



Verified Carbon Standard

NON-PERMANENCE RISK REPORT JURUENA RIVER REDD PROJECT



Ecológica

Document Prepared by Ecológica Assessoria Ltda.

Project Title	Juruena River REDD Project
Version	07
Date of Issue	30-January-2025
Project ID	2709
Monitoring Period	VCS-PD – 1 st Baseline Period VCS-MR – Point 1 (12-November-2020 to 11-November-2021)
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1 INTERNAL RISK

Project Management		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	<p><i>Species planted (where applicable) associated with more than 25% of the stocks on which GHG credits have previously been issued are not native or proven to be adapted to the same or similar agro-ecological zone(s) in which the project is located.</i></p> <p>Not applicable. The Project Activity concerns sustainable forest management of existing forest resources in the Project Area, then does not involve planting seedlings.</p>	0
b)	<p><i>Ongoing enforcement to prevent encroachment by outside actors is required to protect more than 50% of stocks on which GHG credits have previously been issued.</i></p> <p>No, the Project Area has had 0.84 ha of unplanned deforestation during the monitored period, representing 0.0021% of the total project area.</p> <p>Also, the deforestation projection shows that 3,995.51 hectares could be deforested within this first baseline period (next 10 years), representing only 10.02% of the total project area, it is possible to conclude that much less than 50% of the carbon stocks are considered susceptible to encroachment by outside actors and, therefore, need active protection.</p> <p>It is important to note that the project proponent and their monitoring team have no knowledge of any past or present encroachment within the project area.</p> <p>The risks that may occur are treated according to the significance of the threat they might offer to the area. At first, they are identified, then taken to the supervisor responsible for determining how to proceed in the face of that kind of risk, so then a corrective and/or protective measure can be applied to that specific registered case.</p>	0
c)	<p><i>Management team does not include individuals with significant experience in all skills necessary to successfully undertake all project activities (i.e., any area of required experience is not covered by at least one individual with at least 5 years' experience in the area).</i></p> <p>Management team includes individuals with significant experience in AFOLU project design and implementation, and in carbon accounting, under approved GHG programs. Description of team members' experience below in item 1.1.</p>	0

	Moreover, the forest engineer graduated in UNEMAT – Mato Grosso State University-, Sarah Cristina Carvalho de Souza, is the responsible for the Sustainable Management Florets Plan with experience for almost five years.	
d)	<p><i>Management team does not maintain a presence in the country or is located more than a day of travel from the project site, considering all parcels or polygons in the project area.</i></p> <p>Most of the management team maintains a presence near the project site where it can be accessed by road, and the rest works in the proprieties with less than a day to travel. The time to access the farthest location of the project area is less than 6 hours by car plus 5 hours on foot (average of 10 km).</p>	0
e)	<p>Mitigation: <i>Management team includes individuals with significant experience in AFOLU project design and implementation, carbon accounting and reporting (e.g., individuals who have successfully managed projects through validation, verification and issuance of GHG credits) under the VCS Program or other approved GHG programs</i></p> <p>Management team includes individuals with significant experience in AFOLU project design and implementation, and in carbon accounting, under approved GHG programs. Description of team members’ experience below in item 1.1.</p>	-2
f)	<p>Mitigation: <i>Adaptive management plan in place.</i></p> <p>The Juruena River REDD Project adopts the SOCIALCARBON® Standard, which includes, as the relevant tool specifies, “processes for monitoring progress and documenting lessons learned or corrections that may be needed”. For each monitoring report, an action plan is applied for improvements considering the previous monitoring period indicator’s score. Therefore, the relevant mitigation score was applied here.</p> <p>This methodology is an innovative concept developed by the Ecológica Institute to measure the contribution of carbon projects to sustainability. The SOCIALCARBON® Methodology is based on six main indicators: Biodiversity; Natural; Financial; Human; Social and Carbon Resources and aims to deliver high-integrity benefits to each resource. A set of indicators has been developed as part of the efforts from the Project Proponents to properly measure the impacts and cobenefits resulting from the Juruena River REDD Project, which are available on the SOCIALCARBON website¹.</p>	-2
<p>Total Project Management (PM) [as applicable, (a + b + c + d + e + f)]</p> <p>Total may be less than zero.</p>		-4

¹ SOCIALCARBON indicators are available at: <<http://www.socialcarbon.org/documents/>>.

1.1 Team members' experience in AFOLU project design and implementation, carbon accounting and reporting:

Proponent: Plínio Ribeiro – Biofílica Ambipar (Cofundador & CEO Biofílica Ambipar)

Location: São Paulo, São Paulo – Brazil.

Plínio Ribeiro holds a degree 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 participated in 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 "Retorno à Amazônia", by Jean Michel Cousteau. He has been working at Biofílica since 2008, where he has led Projects, Operations and Business Management. Currently, he is Executive Director and shareholder of the company.

LinkedIn: <https://www.linkedin.com/in/plinio-ribeiro-a90570120/>

Cláudio Pádua – Biofílica Ambipar (Scientific Director)

Location: Brasília, Distrito federal – Brazil.

Cláudio Pádua 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 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 represents Brazil before the International Advisory Group (IAG) of the G7 Pilot Program. In 2003, together with his wife, Suzana Pádua, he was named "Hero of the Planet" by Time magazine for his activities in favor of biodiversity conservation. Between 1997 and 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.

LinkedIn: <https://www.linkedin.com/in/cl%C3%A1udio-p%C3%A1dua-326557a/>

Paula Conde – Biofílica Ambipar (Financial and Administrative Manager)

Location: São Paulo, São Paulo – Brazil.

Paula Conde has a degree 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. She has been with Biofílica since 2015, and is responsible for administrative and financial activities, specializing in REDD+ Carbon Market, intermediations, billing of these segments, logistical support to the team and projects.

LinkedIn: <https://www.linkedin.com/in/paula-christina-conde-b82a9125/>

Soraya Pires – Biofílica Ambipar (Operational Director)

Location: São Paulo, São Paulo – Brazil.

Agronomist, graduated from Esalq/USP with specialization in strategic management and finance from FGV, with 15 years of experience in management and development of agribusiness businesses and career developed in large multinational companies in the sugar-energy sector (Adecoagro, BP and BP Bunge). She has been with Biofílica since August 2022, performing activities related to business development, operational management, financial modeling, strategic planning, and AFOLU project management.

LinkedIn: <https://www.linkedin.com/in/soraya-dias-pires-b4628923/>

Caio Gallego - Biofílica Ambipar (NBS Intelligence Manager)

Location: São Paulo, São Paulo – Brazil.

Caio Gallego is a Forestry Engineer graduated from the University of 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. Caio Gallego has over 9 years of experience in working with the development and implementation of AFOLU projects for de voluntary carbon markets. He has worked with project development, with the main focus being on the implementation of one of the first REDD+ projects within the VCS program in the Brazilian Amazon. His main expertise has always been focused on the technical development of projects, having been responsible for more than 10 validation/verification processes. In more than 10 projects in which he was directly responsible for developing, he acted in the application of socio-environmental safeguards, ensuring the generation of net positive impacts on the climate, community and biodiversity, in addition to ensuring the maintenance of exceptional criteria applicable to each of these scopes.

LinkedIn: <https://www.linkedin.com/in/caio-gallego-0875b6b4/>

Laion Pazian – Biofílica Ambipar (Commercial Manager)

Location: São Paulo, São Paulo - Brazil

Laion Pazian is an Economist from the University of São Paulo (USP/ESALQ) and an MBA in Commercial Management from Fundação Getúlio Vargas. He has been at Biofílica since 2016, and he manages the commercial team for carbon credits, key-accounts, commercial policy and strategy. In addition, he monitors and directs the analysis of carbon market intelligence, being responsible for the area's pricing and planning policy.

LinkedIn: <https://www.linkedin.com/in/laion-pazian-1470b2104/>

Nayra Santos – Biofílica Ambipar (Carbon Project Coordinator)

Location: Rio de Janeiro, Rio de Janeiro – Brazil.

Nayra Gomes Nicolau dos Santos is a Forestry Engineer graduated from the Federal Rural University of Rio de Janeiro (UFRRJ), with a postgraduate degree in Forestry Management from the Federal University of Paraná (UFPR). She is currently a student in the Professional Master's Degree course in Environmental Engineering at the Polytechnic School of the Federal University of Rio de Janeiro (Poli / UFRJ). She has extensive experience in designing, managing and executing projects and environmental studies, technical coordination of environmental programs, as well as in institutional management with federal and state environmental agencies in the process of prior licensing and installation of projects related to the

infrastructure sector. She has been with Biofílca since November 2022, dedicated to the development and detailed planning of AFOLU projects, covering all stages from initial conception to full implementation. Her expertise includes auditing for project certification, issuing carbon credits and continuous monitoring to ensure compliance with established targets.

LinkedIn: <https://www.linkedin.com/in/nayra-nicolau-14695883/> Non-Permanence Risk Report VCS Version 4.0

Ricardo Cordeiro – Biofílca Ambipar (Communication Coordinator)

Location: São Paulo, São Paulo – Brazil.

Ricardo Cordeiro is an advertiser, On and Offline art director with more than 10 years of experience, he has worked in digital agencies, trade and live marketing. Experience in UX, planning and digital strategies. Specialization in Digital Marketing and Web Project Management. At Biofílca, where he has worked since 2020, he acts as communication coordinator, responsible for digital marketing, branding and institutional communication actions.

LinkedIn: <https://www.linkedin.com/in/rkscordeiro/>

Márcio Sales – Biofílca Ambipar (Specialist in Statistical Modeling)

Location: Belém, Pará - Brazil

Márcio Sales is a statistician, graduated from the Federal University of Pará, Master in Geography from the University of California, Santa Barbara and PhD student in Production Ecology and Resource Conservation from the University of Wageningen, in the Netherlands. He specializes in data analysis and conducts research in geostatistical modeling of processes distributed in space and time. He works at Biofílca in the production of projections of GHG emissions from future deforestation for the baselines of the projects and in the monitoring of deforestation by satellite.

LinkedIn: <https://www.linkedin.com/in/marciosales/>

Raphael Ramiro – Biofílca Ambipar (FP&A Specialist)

Location: São Paulo, São Paulo – Brazil.

Raphael Ramiro is an Administrator, graduated from Universidade Estadual Paulista and postgraduated in Corporate Finance from Universidade Federal de São Carlos. Professional with more than twelve years of experience in analysis and evaluation of projects from an economic-financial point of view. He has been with Biofílca since May 2022, performing activities related to the Evaluation and Financial Modeling of Carbon Projects - (AR, REDD+, ALM, Blue Carbon); Business Valuation (M&A); analysis of Financial Additionality - Carbon Projects; Executive Board / Board of Directors Presentations; Financial Performance Analysis / KPIs.

LinkedIn: <https://www.linkedin.com/in/raphael-ramiro-248421191/>

Marcela Ferreira – Biofílca Ambipar (Project Analyst)

Location: Manhuaçu, Minas Gerais, Brazil

Marcela Ferreira is a Forestry Engineer graduated from the Federal University of Viçosa, with a master's degree in Forestry Innovation from the same educational institution. She has experience in the design, management and execution of carbon projects, as well as in the forestry Bioenergy sector. She has been at Biofílca since December 2022, producing technical reports and activity reports for AFOLU Projects, and

evaluating reports and products delivered by suppliers regarding the socio-environmental diagnoses carried out.

LinkedIn: <https://www.linkedin.com/in/marcelaferreiragomes/>

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Amana Obolari – Bioflica Ambipar (Project Analyst)

Location: Porto Firme, Minas Gerais

Amana Obolari is a Forestry Engineer graduated from the Federal University of Viçosa, with a Master's and Doctorate in Agroforestry from the same educational institution. She has experience in the design, management and execution of carbon projects, as well as in the management of integrated production systems. She has been at Bioflica since February 2024, producing technical reports and activity reports for AFOLU Projects, and evaluating reports and products delivered by suppliers regarding the socio-environmental diagnoses carried out.

LinkedIn: <https://www.linkedin.com/in/amana-obolari-76a10224a/>

Financial Viability		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	<i>Project cash flow breakeven point is greater than 10 years from the current risk assessment</i> Not applicable.	0
b)	<i>Project cash flow breakeven point is greater than 7 and up to 10 years from the current risk assessment</i> Not applicable.	0
c)	<i>Project cash flow breakeven point greater than 4 and up to 7 years from the current risk assessment</i> Not applicable.	0
d)	<i>Project cash flow breakeven point is 4 years or less from the current risk assessment</i> Calculations show that the project cash flow breakeven point would be attained in less than 4 years from the current risk assessment.	0
e)	<i>Project has secured less than 15% of funding needed to cover the total cash out before the project reaches breakeven</i> Calculation of cash flow demonstrates that the project currently has secured funds to cover part of its expenses, but the amount secured represents less	3

	than 15% of the funding needed to cover the total cash out before the project reaches breakeven.	
f)	<i>Project has secured 15% to less than 40% of funding needed to cover the total cash out required before the project reaches breakeven</i> Not applicable.	0
g)	<i>Project has secured 40% to less than 80% of funding needed to cover the total cash out required before the project reaches breakeven</i> Not applicable.	0
h)	<i>Project has secured 80% or more of funding needed to cover the total cash out before the project reaches breakeven</i> Not applicable.	0
i)	Mitigation: <i>Project has available as callable financial resources at least 50% of total cash out before project reaches breakeven</i> Not applicable.	0
Total Financial Viability (FV) [as applicable, ((a, b, c or d) + (e, f, g or h) + i)] Total may not be less than zero.		3

Opportunity Cost		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	<i>NPV from the most profitable alternative land use activity is expected to be at least 100% more than that associated with project activities; or where baseline activities are subsistence-driven, net positive community impacts are not demonstrated</i> Not applicable	0
b)	<i>NPV from the most profitable alternative land use activity is expected to be between 50% and up to 100% more than from project activities</i> Not applicable.	0
c)	<i>NPV from the most profitable alternative land use activity is expected to be between 20% and up to 50% more than from project activities</i> Not applicable.	0
d)	<i>NPV from the most profitable alternative land use activity is expected to be between 20% more than and up to 20% less than from project</i>	0

	<p><i>activities; or where baseline activities are subsistence-driven, net positive community impacts are demonstrated</i></p> <p>Not applicable.</p>	
e)	<p><i>NPV from project activities is expected to be between 20% and up to 50% more profitable than the most profitable alternative land use activity</i></p> <p>Not applicable.</p>	0
f)	<p><i>NPV from project activities is expected to be at least 50% more profitable than the most profitable alternative land use activity</i></p> <p>NPV from project activities is 290% higher than the SFMP, which is the most profitable alternative land use activity, as demonstrated in the cashflow spreadsheet. Carbon credits will compose a significant income for the project activity to maintain its conservation operations and socio-economic benefits.</p>	-4
g)	<p>Mitigation: <i>Project proponent is a non-profit organization</i></p> <p>Not applicable.</p>	0
h)	<p>Mitigation: <i>Project is protected by legally binding commitment (see Section 0) to continue management practices that protect the credited carbon stocks over the length of the project crediting period</i></p> <p>The project is protected by a legally binding commitment to continue management practices that protect carbon stocks, but they do not cover the entire crediting period. The landowner has received permission to manage forest resources based on a Sustainable Forest Management Plan that was made available to SEMA/MT, the Environmental Agency responsible for licensing these activities in the Project region.</p> <p>The Project area started being managed according to such plan in 2007 in the property Sanga My, and the Plan has a lifetime of 35 years, i.e. management practices should be maintained until 2042. Furthermore, the Sustainable Forest Management Plan was registered in the land title documentation of all properties, which guarantees the commitment to the longevity of the project at least during the first cutting cycle.</p> <p>It is important to note that the project proponent is allowed to request the renewal of the sustainable forest management plan for more 35 years once this first period is over. In addition, the landowner is committed to renew the SFMP after the end of the 35-year cycle mainly due to the possibility to combine with the carbon credit project, which will last for at least 30 years from 2020. Besides that, it is noteworthy to mention that the properties heritage composes the family business, at least, since 1973.</p>	-2

	Thus, the Project is protected by a legally binding agreement, however the agreement is not found to be sufficient to demonstrate legally binding commitment for a 100-year period.	
i)	<p>Mitigation: Project is protected by legally binding commitment (see Section 0) to continue management practices that protect the credited carbon stocks over at least 100 years</p> <p>Not applicable.</p>	0
Total Opportunity Cost (OC) [as applicable, (a, b, c, d, e or f) + (g + h or i)]		-6
Total may be less than 0.		

Project Longevity		
a)	<p><i>Without legal agreement or requirement to continue the management practice</i></p> <p>Not applicable.</p>	0
b)	<p><i>With legal agreement or requirement to continue the management practice</i></p> <p>As explained above on item h) of opportunity cost, the Project area started being managed according to such plan in 2007 in the property Sanga My, and the Plan has a lifetime of 35 years, i.e. management practices should be maintained until 2042.</p> <p>As their commitment, Juruena River' proponent confirms to certainly renew the sustainable forest management plan for another 35-year forest management period and to continue the management practices, which represents a total 57-year management period, i.e., at least until 2077.</p> <p>Thus, the Project is protected by a legally binding agreement, however the agreement is not found to be sufficient to demonstrate legally binding commitment for a 100-year period.</p>	2
Total Project Longevity (PL)		2
May not be less than zero		

Internal Risk

Total Internal Risk (PM + FV + OC + PL)

$$(-4) + 3 + (-6) + 2 = 0$$

Total may not be less than zero.

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2 EXTERNAL RISKS

Land Tenure and Resource Access/Impacts		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating
a)	<p><i>Ownership and resource access/use rights are held by same entity(s)</i></p> <p>The same family entity holds ownership and resource access/use rights which is ensured by the State of Mato Grosso. The properties are privately owned, their title encompassing full control of the land in perpetuity. Moreover, the ownership and land tenure of these properties are recognized by the State of Mato Grosso, provided that the use of the areas attends to the requirements established by the Brazilian Environmental Agency (IBAMA) regarding the sustainable use of these areas and the continuation of management practices.</p>	0
b)	<p><i>Ownership and resource access/use rights are held by different entity(s) (e.g., land is government owned and the project proponent holds a lease or concession)</i></p> <p>Not applicable.</p>	0
c)	<p><i>In more than 5% of the project area, there exist disputes over land tenure or ownership</i></p> <p>There are no communities or residents living within the Juruena River REDD Project area. In addition, there not exist dispute over land tenure or ownership due to the owners have established a good relationship with the nearby communities, there is a responsible in charge for monitoring the area, plus the ownership and resource access/use rights are held by the project proponent. The State of Mato Grosso and the environmental entities have recognized the ownership and land tenure of the project's property to Juruena River REDD Project's proponent. Therefore, it is expected that these practices will avoid the risk of disputes over land tenure, ownership, or access/use rights. Nevertheless, during 2019 and 2020, the project area underwent two severe events involving illegal deforestation and fire. Both issues were taken to the local State's Police to a proper and legal resolution while in the meantime, the landowners contracted a surveillance service with a</p>	0

	local team as an initial way of guaranteeing the forest preserved for the project, with the main objective of avoiding new invasions.	
d)	<p><i>There exist disputes over access/use rights (or overlapping rights)</i></p> <p>Within the project area, there are no disputes regarding access rights, use of land and associated resources in the project's property. Moreover, the resource rights and land tenure of the property are recognized by the State of Mato Grosso and the environmental entities, provided that the utilization of the area attends to the requirements established by the Brazilian Environmental Agency (IBAMA) regarding the sustainable use of these areas and the continuation of management practices.</p>	0
e)	<p><i>WRC projects unable to demonstrate that potential upstream and sea impacts that could undermine issued credits in the next 10 years are irrelevant or expected to be insignificant, or that there is a plan in place for effectively mitigating such impacts</i></p> <p>Not applicable.</p>	0
f)	<p>Mitigation: <i>Project area is protected by legally binding commitment (e.g., a conservation easement or protected area) to continue management practices that protect carbon stocks over the length of the project crediting period</i></p> <p>The project is protected by legally binding commitment to continue management practices that protect carbon stocks, and it will be certainly renewed, as described on item (h) of Opportunity Cost.</p>	-2
g)	<p>Mitigation: <i>Where disputes over land tenure, ownership or access/use rights exist, documented evidence is provided that projects have implemented activities to resolve the disputes or clarify overlapping claims</i></p> <p>Not applicable, there are no disputes over land tenure, ownership, or access/use rights within the project area.</p>	0
<p>Total Land Tenure (LT) [as applicable, ((a or b) + c + d + e + f + g)]</p> <p>Total may not be less than zero.</p>		0

Community Engagement		
Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating

a)	<p><i>Less than 50 percent of households living within the project area who are reliant on the project area, have been consulted</i></p> <p>There is no community living within the project area and reliant on it. Thus, it is not applicable.</p>	0
b)	<p><i>Less than 20 percent of households living within 20 km of the project boundary outside the project area, and who are reliant on the project area, have been consulted</i></p> <p>The communities nearby the project area received the Local Stakeholders Consultation' presentation which has explained the Juruena River carbon project, including a forecast positive socioeconomic impact in the community. In addition, an in-person Stakeholders Consultation meeting was conducted with the presence of recognized leaders of the local communities.</p> <p>For more information about the Local Stakeholder Consultation, please check the VCS-PD, section 2.2.</p>	0
c)	<p>Mitigation: <i>The project generates net positive impacts on the social and economic well-being of the local communities who derive livelihoods from the project area</i></p> <p>The <i>Responsabilidade Socioambiental</i> project is aimed at serving the communities surrounding the project area since one of mitigation actions adopted in the Leakage Management Plan is the inclusion of the local community in the project activities, with environmental education and alternative sources of income to minimize risks of invasion and deforestation within the project area and the reference region.</p> <p>Besides forest conservation, the present project aims to improve and quantify its social and environmental benefits through application of the SOCIALCARBON® Methodology. This methodology is an innovative concept developed by the Ecológica Institute to measure the contribution of carbon projects to sustainability. The SOCIALCARBON® Methodology is based on six main indicators: Biodiversity; Natural; Financial; Human; Social and Carbon Resources.</p> <p>The SOCIALCARBON® Standard will help to demonstrate social and environmental benefits beyond GHG emissions reductions or removals.</p>	-5
<p>Total Community Engagement (CE) [where applicable, (a + b + c)]</p> <p>Total may be less than zero.</p>		-5

Political Risk

Risk Factor	Risk Factor and/or Mitigation Description	Risk Rating																																																																																																												
a)	Governance score of less than -0.79 Not applicable.	0																																																																																																												
b)	Governance score of -0.79 to less than -0.32 Not applicable.	0																																																																																																												
c)	<p>Governance score of -0.32 to less than 0.19</p> <p>The mean of Brazil's Governance Scores across the six indicators of the World Bank Institute's Worldwide Governance Indicators (WGI), averaged over the most recent five years of available data (between 2016 and 2020)² was equal to -0.20.</p> <p>Please, see the table below:</p> <table border="1"> <thead> <tr> <th colspan="2">Voice and Accountability</th> <th colspan="2">Political Stability and Absence of Violence/Terrorism</th> <th colspan="2">Government Effectiveness</th> <th colspan="2">Regulatory Quality</th> <th colspan="2">Rule of Law</th> <th colspan="2">Control of Corruption</th> </tr> <tr> <th>Year</th> <th>Rank</th> <th>Year</th> <th>Rank</th> <th>Year</th> <th>Rank</th> <th>Year</th> <th>Rank</th> <th>Year</th> <th>Rank</th> <th>Year</th> <th>Rank</th> </tr> </thead> <tbody> <tr> <td>2016</td> <td>0,45</td> <td>2016</td> <td>-0,38</td> <td>2016</td> <td>-0,17</td> <td>2016</td> <td>-0,21</td> <td>2016</td> <td>-0,16</td> <td>2016</td> <td>-0,38</td> </tr> <tr> <td>2017</td> <td>0,45</td> <td>2017</td> <td>-0,47</td> <td>2017</td> <td>-0,23</td> <td>2017</td> <td>-0,15</td> <td>2017</td> <td>-0,25</td> <td>2017</td> <td>-0,5</td> </tr> <tr> <td>2018</td> <td>0,36</td> <td>2018</td> <td>-0,44</td> <td>2018</td> <td>-0,45</td> <td>2018</td> <td>-0,33</td> <td>2018</td> <td>-0,25</td> <td>2018</td> <td>-0,40</td> </tr> <tr> <td>2019</td> <td>0,3</td> <td>2019</td> <td>-0,71</td> <td>2019</td> <td>-0,19</td> <td>2019</td> <td>-0,18</td> <td>2019</td> <td>-0,18</td> <td>2019</td> <td>-0,34</td> </tr> <tr> <td>2020</td> <td>0,26</td> <td>2020</td> <td>-0,42</td> <td>2020</td> <td>-0,45</td> <td>2020</td> <td>-0,16</td> <td>2020</td> <td>-0,18</td> <td>2020</td> <td>-0,34</td> </tr> <tr> <td>Mean</td> <td>0,36</td> <td>Mean</td> <td>-0,48</td> <td>Mean</td> <td>-0,30</td> <td>Mean</td> <td>-0,21</td> <td>Mean</td> <td>-0,20</td> <td>Mean</td> <td>-0,39</td> </tr> <tr> <td>Mean</td> <td colspan="11">-0,20</td> </tr> </tbody> </table>	Voice and Accountability		Political Stability and Absence of Violence/Terrorism		Government Effectiveness		Regulatory Quality		Rule of Law		Control of Corruption		Year	Rank	Year	Rank	Year	Rank	Year	Rank	Year	Rank	Year	Rank	2016	0,45	2016	-0,38	2016	-0,17	2016	-0,21	2016	-0,16	2016	-0,38	2017	0,45	2017	-0,47	2017	-0,23	2017	-0,15	2017	-0,25	2017	-0,5	2018	0,36	2018	-0,44	2018	-0,45	2018	-0,33	2018	-0,25	2018	-0,40	2019	0,3	2019	-0,71	2019	-0,19	2019	-0,18	2019	-0,18	2019	-0,34	2020	0,26	2020	-0,42	2020	-0,45	2020	-0,16	2020	-0,18	2020	-0,34	Mean	0,36	Mean	-0,48	Mean	-0,30	Mean	-0,21	Mean	-0,20	Mean	-0,39	Mean	-0,20											2
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f)	<p>Mitigation: Country is implementing REDD+ Readiness or other activities, as set out in this Section 2.3.3.</p> <p>The Project Area is located in the State of Mato Grosso in Brazil. The State/jurisdiction is participating in the CCBA/CARE REDD+ Social and Environmental Standards initiative³, Governors' Climate and Forest Taskforce (GCF)⁴. In addition, the country has an established Designated</p>	-2																																																																																																												

² Available at: <<https://info.worldbank.org/governance/wgi/Home/Reports>>. Last visit on: January 2022.

³ Available at: <https://www.redd-standards.org/index.php?option=com_content&view=article&id=98&Itemid=175>. Last visited on: January 2022.

⁴ Available at: <<https://www.gcftf.org/who-we-are/member-states/>>. Last visit on: January 2022.

	National Authority under the CDM ⁵ and has three registered CDM Afforestation/Reforestation projects ^{6,7,8} .	
Total Political (PC) [as applicable ((a, b, c, d or e) + f)]		0
Total may not be less than zero.		

External Risk	
Total External Risk (LT + CE + PC)	0 + (-5) + 0 = 0
Total may not be less than zero.	

3 NATURAL RISKS

Natural Risk (Fire)	
Significance	<p><i>Minor</i></p> <p>The baseline analysis was based on data from the Brazilian National Institute of Space Research, INPE⁹, with satellite images (from PRODES) and records of possible fire outbreaks. These satellite images show heat spots that might or might not have developed into fire outbreaks, and the program applies possibility scores on these heat spots to evaluate their actual fire risk¹⁰.</p> <p>The use of fire to clear pastures is usual and allowed in Mato Grosso, except during the dry season, between July 1st and October 30th (prohibited period decreed by the state government). Thus, it is possible to verify a large number of fire outbreaks in the project region¹¹. In the four municipalities that belong to the Reference Region - Colniza, Cotriguaçu, Nova Bandeirantes and Apiacás - between 2012 and 2020, 396,384 hotspots were recorded by INPE satellites. In the project area, for the same</p>

⁵ Available at: <<https://cdm.unfccc.int/DNA/view.html?CID=30>>. Last visit on: January 2022.

⁶ Available at: <<https://cdm.unfccc.int/Projects/DB/SGS-UKL1280399804.71/view>>. Last visit on: January 2022.

⁷ Available at: <<https://cdm.unfccc.int/Projects/DB/TUEV-SUED1347438547.06/view>>. Last visit on: January 2022.

⁸ Available at: <<https://cdm.unfccc.int/Projects/DB/TUEV-SUED1242052712.92/view>>. Last visit on: January 2022.

⁹ Available at <<https://queimadas.dgi.inpe.br/queimadas/bdqueimadas#exportar-dados>> Last visit on: August 2021.

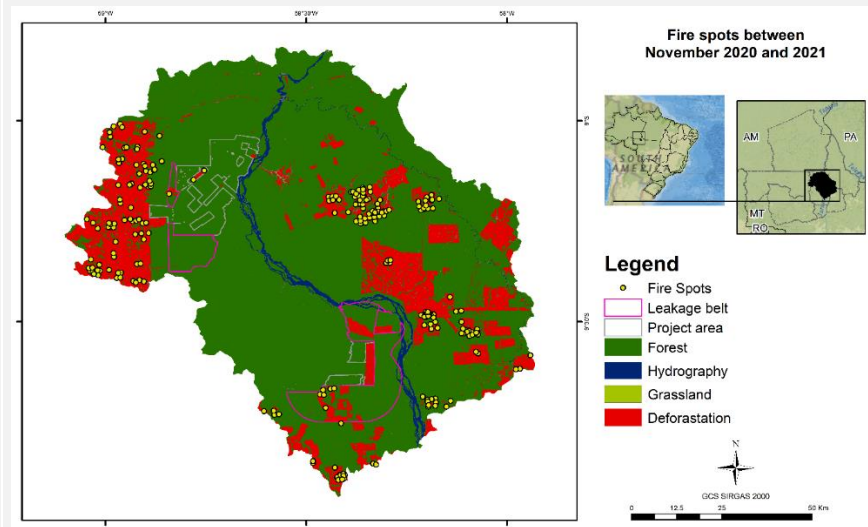
¹⁰ Fire risk calculation methodology: <http://queimadas.cptec.inpe.br/~rqueimadas/documentos/RiscoFogo_Sucinto.pdf>, fire risk scores at page 23. Last visit on: January 2022.

¹¹ Available at <https://queimadas.dgi.inpe.br/queimadas/bdqueimadas#> Last visit on: January 2022.

period, 399 outbreaks were recorded, of which 368 were categorized as high fire (>0.7). This analysis made it possible to understand if the outbreaks occurred in areas that have already been deforested, or if they occurred in forest areas that did not generate additional deforestation, or even if they occurred in areas that were deforested due to the burning.

From this analysis, it was verified that most of the outbreaks detected occurred in areas that had already been deforested or in areas that did not generate forest loss. And only a few fires caused forest loss.

Furthermore, during the current monitoring period, there was no fire within the project area, although there were 250 fires within the reference region, according to the figure below.



Therefore, these occurrences were classified as *minor*, despite the fire rates. These fires are common in the region, however they usually do not present risks on the dense forest, with no records of large fires in the dense forest in areas close to the project area. Thus, it was estimated that the significance of fires causing loss in carbon stocks in this project activity is between 5% to less than 25%.

Likelihood	<p><i>Less than every 10 years</i></p> <p>There were identified heat spots in the historical analysis within the project area in a frequency of less than every 10 years.</p>
Score (LS)	5.00
Mitigation	<p>0.50</p> <p>As mentioned above, fire does not harm dense rainforest vegetation due to the representative portion of the project area that is surrounded by humid forests, including a local park in the north. In addition, the landowner has firebreaks in some of the land' division, in the border limits with pasture areas.</p>

Natural Risk (Pest and Disease outbreaks)	
Significance	<p><i>No Loss</i></p> <p>There was no record of any pest and disease outbreak in the project areas of the Juruena River REDD Project, therefore, no loss. The project area is covered by 100% Amazon Rainforest; thus, this system in equilibrium reduces the significance of pest and disease outbreaks. In such environments, plants live in harmony with pests and diseases. The plants are well adapted to the place they are living in, there are sufficient quantity and quality of nutrients in the soil, with good humidity conditions, incidence of light and the presence of natural predators and biological pest and disease controllers. Thus, pests and diseases do not increase their population, as the environment does not favor the expansion of these agents¹².</p>
Likelihood	<p><i>Every 50 to less than 100 years</i></p> <p>There was no record of any pest and disease outbreak in the project area of the Juruena River REDD Project for the past decades due to, as described above, this system is in environmental equilibrium, which reduces the occurrence likelihood of pest and disease outbreaks. Nevertheless, in order to be conservative, a likelihood of once every 50 to less than 100 years is being considered.</p>
Score (LS)	0.00
Mitigation	<p>1.00</p> <p>No measures are taken for addressing this matter.</p>

Natural Risk (Extreme Weather)	
Significance	<i>Insignificant</i>

¹² ZANUNCIO JUNIOR, José Salazar *et al.* Manejo Agroecológico de Pragas: alternativas para uma agricultura sustentável. **Revista Científica Intellecto**, Venda Nova do Imigrante, v. 3, n. 3, p. 18-34, 2018. Available at <<https://biblioteca.incaper.es.gov.br/digital/bitstream/123456789/3582/1/Manejo-agroecologico-de-pragas-v3-n3-2018.pdf>>. Last visit on: January 2022.

	<p>The significance of blow-down winds was determined using a search of the BDMEP (Meteorological Database for Research and Education) platform¹³, created by the INMET (Meteorological National Institute)¹⁴.</p> <p>In the database of <i>Diamantino</i> Station, the nearest to the project area with data from 2007 to 2021, the average maximum wind speed has never exceeded 3.43 m/s, which is significantly below the wind speed for the categories of tropical storm or hurricane¹⁵.</p>
Likelihood	<p><i>Every 10 to less than 25 years</i></p> <p>No extreme weather events damaging the project area were reported by the management team.</p> <p>The likelihood of blow-down winds was determined using a search of the BDMEP platform wind records from 2007 to 2021.</p> <p>In continental equatorial regions of the Amazon, hurricane damage does not occur. However, Espírito-Santo et al. (2010)¹⁶ used Landsat images of the Brazilian Amazon to detect large natural gaps (>30 ha) with fan-shape forms (blowdowns), probably caused by high-velocity wet downburst winds. Blow-down occurrence frequency and the associated disturbance area are usually greater where severe storms occurred more frequently. Nevertheless, the conclusion of this study shows that the recurrence interval for blowdowns in the western Amazon region is around 27,000 years, based on the occurrence of new blowdowns and the assumption of a constant disturbance rate for the western region.</p>
Score (LS)	1.00
Mitigation	<p>1.00</p> <p>No measures are taken for addressing this matter.</p>

Natural Risk (Geological Risk)

Significance	<p><i>No Loss</i></p> <p>No geological events damaging the project site were reported by the project's management team. Furthermore, the Brazilian entity responsible</p>
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¹³ Available at: <<https://bdmep.inmet.gov.br/#>> Last visited on: January 2022.

¹⁴ Available at: <<http://www.inmet.gov.br/portal/index.php?r=home2/index>> Last visited on: August 2021.

¹⁵ National Weather Service (USA): weather categories determined using Saffir-Simpson Hurricane Wind Scale: <<http://www.nhc.noaa.gov/aboutsshws.php>>. Last visited on: August 2021.

¹⁶ Espírito-Santo et al. (2010). Storm intensity and old-growth forest disturbances in the Amazon region, Geophysical Research Letter, Volume 37, L11403. Available at: <<http://onlinelibrary.wiley.com/doi/10.1029/2010GL043146/pdf>>. Last visit on: August 2021.

	for geological services and for risk and disaster prevention, CPRM ¹⁷ , developed a list of 821 priority municipalities for risk management ¹⁸ , regarding their high and very high geological risk. The municipality of Cotriguaçu was not included on this list, consequently indicating the project area is not of geological concern.
Likelihood	<p><i>Every 50 to less than 100 years</i></p> <p>The project area is located in a stable geological area with no faults. No geological events damaging the project site were reported in the interview or in source searches for the duration of this monitoring period.</p> <p>Moreover, the altitude of the project area ranges from 184 to 377 m, with slope between 6.94 and 8.48 % and average of 7.25 %, characterizing a region with low chances of mass movement and landslide. Generally, land slide events may occur in areas with slopes above 20°-25°, when forested lands begin to be subject of landslides, whereas the project area' slopes comprehend 3°- 7°¹⁹. Therefore, there is a minimal risk of landslides within the project area. In addition, such event has never happened according to the project owner and his management team.</p>
Score (LS)	0
Mitigation	<p>1.00</p> <p>No measures are taken for addressing this matter.</p>

Natural Risk – Other Natural Risk

Significance	Not applicable.
Likelihood	<i>Risk is not applicable to the project area</i>
Score (LS)	0
Mitigation	Not applicable.

**Score for each natural risk applicable to the project
(Determined by (LS × M))**

¹⁷ Available at: <<http://www.cprm.gov.br/>> Last visited on: August 2021.

¹⁸ Available at: < https://www.gov.br/mdr/pt-br/assuntos/emendasparlamentares/PUBL_relatorios_004_821_municipios_prioritarios.pdf> Last visited on: August 2021.

¹⁹ Ministérios das Cidades. Capacitação em Mapeamento e Gerenciamento de Risco. Available at: <<http://www.defesacivil.mg.gov.br/images/documentos/Defesa%20Civil/manuais/mapeamento/mapeamento-grafica.pdf>>. Last visit on: August 2021.

Fire (F)	$5 \times 0.50 = 2.50$
Pest and Disease Outbreaks (PD)	$0 \times 1.00 = 0.00$
Extreme Weather (W)	$1 \times 1.00 = 1.00$
Geological Risk (G)	$0 \times 1.00 = 0.00$
Other natural risk (ON)	$0 \times 1.00 = 0.00$
Total Natural Risk (as applicable, F + PD + W + G + ON)	3.50

4 OVERALL NON-PERMANENCE RISK RATING AND BUFFER DETERMINATION

4.1 Overall Risk Rating

Risk Category	Rating
Internal Risk	0.00
External Risk	0.00
Natural Risk	3.50
Overall Risk Rating (a + b + c)	10

4.2 Calculation of Total VCU

VCS PD

Non-Permanence Risk Report: VCS Version 4.0

Year	Estimated baseline emissions or removals (tCO ₂ e)	Estimated project emissions or removals (tCO ₂ e)	Estimated leakage emissions (tCO ₂ e)	Ex ante buffer credits (tCO ₂ e)	Estimated net GHG emission reductions or removals (tCO ₂ e)
2021	53,331	7.709	8,302	4.562	37.320
2022	42,309	6.607	6,663	3.570	29.039
2023	77,238	10.100	11,917	6.714	55.221
2024	98,732	12.250	15,157	8.648	71.326
2025	104,882	11.816	16,095	9.307	76.971
2026	86,131	10.128	13,300	7.600	62.703
2027	105,582	11.879	16,236	9.370	77.468
2028	172,298	16.160	26,262	15.614	129.875
2029	204,049	18.700	31,044	18.535	154.305
2030	123,667	12.270	19,007	11.140	92.390
2031	156,286	13.316	23,921	14.297	119.049
2032	138,792	12.092	21,319	12.670	105.381
2033	249,141	19.816	37,896	22.933	191.429
2034	179,299	13.134	27,443	16.616	138.721
2035	164,982	12.275	25,322	15.271	127.386
2036	198,997	14.316	30,451	18.468	154.230
2037	280,224	16.387	42,662	26.384	221.175
2038	161,055	10.429	24,816	15.063	125.810
2039	169,075	10.830	26,049	15.824	132.196
2040	286,462	13.835	43,689	27.263	228.938
2041	152,059	8.459	23,562	14.360	120.038
2042	232,122	11.661	35,607	22.046	184.854
2043	251,197	9.912	38,505	24.128	202.780
2044	185,771	7.949	28,729	17.782	149.092
2045	240,179	9.582	36,931	23.060	193.667
2046	216,189	6.700	33,374	20.949	176.115
2047	261,259	7.601	40,177	25.366	213.480
2048	212,417	6.625	32,896	20.579	172.897
2049	234,609	4.722	36,273	22.989	193.614
2050	207,491	4.451	32,255	20.304	170.786
Total	5,245,827	331.712	805,860	491.412	4.108.256

MR – 1st monitoring period (12/11/2020 to 11/11/2021)

Year	Baseline emissions or removals (tCO _{2e})	Project emissions or removals (tCO _{2e})	Leakage emissions (tCO _{2e})	Net GHG emission reductions or removals (tCO _{2e})	Buffer pool allocation	VCUs eligible for issuance
12/11/2020 – 11/11/2021	53,331.21	24,458.20	287.90	28,585.11	2,858.51	25,726.6
Total	53,331.21	24,458.20	287.90	28,585.11	2,858.51	25,726.6