing both documentary support and guidance on how to obtain credit lines.

Community Group	Gleba Castanhal do Urucurituba (Community: Cafezal)
Impact	1. Access to technical assistance and rural extension services;

	2. Qualification of community members; 3. Specialized information for accessing public policies; 4. Action of environmental education; 5. Access to Internet; 6. Implementation of an industrial plant for processing nuts.
Type of Benefit/Cost/Risk	Actual direct benefit
Change in Well-being	1. Community members had access to knowledge and technologies through the provision of technical assistance and rural extension services (TARE). The purpose was to introduce good cultivation practices and integrated management of the properties, aiming at improving quality, increasing productivity, and diversifying family production. It is noteworthy that the cassava multiplication unit was developed in partnership with Embrapa, the technique allows to circumvent undesirable characteristics, such as the low rate of propagation and the large volumes of conventional planting materials, which make difficult the logistics of storage and transportation of manioc to new areas, besides the improvement in the production method, the process of transferring production technology for families of farmers attending the Project occurs; 2. 01 family trained in fish farming and 21 families trained in hygiene and handling of processed food, contributing to the diversification of income and adding value to the product; 3. The families had access to public purchasing workshops, providing knowledge and access to important policies for the strengthening of family agriculture, being an important space to clarify doubts of the community members; 4. The environmental education actions allow the individual and the collectivity build social values, knowledge, skills, attitudes and competencies directed to the conservation of the environment; 5. The improvement in the community's infrastructure, with the installation of an internet antenna, takes the community out of a zone of isolation, having opportunities to communicate faster, helping in cases of emergency and health, as well as allowing access to local and world news, and access to knowledge given the possibilities of internet use; 6. In the Cafezal community an agro-industry was set up to process Brazil nuts. Advisories were taken and through partnerships the purchasing of machinery and equipments, although the agro-industry is located in the Cafezal community, its benefits are extended to the associations of agro-extractivist residents of the communities of São Raimundo, pedra Branca, Recreio and Panamá in the region of Pará (Asmacaru), adding value to the product and increasing the income of the agro-extractivist families.
Community Group	Gleba Eugênio José Gentil Guedes (Community: Nova Vida)
Impact	1. Access to technical assistance and rural extension services;

	2. Support for obtaining rural credit and financing; 3. Knowledge in burn control techniques and fire management; 4. Conflict mediation; 5. Technical support for Rural Environmental Registration.
Type of Benefit/Cost/Risk	Actual direct benefit
Change in Well-being	1. Community members had access to knowledge and technologies through the provision of technical assistance and rural extension services (TARE). The purpose was to introduce good cultivation practices and integrated management of the properties, aiming at improving quality, increasing productivity, and diversifying family production; 2. One purpose of the services provided by TARE is to improve the income and the quality of life of rural families by means of mechanisms to access resources, the support in the documental part to access credit and financing is an important tool to obtain credit lines, support was given to obtain and access rural credit, by issuing a report to Banco Amazônia for 01 family; 3. As part of the environmental education actions, the community members had access to lectures on firefighting and fire control, providing guidance on accessible measures, such as the correct execution of fire breaks, with the aim of reducing the outbreaks of fires on the properties and disseminating information about the damage caused by fire to the environment; 4. The mediation services are carried out according to the spontaneous demands of the community, in the search for a conciliatory solution to disputes over tenure rights or the use of natural resources, and promote a friendlier environment among the community, especially when an agreement is reached through mediation, directly strengthening the community. 5. The assistance given for the properties' Environmental Rural Registry, besides being an integral part of the environmental regularization of the properties, gives the community an improved knowledge about the limits of their property and the management of its natural resources

Community Group	Gleba Fazenda Saracura (Communities: Bananal – Rio Parú, Buritizal, Ramal Serra Grande, Recreio, Morada Nova, Km 30, Guete, Base, Itananga e Palheta)
Impact	1. Access to technical assistance and rural extension services; 2. Qualification of community members; 3. Knowledge in burn control techniques and fire management; 4. Technical support for Rural Environmental Registration; 5. Support for obtaining rural credit and financing; 6. Communication improvement;

	7. Access to Internet.
Type of Benefit/Cost/Risk	Actual direct benefit
Change in Well-being	1. Community members had access to knowledge and technologies through the provision of technical assistance and rural extension services (TARE). The purpose was to introduce good cultivation practices and integrated management of the properties, aiming at improving quality, increasing productivity, and diversifying family production. It is noteworthy that 13 families in the Recreio community were contemplated with the implementation of 10 ha of cassava cultivation in a mechanized area. 2. Families from the communities Buritizal, Morada Nova, Km 30, and Guete had the opportunity to participate in training courses on agro-extractive techniques for native açai management. In the community Base were offered training on banana culture, with receipt of seedlings, in the community Morada Nova was offered training in poultry farming. 3. As part of the environmental education actions, community members from communities: Buritizal, Serra Grande, Recreio, Morada Nova and Km 30, had access to lectures on firefighting and fire control, guiding them to accessible measures, such as the correct execution of firebreaks, aiming to reduce the outbreaks of fires on the properties and disseminate information about the data caused by fire to the environment. 4. The advisory services provided for the properties' Environmental Rural Register, besides being an integral part of the properties' environmental regularization, gives the communities improved knowledge about the boundaries of their properties and the management of their natural resources. 5. One of the objectives of the services provided by TARE is to improve the income and quality of life of rural families through mechanisms of access to resources. The support in the documental part for access to credit and financing is an important tool for obtaining credit lines, support was provided to obtain and access rural credit, by issuing a report to Banco Amazônia for 04 families from the Km 30 community. 6. Communication conditions in the Recreio community were improved by the implementation of a radio, providing access to news and important information. In the communities Itananga and Palheta, cellular phones and an antenna for rural telephony were given to the community, removing them from an isolation zone, giving them the opportunity to communicate faster, mainly helping in cases of emergency and health. 7. The improvement in the community's infrastructure Bananal – Rio Parú,, with the provision of internet, takes the community out of a zone of isolation, having opportunities to communicate faster, helping in cases of emergency and health, as well as allowing access to local and world news.

Community Group	Gleba Joaquim Nunes de Almeida (Community: Tinguellingue)
Impact	1. Access to technical assistance and rural extension services; 2. Creation of a Community Council; 3. Technical support for Rural Environmental Registration; 4. Access to electricity.
Type of Benefit/Cost/Risk	Actual direct benefit
Change in Well-being	1. Community members had access to knowledge and technologies through the provision of technical assistance and rural extension services (TARE). The purpose was to introduce good cultivation practices and integrated management of the properties, aiming at improving quality, increasing productivity, and diversifying family production; 2. The creation of the community council allows the community to feel represented by its leaders, as a means of expressing the community's desires and needs, in an organized way for the search of resources and mobilization of actions in favor of benefits for the community, with public and private partnerships. 3. The advisory services provided for the properties' Environmental Rural Register, besides being an integral part of the properties' environmental regularization, gives the communities improved knowledge about the boundaries of their properties and the management of their natural resources. 4. The community has benefited from the extension of the electric power grid, making it possible to use and access various goods and services that depend on electric power, improving the quality of life of community members in various areas, such as: the possibility of carrying out various activities at night (study, leisure and work), improved conditions for food and agricultural production conservation, access to information via television and radio. And finally, it discourages rural exodus, considering the benefits provided to the community.

Community Group	Gleba José Porto de Oliveira (Community: Braço)
Impact	1. Access to technical assistance and rural extension services; 2. Qualification of community members; 3. Conflict mediation; 4. Specialized information for accessing public policies. 5. Technical support for Rural Environmental Registration; 6. Access to Internet; 7. Access to electricity.
Type of Benefit/Cost/Risk	Actual direct benefit

Change in Well-being	1. Community members had access to knowledge and technologies through the provision of technical assistance and rural extension services (TARE). The purpose was to introduce good cultivation practices and integrated management of the properties, aiming at improving quality, increasing productivity, and diversifying family production. Highlighting the actions of TARE in the production of vegetables, with the implantation and recovery of plastic structures with irrigation through the micro-sprinkler system for 01 family; 2. The families had the opportunity to participate in training in hydroponic cultivation techniques; 3. The mediation services are carried out according to the community's spontaneous demand, in the search for a conciliatory solution to disputes over tenure rights or the use of natural resources, and promote a friendlier environment among the community, especially when an agreement is reached through mediation, directly strengthening the community as a whole; 4. Families have had access to public purchasing workshops, providing them with knowledge and access to important policies for strengthening family farming, which is an important opportunity to clear up doubts among community members; 5. The advisory services provided for the properties' Environmental Rural Register, besides being an integral part of the properties' environmental regularization, gives the communities improved knowledge about the boundaries of their properties and the management of their natural resources. 6. The improvement in the community's infrastructure, with the provision of fiber optic internet, takes the community out of a zone of isolation, having opportunities to communicate faster, helping in cases of emergency and health, as well as allowing access to local and world news. 7. The community has benefited from the extension of the electric power grid, making it possible to use and access various goods and services that depend on electric power, improving the quality of life of community members in various areas, such as: the possibility of carrying out various activities at night (study, leisure and work), improved conditions for food and agricultural production conservation, access to information via television and radio. And finally, it discourages rural exodus, considering the benefits provided to the community.
Community Group	Gleba Panama ou Mapau (Pimental, Estrada Nova, Panaminha, Ramal do Zé Queimado, Ramal da Esperança, Incruzo)
Impact	1. Access to technical assistance and rural extension services; 2. Qualification of community members; 3. Knowledge in burn control techniques and fire management; 4. Creation of a Community Council; 5. Support for obtaining rural credit and financing.

Type of Benefit/Cost/Risk	Actual direct benefit
Change in Well-being	1. Community members had access to knowledge and technologies through the provision of technical assistance and rural extension services (TARE). The purpose was to introduce good cultivation practices and integrated management of the properties, aiming at improving quality, increasing productivity, and diversifying family production. We highlight the TARE actions in the production of vegetables, with the implementation and recovery of plastic structures with irrigation through the micro sprinkler system for 01 family in the Pimental community; 2. The families of the Pimental community had the opportunity to participate in training courses on management of native açaizal, and for the communities Estrada Nova, Panaminha, Zé Queimado and Ramal da Esperança families could participate in actions for planning for cocoa cultivation. The dissemination of sustainable and productive management techniques reduces the pressure on the forest, and contributes to the ecosystem services and promotes the well-being of the communities; 3. As part of the environmental education actions, the community members in such communities: Pimental, Estrada Nova, Panaminha, and Incruzo, had access to lectures on firefighting and fire control, guiding to measures, such as the correct execution of firebreaks, aiming to reduce the outbreaks of fires on properties and disseminate information about the data caused by fire to the environment. 4. The creation of the community council allows in the community Pimental to feel represented by its leaders, as a means of expressing the community's desires and needs, in an organized way for the search of resources and mobilization of actions in favor of benefits for the community, with public and private partnerships. 5. One of the objectives of the services provided by TARE is to improve the income and the quality of life of rural families by means of mechanisms for access to resources, the support in the documental part for access to credit and financing is an important tool for obtaining lines of credit, support was provided to obtain and access rural credit, by issuing a report to Banco Amazônia for 06 families from the Pimental community and 01 family from the Estrada Nova community.

Community Group	Gleba Papudo (Community: Vila dos Gatos)
Impact	1. Access to technical assistance and rural extension services; 2. Knowledge in burn control techniques and fire management; 3. Technical assistance for the Rural Environmental Registration; 4. Communication improvement; 5. Access to electricity.
Type of Benefit/Cost/Risk	Actual direct benefit

Change in Well-being	1. Community members had access to knowledge and technologies through the provision of technical assistance and rural extension services (TARE). The purpose was to introduce good cultivation practices and integrated management on the properties, aiming at improving quality, increasing productivity, and diversifying family production; 2. As part of the environmental education actions, community members had access to lectures on firefighting and fire control, guiding them to accessible measures, such as the correct execution of firebreaks, aiming to reduce the outbreaks of fires on properties and disseminate information about the data caused by fire to the environment; 3. The advisory services provided for the properties' Environmental Rural Register, besides being an integral part of the properties' environmental regularization, gives the communities improved knowledge about the boundaries of their properties and the management of their natural resources; 4. The communication conditions in the community were improved with the cession of cell phone and antenna for rural telephony in the community, removing them from an isolation zone, having opportunities to communicate faster, mainly helping in cases of emergency and health; 5. The community has benefited from the extension of the electric power grid, making it possible to use and access various goods and services that depend on electric power, improving the quality of life of community members in various areas, such as: the possibility of carrying out various activities at night (study, leisure and work), improved conditions for food and agricultural production conservation, access to information via television and radio. And finally, it discourages rural exodus, considering the benefits provided to the community.
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Community Group	Gleba Samahuma (Communities: Monte Sião and Matadouro)
Impact	1. Access to technical assistance and rural extension services; 2. Knowledge in burn control techniques and fire management; 3. Communication improvement.
Type of Benefit/Cost/Risk	Actual direct benefit
Change in Well-being	1. Community members had access to knowledge and technologies through the provision of technical assistance and rural extension services (TARE). The purpose was to introduce good cultivation practices and integrated management of the properties, aiming at improving quality, increasing productivity, and diversifying family production. We highlight the TARE actions in the production of vegetables, with the implementation and recovery of plastic structures with irrigation through the micro sprinkler system for 01 family in the Monte Sião community;

	2. As part of the environmental education actions, the community members of Monte Sião have had access to lectures on firefighting and fire control, providing guidance on accessible measures, such as the correct execution of fire breaks, with the aim of reducing the outbreaks of fires on the properties and disseminating information about the damage caused by fire to the environment; 3. The communication conditions in the community were improved in the Matadouro community, with the cession of a cell phone and an antenna for rural telephony in the community, removing them from an isolation zone, having opportunities to communicate faster, mainly helping in cases of emergency and health.
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Community Group	Gleba Santo Antônio da Cachoeira - 01 (Communities: São Militão, Bananal, Repartimento dos Pilões, Vila nova)
Impact	1. Access to technical assistance and rural extension services; 2. Qualification of community members; 3. Knowledge in burn control techniques and fire management; 4. Creation of a Community Council; 5. Communication improvement; 6. Access to Internet; 7. Infrastructure improvement; 8. Access to electricity.
Type of Benefit/Cost/Risk	Actual direct benefit
Change in Well-being	1. Community members had access to knowledge and technologies through the provision of technical assistance and rural extension services (TARE). The purpose was to introduce good cultivation practices and integrated management of the properties, aiming at improving quality, increasing productivity, and diversifying family production. 2. 02 families from the Bananal community were trained in pisciculture and 03 families in Repartimento dos Pilões were trained in hydroponic cultivation, providing the necessary knowledge for a possible diversification of production and income generation. 3. As part of the environmental education actions, the community members had access to lectures on firefighting and fire control, providing guidance on accessible measures, such as the correct execution of fire breaks, with the aim of reducing the outbreaks of fires on the properties and disseminating information about the damage caused by fire to the environment; 4. The creation of the community council in the São Militão community, allows the community to feel represented by its leaders, being a means of expression of the wishes and needs of the community, in an organized way for the search of resources and mobilization of actions for the benefit of the community, with public and private partnerships.

	5. The communication conditions in the Bananal community were improved with the cession of a cell phone and an antenna for rural telephony in the community, removing it from an isolation zone, having opportunities to communicate faster, mainly helping in cases of emergency and health; 6. The implementation of fiber optic internet in the Repartimento dos Pilões and Vila Nova communities brings improvements to the community's infrastructure, providing opportunities to communicate faster, helping in cases of emergency and health, as well as allowing access to local and world news, and access to knowledge given the possibilities of internet use. 7. Improvements in infrastructure also occurred in the recovery of a bridge that gives access to the Repartimento dos Pilões community, the recovery of this access facilitates the lives of communities, often being a shorter commute option for everyday actions; 8. The communities were benefited with the extension of the electric power grid, enabling the use and access of various goods and services that depend on electrical sources, improving the quality of life of the community in various areas, such as: the possibility of performing various activities at night (study, leisure, and work), improved conditions of food conservation and agricultural production, access to information via television and radio. And finally, it discourages rural exodus, considering the benefits provided to the community.
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Community Group	Gleba São Bento (Communities: Planalto, Bandeira)
Impact	1. Access to technical assistance and rural extension services; 2. Qualification of community members; 3. Specialized information for accessing public policies. 4. Knowledge in burn control techniques and fire management; 4. Access to Internet; 5. Support for issuing CAR and DAP; 6. Access to electricity; 7. Communication improvement.
Type of Benefit/Cost/Risk	Actual direct benefit
Change in Well-being	1. Community members had access to knowledge and technologies through the provision of technical assistance and rural extension services (TARE). The purpose was to introduce good cultivation practices and integrated management of the properties, aiming at improving quality, increasing productivity, and diversifying family production. 2. 10 families from the Bandeira community were trained in hydroponic cultivation, providing the required knowledge for a possible diversification of production and income generation.

	3. 3. The families of the Bandeira community had access to public purchasing workshops, providing knowledge and access to important policies for strengthening family farming. 4. As part of the environmental education actions, the community members had access to lectures on firefighting and fire control, providing guidance on accessible measures, such as the correct execution of fire breaks, with the aim of reducing the outbreaks of fires on the properties and disseminating information about the damage caused by fire to the environment; 5. The implementation of fiber optic internet in the Bandeira community provides the community with opportunities to communicate faster, helping in cases of emergency and health, as well as allowing access to local and world news, and access to knowledge given the possibilities of internet use; 6. Families from the Bandeira community were assisted in completing the Rural Environmental Registration and DAP. The CAR of the properties, besides being an integral part of the environmental regularization of the properties, gives the community an improved knowledge about the limits of their property and the management of its natural resources. The DAP is an essential document for the family farmer to access PRONAF credit lines and at least 15 other Federal Government Public Policies; the TARE actions in the scope of the support in issuing the document, is an essential mechanism for strengthening family agriculture and support in increasing the farmer's income; 7. The communication conditions in the Bandeira community were improved with the cession of a cellular phone and an antenna for rural telephony, removing it from an isolation zone, having opportunities to communicate faster, mainly helping in cases of emergency and health
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Community Group	Gleba Segredo (Community: São Miguel)
Impact	1. Access to technical assistance and rural extension services; 2. Knowledge in burn control techniques and fire management; 3. Support for obtaining rural credit and financing; 4. Advisory on issuing the CAR. 5. Access to electricity; 6. Creation of Community Council.
Type of Benefit/Cost/Risk	Actual direct benefit
Change in Well-being	1. Community members had access to knowledge and technologies through the provision of technical assistance and rural extension services (TARE). The purpose was to introduce good cultivation practices and integrated management on the properties, aiming at improving quality, increasing productivity, and diversifying family production;

	2. As part of the environmental education actions, the community members had access to lectures on firefighting and fire control, providing guidance on accessible measures, such as the correct execution of fire breaks, with the aim of reducing the outbreaks of fires on the properties and disseminating information about the damage caused by fire to the environment; 3. One of the objectives of the services provided by TARE is to improve the income and the quality of life of rural families by means of mechanisms to access resources, the support in the documental part to access credit and financing is an important tool to obtain credit lines; support was provided to obtain and access rural credit, by issuing a report to Banco Amazônia for 03 families; 4. The advisory services provided for the properties' Environmental Rural Register, besides being an integral part of the properties' environmental regularization, gives the communities improved knowledge about the boundaries of their properties and the management of their natural resources; 5. The community has benefited from the extension of the electric power grid, making it possible to use and access various goods and services that depend on electric power, improving the quality of life of community members in various areas, such as: the possibility of carrying out various activities at night (study, leisure and work), improved conditions for food and agricultural production conservation, access to information via television and radio. And finally, it discourages rural exodus, considering the benefits provided to the community; 6. The creation of the community council allows the community to feel represented by its leaders, as a means of expressing the community's desires and needs, in an organized way for the search of resources and mobilization of actions in favor of benefits for the community, with public and private partnerships.
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Community Group	Gleba Serra Grande (Community: Ilha de São Paulo)
Impact	1. Technical assistance and rural extension services provided by the Fundação Jari, focused on strengthening family farming and agro-extractivism. . 2. Advisory on issuing the DAP.
Type of Benefit/Cost/Risk	Actual direct benefit
Change in Well-being	1. The families involved in the project had access to knowledge and technologies through the provision of technical assistance and rural extension services (TARE). . 2. The DAP is a key document for the family farmer to access the PRONAF credit lines and also at least 15 other public policies of the Federal Government, the TARE actions in the scope of support in

issuing the document, is an essential mechanism for strengthening family farming and support in increasing the farmer's income.

It is worth mentioning that the impacts are not limited to the beneficiaries of the communities inserted in the Project Zone, such as the TARE actions, training and capacity building, internet, rural telephony, and the creation of community councils. And that these results are demonstrated in section 4.1.3.

4.1.2 Negative Community Impact Mitigation (VCS, 3.19; CCB, CM2.2)

As expected, the Jari Pará REDD+ Project did not provide negative impacts for the well-being of local communities, especially for those participating in the project, primarily because, as noted in section 2.4.2, no project-related activities resulted in the involuntary removal or relocation of owners of property rights from their lands or territories, nor forced them to relocate activities important to their culture or livelihood

The most relevant negative impact identified during project preparation would be the lack of interest from other stakeholders and the increase in the number of local people due to migration to the Project area, which were mitigated by the following measures:

1. The involvement of various stakeholders in the decision-making processes was ensured and encouraged, participating mainly in workshops, courses, training and diagnostics conducted by Fundação Jari. In addition to this, the existing communication channels were monitored and constantly improved during the monitoring period, as detailed in section 2.3

2. To mitigate the risks of invasion of the property and ensure that illegal activities that threaten the natural resources do not occur, the project supported and gave all necessary support to the surveillance team to conduct their field patrols by waterways and land, acting to prevent illegal activities, as described in section 3.1 of the VCS monitoring report. Besides this, as expected, the population movement due to the project activities and its related impacts did not occur, because only the communities already established and consolidated in the area were able to participate in the project activities.

For the maintenance and improvement of the Area of High Conservation Value (HCVA), land inspections were carried out in loco, and remotely by satellite images. The monitoring of the HCVA Nascente is carried out through inspections to check the structural integrity of the habitat around the spring and the analysis of the quality of the water produced there, as described in the item 5.1.4.

It is noteworthy that although the Project's actions have not had a negative impact on the communities, the Impact Evaluation of Social Projects in the communities identified a certain dissatisfaction among some community members who were part of the sample. This perception presented in the study mainly reflects a certain lack of understanding of the REDD+ Project, and it does not invalidate the points made by the community members, which will be followed up by Fundação Jari. In particular, the

frequent Public Consultation process that the proponents will start implementing as of 2023 will be essential to clarify the importance of the Project activities and its scope, as well as the use of the Monitoring Guide, a document that deals with definitions, information, responsibilities and procedures related to the REDD+ Project.

4.1.3 Net Positive Community Well-Being (VCS 3.19; CCB, CM2.3, GL1.4)

The socioeconomic conditions of the communities impacted by the execution of Jari Pará REDD+ Project are positive, 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 along the main axes: Technical Assistance and Rural Extension, Social Organization and Technical Strengthening, support in the infrastructure improvements of the communities, efficient management and transparency processes.

During the monitored period, the Project carried out a socio-economic development process for the engaged communities, focusing specifically on consolidation of local social organizations, improvement in community infrastructure, and provision of a differentiated TARE with a focus on diversification, increase and commercialization of production, related to activities with a social and environmental focus.

To this end, direct training and capacity building for producers were carried out based on participative strategies with the joint construction of knowledge and the most appropriate techniques for the communities, maximizing the results to be obtained and continuously involving the producers in the management.

The methodology applied in these actions is based on the improvement of the knowledge already mastered by the farmers, integrated with complementary information, thus giving more autonomy to the farmers. Therefore, the project has had the following positive impacts:

- I. Producers trained in better production techniques and processing of agricultural products;
- II. Access to technical assistance and rural extension services directed to the reality of each community;
- III. Creation of new spaces for participation to create opportunities for direct communication with other stakeholders;
- IV. Access to workshops and training in agroforestry and agricultural techniques, giving access to various production technologies;
- V. Increased knowledge and skills in agroforestry systems, agricultural production, and REDD+;
- VI. Environmental education on several topics, helping the processes of the individual and the collectivity to build knowledge, skills, attitudes, and competencies aimed at environmental conservation;

- VII. Facilitation in the access to public policies;
- VIII. Knowledge in burn control techniques and fire management;
- IX. Creation of Community Councils;
- X. Improvement of energy and communication systems and community infrastructure, directly benefiting 580 families.

The main positive indirect impacts achieved during this monitoring period were: Empowerment of resource management, increased self-esteem and confidence, greater access to local public policies, greater opportunities for access to credits (loans), natural resources used in a conscious way, fixation of the rural community in the countryside and consequent reduction of rural exodus and urban marginalization, mitigation of risks of extreme weather events, increased availability and safe access to food, approximation and dialogue with public agents, poverty reduction, increased consumer power and increased social welfare.

- Faced with the challenge of climate change, the project has already delivered a number of beneficial activities to help communities adapt to climate change, which are summarized below:
- Combat actions, acting at the core of the climate change issue, aiming to contain the emission of greenhouse gases;
- Technical support aiming at dynamizing and diversifying the sustainable production of agricultural systems, increasing the capacity of crops to adapt to climate changes and variations;
- Environmental education actions, helping to understand the long-term conservation challenges and the support capacity of the land and the sustainable use of natural resources;
- Strengthening communities, so that they are able to face the challenges associated with climate change, with knowledge that allows them to know their rights and engage in public policies;
- Improvement in the infrastructure of the communities and the availability of solar energy for photovoltaic generation, benefiting and increasing the security of energy supply, as an adaptation option to the predominant hydroelectric source in the electricity matrix.

These benefits can be verified in detail in section 2.1.3, sub-item *Optional Criterion: Climate Change Adaptation Benefits of the Project Description*.

Other Social Impacts Generated in the Community

Besides the activities developed aiming at the benefits expected by the Jari Pará REDD+ Project, Fundação Jari develops other activities focused on promoting human development in the communities located in the region where the Grupo Jari is operating.

During the monitored period, the proponents understood that the Fundação Jari is not limited to working with community members in the field and directly protecting the forest. Therefore, the REDD+ project activities and indicators developed in the Vale do Jari incorporated into the Foundation's organizational structure in 2022 (Figure 20). So that, besides the demonstration of results with the direct forest conservation work, the project encourages other actions with other stakeholders, mainly of a social assistance nature, which generate an indirect positive impact on the project.

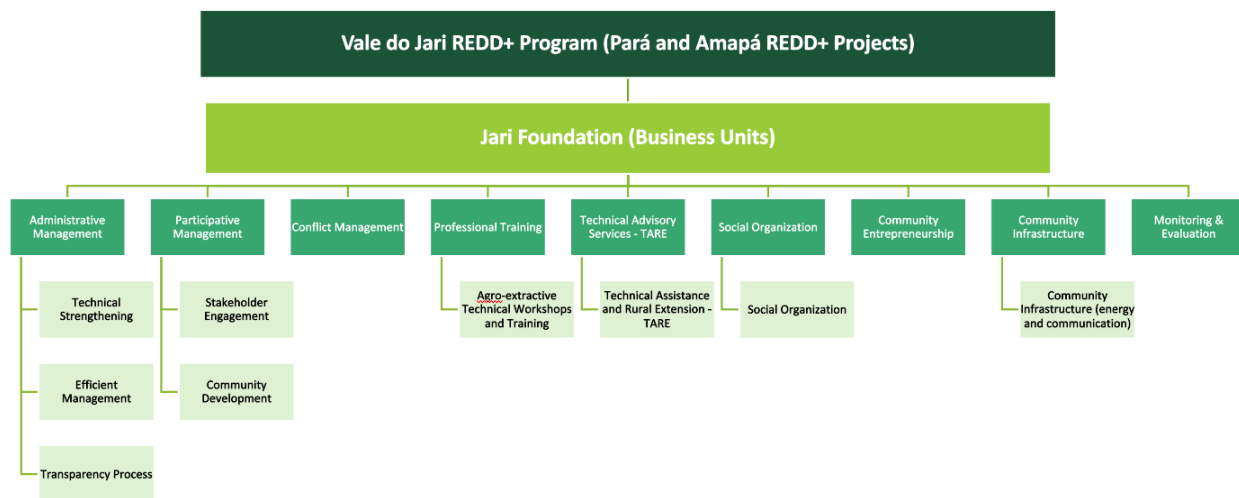


Figure 20. Structure of the proposed 202273 REDD+ Program management (encompassing Jari Pará REDD+ and Amapá REDD+ project) by the Fundação Jari, considering the inclusion of the institution's projects in the REDD+ project monitoring processes (Source: Monitoring Guide, Volume 2).

This occurs through the actions of Fundação Jari for human and sustainable development, which is promoted through Programs and Projects free of charge, prioritizing not only actions in the field of generating work and income as a strategy to fight poverty, but also acting in the base of development, encouraging and strengthening Public Policies and Social Organizations in the fields of Assurance of Rights, Health, Education, Culture, Environment, and Agriculture. The purpose is to provide access to information for people in rural and urban areas, offering guidance services for the knowledge of basic rights and available public policies, strengthening access to public services and citizenship and social welfare actions

⁷³ In the 2023 planning, this structure has been updated, with the "Component" line no longer existing and with new nomenclatures.

through advice to sector and rights councils and social education initiatives, integrated with professional training actions, productive inclusion, and Technical Assistance and Rural Extension.

Additionally, the Fundação Jari is acknowledged as a Social Assistance Entity, operating in compliance with the Organic Law on Social Assistance (LOAS), CNAS Resolution No. 27/2011 and the Recommendation of Technical Note No. 10/2018 - Advisory Services, Defense and Assurance of Rights, Technical Note No. 03/2017 - Social Assistance Activities and Services in the Rural Environment.

In order to help strengthen public policies and the community organization process at the three levels of human and sustainable development (Social, Economic and Environmental), the Fundação Jari plays a role as an agent that allows opportunities through public-private institutional articulation measures; training and development of social leaders; professional qualification and local entrepreneurship, generating jobs and income; and education and social mobilization for forest conservation. By implementing these different measures, in an integrated way, it is possible to influence changes in the behavior of families and communities, with respect to overcoming poverty and the violation of their social rights.

Therefore, the other social impacts generated to the communities can be identified through the following activities:

Projeto Estação de Direitos (Rights Station Project) proposes to contribute to the Social Assistance Policy in Vale do Jari, being part of the network of the Unified Social Assistance System - SUAS. Complying with the parameters of the National Typification of Social Assistance Services, according to Resolution CNAS No. 109/2009, working with the offer of free advisory services Defense and Assurance of Rights, in three fronts: Balcão de Direitos, Social Office and Social Control.

Balcão de Direitos (Counter of Rights) is a strategy of Fundação Jari to guide the access to public policies for the whole community, there is a mediation, guidance and referrals to the social assistance network, through the violations of fundamental human rights and especially to children, adolescents and families.

Among the activities carried out in the monitored period to meet the community needs in several aspects, there were services in the following scopes:

Health: support in scheduling medical appointments, surgeries, and the right to treatment and specialized medical services, prevention activities (lectures, conversation rounds).

Social: referrals to social assistance, guidance for obtaining documents, support in actions with the guardianship council, guidance for complaints, among others.

Labor: preparation of résumés, support in registering for professional courses, document printing.

The **Social Office** provides technical assistance to social institutions, focused on team building, planning, writing, and updating projects for obtaining financial resources, promotion edicts, and resource mobilization. Fundação Jari analyzes and prioritizes the entities that are already developing some project in the community, both in the area of Social Assistance and in the area of the Rights Assurance System.

The direct target public of the entities receiving assistance are preferentially children, teenagers, young people, women, people with disabilities, LGBTQIA+ and the elderly, and, indirectly, their families. The advisory is carried out free of charge to the entities and organizations, and the only mandatory requirement to receive the advisory is that these entities also offer free services to the community.

Regarding the role of the **Social Control**, with active participation of Fundação Jari as the Civil Society representative in the Municipal Social Assistance Councils, in the State and Municipal Councils for the Rights of Children and Adolescents, in the Forum for the Prevention and Eradication of Child Labor, in the Networks for preventing Sexual Abuse and Exploitation of Children and Adolescents, and in the UNICEF Seal's Intersectoral Commissions, through joint actions at the inter-sectorial level with the public authorities and organized civil society, strengthening the System for the Guarantee and Protection of Rights. The Figure 21 presents a summary of a scope of these activities.



Figure 21: Summary of the activities developed in the scope of community development.

In addition to the activities mentioned above, the Foundation donated basic food baskets to vulnerable communities and materials for productive activities, as well as equipment to important institutions in the communities.



Figure 22: Menino Nota 10 Project, organization advised by the Social Office.



Figure 23: Health care, drug delivery.



Figure 24: Publicizing youth leadership training activities.



Figure 25: Basic baskets for donation

4.1.4 Protection of High Conservation Values (CCB, CM2.4)

During the monitored period, no impacts were identified on the high conservation value attributes related to social issues (HCVAs 5 and 6). However, if these are identified in the future, measures must be taken to ensure that there are no net negative impacts on the attributes.

Special attention should be paid to the Castanhais. The Brazil nut deserves special care mainly because, along with other non-timber forest products, such as copaiba and andiroba, they are important as a source of income resources for local traditional communities. For this reason, any tree species that is valuable for the sustenance of the communities must be protected. The Project activities do not generate any negative impact to these areas and, in addition the Brazil nut is still protected by Brazilian federal law (Federal Decree No. 5.975 dated November 30, 2006), which would constitute an illegal activity to bring down this tree.

The Project's actions aim at mapping Brazil nut groves (“castanhais”), delimiting these areas to protect them and avoid conflicts of use. The nut groves of the community Cafezal has been fully mapped.

Currently the mapping of the perimeter of the chestnut groves has been occurring by demands in the communities, often generated in conflicts that are mediated by the Intersectoral Center for Conflict Mediation of the Fundação Jari, which acts in the search for conciliatory solutions to disputes between civilians over the right of possession or use of natural resources (land boundaries and the right to use cashew nut groves. Activities developed by the Nucleus include mediation hearings, collection of points (GPS) with UTM coordinates of the perimeter of the chestnut grove for the preparation of maps and collection of points (GPS) for the correct delimitation of the boundaries of legitimate landholdings, according to the Official State Document.

Furthermore, aiming at sustainable management, the actions of the Project guided the construction of the document of Rules for the Use of Chestnut Trees in the scope of the Community Councils (Pimental, São Miguel, São Militão e Tingue Lingue), which is a formal instrument, elaborated in a participatory manner in the community among the families, where coexistence rules are established that aim at respect in the collective use of natural resources by the community. The sustainable management of these areas is essential to guarantee the continuity of their production.

4.2 Other Stakeholder Impacts

4.2.1 Mitigation of Negative Impacts on Other Stakeholders (VCS, 3.18, 3.19; CCB, CM3.2)

Considering the implemented actions in Jari Pará REDD+ Project, negative impacts on other stakeholders were not expected, and these were not identified during the monitoring period.

However, as a measure to mitigate possible impacts, the Project presents as a strategy to involve the participation of various actors in the activities and decision-making processes. Besides this, there is the conflict resolution procedure, which has proven to be effective, and external stakeholders have several channels available, whether by phone, email or in person, to raise criticisms and/or suggestions.

4.2.2 Net Impacts on Other Stakeholders (VCS, 3.18, 3.19; CCB, CM3.3)

As described and detailed in section 4.2.1, other negative impacts on the well-being of other local stakeholder groups are not anticipated, nor did they occur in the monitored period, since the Project does not limit access to natural resources in the Project area for any agent originally dependent on these resources, and the activities to be carried out in relation to the surrounding communities are based primarily on coordination with government agencies and other local institutions precisely for the promotion of improved living conditions, greater access to public policies and rural extension and technical assistance. The activities outlined and proposed for this Project only aim at impacts that promote inclusion and well-being to the communities and other involved parties.

4.3 Community Impact Monitoring

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

Monitoring the Project's impacts on communities and other actors is an important management tool, enabling assessment of the effectiveness of activities in achieving the proposed objectives.

The Vale do Jari REDD+ Program Monitoring Guide was developed, which will be the main tool for improving monitoring techniques and aims to describe, institutionalize and guide the control and registration among stakeholders on how the monitoring of REDD+ projects established in Vale do Jari, taking into account the required adaptations to the reality, as well as the establishment of attributions and responsibilities in a more precise and transparent way for each stakeholder in this process, and details how the method for gathering evidence for each indicator should be. During the monitoring period, the monitoring evidence was recorded by the Fundação Jari's technicians.

The activities carried out by Jari Pará REDD+ Project, as well as the monitoring, aim to access the effectiveness of interventions focused on the following themes: **Promotion of Rural Technical Assistance and Rural Extension, Support for Social Organization, Strengthening of the Fundação Jari, Community Infrastructure (Energy and Communication) and Efficient Management and Transparency.**

It should be clarified that in the PDD, in the Monitoring Plan for Impacts on the Community and Other Stakeholders, the collection of various data was provided for this monitoring, however, it was decided to perform the analysis and condensation of this information in the indicators that are presented in this section, which were also previously arranged in the PDD in section 3.3 Data and Parameters Monitored.

The information gathered undergoes a quality assurance process, as the documents that guide the field activities generated by the Fundação Jari technicians are organized by the Fundação itself in its physical database and subsequently forwarded to Biofílica, which fits the information into the Project according to the relevant indicator, organizing the virtual database.

The proponents understand that the data collected serves as a basic tool, to be able to respond to the indicators to which the Project committed itself, as well as demonstrate the results and impacts achieved during the monitoring period, which are presented below.

1. Monitoring of activities to **promote technical assistance and rural extension services**, monitoring the results in terms of increased diversification, agro-extractivist productivity and implementation of more sustainable techniques and technologies, as well as market access. The results of the period monitored for each activity developed are presented below:

Strengthening of Family Agriculture and Sustainable Extractivism

Several actions of the Project sought to support the strengthening of family farming and sustainable extractivism, making families remain in the field, with the application of sustainable soil management techniques, allied to the conservation of natural resources, also considering social and economic aspects, such as the culture of family farming and the independence to commercialize the products.

The Project has achieved several results in the short and medium term, among them the promotion of actions aimed at the land title regularity of the families involved, through the already mentioned conflict mediation procedure, the holding of seminars, training, and investment in basic production infrastructure and inputs, both through the donation of fertilizers and inputs to producers, aiming to assist agricultural production, as one of the means to guarantee subsistence maintenance and income generation, as well as in the contribution/maintenance of production structures, offering technical assistance aimed at the recovery of degraded areas, with actions that included from technical visits to support and dissemination of knowledge in daily activities in the field, to help with the environmental regularization of the properties (completion of the Rural Environmental Registration - CAR), support in obtaining rural credit (issuance of reports), support in obtaining licenses for productive activities (Rural Environmental License - LAR) and support in issuing the Declaration of Aptitude to the National Program for Strengthening Family Agriculture - DAP, an identification document for family agriculture, essential for the family farmer to access PRONAF (National Program for Strengthening Family Agriculture) credit lines and also at least 15 other Public Policies of the Federal Government, including PNAE (National School Feeding Program), the implantation of nurseries to supply seedlings and diversify the generation of family income.,



Figure 26: Rural Technical Support: Cassava cuttings multiplication unit in the Cafezal community.

The following are the indicators and results obtained by the Project. During the monitoring period, **approximately 575 people** received technical assistance for the activities of Strengthening Family Agriculture and Sustainable Extractivism.

Data/Parameter	Number of producers benefited by REDD+ Project	
Data unit	Number of engaged people	
Data source	TARE advisory forms and attendance lists	
Description of the means of measurement and procedures to be applied	The number of people who received TARE assistance focused on family farming and sustainable extractivism activities was counted, based on TARE advisory forms and attendance lists	
Monitoring/recording frequency	Annually	
Monitored amount	Year	Number of people
	2018	289
	2019	197
	2020	23

	<table> <tr> <td>2021</td><td>153</td></tr> <tr> <td>2022</td><td>45</td></tr> </table>	2021	153	2022	45
2021	153				
2022	45				
Calculation method	Number of engaged people				
Comments	The number of people was counted by the names present in the TARE advisory forms and attendance list related to technical assistance activities focused on family farming and extractivism, such as: field assistance, donation of inputs, forest inventory, assistance for issuing CAR, DAP, rural credit, advisory meetings. It is worth mentioning that the forms are filled out by hand, so in some cases it was not possible to understand the name and/or signature, which results in a margin of error in the accounting of the data, expressed as a minus. With the implementation of the TARE application, for the next monitored period, this data will be extracted digitally, thus reducing these inconsistencies in the data.				

Additionally, courses and training were offered on various topics: poultry farming, açai farming, cacao farming, fish farming, handling, processing, among others, empowering community members with more productive and sustainable techniques, promoting the diversification of family farming production and forest management activities, including timber and non-timber products, insertion of new production techniques. In addition, lectures and meetings were offered on some topics, including obtaining rural credit and public policies, although they are not called courses and training, these activities are important tools for the empowerment of rural producers, because they are the space where all the information and guidance is presented, being the most accessible channel to answer the doubts of producers. More than offering support to the stakeholders (which is done in the scope of TARE activities), these lectures and meetings aim to disseminate knowledge and make them able to seek access to both public policies and rural credit.

Data/Parameter	Number of courses and training
Data unit	Number
Data source	Attendance list
Description of the means of measurement and procedures to be applied	The number of courses and training held aimed at strengthening family farming and sustainable extractivism, such as training, workshops, meetings, among others, was accounted for.

Monitoring/recording frequency	Annually		
Monitored amount	Year	Number of trainings	
	2018	16	
	2019	1	
	2020	0	
	2021	5	
	2022	5	
Calculation method	Counting the number of courses and training through attendance lists and registration forms		
Comments	Activities in the year 2020 were impacted due to the pandemic caused by Covid-19, by sanitary measures, crowding of people in courses and workshops was avoided.		

Data/Parameter	Number of participations		
Data unit	Number		
Data source	Minutes, attendance lists		
Description of the means of measurement and procedures to be applied	The number of participations in the offered training was counted. Some training courses were offered on more than one day; in these cases, an average number of participations was obtained considering all the days.		
Monitoring/recording frequency	Annually		
Monitored amount	Year	Number of attendances	
	2018	194	
	2019	21	
	2020	0	
	2021	84	
	2022	54	
Calculation method	Counting the number of people trained based on attendance lists. In cases of long duration courses, the		

	average participation of all days was considered to obtain the number.
Comments	

By means of the technical assistance offered 10 productive chains were implemented/encouraged, being them: cultivation of açai palm tree, poultry farming, cacao farming, Brazil nut extraction, fruit farming, horticulture, manioculture, pisciculture, forestry, and swine farming, aiming at the diversification of the family's agricultural production and activities of sustainable use of the forest, increase in the family's productivity and in the generation of income, promoting socioeconomic development ensuring food and economic security for the families.



Figure 27: Cultivation of Açai palm tree: productive chain promoted by Jari Pará REDD+ Project

Data/Parameter	Number of productive chains implemented and/or promoted by the Project
Data unit	Quantity of products
Data source	TARE advisory sheets and reports
Description of the means of measurement and procedures to be applied	The productive chains implemented through the TARE advisory sheets and TARE activity reports were accounted for
Monitoring/recording frequency	Annually

Monitored amount	Year	Number of chains
	2018	6
	2019	8
	2020	3
	2021	9
	2022	3
Calculation method	Count of chains implemented (by product)	
Comments		

According to the actions carried out during the monitoring period, it can be concluded that the Project achieved the following results and impacts:

- Short term: promoted actions aimed at the land title regularity of the families involved; held seminars and training; invested in basic production infrastructure and inputs.
- Medium-term: Provided support to regularization of associations and cooperatives, allowing them to access credit lines; formed intersectoral partnerships to support the implementation of activities and attract investments; introduced new production techniques; implemented a nursery to supply seedlings; acted in the diversification of family income generation.
- Long-term: ensured food and economic security for families, through proper management of agricultural areas, forests and other natural resources; contained the expansion of non-productive areas, maintaining forest cover and reducing human environmental impacts.

Environmental Education Program

Several activities were carried out to promote environmental education, especially fire control and fire prevention that was the most addressed theme in the campaigns, aiming to reduce the number of outbreaks of fire on rural properties, because it is a matter of concern to the community, the lectures were focused on guiding preventive actions and fire fighting, encouraging the use of techniques and management alternatives less aggressive to the environment.

There were also lectures on conscious consumption, environmental regularization, and recovery of degraded areas, some of these activities were extended to schools in the region, thus reaching a larger audience, which can be multipliers of this information, especially for the future of the region.

In total there were **30 environmental education actions**, which reached an expressive number of 486 project's beneficiaries participant in the activities, divided into: 25 lectures on fire prevention, control and prevent of forest fires; 01 lecture on conscious consumption of electricity and water; 01 lecture on Permanent Protection Areas, Conservation Units and Legal Reserve; 01 community cinema action and and 02 meetings about agriculture and environment.

It is hoped that this will increase the community's awareness of environmental issues, as well as provide them with greater knowledge of more sustainable management techniques and environmental policies, making the communities protagonists and strengthening the development of local strategic public policies.

Data/Parameter	Number of courses and training (Lectures, campaigns and workshops with the theme environmental education about environmental degradation, recovery of degraded areas, fire prevention, adaptation to environmental legislation, among others)	
Data unit	Number	
Data source	Minutes, activity reports, attendance lists	
Description of the means of measurement and procedures to be applied	The number of activities carried out with a focus on environmental education (lectures and community cinema) was counted	
Monitoring/recording frequency	Annually	
Monitored amount	Year	Number of courses
	2018	12
	2019	16
	2020	0
	2021	0
	2022	2
Calculation method	Counting the number of courses and training	
Comments		

Data/Parameter	Number of participations	
Data unit	Number	
Data source	Attendance list	
Description of the means of measurement and procedures to be applied	The number of participations in the environmental education activities was counted using the attendance lists.	
Monitoring/recording frequency	Annually	
Monitored amount	Year	Number of attendances
	2018	198
	2019	273
	2020	0
	2021	0
	2022	15
Calculation method	Counting the number of participations	
Comments	The activities in the year 2020 were impacted due to the pandemic caused by Covid-19, for sanitary measures, the agglomeration of people in courses and workshops was avoided. In 2021, the environmental education activities were also impacted due to the pandemic, since actions in schools and community cinema could not occur due to the large number of people that such actions cause, in these periods other activities were prioritized, such as training and ATER assistance aiming to support income generation and subsistence activities.	

According to the actions carried out during the monitored period, it can be concluded that the Project achieved the following results and impacts:

- Short term: held lectures and campaigns with the theme environmental education about environmental degradation, recovery of degraded areas, fire prevention, adaptation to environmental legislation, among others;
- Medium-term: carried out a survey of community demands; reduced the use of techniques that are aggressive to the environment;

- Long term: helped raise environmental awareness and knowledge of environmental laws, making communities protagonists and strengthening the development of strategic local public policies.

2. Monitoring of the **Social Organization** support activities, carried out with the objective of creating and strengthening local organizations, so that they have better capacities to seek access to public policies and programs, mainly by actions focused on basic structural issues, such as health, education, and improved access to communities, through the activities developed in the monitored period (courses, training, and articulations). The results of the monitored period are presented below:

Strengthening of associations and cooperatives in the communities

All actions aimed at promoting the strengthening of associativism and cooperativism in the communities were accounted for, from meetings to courses on the subject, especially the activities carried out within the scope of already consolidated associations, seeking to further strengthen this organizational structure.

Data/Parameter	Number of courses and training	
Data unit	Number	
Data source	Minutes, activity reports, attendance lists	
Description of the means of measurement and procedures to be applied	The courses and activities that were linked to associativism and cooperativism were counted, among them: courses held within the scope of the associations, workshops with community members, and meetings with leaders and associations.	
Monitoring/recording frequency	Annually	
Monitored amount	Year	Number of activities
	2018	4
	2019	0
	2020	0
	2021	30
	2022	5
Calculation method	Counting the number of courses and training held	

Comments	In 2019 the activities were impacted due to financial problems faced in the period by the Jari Group, and also the prioritization of activities according to the dynamics of the projects. The activities in 2020 were impacted due to the pandemic caused by Covid-19, for sanitary measures, the agglomeration of people in courses and workshops was avoided.
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Data/Parameter	Number of attendances	
Data unit	Number	
Data source	Minutes, activity reports, attendance lists	
Description of the means of measurement and procedures to be applied	Participation in activities related to associations and cooperatives were recorded, including courses held within the associations, workshops with community members, and meetings with leaders and associations.	
Monitoring/recording frequency	Annually	
Monitored amount	Year	Number of trainings
	2018	87
	2019	0
	2020	0
	2021	497
	2022	43
Calculation method	Counting the number of attendances	
Comments	Participation in activities related to associations and cooperatives were recorded, including courses held within the associations, workshops with community members, and meetings with leaders and associations.	

The participation of women is always encouraged in the Project's activities, especially to occupy leadership positions. So far, the minutes of assemblies and constitution are the only instruments available to measure the number of women involved in the associations/ cooperatives benefited, which justifies that in the years when the information is unavailable, it reflects the absence of this record and not necessarily

the lack of actions in this scope. The justification for the methodology to account for this indicator is also expressed in detail in the section 2.2.4.

Data/Parameter	Number of women involved in the associations/cooperatives benefited by REDD+ Project	
Data unit	Number	
Data source	Minutes of associations/ cooperatives	
Description of the means of measurement and procedures to be applied	The survey was done by counting the minutes that indicated women in the positions of the associations/cooperatives	
Monitoring/recording frequency	Annually	
Monitored amount	Year	Number of women
	2018	0
	2019	0
	2020	0
	2021	31
	2022	0
Calculation method	Number of women in positions in the associations/cooperatives	
Comments		

According to the actions carried out during the monitoring period, it can be concluded that the Project achieved the following results and impacts:

- Short term: held seminars and informative courses on the subject of Associativism / Cooperativism; trained leaders with the residents of the communities, through community councils; raised awareness about the importance of the role of social organizations in the development of communities; identified the main demands of the communities.
- Medium-term: generated a better understanding from community members about the basic aspirations and needs of their community; allowed a better understanding of the communities' potential; promoted a greater involvement of all community representatives in discussions and decision making processes.

- Long-term: promoted greater social empowerment in the communities; increased self-esteem and confidence of producers/community members, improving human capital; promoted socio-economic development and social inclusion in the project zone.

Structuring of the Cooperative Nuclei of the Communities

A total of **10 associations/cooperatives were benefited in the monitored period**, 06 of which received advisory services: COOPMAR - Cooperative of Timber Extraction Producers of Almeirim and Region; COOPNHARIN - Cooperative of Labor and Natural Artifacts of the Chestnut River; CYPOS; Açaí Extraction Producers; Grupo SEARA and Versatile Needles [Aguilhas Versáteis]. And 04 associations received support for regularization: APROSAN - Association of Agro-extractive Producers and Artisanal Fishermen of the Santa Luzia do Taiassuy community; APRAFA - Association of Rural Producers and Family Farmers; ATEAEP - Association of Extractive Workers of Pará and Amapá, and COPABAM - Cooperative of Agro-extractive Producers of the Lower Amazon.

Data/Parameter	Number of associations/cooperatives benefited by REDD+ Project	
Data unit	Number of associations/ cooperatives	
Data source	Activity report	
Description of the means of measurement and procedures to be applied	The survey was done by accounting for the activity reports	
Monitoring/recording frequency	Annually	
Monitored amount	Year	Number of associations
	2018	2
	2019	3
	2020	3
	2021	10
	2022	3
Calculation method	Counting the number of benefited associations/cooperatives	
Comments		

According to the actions carried out during the monitored period, it can be concluded that the Project achieved the following results and impacts:

- Short term: formalization of community groups with the cooperatives.
- Medium-term: gave opportunity to community members to participate in cooperative projects; encouraged the participation of women and young people in community associations/cooperatives; enabled the exchange of experiences between communities through cooperatives; offered courses and training taught and/or financed by the REDD+ Project and/or by cooperatives;
- Long-term: strengthened the cooperative nuclei; implemented better productive practices; increased self-esteem and confidence of producers/community members, improving human capital; promoted socio-economic development and social inclusion in the project area.

3. Monitoring of the **Fundação Jari Strengthening activities**, focused on implementing new ideas, procedures and technologies in order to recycle the staff's knowledge about ATER, as well as improve institutional skills for carrying out activities focused on developing businesses with social impact, since in Vale do Jari the Fundação Jari is certified as the main agent for ATER.

The actions to strengthen the Fundação Jari are one of the most fundamental investments of the project, as this is the only way to ensure the permanence of all the potential benefits of climate, community and biodiversity. During the monitored period, the goal was to increase the effectiveness of the impact business development actions together with the communities. The results of the monitored period are presented below:

Strengthening the ATER team

Training the ATER team allowed the Fundação Jari to provide high quality assistance and meet local demands. It is worth stressing that, in addition to the training provided by its technicians, the Fundação Jari also hired qualified consultants during this period to provide support for specific demands, as already reported in section 2.3.15.

Data/Parameter	Training focused on the qualification of the team to meet the demands of the communities
Data unit	Number
Data source	Activity Reports, Attendance Lists, Certificates

Description of the means of measurement and procedures to be applied	The number of courses and trainings carried out with the objective of strengthening the ATER team was counted	
Monitoring/recording frequency	Annually	
Monitored amount	Year	Number of trainings
	2018	2
	2019	2
	2020	1
	2021	4
	2022	4
Calculation method	Counting the number of trainings	
Comments		

Data/Parameter	Number of participations	
Data unit	Number	
Data source	Activity Reports, Attendance Lists, Certificates	
Description of the means of measurement and procedures to be applied	The number of participations in the training offered was counted	
Monitoring/recording frequency	Annually	
Monitored amount	Year	Number of attendances
	2018	25
	2019	28
	2020	1
	2021	08
	2022	93
Calculation method	Counting the number of trainings	
Comments		

According to the actions carried out during the monitoring period, it can be concluded that the Project achieved the following results and impacts:

- Short-term: offered and supported training courses aimed at qualifying the team to meet the demands of the communities, raised funds to invest in improvements in the Project's activities; carried out the acquisition of equipment for the team;
- Medium-term: Formed a qualified team to act in the economic and social development demands of the communities; strengthened the technical team (by means of qualification and hiring consultants for specific demands); improved the communication tools and the communication process between the Foundation, the other stakeholders involved in the project, and society.
- Long-term: improved the impacts generated in the socio-economic development and environmental conservation sphere; ensured the permanence of the Foundation's actions in the territory; reduced emissions from deforestation and forest degradation; provided sustainability to the project's interventions.

Strengthening institutional partnerships and seeking new ones

According to the Fundação Jari's financial statements, during the monitored period, 5% of all funding raised by the Fundação Jari came from other sources for investment in the Project region. Additionally, during the monitored period, as planned by VVB, the Fundação Jari received direct investments from the sales of carbon credits generated by the project.

As mentioned in section 2.4.3, the Foundation has a range of partnerships and alliances that sign agreements with different institutions at different levels each year, gradually reducing the Fundação Jari's dependence on its sponsor Jari Celulose. The details of the source of these amounts were made available to VVB.

Data/Parameter	Total funds raised from other sources for investment in the project region
Data unit	%/year
Data source	Financial Statements
Description of the means of measurement and procedures to be applied	The survey was made by accounting for the values in the financial statements

Monitoring/recording frequency	Annually	
Monitored amount	Year	Financial Resource (R\$)
	2018	10%
	2019	5%
	2020	2%
	2021	0,001%
	2022	8%
Calculation method	Counting the resource raised per year	
Comments		

Data/Parameter	Growth of annual resources available for Fundação Jari activities
Data unit	%/year
Data source	Financial statements of the Fundação Jari, quarterly reports prepared by Biofílica, and financial flow of transfers prepared by Biofílica
Description of the means of measurement and procedures to be applied	The survey was conducted by accounting for funds allocated, proportionally, to the Jari Group (Biofílica transfers through credit sales) and funds allocated to the Fundação Jari from Jari Celulose
Monitoring/recording frequency	Annually

Monitored amount	Year	Resource (%)	Observation
	2018	0%	Sales not started
	2019	0%	Sales started, but transfer not yet realized (see comment)
	2020	63%	Started repasses
	2021	103%	Sales completed at the end of the year. The pass-through from the sale of credits was greater than the pass-through to the Fundação Jari.
	2022	5%	Passing on the remaining amount in cash from 2021 sales
Calculation method	The historical transfers made by Jari Celulose to the Fundação Jari from 2018 to 2022 were surveyed. Based on this, the percentage contribution was calculated based on the revenue obtained from the sale of carbon credits, starting in 2020 and ending in the first quarter of 2022.		
Comments	The payment for the carbon credit sales is not cash, i.e., the balance is available as the customer makes the payment, so even though the sales started at the end of 2019, the onlending only began in 2020, likewise, even though the sales of the project ended at the end of 2021, in early 2022 there was a small onlending to Grupo Jari, of remaining cash.		

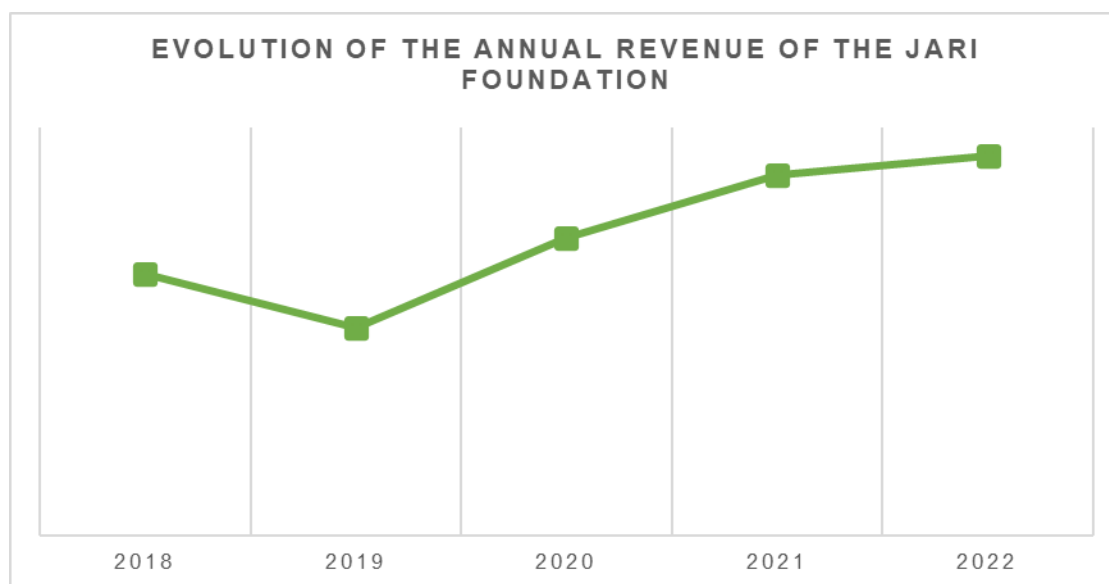


Figure 28. Illustration of the annual evolution of the Fundação Jari revenues, based on data from the financial statements (made available to VVB)

In addition to the consolidated partnerships established throughout the life span of the Project, the Fundação Jari seeks new partners to provide new activities, as well as increase the reach of its actions. In the monitored period **04 terms of cooperation were signed**.

In 2018, an Agreement Term was signed with the Association of Families of the Pacuí Region Family Agricultural School - AFEFARP, in order to provide an internship field for students of the educational institution at the Fundação Jari, providing the intern with professional development. It should be noted that in 2022, under a joint-action agreement with AFEFARP, the Pacuí Family School Project started to be developed, which provides agricultural technical education to young people in the region, as mentioned in section 2.2.13.

In 2020, the Cooperation Agreement between the Foundation and the National Service for Industrial Learning of the State of Amapá (SENAI/AP) was added, the cooperation was initiated in 2015, and extended to 2025. SENAI is an institution with vast experience in implementing and managing Apprenticeship Programs, and the partnership is designed to offer the towns in Vale do Jari Professional Qualification courses in the modalities of Initial and Continuing Education (FIC), Industrial Apprenticeships, and Technical Qualification, both on-site and distance learning. In this partnership, the Fundação Jari provides educational support and provides SENAI in Vale do Jari with the physical infrastructure needed to conduct professional training activities.

In 2022, an important partnership was signed for monitoring biodiversity through scientific and technical cooperation between the Fundação Jari and IFAP, underpinned by teaching, research and outreach activities focused on monitoring social biodiversity in the Vale do Jari region.

Data/Parameter	Strengthening institutional partnerships and seeking new ones	
Data unit	Number of partnerships signed	
Data source	Terms of cooperation/partnership	
Description of the means of measurement and procedures to be applied	The survey was done by counting the number of partnerships signed	
Monitoring/recording frequency	Annually	
Monitored amount	Year	Number of associations
	2018	1
	2019	0
	2020	1
	2021	0
	2022	2
Calculation method	Counting the number of cooperation/partnership agreements signed	
Comments		

Besides the partnerships mentioned above, it is important to emphasize that the Project relies on several other stakeholders, as indicated in section 2.3. 3, who make major contributions in the socio-environmental area, also counting on the support of government entities, such as the municipal governments of Almeirim (Pará), Vitória do Jari (Amapá) and the Amapá State Government, although these agencies are not located in the State of Pará, this exchange occurs both due to the partnership consolidated in the REDD+ Projects in the two states, as well as the geographical location of the Jari property, which is on the border between them. It should also be noted that the Monitoring Guide described in section 2.2.2 will be an important tool for driving the engagement of the players involved.

According to the actions carried out during the monitoring period, it can be concluded that the Project achieved the following results and impacts:

- Short term: elaborated institutional strategies to reach new partnerships; implemented an institutional strategy focused on adapting a business model with social impact.
- Medium-term: formed new partnerships to implement social impact actions in the Project Zone; strengthened the foundation's technical team (qualification and hiring of new professionals).
- Long-term: ensured the great permanence of the Foundation's actions in the territory; increased recognition and prominence in the spheres of action; achieved financial autonomy for the Foundation's actions; reduced emissions from deforestation and forest degradation; provided subsidies for the long-term continuity of socio-environmental impact interventions.

4. Monitoring of activities to improve **community infrastructure (energy and communication)**, focusing on the supply of energy and communication for the communities, monitoring the results of the efforts of articulation with the government for access to the program Light for All and the results of the installation of telephone and internet access points in the communities. The results of the monitored period are presented below:

Installation of electricity in the communities

Since 2017, the Foundation has been actively contributing to the inclusion of the rural communities of the Almeirim municipality in the public policy for providing access to rural energy, carrying out activities of mapping the communities and improving the branches and roads for the electric power companies to implement the "Light for All" program, carrying out the extension of the electric grid.

During the monitoring period, **09 communities** were benefited with the implementation of the electric power system: Braço, Bandeira, Vila Nova, Repartimento, Vila dos Gatos, Ting Lingue, São Miguel, São Militão, and Bananal (MTD), resulting in improved living conditions for **472 families**.



Figure 29. Electricity in the community.

Data/Parameter	Number of producers benefited by REDD+ Project	
Data unit	Number of engaged families	
Data source	Activity report	
Description of the means of measurement and procedures to be applied	The number of communities that have benefited from the installation of electric energy was counted through the activity reports of Fundação Jari, and the number of families was counted according to the latest socio-environmental study survey (started in 2019 and completed in 2022).	
Monitoring/recording frequency	Annually	
Monitored amount	Year	Number of Communities
	2018	0
	2019	84
	2020	388
	2021	0
	2022	0
Calculation method	Counting the number of benefited families	
Comments		

According to the actions carried out during the monitored period, it can be concluded that the Project achieved the following results and impacts:

- Short term: defined alternative power generation for families; mapped the extension of the power grid in the communities.
- Medium term: articulated with public organs the viability of projects of energy supply to the communities.
- Long-term: improved community infrastructure; improved quality of life for residents; improved capacity to access technologies and markets.

Construction of communication infrastructure for the communities

A rural telephone system via cell phone was implanted in the communities: Itaninga, (2019), and Buritizal I, Vila dos Gatos, Palheta, Matadouro, Bananal (MTD), and Bandeira (2021). And Internet in the communities: Cafezal, Bananal (Rio Parú) (2020), Braço and Bandeira (2021), Vila Nova and Repartimento (2022).

In total, **12 communities** have had improvements in their infrastructure, benefiting **399 families**.



Figure 30. Rural communication tower (internet) installed in the Bananal community - Rio Parú.

Data/Parameter	Number of producers benefited by REDD+ Project	
Data unit	Number of engaged families	
Data source	Activity reports and terms of equipment assignment and use	
Description of the means of measurement and procedures to be applied	The number of communities that benefited from improved communication was counted through the activity reports of Fundação Jari and terms of equipment assignment. The number of families was counted according to the latest socio-environmental study survey (started in 2019 and completed in 2022)	
Monitoring/recording frequency	Annually	
Monitored amount	Year	Quantity of Communities
	2018	0
	2019	14
	2020	40
	2021	285
	2022	60
Calculation method	Counting the number of benefited families	
Comments		

All the actions carried out to improve the infrastructure of the communities allowed the project to achieve the following results:

- Short term: mapped communication infrastructures in the communities; developed projects for the installation of communication antennas and community telephone stations.
- Medium-term: articulated with public agencies to enable projects of access to communication in the communities; installed public telephone systems and rural Internet and telephone antennas in the communities.
- Long term: improved community infrastructure; improved the communication process between communities and other actors involved in the project; improved the quality of life

of the residents; improved the ability to access technologies and markets; provided greater access to information and autonomy to access knowledge, improving human capital.

5. Monitoring of **Efficient Management Activities and transparency**, focused on formalizing an agreement to define financial management guidelines, communication procedures, and stakeholder involvement. The results of the monitored period are presented below:

Creation of the Socio-environmental Financial Management Agreement REDD+ Jari

In 2018, the partnership contract between Biofílica and Grupo Jari was amended to formalize the agreement between the parties that defined the financial management guidelines for the REDD+ project, as well as the communication and stakeholder engagement procedures.

Efficient and transparent management is fundamental to ensure the quality, consistency and sustainability of the investments made by the project, as well as its maintenance over the long term. This financial management model declares the Fundação Jari as the central actor and protagonist of the project, responsible for managing resources, building up annual investment plans and ensuring transparent communication with all stakeholders (Figure 7 of the PDD). This management process is monitored and supported by the other project proponents. Thus, the Fundação Jari's activities are currently completely financed by the REDD+ Project, i.e. there are no activities carried out that are not related to it.

In addition to this, as indicated in section 4.1.3, the activities and indicators of the REDD+ projects that take place in Vale do Jari, were incorporated into the organizational structure of the Foundation in 2022, this was a direct reflection of this empowerment and autonomy that the institution has been creating over the years.

In the Monitoring Guide, volume 2 "Stakeholders and their activities", the Fundação Jari is highlighted as being responsible for the local monitoring of the activities carried out by other stakeholders, which are understood mainly as the other sectors of the Jari Group that are involved in the project: Property and Land Security, Geoprocessing, Forestry Operations, Quality and Environment, and Forestry Research. Their joint work with these sectors goes beyond providing technical support in field actions, and also includes financial investments to ensure that the planned and priority project activities are carried out. The current management flowchart of these parties is presented below.

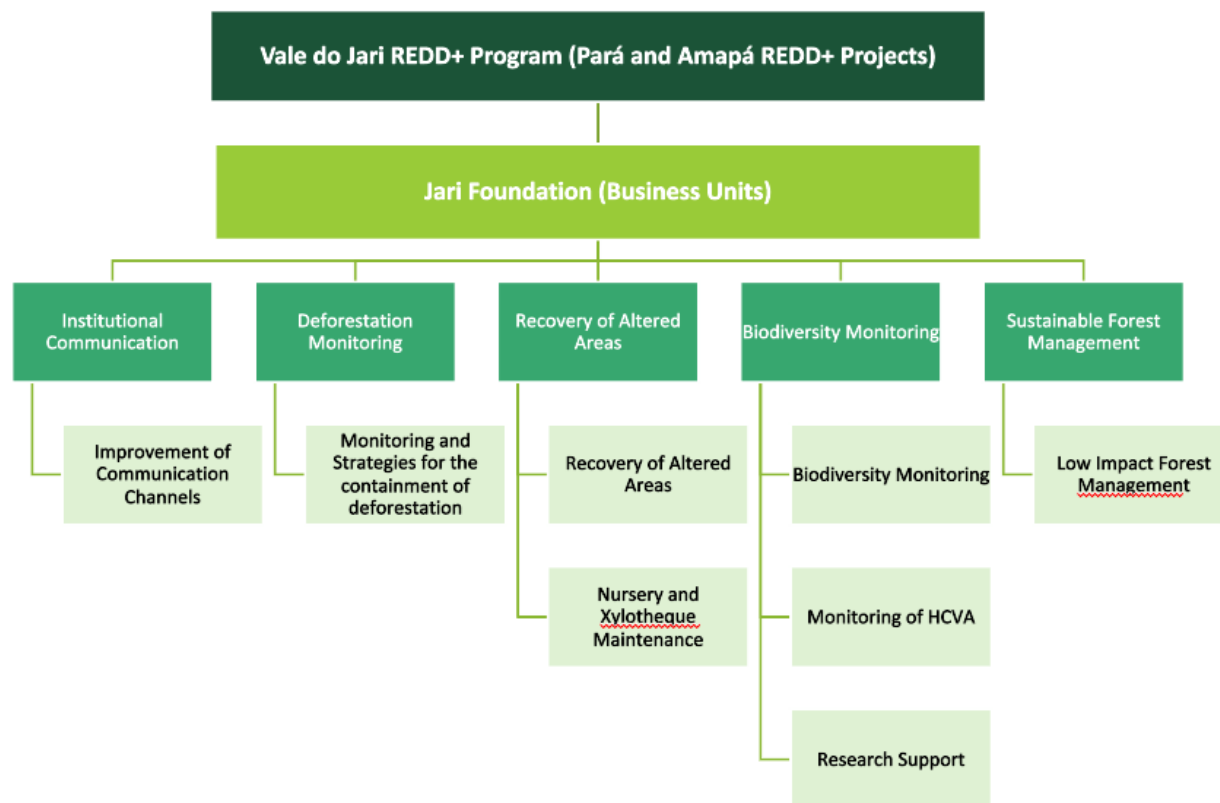


Figure 31. Management structure of the REDD+ Program proposed in 2022 (encompassing the Jari Pará REDD+ and Amapá REDD+ project) by the Fundação Jari, considering the monitoring of other sectors of the Jari Group (Source: Vale do Jari REDD+ Program Monitoring Guide - Volume 2).

Although the activity has been implemented in its entirety, as expected by the PDD, the proponents understand that this is an action that deserves continuous improvement throughout the life cycle of the project and this will be totally dependent on the engagement and joint work of all parties involved in the project.

Moreover, in this first phase, not all the expected impacts were reached in the medium and long term, so in the following years of the project, the goal is to improve more and more what is being done to achieve what was planned. According to the actions carried out during the monitored period, it can be concluded that the project has achieved the following results and impacts:

- Short-term: a transparent financial mechanism was created that allows direct investments in social and environmental activities; the Fundação Jari was appointed as responsible for managing the funds generated by the Projects.

- Medium-term: ensured transparent management of the revenue generated by the sale of credits from REDD + Jari projects; promoted better engagement of project stakeholders; promoted better tools for monitoring social and environmental investments.
- Long-term: promoted the beginning of an adequate framework for long-term financial management of the project; reduced emissions from deforestation and forest degradation in the project zone; brought positive impacts to most communities in the Project Zone throughout project implementation.

4.3.2 Monitoring Plan Dissemination (CCB, CM4.3)

As described in section 3.1.4, the Jari Pará REDD+ Project implemented three methods of communication, aiming to guarantee access to the documents and all the other information about the Project to the communities and other actors through voice, written and virtual means. The Monitoring Guide stands out as one of the tools for dissemination, presenting activities, indicators, and practices for monitoring activities.

The results were disseminated in a virtual version where the documents related to monitoring were provided through Verra's website and website, newsletter, and Biofílica's social media, and orally from presentations about the project results during the Technical Assistance and Rural Extension (TARE) process, as well as, it is planned that the results will be disseminated to the communities in a more didactic way, through a summary of the Monitoring Guide and in the annual public consultations, where the results of the project will be discussed, promoting a participatory evaluation of the deliveries and suggestions, and improvement points will be raised that may be increased in the planning of the following year, ensuring the engagement of communities in the decision-making process.

4.4 Optional Criterion: Exceptional Community Benefits

Not applicable. This project is not intended to be validated for the Gold Level of this section.

5 BIODIVERSITY

5.1 Net Positive Biodiversity Impacts

5.1.1 Biodiversity Changes (VCS, 3.19; CCB, B2.1)

Change in Biodiversity	Reducing deforestation and forest degradation
Monitored Change	During the monitored period, it was identified that the deforestation predicted in the baseline was greater than what happened, in other

	words, there was a reduction of unavoidable and unplanned deforestation both in the project area and in the leakage belt.																																		
	<table><tr><th rowspan="2">Year</th><th colspan="2">Project Area</th><th colspan="2">Leakage Belt</th></tr><tr><th>Projected deforested area</th><th>Deforested area</th><th>Projected deforested area</th><th>Deforested area</th></tr><tr><td>2018</td><td>1.306</td><td>578</td><td>2.464</td><td>257</td></tr><tr><td>2019</td><td>1.399</td><td>420</td><td>2.411</td><td>678</td></tr><tr><td>2020</td><td>1.394</td><td>609</td><td>2.319</td><td>288</td></tr><tr><td>2021</td><td>1.547</td><td>305</td><td>2.246</td><td>415</td></tr><tr><td>2022</td><td>1.615</td><td>299</td><td>2.210</td><td>166</td></tr></table>	Year	Project Area		Leakage Belt		Projected deforested area	Deforested area	Projected deforested area	Deforested area	2018	1.306	578	2.464	257	2019	1.399	420	2.411	678	2020	1.394	609	2.319	288	2021	1.547	305	2.246	415	2022	1.615	299	2.210	166
	Year		Project Area		Leakage Belt																														
		Projected deforested area	Deforested area	Projected deforested area	Deforested area																														
	2018	1.306	578	2.464	257																														
	2019	1.399	420	2.411	678																														
	2020	1.394	609	2.319	288																														
	2021	1.547	305	2.246	415																														
2022	1.615	299	2.210	166																															
A total change of 7,261 ha in the Project Area and 11,650 ha in the Leakage Belt, caused by deforestation, was predicted in the baseline. However, according to the monitoring data provided in this report, the total change that actually occurred was 2,210 ha in the Project Area and 1,804 ha in the Leakage Belt, representing 70% and 85% less than expected, respectively. The consequent reduction in deforested areas also implied qualitative changes, such as the conservation and maintenance of the integrity of the forest and existing ecological processes, reducing soil erosion, contributing to the conservation of water quality, maintaining the 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.																																			
The survey of deforestation data and the verification of accuracy, via satellite images and in the field are described in detail in the MR-VCS. In addition to monitoring the forest cover using satellite images, other activities influenced the results obtained during the monitored period: the frequent carrying out of patrol rounds by the surveillance team, which strengthens the governance of the property, and greater alignment with the communities in activities technical assistance and rural extension, workshops and training and improvement of communication channels.																																			
Justification for change																																			
Change in Biodiversity																																			
Biodiversity Conservation The implementation of Project activities, with the aim of producing a positive impact on biodiversity, through the maintenance of vegetation cover, resulted in satisfactory effects in terms of biodiversity conservation. The following numbers were recorded in the monitoring carried out in 2022 by the Federal Institute of Amapá (IFAP): <table><tr><td>Number of species</td></tr></table>	Number of species																																		
Number of species																																			

Year	Fauna		Flora
	Mammals	Birds	
2018	n/a	n/a	n/a
2019	n/a	n/a	n/a
2020	n/a	n/a	n/a
2021	n/a	n/a	n/a
2022	16	163	139

Although during the monitored period there was only one biodiversity survey (reason explained in section 2.1.3), it was possible to identify, through comparison with historical data (detailed in the description of the results of the monitoring plan presented below), that the reduction of deforestation and forest degradation in the Project area was essential for the maintenance of species.

The monitoring plots were divided between areas of primary forest, eucalyptus forestry and areas where native species management has already taken place (activity discontinued in Pará since 2016), following strict rules and well-established criteria. The results of the analyzes showed that the positive net impacts reflected the integrity of the primary native forest areas, in addition to the result of the good management practices carried out by Grupo Jari in the planted forest areas, located in the Project Zone and which serve as an ecological corridor for the species, demonstrating the guarantee of the abundance and conservation of the biodiversity of the local species.

In addition, it is important to highlight the presence of endangered species inventoried in the monitored sampling units, which demonstrates the importance of the project area for the conservation of biodiversity and the mitigation of extinction risks, guaranteeing genetic diversity.

The detailed results of monitoring biodiversity, as well as the positive impacts generated in this context by the Project's activities, can be found in sections 1.1.60, 1.1.61 and 1.1.62, of this MR-CCB, in addition to the fauna and flora reports produced by IFAP (2023).

It is worth mentioning that the data collected in this last follow-up, carried out in 2022, represent the sampling reality of the specific plots monitored, therefore, some plant or animal species were not captured due to methodological restrictions, however, this does not imply in affirming their non-existence in the Zona do Project. In this sense, additional information, such as new trigger species, were included in this MR, for continuity of follow-up in the next verifications.

Justification for change

5.1.2 Mitigation Actions (VCS, 3.19; CCB, B2.3)

The Jari Pará REDD+ project operates mainly in maintaining the habitat of the species present in the Project area, seeking to reduce and control the threats suffered by the biotic community present in the area. The data collected for the studies related to biodiversity, at the beginning of the project's conception, were satisfactory in the sense of evaluating the current context of biodiversity conservation in the Project Zone.

Given this context, with the objective of evaluating the variations that occur in the biotic community over time, a partnership was signed with the Federal Institute of Amapá (IFAP) in 2022, which carried out the survey and analysis of fauna and flora for this monitored period. , and will carry out frequent monitoring of biodiversity in the region.

The results produced in biodiversity studies, in addition to contributing to the increase in technical knowledge, can serve as an important source of data to encourage actions to preserve animal and plant species in the region. Thus, technical cooperation for such work aims to advance with monitoring actions, as a way of generating inputs to minimize anthropic actions, mainly working with community members and involving them in activities.

This will produce more robust knowledge about the region, supporting one of the main expected mitigation actions, which is the expansion of environmental education work involving local communities, with the aim of raising awareness mainly about predatory hunting, and sustainable use. of forest resources, disseminating the importance of ensuring the conservation of standing forests and the sustainable management of resources.

Additionally, in order to mitigate negative impacts on biodiversity and maintain or improve the High Conservation Value Attributes in the Cerrado area (HCVA 3 - Ecosystems and Rare Habitats) and at the source (HCVA 4 - Environmental Services and HCVA 5 - Needs of local peoples), monitoring was carried out by Fundação Jari's Security Team, detailed in section 5.1.4. The continuous inspection of the areas allows, in addition to monitoring the characteristics of the environment over time, the inhibition of predatory and illegal activities in the delimited perimeters.

5.1.3 Net Positive Biodiversity Impacts (VCS, 3.19; CCB, B2.2, GL1.4)

Species and habitat	During the monitoring period, the Jari Pará REDD+ Project underwent biodiversity monitoring conducted by the involved institution Federal Institute of Amapá (IFAP), in 2022. The study found 5 fauna species considered Vulnerable (VU) by the IUCN. These species are: • <i>Tapirus terrestris</i> (Brazilian Tapir) • <i>Ateles paniscus</i> (Black-faced Spider monkey) • <i>Patagioenas subvinacea</i> (Ruddy Pigeon)
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	• <i>Ramphastos tucanus</i> (White-throated Toucan) • <i>Ramphastos vitellinus</i> (Channel-billed Toucan)
Areas needed for habitat connectivity	Primary native forest areas and ecological corridors (Grupo Jari eucalyptus commercial plantations).

The REDD+ Jari Pará Project is, during this monitoring period, applying methodological rules to meet the Gold Climate Standard. However, only aspects of climate adaptation for communities are considered; biodiversity aspects are not specifically assessed for compliance with the standard.

Nevertheless, over the project's lifetime, 8,119 hectares of tropical forest that would have been cleared in the without-project scenario within the project area have been preserved, and the lives of three mammal species and six bird species have been protected, demonstrating the project's contribution to environmental protection and climate adaptation.

5.1.4 High Conservation Values Protected (CCB, B2.4)

The Project area has two High Conservation Value Areas, both areas are monitored in accordance with the Jari Group Land Area Inspection Procedure, which prescribes the conditions for patrolling the lands of Jari Celulose, Papel e Embalagens S/A., by road and river.

One of them corresponds to an area of 212.6 hectares of Cerrado, which was identified as of exceptional importance due to its small expressiveness in a landscape with a predominance of dense rainforests, classified as HCVA 3 (forest areas that contain or are contained in rare, threatened, or endangered ecosystems).

Focusing on ensuring the maintenance and improvement of the natural characteristics of the Cerrado ecosystem identified within the project area, the conservation area is monitored by Grupo Jari's Security Team. On-site monitoring took place in 2017, due to the distance from the area, remote monitoring was impaired in later years, however, to ensure the integrity of the activity, remote monitoring was carried out using high-resolution satellite images in the years without field inspection, which is continuous, in order to guarantee that no deforestation actions occurred in the area (Figure 29).

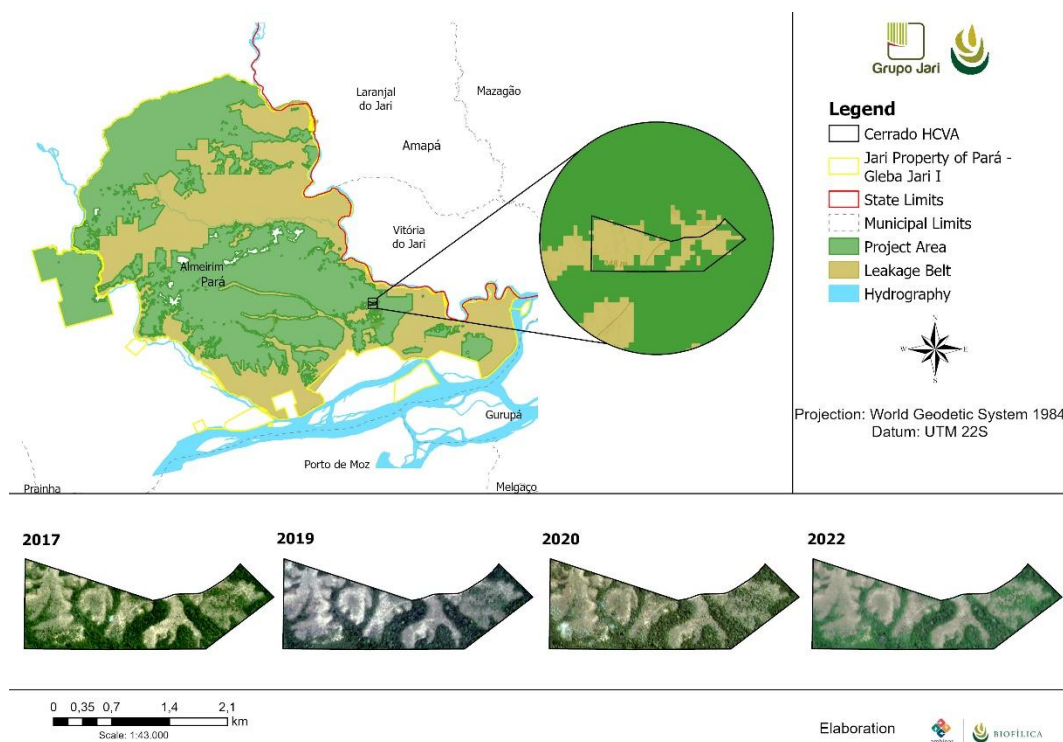


Figure 32. HCVA Savanna Monitoring for 2017, 2019, 2020, and 2022.

Below is the evaluation of the monitored indicator for this activity.

Data / Parameter	Cerrado HCVA
Data Unit	Number
Data Source	Satellite images and on-site monitoring
Description of the measurement means and procedures to be applied	On-site monitoring was carried out in 2017, in subsequent years monitoring was carried out via high-resolution satellite images
Monitoring/logging frequency	Once every 5 years (flora) and twice a year (fauna)
monitored value	Area with preserved characteristics
calculation method	Verification of conditions in the area by satellite image
Comments	

The other HCVA identified in the Project area is a spring located near Vila do Planalto, which provides a fundamental resource for the needs of the local community (HCVA 5) and is in a critical situation (HCVA 4),

compromising its integrity due to an intense process of chemical weathering favored by the slope of the land and very concentrated rainfall events.

Especially at the headwaters of Vila Planalto, monitoring is guided to observe the existence of the following items: erosion, landslides, deforestation, invasion, the beginning of a forest fire, making of caissons, removal of wood, odor and color of the water. The monitoring of the area is carried out based on inspections to verify the structural integrity of the habitat around the spring, also by the Grupo Jari Security Team.

During the monitored period, two inspections were carried out per year, with the exception of 2020, when the area was not monitored in loco due to financial problems faced by the Group, causing unavailability of a vehicle to carry out the inspections, in all, 8 inspection actions were carried out during the monitored period.

It should be pointed out that these areas are located in the Leakage Belt. This monitoring is carried out by the Jari Celulose surveillance team, through the management of the Quality and Environment area and the monitoring of the Land Patrol team. As these areas are already monitored, they were not included in the scope of areas monitored by IFAP at this time, which is in its initial phase, and will be expanded.

The location of the source is shown in Figure 30.

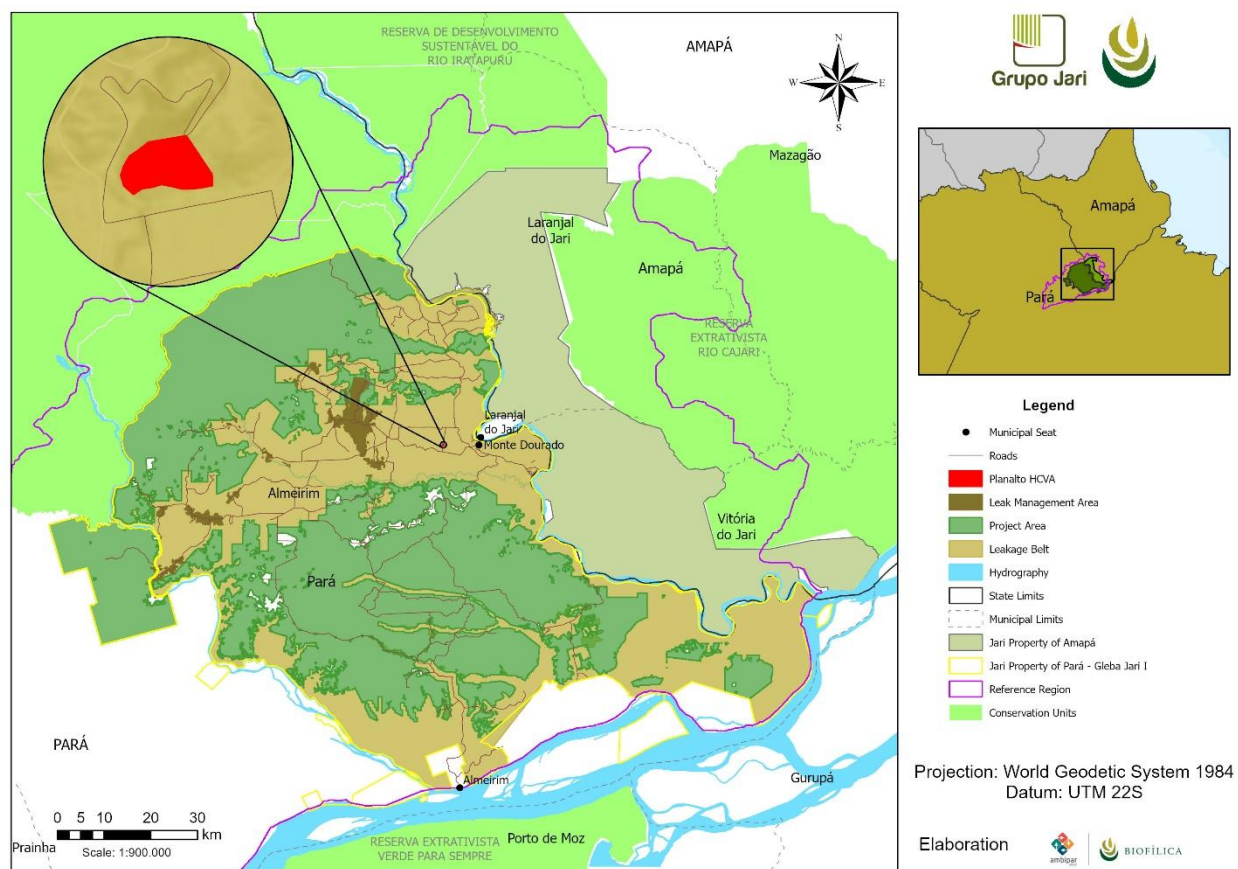


Figure 30. Location of the HCVA Planalto Springs.

It should be noted that the Jarí Group recognizes the right of ownership and use of timber and non-timber forest resources by local communities for subsistence purposes if it does not characterize an illegal activity. Being allowed:

- Community extractivism of residents of local communities identified in the areas where the Jarí group operates.
- Non-predatory hunting and fishing for the subsistence of local communities.
- Controlled access by authorized persons (employees, authorized and accompanied visitors, and researchers).
- Forest inventories, with the installation of permanent plots for monitoring purposes.
- Research related to flora and fauna monitoring and study activities.
- Location of ecological trails.
- And other activities that do not affect the environmental attributes of these areas.

5.1.5 Species Used (VCS, 3.19; CCB, B2.5, 2.6)

The project encourages the use of native species by rural communities. Although some non-native species are used by farming families, such as corn, rice, watermelon and beans. These agricultural species are food crops and are domesticated worldwide. They were introduced to the region during the last century (not due to the project's activities) and are an important source of food and income for rural and urban communities in the region, as well as being part of the local culture. Widely cultivated in other regions of Brazil, these species are not recognized for threatening some native species.

Species introduced	Classification	Justification for use	Adverse effects and mitigation
Corn	Non-native	Used in small areas of subsistence planting in family farming.	As they are used in small areas and in non-significant quantities, the species presents no threat or imbalance of other native species or in threat.
Rice	Non-native	Used in small areas of subsistence planting in family farming.	As they are used in small areas and in non-significant quantities, the species presents no threat or imbalance of other native species or in threat.

Watermelon	Non-native	Used in small areas of subsistence planting in family farming.	As they are used in small areas and in non-significant quantities, the species presents no threat or imbalance of other native species or in threat.
Bean	Non-native	Used in small areas of subsistence planting in family farming.	As they are used in small areas and in non-significant quantities, the species presents no threat or imbalance of other native species or in threat.

Furthermore, in order to increase food security, small producer income and the sustainability and diversification of food production systems (and, consequently, reduce dependence on forest resources, such as wood and game), the Project has been working together with farmers with Agroforestry Systems. Some exotic species, including those produced and donated by the Jari Group Nursery, are planted in these AFS's, such as mango, orange and lemon trees. It is important to emphasize that the cultivation of these exotic species is not carried out within the forests of the Project Area, but in previously degraded areas that are occupied by farming families.

5.1.6 Invasive Species (VCS, 3.19; CCB, B2.5)

Although the project encourages the use of native species by rural communities, such as Brazil nuts, açai, cassava, cupuaçu, among others, some non-native species are used by farming families, such as corn, rice, watermelon and beans. These agricultural species are domesticated food species worldwide and were introduced to the region during the past century (not due to project activities) and are an important source of food and income for rural and urban communities in the region, as well as being part of the local culture. Widely cultivated in other regions of Brazil, these species are not recognized for threatening some native species.

Additionally, agricultural species cited are globally domesticated and are not listed as invasive species by the IUCN Global Invasive Species Program. Thus, they do not represent a direct threat to natural ecosystems, being species that require cultural treatments performed by man, such as soil management, irrigation and weed control. Furthermore, these species are not adapted to the climatic conditions of the Amazon region, just as they have been cultivated in the region for hundreds of years without any invasive characteristic having been detected.

The use of these species is justified both by the importance they give to the communities, being these sources of food and income, and by the low risk of causing negative impacts on native species and/or introducing and facilitating the spread of diseases. Furthermore, it is important to point out that the areas

where these species are cultivated are not located in forest areas, or even, forest degradation activities are not supported for the implantation of these crops. The project promotes its planting in already degraded areas, which are currently managed by family farmers.

5.1.7 GMO Exclusion (CCB, B2.7)

Through the Jari Pará REDD+ Project, it was guaranteed that no Genetically Modified Organism (GMO) was used. It is also guaranteed that the seeds and seedlings of forestry and agricultural species supplied to the communities are not GMOs.

The Fundação Jari, in its rural technical assistance role in the Project region, does not recommend or encourage the use of genetically modified species. During this monitoring period, only pure species or, in the case of the species developed by Embrapa, genetically improved (non-modified) were distributed: Banana BRS Conquista, Banana Pacová (Terra Maranhão), Banana Pacovan Ken, Banana Anã Prata, Cupuaçu BRS Carimbó and Açaí BRS Pará.

In addition to the fact that seedlings or seeds of genetically modified species (both forestry and agricultural) were not distributed during this monitoring period, it is also not part of the scope of the Project to encourage, produce or donate seedlings and/or GMO seeds in the coming years of the Project. Below is the evaluation of the monitored indicator for this activity.

Data / Parameter	Use of genetically modified organisms (GMOs)	
Data Unit	Number	
Data Source	The use or not of GMOs was measured by the Fundação Jari reports. The method consisted of searching for the presence and/or absence of use in Fundação Jari reports and also in seedling donation lists.	
Description of the measurement means and procedures to be applied	Activity reports	
Monitoring/logging frequency	Yearly	
monitored value	Years	Use
	2018	Absent
	2019	Absent
	2020	Absent
	2021	Absent

	2022	Absent
calculation method	Identification of information on the use of GMOs in reports.	
Comments		

5.1.8 Inputs Justification (VCS, 3.19; CCB, B2.8)

The REDD+ Project mainly encourages the use of organic compost in the activities carried out by the project, in addition to avoiding the anaerobic decomposition of organic waste available on rural properties (such as manure and straw), greenhouse gas emissions and water contamination, if well conducted, the organic compost results in an organic fertilizer of excellent quality, with ideal rates of carbon and nitrogen.

Name	Organic Compound
Justification for Use	The composting process, when carried out properly, provides an organic fertilizer of remarkable quality, with ideal rates of carbon and nitrogen, in addition to preventing the anaerobic decomposition of the organic residue available on rural properties, such as straw and manure, from emitting greenhouse gases. and contaminate the water.
Adverse Effect	Unknown

Chemical fertilizers were used minimally, with their recommendations based on soil analyzes carried out and focused on each type of production system developed by producers. In addition, the recommended fertilization did not contain nitrogen in the formulation, this nutrient being provided through the organic compost, as mentioned in the table above.

As a result, it was possible to avoid adverse effects such as pollution, greenhouse gas emissions and eutrophication of water bodies and groundwater. Below is the evaluation of the monitored indicator for this activity.

Data / Parameter	Use of chemical pesticides, biological control agents or other types of inputs
Data Unit	Number
Data Source	Activity reports

Description of the measurement means and procedures to be applied	The use or not of chemical pesticides, biological control agents or other types of inputs was checked by the Fundação Jari reports. The method consisted of searching for the presence and/or absence of use in Fundação Jari reports.		
Monitoring/logging frequency	Yearly		
Monitored value	Year	Use	
	2018	Being	
	2019	Being	
	2020	Being	
	2021	Being	
	2022	Being	
Calculation method	Identification of information on the use of biological control agents or other types of inputs in the reports.		
Comments			

5.2 Offsite Biodiversity Impacts

5.2.1 Negative Offsite Biodiversity Impacts (CCB, B3.1) and Mitigation Actions (CCB, B3.2)

As expected, no negative impacts on biodiversity outside the Project Zone caused by the activities carried out were detected, in the same way that no leaks were detected during the monitored period, therefore, the table suggested for this section with the negative impacts on biodiversity outside the Project Zone and mitigation actions has not been populated.

This absence of negative impacts derives mainly from the fact that the Project Zone is surrounded by protected areas (Conservation Units) and, because the social activities carried out are designed to mitigate possible leaks that may occur, keeping people in the countryside and in harmony with the forest, these actions were explained in sections 4.1.3 and 4.3.1.

The main impacts observed on external biodiversity were the maintenance of the Project Area and Zone as an ecological corridor and as a buffer zone for risks and threats to the mosaic of protected areas in the north of the state of Pará.

5.2.2 Net Offsite Biodiversity Benefits (VCS, 3.19; CCB, B3.3)

As mentioned in the section above, no negative impacts were detected on the Project Zone's biodiversity caused by the activities carried out, in the same way that no leaks were detected. Therefore,

the mitigating actions were not necessary, however, the activities of monitoring the forest coverage through satellite images, the frequent carrying out of patrol rounds by the heritage surveillance team, strengthening the governance of the property and seeking the minimum impact on biodiversity, improved communication channels with other stakeholders, and greater alignment with local communities in technical assistance and rural extension activities, workshops and training, focusing on the sustainable use of natural resources and forest maintenance, promoted biodiversity conservation in the region.

The impacts generated by these activities promoted the conservation of biodiversity in the area that serves as an ecological corridor for the Conservation Units in the region, as demonstrated in the monitoring of biodiversity carried out during the monitored period. This connectivity between fragments constitutes a large and resilient conservation system, making significant improvements in the quality of life of local populations and functioning as a buffer zone for risks and threats to the mosaic of protected areas in Vale do Jari.

5.3 Biodiversity Impact Monitoring

5.3.1 Biodiversity Monitoring Plan (CCB, B4.1, B4.2, GL1.4, GL3.4)

A fundamental tool, biodiversity monitoring makes it possible to measure the impacts of possible activities caused by the Project on biodiversity, allowing relevant adjustments and repairs to be made in the pursuit of the desired objectives.

For the Jari Pará REDD+ Project, Biodiversity monitoring was carried out from the consolidation of the partnership between Fundação Jari and IFAP, and encompasses the following main actions encourage the involvement of students, IFAP teachers and the community in general in research and extension activities in the Vale do Jari region, develop research, extension and training activities in the Vale do Jari communities, conduct the study of tree vegetation dynamics, map and monitor significant tree species for communities such as the Amazon nut, andiroba and copaiba in management areas, conduct the phytosociological study of tree vegetation; carry out a study of the richness and diversity of flora, fauna and avifauna, the number of taxa monitored, identify High Conservation Value Areas - HCVA, carry out the joint publication of scientific articles with data from the region, carry out the implementation of permanent plots to conduct studies on the richness of the plant and animal community, carry out the fauna study with the identification of endangered species with the updating of the status of relevant species on the IUCN red list of threatened species, and carry out frequent scientific expeditions to survey the biodiversity in the region.

The work in partnership with the IFAP aims to develop, for the region, a systematized database with all the data so far collected in the Jari Group's forests, with its frequent updating based on the carrying out of new campaigns of field. This database will serve as a reward for various socio-environmental programs, as well as guidelines for actions aimed at those responsible. In addition, the partnership with IFAP also

aims to implement a participatory monitoring program, which will start in 2023, in which some residents of the community will be selected and trained to collect information in the region. Information on the presence of endemic species included in lists of endangered species and the presence of invasive exotic species, as well as an increase or reduction in observation can be produced by community members.

In this scenario, therefore, in 2022, new monitoring of fauna communities (birds and medium and large mammals) was carried out by IFAP, in the Jari Pará REDD+ Project area, with the aim of i) collecting data on richness, abundance, as well as ecological data on diversity, equitability and dominance; ii) identify the species composition of medium and large-sized birds and mammals; and iii) identify species with potential for indicating the quality of habitat in the project area, such as species with some conservation status, rare, game or restricted occurrence, in addition to species with a degree of threat of extinction.

The collection of these data makes it possible to assess the impacts of project activities on biodiversity and to identify unplanned changes, in order to make the necessary adaptations to achieve the desired objectives and impacts. The complete study containing the applied methodology, list of graphs, tables and figures, as well as the details of the results, was made available to VBB. Below is a detailed description of the monitoring carried out with the results achieved.

The information collected goes through a quality assurance process, and is reviewed by the technicians responsible for the collection, and by Biofílica analysts, which is responsible for the storage and virtual organization of the documents made available.

a. Fauna

The study methods applied in the monitoring of fauna in the project areas are widely known and used in scientific analyzes of wildlife, mainly for identification, monitoring and absolute abundance of species, as well as in studies of activity patterns⁷⁴

Sampling took place between November 8th and 18th, 2022, and monitoring was carried out at four sampling points, located in the Project area, in the state of Pará. The plots covered two distinct types of vegetation: eucalyptus forestry (near the Pimental community) and forestry areas adjacent to primary rainforest and unmanaged forest (near the Planalto community).

⁷⁴ KARANTH, 1995; KARANTH; NICHOLS, 1998; VAN SCHAIK; GRIFFITHS, 1996



Figure 31. Location of monitoring points in the areas of the Jari Pará REDD+ Project (Planalto). Source: IFAP, 2023



Figure 32. Location of monitoring points in the areas of the Jari Pará REDD+ Project (Pimental). Source: IFAP, 2023



Figure 33. Portion of monitored unmanaged forest (Planalto), in the Jari Pará REDD+ Project areas. Source: IFAP, 2023

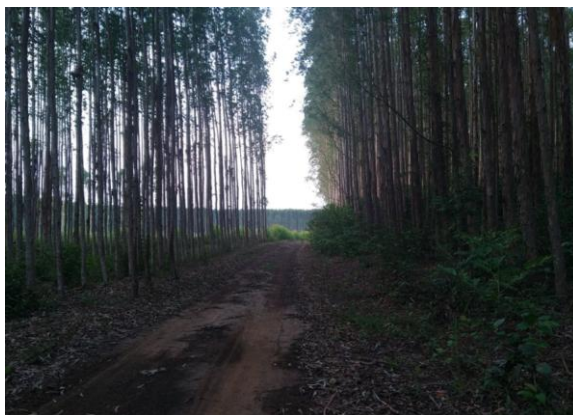


Figure 34. Portion of monitored eucalyptus silviculture (Pimental), in the areas of the Jari Pará REDD+ Project. Source: IFAP, 2023

i. Medium and large mammals

Two basic methods of sampling mammals were employed: (i) active search for direct evidence (visualizations and/or vocalizations) and indirect evidence (identification of tracks, feces, skeletons and other traces); (ii) detection by camera traps. The methods applied together make it possible to maximize

the faunal inventory of an area in a relatively short time. They also allow for more realistic comparisons between different sampled areas.

For the collection of data from mammals, a sampling design with four points was applied, divided between the evaluated areas. Table 4, below, identifies the sampling points adopted, with their respective coordinates and type of vegetation.

Table 4. Sampling points defined for monitoring mammals.

Sample site	Local	Coordinates		Type of vegetation
		Latitude	Longitude	
Point 1	Almerim (PA)	-0.97559361	-53.05237542	Eucalyptus forestry
Point 2	Almerim (PA)	-0.96943699	-53.0477282	Eucalyptus forestry
Point 3	Almerim (PA)	-0.74756748	-52.54291727	Unmanaged forest
Point 4	Almerim (PA)	-0.83301299	-52.59933884	Eucalyptus forestry

Mammals were analyzed for the number of species, families, orders and number of individuals observed in each sampled area. The methods applied for monitoring, and which were more efficient, were the active search and the census by searching for traces, applied in 90% of the records made. Because they are, for the most part, crepuscular-nocturnal, the search for tracks and traces is one of the most appropriate techniques to identify the presence of mammals in environments.

The capture method by camera traps contributed with 6.25% of the registered richness. We tried to place the traps close to food resources or water sources. The sampling effort for this method was 148 hours per point (three cameras in two days per point).

Results

Were registered **49 specimens of medium and large-sized mammals, and primates**, in the primary rain forests and eucalyptus forestry areas (in four points of the plots – P3, P4, P5 and P6). This number counts direct and indirect records in the transects, in addition to the camera traps. They are distributed in **6 orders, 11 families, 15 genera and 16 species**. The complete list of species can be found in the IFAP fauna report, in Table 3.

At the order level, the order Carnivora presented the highest richness, with the record of five species: *Cerdocyon thous* (bush dog), *Potos flavus* (pearjaw), *Leopardus pardalis* (ocelot), *Puma concolor* (cougar) and *Panthera onca* (jaguar).

Carnivores such as *Puma concolor* (Felidae), has a wide distribution, occurring in all biomes, and is considered an opportunistic carnivore, being able to live in anthropized environments. The species *Leopardus pardalis* (Felidae) according to ICMbio data, presents great adaptive flexibility, and also has a wide distribution area and relatively high densities, compared to other feline species, uses from well-preserved areas to altered environments. *Cerdocyon thous* (Canidae) is a species that inhabits forests, gallery forests and fields, and its generalist opportunistic omnivorous diet is easily found in altered environments⁷⁵.

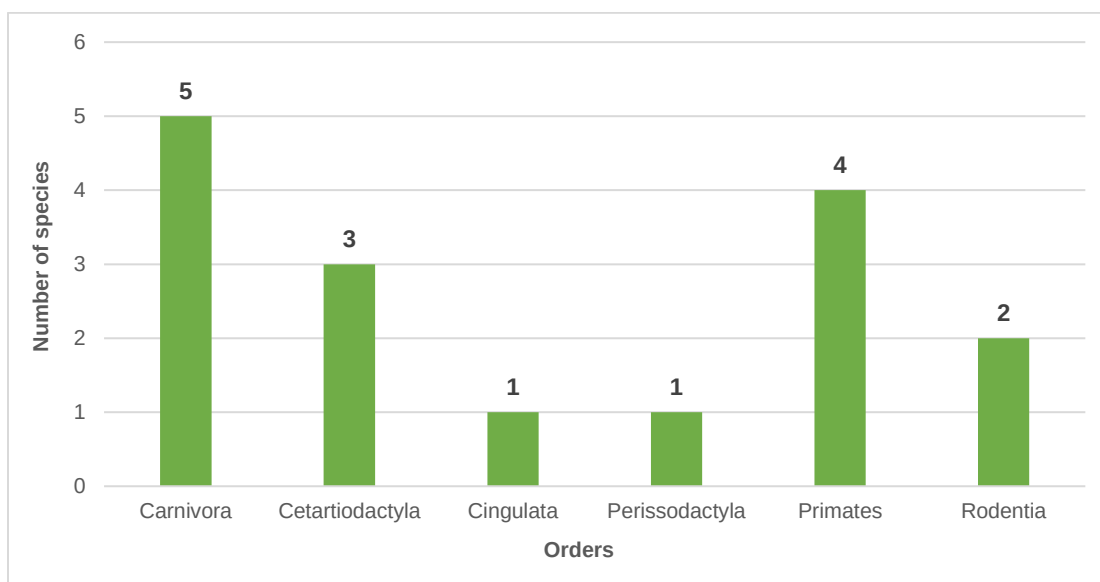


Figure 35. Orders of mammals, with their respective representativeness in relation to the number of species.

In the monitored areas, high richness and abundance of species were recorded, in these places both generalist species and those with low sensitivity to changes in the environment were recorded, such as *Cerdocyon thous* (wild dog) and *Dasyprocta leporina* (agouti), as well as mammals with high sensitivity to anthropic alterations, including endangered species, such as *Tapirus terrestris* (tapir) - points P3 and P6. At eucalyptus silviculture points, adjacent forest fragments are formed by the deforestation process,

⁷⁵ REIS, N.R.; SHIBATTA, O.A.; PERACCHI, A. L.; PEDRO, W.A. & LIMA, I.P. Mamíferos do Brasil. In: REIS, N. R.; PERACCHI, A. L.; PEDRO, W.A. & LIMA, I.P. (Eds.). Mamíferos do Brasil. 2. ed. Londrina: Nélío R. dos Reis. p. 23-29. 2011.

and for large mammals, the size of the fragment directly influences species richness⁷⁶, a fact that can trigger loss of continuity⁷⁷, even though they are capable of to adapt to new environmental conditions. Thus, its period of activity may change and influence the richness rates of these species in the region.

The Shanno-H' ecological index, at the two sampled points, varied between 0.7 and 2.3. For tropical environments, diversity values around three are expected⁷⁸. The results show that, although some sampled points are historically subjected to anthropogenic activities, the results obtained are satisfactory.

The results of other indices, such as the species accumulation curve and Jaccard similarity, demonstrate that the sampling was relatively representative, but the number of species sampled is still lower than the number of species expected for the region. It is worth mentioning the difficulty in sampling the total richness in surveys carried out in the Neotropical region, due to the great richness and diversity present in its ecosystems.

It was noted from the sampling carried out in the monitoring, the presence of game species, that is, species that are preyed and suffer pressure from hunting. Some common fauna species targeted by hunting are collared peccaries, tapirs, agoutis, pacas and deer, present in the Project region. It is important to note that the practice of hunting is common locally, whether for sport, recreation or professional purposes, which makes medium and large mammal species of important commercial value, however, the main objective of the families present in the areas of the The project starts from the cultural particularities of each population, with animals hunted for subsistence purposes, used as a source of food and consumed in different ways of preparation. In some cases, even rare in the region in sports, recreational or professional form.

Thus, evaluating the ecological aspects and species sensitive to predation, it is understood that the populations of the species are not stable over time, having varied levels in their occurrence and both positive and negative fluctuations.

In this scenario, species in their conservation status were identified, present in the national list with some degree of threat, namely *Panthera onca* (jaguar), *Puma concolor* (puma), *Tapirus terrestres* (tapir) and *Ateles paniscus* (black spider monkey), all categorized in vulnerable status (VU). On the IUCN Red List of Threatened Species, *Panthera onca* was recently assessed as Near Threatened (NT), and the other species are listed at Least Concern (LC). The bush deer (*Mazama americana*) was the only one among the

⁷⁶ Fragmentação de ecossistemas: Causas, efeitos sobre a biodiversidade e recomendações de políticas públicas. MMA/SBF, Brasília, 2003. ISBN-87166-48-4. VIEIRA, M. V.

⁷⁷ *Conservation Biology: An Evolutionary - Ecological Perspective*. Sinauer Associates, Sunderland, MA. 1980. WILCOX, B.A.

⁷⁸ *Ecological methodology*. 2.ed. Amsterdam, Addison Wesley, 1999. 620 p. KREBS, C. J.

species cataloged in the region with insufficient data for categorization in degree of conservation. The list of species and their conservation status can be accessed in the IFAP report, in Table 7.

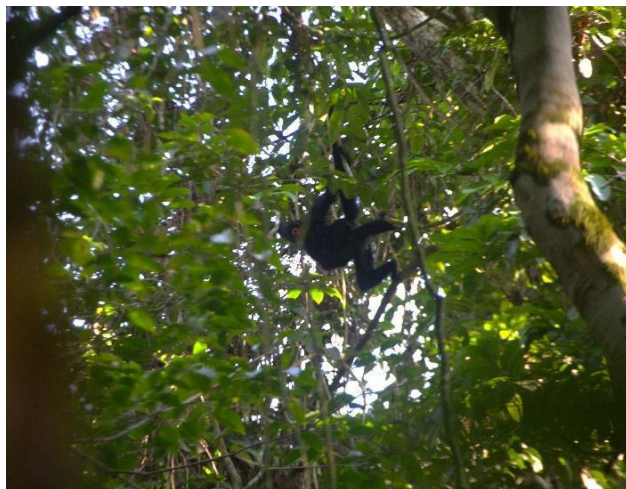


Figure 36. Observation of mammals in the Project's biodiversity monitoring. *Ateles paniscus* (black spider monkey).



Figure 37. Observation of mammals in the Project's biodiversity monitoring. *Tapirus terrestris* (tapir), in a camera trap.

Below are the indicators with the results of the monitoring carried out for mammals in the monitored period.

Data / Parameter	Number of species of animals monitored	
Data Unit	Number	
Data Source	Field sheets, data sheet and Fauna Monitoring Report	
Description of the measurement means and procedures to be applied	Two measurement methods were used: (i) active search for direct evidence (visualizations and/or vocalizations) and indirect (identification of tracks, feces, skeletons and other traces); (ii) detection by camera traps.	
Monitoring/logging frequency	Every two years	
Monitored value	Years	Mammals
	2018	n/a
	2019	n/a
	2020	n/a

	<table> <tr> <td>2021</td><td>n/a</td></tr> <tr> <td>2022</td><td>16</td></tr> </table>	2021	n/a	2022	16
2021	n/a				
2022	16				
Calculation method	All quantitative data were entered into electronic spreadsheets. For each sample environment, Richness-S, Absolute Abundance-N and Relative Abundance-AR of species were checked. Calculation details can be found in the IFAP fauna report, made available to the VVB.				
Comments	Biodiversity monitoring was resumed for the project after the consolidation of the partnership with IFAP in 2022, therefore, monitoring data were not presented for previous years.				

Data / Parameter	Wealth of the monitored fauna taxon												
Data Unit	Number												
Data Source	Field sheets, data sheet and Fauna Monitoring Report												
Description of the measurement means and procedures to be applied	Two measurement methods were used: (i) active search for direct evidence (visualizations and/or vocalizations) and indirect (identification of tracks, feces, skeletons and other traces); (ii) detection by camera traps.												
Monitoring/logging frequency	Every two years												
Monitored value	<table> <tr> <td>Years</td><td>Mammals</td></tr> <tr> <td>2018</td><td>n/a</td></tr> <tr> <td>2019</td><td>n/a</td></tr> <tr> <td>2020</td><td>n/a</td></tr> <tr> <td>2021</td><td>n/a</td></tr> <tr> <td>2022</td><td>12</td></tr> </table>	Years	Mammals	2018	n/a	2019	n/a	2020	n/a	2021	n/a	2022	12
Years	Mammals												
2018	n/a												
2019	n/a												
2020	n/a												
2021	n/a												
2022	12												
Calculation method	All quantitative data were entered into electronic spreadsheets. Observed mammalian richness (Sobs) was compared with first-order richness estimators (Jackknife, Chao and Bootstrap) subjected to 100 randomizations. The												

	estimates were generated by the EstimateS 9.1 Software (COLWELL, 2013). Calculation details can be found in the IFAP fauna report, made available to the VVB.
Comments	The richness results indicated in “Monitored value” refer to the sampling point (transect) that presented the highest species richness in comparison to the other sampling units.

Data / Parameter	Status of species of relevance on the IUCN Red List of Endangered Species
Data Unit	Not applicable.
Data Source	Field sheets, data sheet and Fauna Monitoring Report
Description of the measurement means and procedures to be applied	Systematization and comparison of data and information collected in fauna surveys with the IUCN Official List, available at: http://www.iucnredlist.org
Monitoring/logging frequency	Every two years
Monitored value	Mammalian species with IUCN Vulnerable (VU) status: - <i>Tapirus terrestris</i> (tapir) - <i>Ateles Paniscus</i> (black spider monkey) Mammalian species with Near Threatened (NT) status from the IUCN: - <i>Panthera onca</i> (jaguar) under the A2cd criterion
Calculation method	Not applicable.
Comments	The complete table with the list of all species listed on the IUCN Red List can be found in the complete Fauna Report, delivered to the VVB.

ii. Avifauna

The Jari Pará REDD+ Project region, which is part of the Guinas Shield monitoring areas, is known to have at least 1,004 bird species, representing 70 families and 22 Orders (MILENSKY et al. 2005), of which 283 are restricted or rare⁷⁹.

In this context, for the avifauna, transects of approximately two kilometers each were implemented in the sampling design, where listening points were installed for the collection of the census and counting of birds. In this monitoring, as well as for mammals, it was divided into four transects, located in the municipality of Almeirim (Pará). Table 5, below, identifies the sample transects adopted, with their respective coordinates and type of vegetation.

Table 5. Sampling transects defined for bird monitoring.

Sample transects	Local	Coordinates		Type of vegetation
		Latitude	Longitude	
Transect 1	Almerim (PA)	-0.980111	-53.048441	Eucalyptus forestry
Transect 2	Almerim (PA)	-0.971162	-53.047503	Eucalyptus forestry
Transect 3	Almerim (PA)	-0.747154	-52.535167	Primary forest
Transect 4	Almerim (PA)	-0.825370	-52.599223	Eucalyptus forestry

The census method by listening points consists of a qualitative and quantitative survey by points, in which the points are separated by two hundred meters, guaranteeing the independence of sampling, where each transect has ten fixed listening points.

For sampling using this method, the observer remains at each point for ten minutes, recording the birds seen and/or heard within a radius of approximately fifty meters. Thus, the observer registers through notes the identification information of the species (qualitative) and the number of individuals for each species (quantitative).

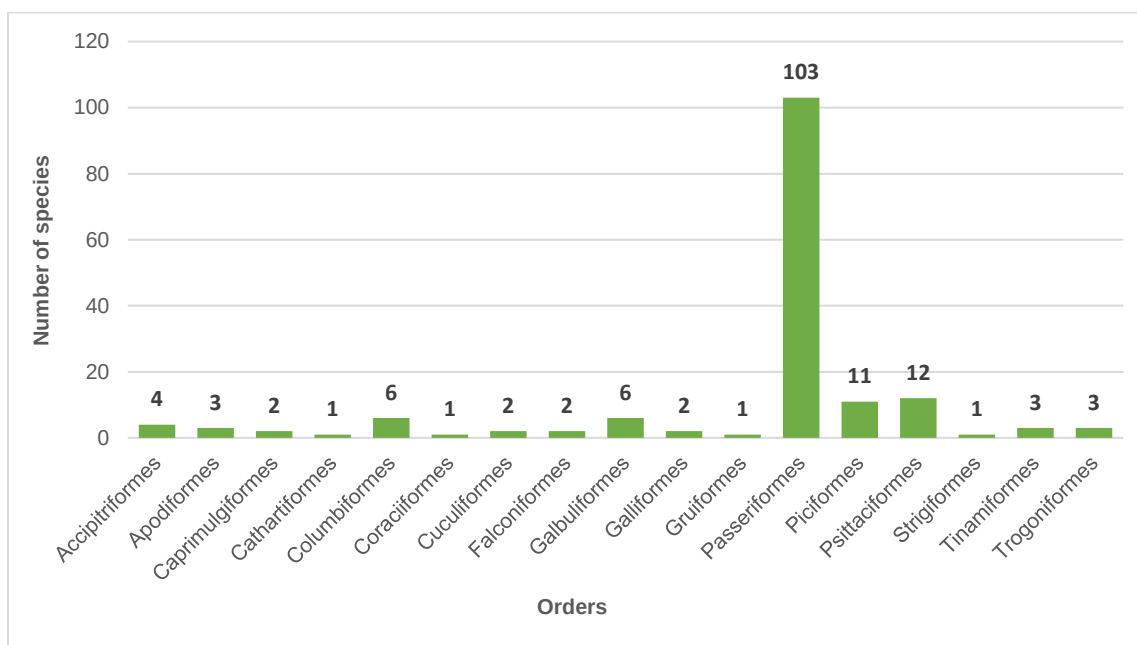
Results

⁷⁹ OREN, D. C. 1999. Avaliação e identificação de ações prioritárias para a conservação, utilização sustentável e repartição do benefício da biodiversidade da Amazônia Brasileira. Programa Nacional da Diversidade Biológica-Biogeografia e conservação de aves na região Amazônica.

During the avifauna monitoring, **163 species belonging to 44 families and 17 orders** were recorded. Among the orders sampled, Passeriformes had the highest number of species, with 103 records. Other families were observed in significantly smaller numbers. The dominance of Passeriformes is mainly due to encompassing a large number of species and the fact that some of them inhabit more diverse environments and foraging strata.

Of the four families with the highest number of species, three belong to Passeriformes: Tyrannidae with 19 species, followed by Thamnophilidae with 18 species and Psittacidae with 12 species.

Tyrannids have representatives ranging from forest occupants (e.g., *Attila spadiceus*) to species more accustomed to open areas (e.g., *Pitangus sulphuratus*)⁸⁰. The presence of many species of the Thamnophilidae family becomes very important for the studied area, since a great majority of the species of this family are highly dependent on forests and normally have high to medium sensitivity to environmental impacts (e.g., *Frederickena viridis*)⁸¹. Finally, the Psittacidae are canopy frugivores, which act as seed dispersers, which makes them important in the process of forest recomposition, through the important ecological work of seed dispersal.



⁸⁰ SICK, H. 1997. Ornitologia Brasileira. Rio de Janeiro: Editora Nova Fronteira, 912pp.

⁸¹ STOTZ, D. F.; FITZPATRICK, J. W.; PARKER, T. A.; MOSKOVITS, D. K. Neotropical Birds: ecology and conservation. Chicago: University of Chicago Press, 1996. 478p.

Figure 38. Distribution of species among the orders of avifauna recorded in the areas.

Evaluating the general richness present in the transects, it is noted that the areas of primary forest had the highest index, followed by the second transect of eucalyptus forestry, but with a large part of the listening points making ecotone between eucalyptus forest and fragments of rain forest dense. Adjacent vegetation in forest fragments must be considered as it is an important factor for the high richness found in some transects. The riches obtained during this study can be considered satisfactory when compared to other Amazonian studies⁸².

For the calculation of abundance, 120 counts of fixed points were performed, in 60 sample points, each point had 10 listening points. During the counts, 1330 contacts were made, the primary rainforest plot analyzed was the one that recorded the highest number of individuals, with a total of 420, and the eucalyptus silviculture points recorded smaller occurrences. In general, equitability results obtained in the transects demonstrate that the avifauna of the sampled areas does not have many species with great abundances, indicating that the avifauna abundance of the studied area is uniform. For detailed analysis of abundance in each transect, access Table 8, present in the IFAP fauna report, made available to the VVB.

Another important observation indicator in monitoring is the species' sensitivity status to environmental impacts. The primary forest transects recorded the fifth highest number of species sensitive to environmental impacts, however, it obtained a considered number of species with medium sensitivity to impacts. At the eucalyptus silviculture points, the second highest number of species with low environmental sensitivity was registered, with 77.27% of the species captured in these areas, indicating that these transects have little support to maintain species with more demanding occurrence.

Game birds are mainly represented by the families Cracidae and Tinamidae, as they are the most pursued by hunters in Brazil for consumption. Other species highly appreciated by hunters and commercialized are the species of the Psittacidae family (macaws, parrots and parakeets), as they are birds that cause admiration for their beauty, ability to imitate voices and other songs.

Sixteen game species were identified in the studied areas. Currently, 234 bird species are on the ICMBio list of endangered species (2022), being subdivided into 120 "Vulnerable" species, 71 "Endangered" species, 42 "Critically Endangered" species and one "Extinct in the wild" species. In this

⁸² BARROS, Sarah Pereira. Avifauna de uma área de transição cerrado-amazônia: composição, abundância, riqueza e variação diária na taxa de captura. 2018. ix, 18 f. TCC (Graduação em Ciências Biológicas) - Universidade Federal do Mato Grosso, Campus Universitário do Araguaia, Instituto de Ciências Biológicas e da Saúde, Pontal do Araguaia, 2018.

monitoring, no species with threat status were registered, but two with “Near Threatened” status were registered, namely *Ibycter americanos* (songbird) and *Ara chloropterus* (red macaw).

According to the International Union for Conservation of Nature (IUCN, 2022) four species were registered with “Vulnerable” status, namely *Patagioenas subvinacea* (botafofo dove), *Ramphastos tucanus* (white-throated toucan), *Ramphastos vitellinus* (toucan Curassow-billed Curassow) and *Crax alector* (Poronga Curassow). Another six species have “Near Threatened” status, namely *Tinamus major* (inhambu-serra), *Odontophorus gujanensis* (uru-corcovado), *Psophia crepitans* (grey-backed jacamim), *Amazona farinosa* (mealy parrot), *Epinecrophyllos gutturalis* (brown-bellied hornbill) and *Hypocnemis cantator* (Guyana songbird).

When dealing with rare species, 84 species were recorded only once or twice, 53 species were recorded in only one event and 31 were recorded in two events. As for species with restricted occurrence, 18 species with distribution restricted to the Guiana plateau were recorded in this monitoring, with emphasis on *Hylexetastes perrotti* (uniform woodcreeper), which was recorded only once, and *Herpsilochmus sticturus* (pink-tailed weevil). To review the list of species and conservation status, see Tables 11 and 12 of the IFAP fauna report.



Figure 39. Avifauna monitoring records in 2022 in the Project areas.



Figure 40. Avifauna monitoring records in 2022 in the Project areas

In general, the results found show that the conservation of fragments close to forestry plantations is extremely important for the maintenance of local diversity, since excellent richness and diversity were found in these areas. The locality close to the Planalto community was the point with less richness, abundance, diversity, evenness and greater dominance, indicating that the low complexity of the environment, as well as the greater distance from more structured forests or watercourses, makes it difficult to live in the place. by bird species or dispersal itself.

In summary, taking into account the transects studied, the highest levels of Shannon Diversity, Pielou and Equitability were found in fragments of primary forests close to eucalyptus forests, a fact that indicates the importance of these areas in preserving local diversity. In any case, the eucalyptus could facilitate the movement of forest species between one fragment and another, thus helping in the connectivity of the environment under study.

Below are the indicators with the results of the monitoring carried out for the avifauna in the monitored period.

Data / Parameter	Number of species of animals monitored													
Data Unit	Number													
Data Source	Field sheets, data sheet and Fauna Monitoring Report													
Description of the measurement means and procedures to be applied	Mainly, the census method by listening was applied, with 10 fixed listening points, separated by 200 meters. For sampling using this method, the observer remains at each point for 10 minutes, recording the birds seen and/or heard within a radius of approximately 50m. Species identification information (qualitative) and the number of individuals for each species (quantitative) were duly noted. When species were not identified in the field, they were photographed or recorded to aid in future identification.													
Monitoring/logging frequency	Every two years													
Monitored value	<table><tr><td>Year</td><td>Birds</td></tr><tr><td>2018</td><td>n/a</td></tr><tr><td>2019</td><td>n/a</td></tr><tr><td>2020</td><td>n/a</td></tr><tr><td>2021</td><td>n/a</td></tr><tr><td>2022</td><td>163</td></tr></table>		Year	Birds	2018	n/a	2019	n/a	2020	n/a	2021	n/a	2022	163
Year	Birds													
2018	n/a													
2019	n/a													
2020	n/a													
2021	n/a													
2022	163													
Calculation method	All quantitative data were entered into electronic spreadsheets. For each sample environment, Richness-S, Absolute Abundance-N and Relative Abundance-AR of species were checked. Calculation details can be found in the IFAP fauna report, made available to the VVB.													
Comments	Biodiversity monitoring was resumed for the project after the consolidation of the partnership with IFAP in 2022.													

therefore, monitoring data were not presented for previous years.

Data / Parameter	Wealth of the monitored fauna taxon												
Data Unit	Number												
Data Source	Field sheets, data sheet and Fauna Monitoring Report												
Description of the measurement means and procedures to be applied	Mainly, the census method by listening was applied, with 10 fixed listening points, separated by 200 meters. For sampling using this method, the observer remains at each point for 10 minutes, recording the birds seen and/or heard within a radius of approximately 50m. Species identification information (qualitative) and the number of individuals for each species (quantitative) were duly noted. When species were not identified in the field, they were photographed or recorded to aid in future identification.												
Monitoring/logging frequency	Every two years												
Monitored value	<table border="1"> <thead> <tr> <th>Year</th><th>Birds</th></tr> </thead> <tbody> <tr> <td>2018</td><td>n/a</td></tr> <tr> <td>2019</td><td>n/a</td></tr> <tr> <td>2020</td><td>n/a</td></tr> <tr> <td>2021</td><td>n/a</td></tr> <tr> <td>2022</td><td>6</td></tr> </tbody> </table>	Year	Birds	2018	n/a	2019	n/a	2020	n/a	2021	n/a	2022	6
Year	Birds												
2018	n/a												
2019	n/a												
2020	n/a												
2021	n/a												
2022	6												
Calculation method	All quantitative data were entered into electronic spreadsheets. The 1st order non-parametric Jackknife estimator was applied to extrapolate the species richness in the study area. This estimator assigns greater weight to rare species (those that occurred in only one sample). Calculation details can be found in the IFAP fauna report, made available to the VVB.												
Comments	The richness results indicated in “Monitored value” refer to the sampling point (transect) that presented the highest species richness in comparison to the other sampling units.												

Data / Parameter	Status of species of relevance on the IUCN Red List of Endangered Species
Data Unit	Not applicable.
Data Source	Field sheets, data sheet and Fauna Monitoring Report
Description of the measurement means and procedures to be applied	Systematization and comparison of data and information collected in fauna surveys with the IUCN Official List, available at: http://www.iucnredlist.org
Monitoring/logging frequency	Every two years
Monitored value	Avifauna species with IUCN Vulnerable (VU) status: - <i>Patagioenas subvinacea</i> (botafofo dove) - <i>Ramphastos tucanus</i> (white-throated toucan) - <i>Ramphastos vitellinus</i> (oretho-billed toucan). Avifauna species with Near Threatened (NT) status from the IUCN: - <i>Tinamus major</i> (inhambu-serra) - <i>Odontophorus gujanensis</i> (uru-corcovado) - <i>Amazona farinosa</i> (mealy parrot) - <i>Hypocnemis cantator</i> (Guyana songbird).
Calculation method	Not applicable.
Comments	The complete table with the list of all species listed on the IUCN Red List can be found in the complete Fauna Report, delivered to the VVB.

Conclusions

The results revealed in this monitoring demonstrated that several species found are endemic to the region, hunting, as well as many are on the Red List of threatened species by the IUCN. This scenario arises from measures associated with the conservation of habitat areas for species, based on the efforts applied by the Project to reduce deforestation and forest degradation in the region.

In addition, it is pointed out that the presence of fauna species, both threatened and endemic, are attributes for classifying the Project area as a High Conservation Value Forest, according to the classification of HCVA attributes. Therefore, these attributes remain stabilized in accordance with the biodiversity diagnoses carried out in the design of the project and subsequent monitoring, with the conservation of forest areas.

Even so, some negative effects of anthropic activities in the project areas are identified, such as the de-characterization or even modification of habitats, and the reduction of breeding or feeding areas, mainly due to the frequent presence of vehicles and people during activities in the areas, which induces species migration. To minimize these impacts, environmental education activities are reinforced, such as visits to the Jari Museum to raise awareness of the rich biodiversity of the region, with students from public and private schools in the Vale do Jari region, as well as visits to areas and in the communities present in the Project Zone to conduct workshops aimed at preserving biodiversity and good practices.

It is worth mentioning that the monitoring carried out in 2022 started a new phase of the participatory monitoring plan, that is, it involved the participation of residents of the communities to collect information on the region's fauna, based on assistance in identifying traces in the areas monitored. As a result, monitoring verified the local community's perception of management practices and the integrity of the forests, with regard specifically to the local fauna.

b. Flora

Together with the monitoring of the fauna, a survey of flora species was carried out in 2022 by IFAP, evaluating aspects of structure and composition, in order to guarantee the maintenance of forest integrity, as provided for in the Project's Biodiversity Monitoring Plan, in the PDD (section 5.4.1). The Project region, as it is concentrated among several Conservation Units (UCs), has a rich biodiversity and the occurrence of a significant number of plant species, while it extends over several forest phytophysiognomies.

Thus, monitoring the diversity and protection status of flora species in the Project area aims to bring a better understanding of the biota and how the Project's conservation activities meet the needs and demands of the CCB standard.

The main monitoring objectives were: (i) to reveal the floristic richness and diversity of forest environments; (ii) identify growth rates in the studied forest environments; (iii) reveal tree mortality and recruitment rates in the different forest environments studied; (iv) identify which species have higher rates of growth, mortality and recruitment in the different environments studied; and (v) compare the studied forest environments in terms of floristic composition and forest dynamics.

Methodology

The monitoring was applied in two locations and different physiognomies: preserved rainforest area and managed forest. The delineated permanent plots are one hectare, subdivided into one hundred smaller plots of one hundred square meters.

Data from the continuous forest inventory (CFI) were used, with remeasurements in permanent plots in different periods, comparing the 2013 and 2022 monitoring. chest greater than 30 (thirty) centimeters, 1.30 meters from the ground), were incorporated in this report as recruitment, entry and mortality.

Scientific names and species authorship followed the database of Museu Jari, Missouri Botanical Garden and Flora do Brasil, and the classification of families followed the Angiosperm Phylogeny Group III system.

The number of identified individuals, as well as their data extracted from the floristic inventory (basal area, average diameter, richness, number of dead and number of recruits), were calculated by plot among the environments studied.

For the analysis of the structure of the forest environment, elements of floristic composition, number and diversity of species, and diametric structure were considered. The forest dynamics was evaluated by calculating the periodic increment in the basal area, annual periodic increment, entry or recruitment rate and mortality.

The species diversity estimate was calculated from the Shannon-Wiener index (H'). The Shannon-Weaver index always takes into account the number of species and the dominant species. The higher the value of H' , the greater the floristic diversity of the studied population. This index can express richness and uniformity. In addition, according to Knight (1975)⁸³, the Shannon-Weaver diversity index varies between 3.83 and 5.85 for the tropical forests of the Amazon.

Basal area was analyzed by summing the cross-section of individuals in the first study, and the estimate of the final periodic basal area was given by summing the cross-section of surviving individuals, including recruitment and excluding mortality.

Tree growth was calculated by the diameter increment values in the evaluated periods, for each of the species in the two monitored environments. Mortality was obtained by the ratio between the number of dead individuals in the period observed by the abundance of individuals referring to the first forest inventory, applied to logarithmic modeling. Recruitment was obtained by the ratio between the number of new tree individuals in the observed period and the abundance referring to the number of individuals in the first monitoring.

⁸³ KNIGHT, D. H. A phytosociological analysis of species-rich tropical forest on Barro Colorado Island, Panama. Ecological Monographs, v. 45, p. 259 - 284, 1975.

All evaluative calculations of flora patterns were performed using an electronic spreadsheet and the R Core Team (2022) program.

Results

i. Forest structure and dynamics

As described, two environments were analyzed to assess the composition and dynamics of plant species in the Project area.

For the managed forest plots, in the analyzed period, 129 species were verified in the year 2013 and **139 species in the year 2022**. Comparatively, the number of individuals, as well as the number of species, increased between the monitored years, with the 183 new admissions and 110 mortalities in the year 2022. Thus, recruitment is higher than the number of deaths, demonstrating a positive balance in quantitative terms in the forest management environment.

In the studied areas, the populations of *Vochysia vismiifolia* (Vochysiaceae) were the ones that most entered, followed by *Bellucia dichotoma* (Melastomataceae), with 16.4% and 7.9%, respectively.

In terms of mortality, the populations of *Ferdinandusa paraensis* (Rubiaceae) and *Cecropia concolor* (Urticaceae) were the species that most contributed to this rate, with 12% and 8% respectively, during the monitored period. Species of the genus *Cecropia* sp., which, despite fast growth, have a short life cycle⁸⁴, characteristic of colonizing species, that is, they establish themselves quickly, but have a high mortality rate in short periods.

As for the local diversity, it was possible to verify an increase for the managed forest environment, mainly due to the increase in the number of species and in the number of individuals. The opening of clearings in the forest, through the extraction of individuals, provides the entrance of light that, consequently, favors the development of trees that were previously stagnant in the understory. This fact suggests that the forest is advancing in the successional stages, thus an intense dynamic of populations is observed.

The basal area and the density of individuals are also impacted by the increase in solar radiation provided by the opening of the canopies, a fact that drives the growth of tree and non-tree species.

As for the annual periodic increment (IPA) values, the species with the highest averages were *Protium opacum* (Burseraceae) and *Duguetia surinamensis* (Annonaceae), with 13 and 1.9 centimeters,

⁸⁴ VICENTINI, E. et al. Aspectos demográficos de espécies de *Cecropia* em fragmento de mata ciliar da usina hidrelétrica Rio Bonito, Santa Maria de Jetibá - ES. Espírito Santo, 2008.

respectively. Several factors affect the growth of individual trees and are reflected in the wide range of increments found. A variation in growth rates was observed, given by the IPA, both between species and within them. This variability in growth between and within species is a characteristic of tropical forests⁸⁵. **Table 6**, below, summarizes the estimates explored in the monitoring of forest management environments in the Project area.

Table 6. Estimate of the parameters analyzed in the monitoring carried out in 2013 and 2022 for the managed forest environment, in the Project area.

Parameter	2013	2022
Number of individuals per hectare	555	634
number of species	129	139
Diversity (H')	4,25	4,78
Basal area (m ²) per hectare	20,45	25,13
Average diameter (cm)	18,40	19,11
Annual recruitment rate (%)	-	3,71
Taxa de mortalidade anual (%)	-	2,39
Incremento periódico anual (cm)	-	0,64

For the data collected from the preserved forest, 137 species were found in the year 2013, and **132 species in the year 2022**. As for the number of individuals, there was a decrease in the last year, compared to 2013. The entry was 70 individuals, but the mortality was 110. Thus, the balance in number of individuals, unlike the managed areas, was negative in the evaluated period. It was observed that 19% of the individuals killed during this period occurred in populations of *Licaria canella* (Lauraceae), *Mouriri brachyanthera* (Melastomataceae) and *Cecropia obtusa* (Urticaceae).

In terms of diversity and species richness, there was a small decrease for the preserved forest environment, mainly due to the decrease in the number of species and in the number of individuals. However, it is suggested that the site tends towards stability in terms of diversity, suggesting an advanced

⁸⁵ SILVA, R.P. 2001. Padrões de crescimento de árvores que ocorrem em diferentes topossequências na região de Manaus (AM). Dissertação de Mestrado. INPA/UA. Manaus-AM.

successional stage, that is, mature forest. Thus, the time scale between ecosystem disturbance and reconstruction phases are also important factors, which can influence species richness and diversity.⁸⁶

As with the forest management areas, the density of individuals per hectare and basal area suffered a small decrease during the monitored period, suggesting stability in the density, as well as in the average diameter of the plant community. The overall average for all species was 0.2 cm in preserved forest areas. The species with the highest annual periodic increment averages were *Parkia ulei* (Fabaceae), with 2.2 cm, and *Sloanea grandis* (Elaeocarpaceae), with 1.4 cm. Table 7, below, summarizes the estimates explored in the monitoring of preserved forest environments in the Project area.

Table 7. Estimate of the parameters analyzed in the monitoring carried out in 2013 and 2022 for the preserved forest environment, in the Project area.

Parameter	2013	2022
Number of individuals per hectare	537	514
number of species	137	132
Diversity (H')	4,38	4,20
Basal area (m ²) per hectare	32,82	30,73
Average diameter (cm)	22,93	23,13
Annual recruitment rate (%)	-	1,65
Taxa de mortalidade anual (%)	-	2,43
Incremento periódico anual (cm)	-	0,37

ii. Diametric distribution

To evaluate the distribution of diameter of individuals, ten classes were considered, with intervals of ten centimeters between them, the first class being between 9.5 and 19.5 centimeters, and the last one above 99.5 centimeters. The evaluation of the number of classes was based on Sturges' formula (1926) and was later standardized for all environments studied for comparison purposes.

⁸⁶ STEEGE, H. T. et al. Na analysis of the floristic composition and diversity of Amazonian forests including those of the Guiana Shield. *Journal of Tropical Ecology*, 16: 801-828, 2000.

In the first year of comparison, 2013, 69% of individuals were present in the first diameter class (9.5 to 19.5 centimeters). In the last year, 2022, this percentage was maintained. This data indicates that the managed forest areas tend towards a relative stabilization in terms of diametric structure.

Thus, it is observed in Figure 41 that the diametric structure maintained its negative exponential form during the studied periods. Therefore, it was possible to identify that individuals are migrating from earlier classes to later classes of diameter at breast height (DBH). This result is a positive factor, as it indicates the effectiveness of conservation and good practices in the Project's monitored areas, given that this trend is the expected behavior for an environment that does not undergo major alterations or severe disturbances.

The distribution of tree individuals followed the curve pattern, which is compatible with the diameter structure of the forests in the Project region. In this arrangement, the plant population analyzed has representatives in all size classes, but the highest concentration of individuals occurs in the first diameter classes and progressive reduction as the DBH increases. Thus, the results indicate a balanced behavior of the forest structure, that is, the population has a sufficient remaining stock to promote the maintenance of the diametric structure of the vegetation.

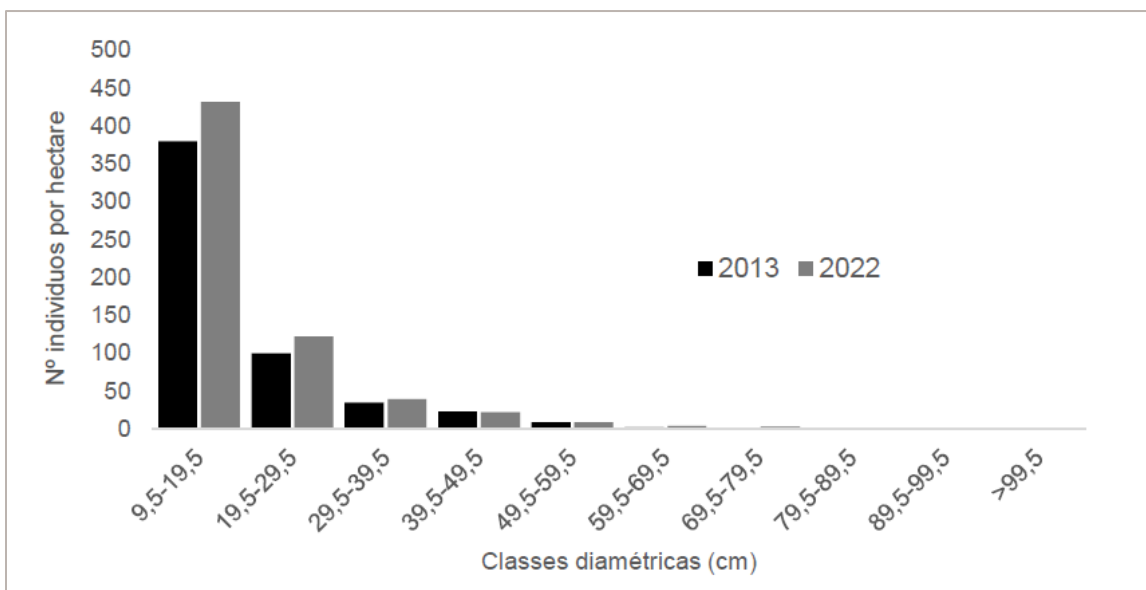


Figure 41. Diametric distribution of individuals in the managed forest environment, for the years 2013 and 2022, in the monitoring plots of the Jari Pará REDD+ Project.

In areas of preserved forest, the same logic for studying the size of species was applied. In 2013, 55% of individuals were present in the first diameter class (9.5 to 19.5 centimeters). In 2022, this percentage was maintained, that is, the preserved area presented stabilization in terms of diametric structure, during the evaluated period.

Following the same tendency of the managed forest, the graph of the diametric classes of the species is presented in a negative exponential form, which indicates good quality of an environment that does not suffer external disturbances, keeping the ecosystem of the forest community in balance.

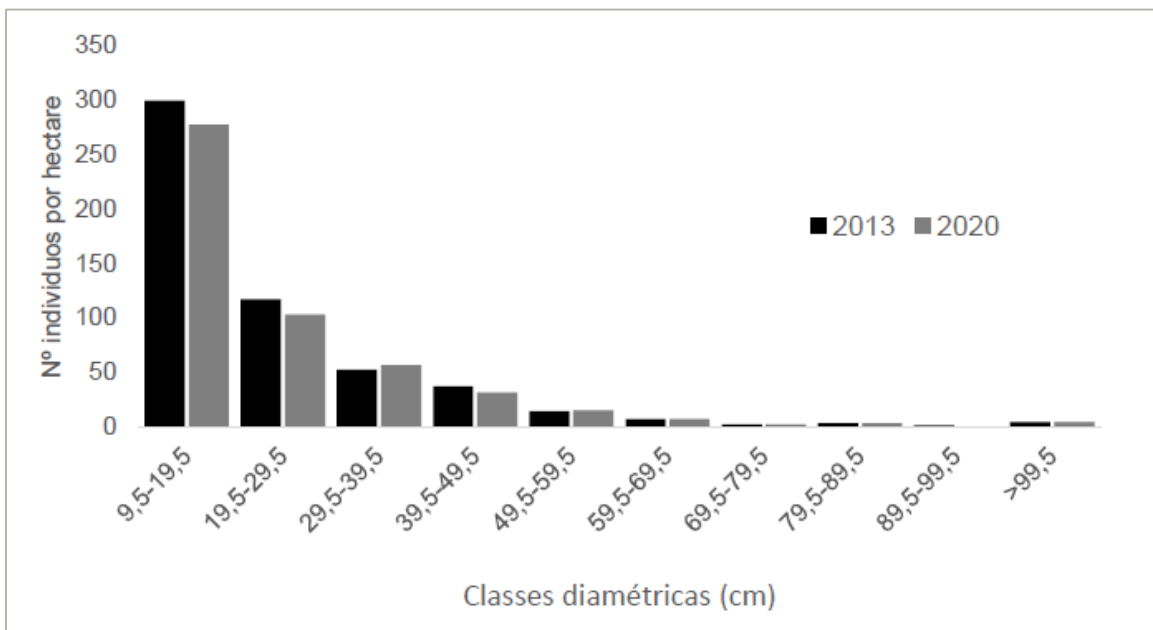


Figure 42. Diametric distribution of individuals in the preserved forest environment, for the years 2013 and 2022, in the monitoring plots of the Jari Pará REDD+ Project

Conclusions

The analysis of the managed forest environment indicated a positive balance in the number of individuals, in view of the entry of new specimens being greater than mortality. The preserved forest revealed higher mortality rates, explained by the decrease in the number of individuals.

Periods of instability or imbalance between mortality and recruitment may be part of the rhythmic cycles of some undisturbed forests, which reach a balance through periods of high mortality or biomass loss, alternating with periods of high recruitment or biomass gain. In these cases, such an imbalance is attributed to the natural process, since mortality occurs first, followed by recruitment.

It is important to point out that the long period of monitoring can also influence, as the fluctuation in population rates and tree density can lead to wrong conclusions, depending on the years of measurements, about the dynamic processes that are taking place in the forest. In addition, it is also worth noting that the monitored plot is located in a lowland area, close to the Arraiolos River, where water availability is greater, therefore, it is expected that individuals are more sensitive to extreme droughts than those found in the plateau areas, where water availability is lower.

In general, the indices of floristic composition of the two evaluated environments showed good variation, a fact evidenced by the estimate of diversity and species richness. In this way, it is understood that the Project's activities have been contributing to the stability of the areas in which it operates, seeking to reduce severe impacts on the forest ecosystem and guarantee the balance of the regional biota.

Data / Parameter	Plant community diversity in permanent plots		
Data Unit	Shannon-Wiener Index (H')		
Data Source	Field sheets, data sheet and Flora monitoring report (IFAP, 2023)		
Description of the measurement means and procedures to be applied	The flora monitoring study was based on the application of permanent plots allocated in the Project area, evaluating two environments: forest management area and preserved forest area. The permanent plots are 1 hectare (100 by 100 meters) subdivided into 100 sub-plots of 100 square meters (10 by 10 meters) each. Data from the continuous forest inventory (CFI) were used with remeasurements in permanent plots in different periods, between the years 2013 and 2022.		
Monitoring/logging frequency	Every two years		
Monitored value	Year	Managed Forest	Unmanaged Forest
	2018	n/a	n/a
	2019	n/a	n/a
	2020	n/a	n/a
	2021	n/a	n/a
	2022	4,78	4,30
	These values, considered adequate for the forest physiognomy of the Project area, infer a high rate of richness and variety of flora species, which explains the total 139 species found in the monitoring areas.		
Calculation method	Diversity at the species level for the environments was estimated by the Shannon-Wiener diversity index (H'). The index has data on the total number of individuals sampled, number of individuals sampled of the i-th species, number of species sampled and Napierian base logarithm, making it possible to reach the index value for understanding floristic diversity.		

Comments

The flora report, developed by IFAP (2023), will be made available for access to the VVB.

5.3.2 Biodiversity Monitoring Plan Dissemination (CCB, B4.3)

As already described in item 2.3.1, the Jari Pará REDD+ Project implemented three methods of communication, aiming to guarantee access to documents and all other Project information to communities and other actors through oral, written and virtual forms. The Monitoring Guide stands out as one of the dissemination/dissemination tools, presenting activities, indicators and practices to monitor activities.

The results were disseminated in a virtual version where the documents related to the monitoring were made available through Verra's website and website, Biofílica's newsletter and social media, and orally in the presentations on the project's results, during the Technical Assistance and Rural Extension process (ATER), as well as, it is planned that the results will be disclosed to the communities in a more didactic way, through a summary of the Monitoring Guide and in the holding of annual public consultations, where the results of the Project will be discussed, promoting a participatory evaluation of deliveries and suggestions, and points for improvement will be raised that can be increased in the planning of the following year, guaranteeing the engagement of communities in the decision-making process.

5.4 Optional Criterion: Exceptional Biodiversity Benefits

5.4.1 Trigger Species Population Trends (CCB, GL3.2, GL3.3)

The main trigger species identified by the REDD+ Project are listed below, the monitoring carried out in 2022 was part of the initial phase of the partnership between Fundação Jari and IFAP, therefore, its coverage area was reduced in Pará, when comparing the entire extension of the Project Zone. Regardless, the results obtained, described in the previous sections, were very significant for the methodologies and period monitored, and the advancement of this partnership will, as a consequence, cover the monitored areas and thus provide a better detailing of the dynamics of biodiversity in loco to the project.

In view of this, some trigger species identified in the Project PDD, namely *Chiropotes satanas* (black saki), *Pteronura brasiliensis* (otter), *Tayassu peccary* (peccary) and *Crax alector* (curasow), were not recorded in the plots of monitoring of selected fauna. It is correct to infer that the study area, mainly those with eucalyptus monoculture, have forest remnants, either primary forest or in secondary succession. Therefore, the fact that a species is not registered in a certain area does not mean its total non-existence, this is a very common situation in long-term monitoring of Biodiversity.

Additionally, the list was updated with other species identified in the collection areas of fauna individuals in this monitoring. These species are important indicators of environmental conservation and

should be monitored, aiming to minimize habitat loss and preserve their population, since they are listed as vulnerable on the IUCN Red List of Threatened Species.

Trigger Species	<i>Tapirus terrestris</i>
Scenario with Project	The <i>Tapirus terrestris</i>, popularly known as tapir, is considered one of the animals sensitive to hunting, therefore, a game species. Among the mammals that occur in Brazil, the tapir is the largest terrestrial vertebrate⁸⁷ and, among its ecological functions, the dispersion of seeds, being a frugivorous animal, stands out as one of the most relevant for the ecosystem balance of the places where it inhabits. In view of this, the species, listed on the IUCN red list in vulnerable status (VU), requires robust conservation action plans, reinforcing the need to maintain protected areas (UCs) around the Project and avoid deforestation and degradation forestry in conservation areas, in order to minimize habitat loss. The Jari Pará REDD+ Project, based on its Biodiversity Monitoring Plan (described in section 5.4.1 of the PDD), seeks to ensure the continuity and improvement of biodiversity, through follow-up and monitoring campaigns, in order to assess the dynamics seasonality of the species together with practices with low impact on the forest and other activities. <i>Tapirus terrestris</i> was identified in five occurrences in the areas of the Jari Pará REDD+ Project. As it is a highly sensitive species to anthropic alterations, richness, which is considered high, is a positive indicator of conservation conditions in the area, favorable to the permanence and preservation of the mammal. In this sense, it can be inferred that the Project's activities have been effective for the maintenance of the species, since one of the positive impacts foreseen in the initial description of the Project is the conservation of key and vulnerable species, in indicators such as richness and frequency of occurrence.
Trigger Species	<i>Ateles Paniscus</i>
Scenario with Project	The species <i>Ateles paniscus</i>, with the popular name black spider monkey, was a species recorded in two occurrences in the last monitoring (2022), in the sampling points of eucalyptus silviculture. Listed on the IUCN list in vulnerable status (VU) and considered a game species, the black spider monkey is a species that is very sensitive to the anthropization of the environment, since it lives exclusively in treetops, occupying, preferably, the upper levels of the canopy. Because it is frugivorous, the species is considered an important seed disperser, a fact that makes it key in the conservation and maintenance of areas.

⁸⁷ Discentes do Programa de Pós-Graduação em Desenvolvimento e Meio Ambiente (PRODEMA), Universidade Federal do Piauí - A CAÇA DA ANTA (*Tapirus terrestris*) E AS IMPLICAÇÕES PARA A CONSERVAÇÃO DAS FLORESTAS BRASILEIRAS: UMA REVISÃO SISTEMÁTICA

	In addition to being listed on the IUCN, it also appears on the official IBAMA list in threatened status, being vulnerable due to its susceptibility to hunting and disturbance of its natural habitat. The Project, based on the Biodiversity Monitoring Plan (described in section 5.4.1 of the PDD), has been implementing actions that seek to mitigate the impacts on the forest and, according to the results found in this monitoring report, the conservation status of the Project area was obtained a positive result, which implies the preservation of biodiversity and maintenance of the species under study. Furthermore, the presence of the species in areas of eucalyptus silviculture demonstrates the importance of fragments of primary forest adjacent to the monitored regions, in the areas of the Project, helping to preserve the local biodiversity that permeates these locations and, more importantly, becoming essential for the guarantee of survival of rare and vulnerable fauna.
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Trigger Species	<i>Patagioenas subvinacea</i>
Scenario with Project	Considered one of the endangered birds in Brazil, <i>Patagioenas subvinacea</i> (botafofo dove), was found in the Project region and is listed in the IUCN in vulnerable status (VU), also included as a game species. <i>Patagioenas subvinacea</i>, as well as other identified trigger species, is an important seed disperser and normally lives in the canopy and under canopy. Despite not showing high richness, the presence of the species, being a threatened taxon, in the monitored sample units indicates the positive status of forest integrity, reinforcing the need to continue the Biodiversity Monitoring Plan (described in section 5.4.1 of the PDD), since this species demonstrates a certain fragility in the face of the loss and fragmentation of the forest habitat.

Trigger Species	<i>Ramphastos tucanus</i>
Scenario with Project	The white-throated toucan, or <i>Ramphastos tucanus</i>, is one of the trigger species monitored in order to present the effectiveness of conservation actions in the Project area, since it is listed on the IUCN red list in vulnerable status (VU). Furthermore, due to its beauty and exoticism, the toucan is hunted in the region, which makes it one of the monitored game species. The species feeds on fruits, insects and small vertebrates, occupying tree stems at varying heights. Because it is a species of high occurrence in the Project region, it is an indicator of good quality of fauna diversity, and therefore, it is analyzed as an indicator species of conservation results in forest areas. The Project's activities seek to guarantee the continuity and presence of these species in conservation areas, thus, from the implementation of the Biodiversity Monitoring Plan, described in section 5.4.1 of the PDD, positive results of protection of this species were recorded. <i>Ramphastos tucanus</i> showed extremely high occurrence and richness in the monitored areas, being recorded 26 times. This data positively demonstrates the environmental

conditions for the occupation of this endangered species, given that its population inhabits all monitored sampling points.

APPENDIX 1: Communities Located in the State of Pará Within the Scope of the Project's Actions

Community	Geographic Coordinates		Gleba
	Latitude	Longitude	
13 DE MAIO	-0,903184	-52,910103	ANTONIO FERNANDES TEIXEIRA
ACAPUMUM	-1,252352	-52,963585	HUASCAR LOPES PORTUGAL
ÁGUA AZUL	-0,931853	-52,940601	ANTONIO FERNANDES DA FONSECA TEIXEIRA
ARIRAMBA	-1,219953	-52,45726	FAZENDA SARACURA
BANANAL	-0,752471	-52,575232	SANTO ANTONIO DA CACHOEIRA
BANANAL (RIO PARU)	-1,366847	-52,848233	FAZENDA SARACURA
BANDEIRA	-0,871666	-52,607095	SÃO BENTO
BASE	-1,313841	-52,589527	FAZENDA SARACURA
BITUBA	-1,262559	-52,642456	CAMPO SARACURA
BRAÇO	-0,824172	-52,766494	JOSÉ PORTO DE OLIVEIRA
BURITIZAL II	-0,843485	-52,554368	GOGÓ DE GUARIBA

CAFEZAL	-1,160822	-53,16114	CASTANHAL DO URUCURITUBA
ESPÍRITO SANTO	-1,349862	-52,251103	SÃO JOSÉ
ESPOSENTO	-1,343781	-52,45325	CAJUEIRO SERRA DE ALMEIRIM
ESTRADA NOVA	-1,009118	-53,046271	PANAMA OU MAPAU
GOIABAL	-1,338161	-52,38506	SERRA GRANDE
GUETE	-1,294293	-52,632805	FAZENDA SARACURA
ILHA DE SÃO PAULO	-1,313838	-52,327229	SERRA GRANDE
INCRUZO	-0,989433	-53,147381	PANAMA OU MAPAU
ITANINGA	-1,148573	-53,042208	FAZENDA SARACURA
ITAPUCU	-1,091279	-52,358147	JUPATITUBA
KM 22	-1,3874	-52,502417	CAJUEIRO SERRA DE ALMEIRIM
KM 25	-1,380889	-52,530951	CAJUEIRO SERRA DE ALMEIRIM
KM 30	-1,37924	-52,607222	FAZENDA SARACURA
MARGARIDA	-0,981836	-52,462355	SANTA MARGARIDA
MATADOURO	-0,85828	-52,549292	SAMAHUMA
MONTE SIÃO	-0,917773	-52,538843	SAMAHUMA
MORADA NOVA	-0,840545	-53,073988	FAZENDA SARACURA

NOVA VIDA	-0,87508	-52,959258	EUGÊNIO JOSÉ GENTIL GUEDES
PANAMINHA	-0,985541	-53,101406	PANAMA OU MAPAU
PIMENTAL	-0,973736	-53,038852	PANAMA OU MAPAU
PLANALTO	-0,869994	-52,604113	SÃO BENTO
PUXURI	-0,939487	-53,215671	PANAMA OU MAPAU
RAMAL DA ESPERANÇA	-0,96365	-53,101165	PANAMA OU MAPAU
RAMAL DO ZÉ QUEIMADO	-0,969338	-53,089819	PANAMA OU MAPAU
RAMAL GROTA RICA (ÁREA 127)	-0,82086	-53,063062	FAZENDA SARACURA
RAMAL NOVA UNIÃO	-0,998302	-53,115658	PANAMA OU MAPAU
RAMAL SERRA GRANDE	-1,032681	-53,058563	FAZENDA SARACURA
RECREIO	-1,120893	-53,161338	FAZENDA SARACURA
REPARTIMENTO DOS PILÕES	-0,720323	-52,857499	SANTO ANTONIO DA CACHOEIRA- 01
RODOVIA PANAICÁ KM 40	-1,287973	-52,656069	FAZENDA SARACURA
SÃO JOÃO BATISTA DO PALHETA	-0,949187	-52,601482	FAZENDA SARACURA
SÃO LUIS DE GONZAGA (BURITIZAL)	-1,050638	-53,020761	FAZENDA SARACURA
SÃO MIGUEL	-0,871382	-52,740749	SEGREDO

SÃO MILITÃO	-0,763948	-52,624129	SANTO ANTONIO DA CACHOEIRA- 01
SARACURA	-1,321434	-52,35093	SERRA GRANDE
TERRA SANTA	-1,011519	-52,884242	FAZENDA SARACURA
TINGUELINGUE	-0,90748	-52,68753	JOAQUIM NUNES DE ALMEIDA
TUCUNAREÍ	-1,252289	-52,136612	FAZENDA SARACURA
VILA DOS GATOS	-0,917889	-52,647579	PAPUDO
VILA NOVA	-0,746523	-52,883315	SANTO ANTONIO DA CACHOEIRA- 01
VILA NOVA (RIO ARRAIOLOS)	-1,332194	-52,389496	SERRA GRANDE

APPENDIX 2: PROJECT RISKS TABLE

	Identified risk(s)	Potential impact of risk on stakeholders, ecosystem health, and biodiversity	Mitigation or preventative measure(s) taken
Natural and human induced risks to stakeholders' wellbeing	No risk identified.	N/A	During the monitored period and throughout the entire longevity of the project, consultations have been and will continue to be conducted with local stakeholders regarding the implementation of any planned activities, in order to engage communities and mitigate any risks and negative impacts. As a mitigation measure, the communication is based on Public Consultations, meetings for Project presentation, exchanges between communities, ATER visits, and communication strategies with open dialogue provided by Information tools, Feedback Channels and the Complaint Redress Procedures, Conflict Management and Stakeholder Communication procedures. It is worth noting that these communication channels aimed to preserve and stimulate rapid dialogue, mainly by ATER visits, being a space for consultation, complaints, suggestions for stakeholders, and include, among other communication strategies implemented, the sending of requests, suggestions or complaints, through suggestion boxes (Contact Us), contact forms and telephone channels.

Risks to stakeholder participation	No risk identified.	N/A	The Jari Pará REDD+ Project does not pose risks to the well-being of local communities, especially those who participate in the project as no activity related to the project results in the involuntary removal or relocation of owners with property rights to their lands or territories. The involvement of various interested parties in decision-making processes is guaranteed and encouraged, promoting participation in workshops, courses, training and diagnoses carried out. In addition, existing and implemented communication channels are also constantly improved.
Working conditions	Occupational safety risks.	Impacto na saúde e segurança de trabalhadores que atuam nas áreas do projeto ou junto os proponentes.	An important component of the Project involves strict care for workers' safety, considering the internal regulations and official standards established by the federal and state governments. Through internal rules and improvements in occupational health and safety practices, all positions and situations that could pose some type of occupational risk were thoroughly avoided and mitigated. Other relevant tools are reported in the following documents made available to VVB: • Covid-19 Protocol • Description of PPE by Function • Action plan • Environmental Risk Prevention Program Occupational Health and Safety Information – ISST.

Safety of women and girls	No risk identified.	N/A	The Fundação Jari encourages the participation of women, young people and marginalized people, allocating part of the resources of the Socio-Environmental Agreement to include these less favored groups (gender, youth and vulnerable populations).
Safety of minority and marginalized groups, including children	No risk identified.	N/A	The Fundação Jari encourages the participation of women, young people and marginalized people, allocating part of the resources of the Socio-Environmental Agreement to include these less favored groups (gender, youth and vulnerable populations).
Pollutants (air, noise, discharges to water, generation of waste, and release of hazardous materials and chemical pesticides and fertilizers)	Pollution caused by fertilizers.	Pollution of watercourses and impact on biodiversity health.	The Jari Pará REDD+ Project mainly encourages the use of organic compost in the activities carried out by the project, in addition to avoiding the anaerobic decomposition of organic waste available on rural properties (such as manure and straw), greenhouse gas emissions and water contamination. If well managed, the organic compound results in an organic fertilizer of excellent quality, with ideal levels of carbon and nitrogen. Chemical fertilizers were used minimally, with recommendations based on soil analyzes carried out and focused on each type of production system developed by producers. Furthermore, the recommended fertilization did not contain nitrogen in the formulation, this nutrient being supplied through the organic compound. This made it possible to avoid adverse effects, such as pollution, greenhouse gas emissions and

			eutrophication of water bodies and groundwater. The project also carries out environmental education activities, which aim to educate, guide and mitigate the risks associated with environmental pollution.
Discrimination	No risk identified.	N/A	Biofílica Ambipar Environmental Investments follows the principles of the Grupo Ambipar “Code of Conduct”, based on the premise of respect for people, regardless of their hierarchical position, origin, color, ethnicity, culture, age, social level, physical capacity, religion, and sexual orientation, not being accepted any practice of discrimination. Some commitments are the encouragement of attitudes of respect for people, their traditions and values, as well as to guide the relationship by respecting the laws and conventions that deal with fundamental human rights. Grupo Jari has a solid culture of Human Rights Policy and Social Responsibility, being a group that respects, protects, and supports human rights. This position is described in its internal rules, such as the "Integrated Policy of Grupo Jari" and “Code of Conduct - Principles and General Norms of Conduct”. The "Code of Conduct - General Principles and Standards of Conduct" has the purpose of guiding and directing the attitude of all employees of Grupo Jari concerning the contact with the internal and external public, and with the community. This document is based on principles protected by transparency and ethics, by local, state and federal laws,

			and by international treaties and conventions, such as the Universal Declaration of Human Rights, the International Labor Organization and United Nations Conventions. Several topics are covered in this document, such as ethical values and the law, conflicts of interest, human rights, the environment, workplace practices, external publics, and so on, thus addressing discrimination issues.
Sexual harassment	No risk identified.	N/A	Biofílica Ambipar Environmental Investments follows the principles of the Grupo Ambipar “Code of Conduct”, based on the premise of respect for people, regardless of their hierarchical position, origin, color, ethnicity, culture, age, social level, physical capacity, religion, and sexual orientation, not being accepted any practice of discrimination. Some commitments are the encouragement of attitudes of respect for people, their traditions and values, as well as to guide the relationship by respecting the laws and conventions that deal with fundamental human rights. Grupo Jari has a solid culture of Human Rights Policy and Social Responsibility, being a group that respects, protects, and supports human rights. This position is described in its internal rules, such as the "Integrated Policy of Grupo Jari" and “Code of Conduct - Principles and General Norms of Conduct”. The "Code of Conduct - General Principles and Standards of Conduct" has the purpose of guiding and directing the attitude of all employees of Grupo Jari concerning the contact with the internal and external public, and with the community. This document is

			based on principles protected by transparency and ethics, by local, state and federal laws, and by international treaties and conventions, such as the Universal Declaration of Human Rights, the International Labor Organization and United Nations Conventions. Several topics are covered in this document, such as ethical values and the law, conflicts of interest, human rights, the environment, workplace practices, external publics, and so on, thus addressing issues such as moral and sexual harassment.
Equal pay for equal work	No risk identified.	N/A	The project and its proponents establish employee payments without gender discrimination. It is worth mentioning that the project proponents already have teams composed mainly of people from the Vale do Jari, for both direct employees of Grupo Jari, as well as for hired consultants, which highlights that the project will only reinforce the actions already taken in this regard.
Gender equity in labor and work	No risk identified.	N/A	All stages of the selection process, as well as hiring the professional, are based on criteria established in the description of positions offered and minimum qualification is desirable. No criteria of race, gender, sexual orientation, color, religion, age, ethnic origin, physical or mental disability or social class are adopted. It is worth mentioning that the project proponents already have teams composed mainly of people from the Vale do Jari, this for both direct employees of Grupo Jari, as well as for hired consultants, which

			highlights that the project will only reinforce the actions already taken in this regard.
Forced labor⁸⁸	No risk identified. The project does not and will not use victims of forced labor.	N/A	It is assumed that all employees at Grupo Jari, Biofílica Ambipar Environmental Investments, and service companies are legally contracted in compliance with the Brazilian labor legislation. In addition, international agreements ratified by Brazil and issues related to worker well-being are observed. After being hired, and before starting the worker's activities, there is training and qualification on technical procedures and promotion of empowerment regarding their rights and applicable laws. In addition, employees are instructed to join the institution responsible for defending their rights, the unions respective to their area of work.
Child labor	No risk identified. The project does not and will not use victims of child labor.	N/A	It is assumed that all employees at Grupo Jari, Biofílica Ambipar Environmental Investments, and service companies are legally contracted in compliance with the Brazilian labor legislation. In addition, international agreements ratified by Brazil and issues related to worker well-being are observed. After being hired, and before starting the worker's activities, there is training and qualification on technical procedures and promotion of empowerment regarding their rights and applicable laws. In addition,

⁸⁸ The identified risks and commensurate mitigation or preventative measure(s) for forced labor, child labor, and human trafficking, must be inclusive of staff and contracted workers employed by third parties.

			employees are instructed to join the institution responsible for defending their rights, the unions respective to their area of work.
Human trafficking	No risk identified. The project does not and will not use victims of human trafficking.	N/A	It is assumed that all employees at Grupo Jari, Biofílica Ambipar Environmental Investments, and service companies are legally contracted in compliance with the Brazilian labor legislation. In addition, international agreements ratified by Brazil and issues related to worker well-being are observed. After being hired, and before starting the worker's activities, there is training and qualification on technical procedures and promotion of empowerment regarding their rights and applicable laws. In addition, employees are instructed to join the institution responsible for defending their rights, the unions respective to their area of work.
Recognition of, respect of, and promotion of the rights to IPs, LCs and customary rights holders	No risk identified.	N/A	The Jari Amapá REDD+ Project recognizes, respects, promotes the protection of human rights and supports the rights to lands, territories and resources, including the statutory and traditional rights of indigenous peoples and others within communities and other stakeholders. Both Biofílica Ambipar Environment and the Grupo Jari are committed to fostering an attitude of respect for people, their traditions and values, as well as guiding relationships by respect for the laws and conventions that deal with fundamental human rights.

			Biofílica Ambipar Environment follows the principles of the Ambipar Group's "Code of Conduct", whose basic premise is respect for people, regardless of their hierarchical position, origin, color, ethnicity, culture, age, social level, physical ability, religion and sexual orientation, and does not accept any practice of discrimination. The Grupo Jari has a solid culture of Human Rights Policy and Social Responsibility. The description of this position can be found in its internal rules, such as the "Integrated Policy of the Jari Group" and the "Code of Conduct - General Principles and Rules of Conduct" of the Jari Group, and in the document "Code of Conduct" of the Ambipar Group.
Preserving and protecting cultural heritage	No risk identified.	N/A	The Project recognizes, respects and supports the rights to lands, territories and resources, including the statutory and traditional rights and others within communities and other stakeholders.
Protecting and preserving property rights, customary rights, or protecting legal or customary tenure/access rights to territories, property, and resources, including collective and/or conflicting rights	Disputes over rights to territories and resources.	Land tenure conflicts within the project's properties and impact on the housing conditions of populations present in the area.	Todos os detalhamentos sobre como o projeto mitiga e endereça temas de posse e direitos de propriedade podem ser encontradas nas seções 2.5 Legal Status and Property Rights.
Impacts on biodiversity and ecosystems	No risk identified.	N/A	This lack of negative impacts derives mainly from the fact that the Project Zone is

			surrounded by protected areas (Conservation Units) and that the activities carried out by the Project are designed to reduce deforestation and degradation, thus guaranteeing the conservation of the habitat of the species, and mitigating possible leaks that may occur, keeping people in the countryside and in harmony with the forest. The Project Zone as an ecological corridor and as a buffer zone for risks and threats to the mosaic of protected areas in the north of the state of Amapá.
Soil degradation and soil erosion	Soil erosion caused by forest management activities.	N/A	Forest management operations, even if they have a reduced impact, are the most likely to generate risks. Techniques are adopted to ensure that timber extraction offers the lowest possible risk. Establishes guide procedures for controlling soil erosion, such as: • Low impact management; • Marking and protection of forest areas on the banks of water bodies or at risk of erosion (30-100 m wide); • Do not manage areas on steep slopes; • Construction of roads and other support areas in the smallest possible size; • Reducing skid trails to the minimum possible through careful planning; • Road construction always follows hilltops; • Skid trails and roads perpendicular to the slopes; • Leveling areas to facilitate drainage; • Controlled management during periods of intense rain;

			Complementary planting using species that quickly cover exposed soil can be done as necessary.
Water consumption and stress	No risk identified.	N/A	The agroextractive activities carried out by communities in the Project Zone are their main source of income, and thanks to the maintenance of the genetic variability of plant and animal species, important for the resilience of species to pests and diseases, as well as the maintenance of the volumetric flows of bodies of water, guaranteeing water for irrigation and agricultural production and the conservation of forest cover that acts as a protective shield against winds and storms, so common in the region, these activities have a favorable environment to be carried out, in addition to the constant support of technical assistance.
Habitats (and areas needed for habitat connectivity) for rare, threatened, and endangered species	Deforestation and forest degradation of habitats, leading to impacts on species' balance.	Loss of habitat that provides shelter and food for endangered species within the project area.	The results produced in biodiversity studies, in addition to contributing to the increase of technical knowledge, can serve as an important source of data to foster actions to preserve animal and plant species in the region. Thus, the technical cooperation for such work aims to advance with monitoring actions, to generate inputs to minimize anthropic actions, especially working with the community and involving them in the activities. This produces more robust knowledge about the region, supporting one of the main

			expected mitigation actions, which is the expansion of environmental education work involving local communities, with the aim of raising awareness mainly about predatory hunting, and sustainable use of forest resources, disseminating the importance of ensuring the conservation of standing forests and the sustainable management of resources. The presence of all the species mentioned are indicators of an ecological balance present in the monitored areas, resulting from efforts to curb deforestation. Specifically, the species <i>Bertholletia excelsa</i> (Brazil nut tree) is considered a vulnerable species of extinction and, due to its high social value to the communities served by the project, is also considered a Social AAVC (Socially Relevant and Commercially Valuable Species), being a focus of environmental monitoring throughout the project's duration. The species listed in the table above, both animal and plant, are present within the project area, and were properly monitored during the period, with the reduction of deforestation and forest degradation in the Project area being essential for the maintenance of these species.
Areas needed for habitat connectivity	Deforestation and forest degradation of habitats,	Loss of habitat that provides shelter and food for endangered species within the project area.	The project's main activity is focused on reducing deforestation and forest degradation. During the monitoring period,

	leading to impacts on species' balance.		the positive impacts generated by the conservation efforts reflected the integrity of the primary native forest areas, in addition to the result of the good management practices carried out by Grupo Jari in the planted forest areas, located in the Project Zone and which serve as an ecological corridor for the species, demonstrating the guarantee of the abundance and conservation of the biodiversity of the local species. In addition, it is important to highlight the presence of these endangered species inventoried in the monitored sampling units demonstrates the importance of the project area for the conservation of biodiversity and the mitigation of extinction risks, guaranteeing genetic diversity.
Invasive species	No risk identified.	N/A	N/A
Ecosystem conversion	No risk identified.	N/A	N/A

APPENDIX 3: COMMERCIALLY SENSITIVE INFORMATION

Section	Information	Justification
1.13	Financial Performance Spreadsheet and other related documents;	This is the company's strategic and confidential financial and/or commercial information, as defined in section 1.13
1.13	Agreements and contracts between the parties involved	Strategic information on bidders, as defined in section 1.13
1.13	Jari's legal status documents	Strategic information on bidders, as defined in section 1.13
1.13	Minutes of meetings with Biofílica Ambipar, Grupo Jari and Fundação Jari;	Proponents' internal and strategic decisions
1.13	Financial statements of the Grupo Jari (Jari Celulose and Fundação Jari)	This is the company's strategic and confidential financial and/or commercial information, as defined in section 1.13
1.13	Financial Statements of Biofílica Ambipar Meio Ambiente	This is the company's strategic and confidential financial and/or commercial information, as defined in section 1.13
2.1.2, 2.1.4	Grupo Jari's Operational and Environmental Procedures	Internal company policies

APPENDIX 4: National Forest Emission Reference Level (FREL)

The FREL, known as the Forest Reference Emission Level, is nothing more than a reference level at which REDD+ activities in Brazil are measured and, in principle, allows the evaluation of the actual effects of policies and measures to reduce greenhouse gas emissions. This reference level of forest emissions is one of the requirements for developing countries that want to obtain recognition of their national forest mitigation efforts by the UNFCCC for the payments of REDD+ forestry results.

The reference level is taken 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 from 2016 to 2020”⁸⁹, an updated version of the one delivered in 2014. The document was submitted by Brazil to and approved by the UNFCCC in 2018

As an improvement in the analysis of the project's emissions data and reductions, a comparison was made with the values reported in the reference level of forest emissions in Brazil 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 intended to understand the role of the project at countrywide level, as well as an exercise to be aware of governmental updates concerning the reference level.

Therefore, it was identified that the FREL brings an average annual value of emissions of 751,780,503,37 tCO₂ related to the total annual 1,402,919.78 hectares of deforested areas in the legal Amazon. Regarding the project, in the years monitored, the average annual rate of emissions from planned and unplanned deforestation (opening for management infrastructure) and forest fires was 153,684.42 tCO₂ per 490.2 average hectares deforested each year. Therefore, by a simple rule of three, taking the annual rate of deforestation in the project and extrapolating to the reference level, the project should be emitting 262,682.73 tCO₂ annually.

It was also verified the percentage of the average project's emissions (153,684.42 tCO₂) in comparison to the reference level in order to verify the representativity of the project's emissions in the total value (751,780,503.37 tCO₂). As a result, it was identified that the project's emissions in the monitored period represented 0,0003% of the total emissions in the legal Amazon.

Making a methodological comparison associated with the FREL and the Jari Pará REDD+ Project, although the reference level of emissions was calculated using an extremely robust and reliable methodology, some points should be taken into account to explain the difference found between what was expected and what occurred.

First, the national reference level considered the years 1996 to 2015 in its calculations, consisting of a different period than the one monitored by the project (2018 to 2022). In addition, the methodology associated with FREL integrated burlap into its carbon stock calculations and, consequently, the final emissions values took burlap into account as well. Another important distinction is the fact that the approach of the REDD+ Project is developed in a more regional analysis, unlike the FREL. Thus, the

⁸⁹ BRAZIL. Ministry of Environment Ministry of Science, Technology and Innovation. **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 from 2016 to 2020**. Brasília, DF: MMA, Jan. 2018.

differences in methodological approaches make the emission factors of these two references different from each other.

Finally, it is important to emphasize the importance of the FREL as a national initiative to monitor emissions on a broader level, and to strengthen the national strategies of the REDD+ scope. Jari Pará REDD+ Project will follow the national updates in order to contribute to the progress and improvement of the REDD+ Projects throughout the country.