

# PROJECT REVIEW REPORT

This project review report includes findings raised during Verra’s review of the project specified below. The VVB must address the findings before the project request can be considered for approval by Verra. The project review report will be made publicly available on the Verra Registry. Confidential information may be provided in separate attachments.

<b>Project ID</b>	0875
<b>Project Name</b>	FLORESTAL SANTA MARIA PROJECT
<b>Review Type</b>	Verification Approval
<b>Program(s)</b>	VCS Program
<b>Verification Period</b>	13-April-2019 to 12-April-2022
<b>Project Proponent</b>	Caraguá Agronegócios LTDA;
<b>Methodology</b>	VCS Methodology VM0007, “REDD Methodology Framework (REDD-MF), Version 1.6
<b>VVB</b>	Earthood Services Private Limited
<b>Assessment Criteria</b>	VCS Standard, v4.4,
<b>Date of First Issue</b>	23 December 2023
<b>Date of Second Issue</b>	11 July 2024
<b>Date of Third Issue</b>	31 October 2024
<b>Review Conclusion</b>	Approved
<b>Date of Final Issue</b>	21 March 2025

## FINDINGS

#	Finding Description	VVB Response	Status
1	<b>Missing information on the impacts of the project description deviation (change of project proponents)</b>		
	<p><u>Issue</u></p> <p>In Section 3.2.2 of the Monitoring report, the project proponent reports a change of proponents as a PD deviation, however, no information is provided on the impacts of this deviation. For example, its impact on project longevity and AFOLU-specific safeguards</p> <p><u>Action Required</u></p> <ol style="list-style-type: none"> <li>1. The VVB must ensure the project proponent update Section 3.2.2 of the Monitoring report information on the impacts of the PD deviation, for example, on project longevity and AFOLU-specific safeguards.</li> <li>2. The VVB must ensure that all the entities involved in project design and implementation adhere to the AFOLU-specific safeguards, for example, not involved in any form of discrimination or sexual harassment.</li> <li>3. The VVB must provide the steps taken to validate the PD deviation and how it assessed impacts, for example, on project longevity.</li> </ol> <p><u>Program Rule</u></p> <p>VCS Standard, v4.4, Sections 3.19 and 3.18.15,</p>	<p><b>Round 1</b></p> <p>The section 3.2.2 of the MR was updated by the project proponent, including justifications summarized as follows:</p> <p>The inclusion of Systemica as a project proponent is a measure admitted by the standard to involve a technical advisor who provides reliable support for the revalidation of the project and the improvement and quality of other issues related to the project and its implementation, in accordance with the experience supported by Systemica. This deviation does not in any way affect issues such as the longevity, baseline and additionality of the project, since the conditions already evaluated by Verra since the beginning of the project will continue to apply, the only intention is to increase the technical quality and provide the high level of knowledge of the standards that the new proposer has.</p> <p>The project proponent, through the linked technical team, takes comprehensive measures to ensure that all entities involved in the design and implementation of the project are not associated with or support any form of discrimination or sexual harassment. All contracts with project service providers have a contractual clause that obliges them to adopt all Systemica guidelines and standards that also concern discrimination. Likewise, the contracted institutions must sign a commitment agreement document that describes specific guidelines</p>	Closed

		<p>and work conduct practices aimed at preventing problems related to discrimination and the implementation of an ethical code is mandatory.</p> <p>The project's ongoing communication procedure includes a feedback and grievance redressal mechanism that also serves to address and resolve any potential discrimination-related issues that may arise during the course of the project. Annexes:</p> <ul style="list-style-type: none"> <li>A. 240113_Code of ethics and conduct.rar</li> <li>B. 230510_Project Communication Procedure.rar</li> </ul> <p><u>VVB Response</u></p> <p>The VVB reviews and analyzes the update of section 3.2.2 of MR, as well as the evidence included in Annexes “240113_Code of ethics and conduct.rar” and “230510_Project Communication Procedure.rar”, cited in the updated text (references 86 and 87) and which are included as evidence of the present response.</p> <p>In the document “FSM REDD project communication procedure.pdf” is described the procedure of communication that is considered an adequate measure to mitigate the possible impact of the inclusion of the new project proponent. The VVB also analyses the Code of Ethics is described in the document “<i>CODIGO DE ETHICA E CONDUTA DA MYS E JLFL TREINAMENTO GERENCIAL LTDA. “Systemica - Inteligência em Sustentabilite”</i>”, incorporated as evidence, which is signed by each of the members of Systemica's technical team.</p> <p>Based on the evidence cited in section 3.2.2 of the updated MR v 3.3 and the temporality of the agreements signed between Caraguá Agronegócios LTDA and SYSTEMICA INTELIGÊNCIA EM SUSTENTABILIDADE S.A.1, the VVB conclude that the included deviation will not have an impact on the temporality of the project, the impact mitigation measures due to this adjustment will not affect</p>	
--	--	---	--

		<p>compliance with the specific AFOLU safeguards and that the technical team provided by the new project proponent takes the necessary mitigation measures, for which the corrective action carried out by the proponent is in accordance with the requirements of section 3.19 and 3.18.5 of the VCS Standard.</p>	
		<p><u>Verra Response</u>          Section 3.2.2 of the Monitoring report has been updated to include information on the impacts of the change of proponents as a PD deviation. The VVB has also provided an assessment of the same. This finding is closed.</p>	

<p><b>2</b></p>	<p><b>Missing KML files for Project Zones</b></p> <p><u>Issue</u>          KML files were not submitted (for the updated baseline) for the following project zones:</p> <ol style="list-style-type: none"> <li>a. Project area</li> <li>b. Leakage belt (as per first baseline),</li> <li>c. Leakage belt (as per updated baseline)</li> <li>d. Reference region (RRD),</li> <li>e. Reference region for projecting location of deforestation (RRL)</li> </ol> <p><u>Action Required</u></p> <ol style="list-style-type: none"> <li>1. The VVB must ensure that KML files are submitted for all of the applicable project zones.</li> <li>2. The VVB must explain how they assessed all of the applicable project zones and compliance with the methodology.</li> </ol> <p><u>Program Rule(s)</u>          VCS Standard v4.4, Section 3.11.2 (3)</p>	<p><b>Round 1</b></p> <p><u>PP Response</u>          The KML type file, containing the information related to the finding, is attached to this PRR response and it was not possible for the Project Proponent to attach a new KML file uploaded to the Verra platform, however the Verra was notified and instructed to submit the file in conjunction with this review.</p> <p><u>Annexes:</u></p> <ol style="list-style-type: none"> <li>A. FSM_KML_2024.kml</li> <li>B. Re Updating Floresta Santa Maria KML - Inquiry on Document Upload.htm</li> </ol> <p><u>VVB Response</u>          The VVB examines and analyzes the content of the KML file "FSM_KML_2024.kml, considering that it meets the conditions expressly contained in Section 3.11.3 of the VCS v4.4 Standard and that it includes the delimitation of the first baseline and the base requested in validation (the Google Earth program was used</p>	<p>Closed</p>
-----------------	--	--	---------------

		<p>to verify the information.</p> <p>Likewise, the VVB reviews the project proponent's request to the Verra registry to update the file on the platform, which is located in the support file "Re Updating Floresta Santa Maria KML - Inquiry on Document Upload.msg", which contains as evidence attached, the same file delivered to the VVB for evaluation of the corrective action and that meets the conditions of section 3.11.2 of the VCS Standard v4. In Verra response (dated in January 16, 2024), the text indicates: <i>"The requested updated KML file should be submitted together with PRR and the revised documents"</i>.</p> <p>Although the KML file is not yet updated on the platform in the project user with ID875 (the file that is loaded on the platform is called "PA_FSM.shp.kml"), the VVB considers that the evidence provided by the project proponent as corrective action supports that the project is complying with the section of the VCS v4 Standard required in this PRR.</p> <p><u>Verra Response</u>  <u>The correct KML file was shared as part of the PRR responses. This finding is closed.</u></p>	
--	--	--	--

3 Missing and unclear information regarding the Leakage Belt			
	<p><u>Issue</u></p> <ol style="list-style-type: none"> <li>1. It is not clear why a new LB has been delineated.</li> <li>2. The new leakage belt described in Section 3.6.2 and Section 4 of the new PD does not comply with the methodology requirements.             <ol style="list-style-type: none"> <li>a. The LB does not meet the minimum area requirement.</li> <li>b. Insufficient evidence is provided to request relaxation of up to 50% on the</li> </ol> </li> </ol>	<p><b>Round 1</b></p> <p><u>PP Response</u></p> <p>1) A new leakage belt was defined for two reasons: i) to be consistent with the approach taken for baseline reassessment (more details in Finding 8); ii) because the old LB (employed during the first baseline period) did not conform to methodology requirements – the problematic aspects of the old LB were discussed in Sections 3.6.2 and 4.1.1 of the submitted PD. In the update versions, amendments</p>	<p>Closed</p>

<p>similarity criteria between PA and LB, considering the availability of large forest areas surrounding the project that were not included in the LB (i.e., forest areas located north and west of the PA).</p> <p><u>Action Required</u></p> <ol style="list-style-type: none"> <li>1. The VVB must assess that the justification provided for modifying the leakage belt are aligned with the VCS standard and the methodology requirements.</li> <li>2. The VVB must ensure that the leakage belt is correctly delineated to meet the minimum size requirement, so that it includes all available forest areas surrounding the PA.</li> <li>3. The VVB must assess the compliance of the newly selected leakage belt with the requirement of the module VMD0007, v3.3</li> </ol> <p><u>Program Rule(s)</u> VMD0007, v3.3, Section 1.1.3</p>	<p>were made in the text to better clarify why we felt this redefinition to be necessary.</p> <p>2a) According to VMD0007, the minimum area requirement can be relaxed when forest areas close to project borders are unavailable to define the LB; we found this to be the case.</p> <p>2b) The forest areas to the north and west of the PA are not adequate for defining a new LB. Referring to the figure inserted below: the forests to the north are located in either indigenous land (the “Kawahiva do Rio Pardo” reserve, in the northwest) or conservation unit (the “Parque Estadual Igarapés do Juruena”, to the northeast) and therefore are not eligible by the land tenure similarity criterium. Meanwhile, most of the forests to the west of the PA (and within a 15 km buffer) that existed in 2019 had already been deforested by the time the first version of the PD was completed, and were thus excluded from the new LB (hashed areas) – the polygons coloured correspond to a selection of features from the PRODES dataset [Ref. 1] in the Mato Grosso state, which were mapped from satellite images taken in July/2022 (the first version of the PD was issued in August/2022). The background image is the MapBiomass Col 7 coverage data for 2019.</p>	
---	--	--

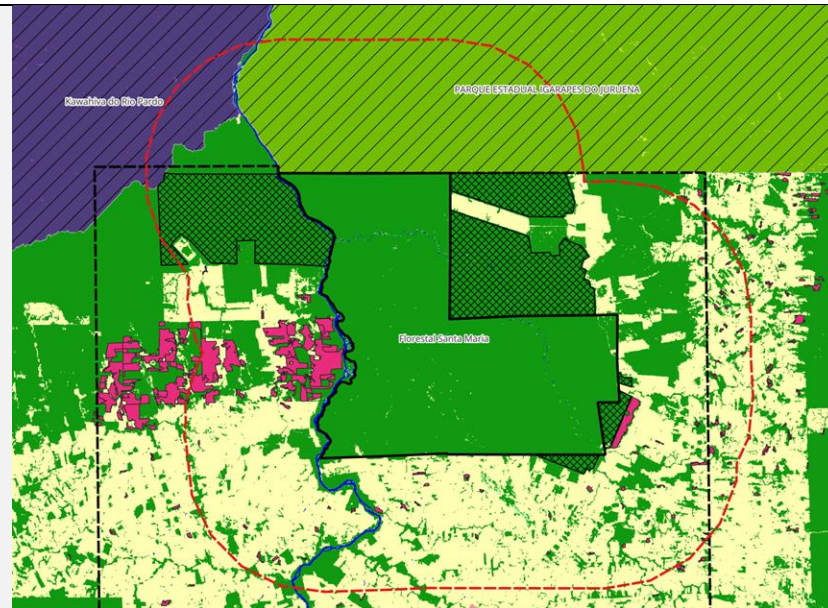


Fig. 1. Definition of the new leakage belt.

Under these circumstances, we believe the new LB is adequately defined and the relaxation of similarity criteria is justified.

However, when reviewing the “Similarity Analysis” subsection (within Section 4.1.1) we noticed it was not fully conforming to VMD0007 guidelines. The analysis has been updated and the subsection was rewritten. Because the settlement density calculation in the new analysis employs buffers zones of 2 km around target areas (instead of 1 km) a new methodology deviation had to be reported. The conclusion of the analysis remains the same (all regions satisfy all similarity criteria within the allowed margins).

Annexes:

- A. FSM\_PPR\_Finding\_03\_Fig1.png

		<p>B. 240206_FSM_SIMILARITY_ANALYSIS (Folder containing shapefiles, rasters, and spreadsheets supporting the new similarity analysis).</p> <p>References:</p> <p>1) TerraBrasilis – Downloads – Amazônia Legal – PRODES (Desmatamento). Incremento anual no desmatamento - Shapefile (2008/2022). File: <a href="#">yearly deforestation.zip</a></p> <p><u>Actions taken:</u></p> <ul style="list-style-type: none"> <li>• The text in Section 3.6.2, Project Description Deviations, subsection “Leakage Belt” was partially rewritten to better clarify the reasons that led to a redefinition of the leakage areas.</li> <li>• Similar changes were also made to the text in Section 4.1.1, Definition of Boundaries, subsection “Leakage Belt”.</li> <li>• The similarity analysis (for both RRD and LB) was redone and the corresponding section (in Section 4.1.1) rewritten.</li> <li>• A new methodology deviation was included due to the use of slightly larger buffer zones when calculating settlement densities around target areas (PA, RRD and LB).</li> </ul> <p><u>VVB Response</u></p> <p>The VVB considers adequate the justification prepared by the project proponent in relation to the non-relevance of linking restricted areas located in the north and west of the PA as part of the Leakage Belt for not meeting the similarity criteria required by Tool VMD007, as well as Likewise, as there are few areas with forest that allow compliance with the conditions of the relationship between the Leakage belt/Project Area, the conditions for relaxed when forest areas close to project</p>	
--	--	---	--

		<p>borders are unavailable to define the L are being met, in the terms of the very justification presented by the project.</p> <p>On the other hand, the project proponent finds that the similarity analysis provided in PD Section 4.1.1 does not fully comply with the VMD0007 Module conditions, since by expanding the analysis area (2km buffer) to establish the leakage belt, it is necessary to link new local communities, which must be informed of the methodological deviation.</p> <p>The VVB evaluates the set of actions taken and verifies the adjustment of sections 3.6.2 and 4.1.4 of the PD in a manner consistent with what is indicated by the project proponent in this point. Likewise, the VVB analyzes the supports included in the annexes: “FSM_PPR_Finding_03_Fig1.png” and the folder “240206_FSM_SIMILARITY_ANALYSIS”, all the evidence were verified: shapefiles, raster, and spreadsheets supporting the new similarity analysis.</p> <p>Finally, the VVB analyzed and verified the evidence included in the cited reference information (access to the link: <a href="#">yearly_deforestation.zip</a>), in which the deforestation trend can be evidenced in a manner consistent with how it is described by the project proponent in the PD.</p> <p>The justification and corrective action described by the project proponent is ensuring compliance with section 1.1.3 Leakage Belt of Module VMD007, v3, and is a conservative measure that addresses compliance with the principles of the VCS v4 standard. According with the adjustments and the new methodology deviation described in sections 3.6.2 and 4.1.1 of the PD the Verification Report was updated in section 3.3.1.</p>	
--	--	--	--

		<p><u>Verra Response</u>          The PP provided justification for modifying the location and size of the leakage belt . However, this finding remains open.</p> <p>Issue          Section 3.6.2 of the PD and section 3.3 of the Verification Report state that the leakage belt was re-delineated partially because of the presence of deforestation events (i.e. large company) that are not related with the baseline deforestation agents (i.e. small-holders).</p> <ol style="list-style-type: none"> <li>1. It is unclear what evidence was used by the VVB to verify this statement.</li> <li>2. It is unclear if the presence of this large company, owning more than 40,000 hectares of land, has also caused deforestation in the reference region during the historical reference period.</li> </ol> <p><u>Action required:</u>          The VVB must update Section 3.3 of the verification report to describe the steps taken and the evidence used to confirm:</p> <ol style="list-style-type: none"> <li>1. The presence of the large company that caused deforestation in the old leakage belt.</li> <li>2. The large scale deforestation in question did not occur in the reference region during the new baseline’s historical reference period.</li> </ol> <p><u>Program Rule(s)</u>          VMD0007, v3.3, Section 1.1.3</p> <p><b>Round 2</b></p> <p><u>PP Response</u></p> <ol style="list-style-type: none"> <li>1. Evidence of large company</li> </ol>	
--	--	--	--

		<p><b>Justification for the Modification of the Leakage Belt</b></p> <p>As indicated in Sections 3.6.2 of the PD and 3.3 of the Verification Report, the modification of the leakage belt was based on the observation that the areas to the west of the Project are owned by a large company, which does not correspond to the primary baseline deforestation agents described in the PD (small landowners) and, therefore, that it would be erroneous to presume that deforestation events within that region occurred as a consequence of the activity shifting of the identified baseline agents.</p> <p><b>Evidence of Characterization of the Area as a Large Enterprise</b></p> <p>To substantiate the presence of a large enterprise in the former leakage belt area that necessitated the alteration of the leakage belt, a legal analysis was conducted that considered the following documents:</p> <ul style="list-style-type: none"> <li>• Negative Certificate of Rural Land Tax Debts (ITR) (Certidao-07549636.pdf)</li> <li>• Certificate of ITR Registration Data (dadosImovel-07549636.pdf)</li> <li>• Copy of the Rural Property Registration Certificate consulted on the portal (CCIR_FazendaBauru.pdf)</li> <li>• Property Registration Certificate/Full Content (25057735.pdf)</li> <li>• Area Plan in the Land Management System (SIGEF) (Planta_GeorreferenciamentoSIGEF_Áreatotal.pdf)</li> <li>• Descriptive Memorial of the Area in the Land Management System (SIGEF) (MemorialDescritivo_GeorreferenciamentoSIGEF_Áreatotal.pdf)</li> <li>• CNPJ Card of the Company Owning the Area (CNPJ_AgropecuariaBauruLTDA.pdf)</li> <li>• Corporate Structure of the Company Owning the Area (QSA_AgropecuariaBauruLTDA.pdf)</li> </ul>	
--	--	--	--

		<p><b>Details of the Evidence</b></p> <p>Fazenda Bauru, an area neighboring Fazenda Santa Maria, corresponds to a “large rural property” (more than 15 fiscal modules), with approximately 57.193 ha. (The fiscal module of Colniza-MT is 100 hectares, according to INCRA (<a href="https://pro-pgt-incra.estaleiro.serpro.gov.br/pgt/indices-basicos">https://pro-pgt-incra.estaleiro.serpro.gov.br/pgt/indices-basicos</a>) and the classification indicated by Law 8.629/1993 (<a href="https://www.planalto.gov.br/ccivil_03/leis/l8629.htm">https://www.planalto.gov.br/ccivil_03/leis/l8629.htm</a>)).</p> <p>The farm's registration states that the rural property was incorporated into the share capital of the owner company, Agropecuária Bauru LTDA., in the amount of R\$28,000,000.00 (twenty-eight million reais), representing the entire share capital of the company, as verified in a consultation with the Brazilian Federal Revenue Service.</p> <p>In addition, Agropecuária Bauru LTDA. has the following activities registered: logging in native forests, support activities for forestry production, support activities for livestock farming not previously specified, support activities for agriculture not previously specified and conservation of native forests (CNAE numbers 02.20-9-01, 01.61-0-99, 01.62-8-99, 02.30-6-00 and 02.20-9-06).</p> <p>Furthermore, the public consultation of inquiries by the Public Prosecutor's Office of the State of Mato Grosso revealed inquiry no. 000167-054/2020, which investigates the alleged illegal deforestation of approximately 2,100.9725 hectares of native forest on the property. This inquiry is registered in the property's registration through the annotation "AV-03 – M. 2,533 – EXISTENCE OF PUBLIC CIVIL INQUIRY".</p> <p>Therefore, the legal analysis demonstrates decisively that the neighboring farm indeed belongs to a large enterprise, whose practices</p>	
--	--	---	--

		<p>differ from those of the primary baseline deforestation agents, and therefore that it would be incorrect to have parts of the leakage belt overlapping that area, justifying our redefinition of the leakage belt zones.</p> <p><b>2. Whether deforestation occurring within the large company perimeter contributed to the reference region’s deforestation rate measured during the historical reference period</b></p> <p>During the writing of the first version of the PD we analyzed the georeferenced data associated with Fazenda Bauru, which was then available in the CAR database. Our reference region (RRD) was delimited taking this data into account, ensuring the absence of overlaps between the RRD and the farm. (This point was discussed during the VVB audit, and the CAR consultation was documented in the annexed figure “FazendaBauru_CAR.png”)</p> <p>However, while preparing the response to this Finding, we found that the farm’s perimeter has been updated and made available in the more reliable SIGEF database (<a href="http://incra.gov.br">SIGEF - Sistema de Gestão Fundiária (incra.gov.br)</a>) where its registration was approved in April 2020, according to the shapefile’s metadata (included in the annexes).</p> <p>Fazenda Bauru’s new perimeter indeed overlaps with our RRD, the intersection area being approximately 1,864 ha, as shown in the figure below.</p>	
--	--	---	--

	<p>The map displays the geographical context of the project. It features a legend with two main sections: 'Limits' and 'Rasters'. Under 'Limits', it identifies the RRD (Reserve de Desenvolvimento Rural) as a grey area, the Project Boundary as a green line, the Project Area (2019) as a light green area, the Leakage Belt as a green cross-hatched area, Fazenda Bauru (SIGEF) as a purple dashed outline, the RRD/Fazenda Bauru intersection region as a red and grey hatched area, and the Raster data extent as a yellow dashed outline. Under 'Rasters', it shows 'Historic period data' with 'Unplanned deforestation (2007 - 2019)' represented by red patches. The map itself shows these elements overlaid on a landscape, with labels for 'FAZENDA BAURU' and 'Florestal Santa Maria'. A scale bar at the top left indicates distances from 0 to 20 km, and a north arrow is located at the top right.</p> <p>Despite the non-negligible overlap, we verified that, if the average historical deforestation rate in the RRD (computed during 2007-2012) is corrected, by discounting all deforestation that occurred in the intersection area, the percentual change relative to the annual rate adopted in the PD would be approximately -0.24%. And, since this correction is of the same order of magnitude of the yearly allocation errors* inherent to the baseline model (which average around 0.53% in absolute value), it is perfectly acceptable to ignore it. Therefore, we conclude that no changes are required in the PD.</p> <p>The detailed calculation is reported in an annexed spreadsheet (RRD_and_FazendaBauru_Intersection_Calculations.xlsx); other supporting materials are also included in the annexes.</p> <p>* Allocation error is the difference between the target area that is supposed to be deforested in each baseline year and the actual deforestation allocated by the baseline model. The difference arises because there is a limited set of probability values occurring in the risk map (which depends on the possible combinations of factor-map categories) and it is not always possible to find a threshold that splits</p>	
--	---	--

		<p><i>the area in the precise manner required by the target value. These errors tend to cancel in consecutive years, so the accumulated error is usually small.</i></p> <p><u>Annexes:</u></p> <ul style="list-style-type: none"> <li>• Fazenda Bauru Documents             <ul style="list-style-type: none"> <li>○ 25057735.pdf</li> <li>○ CCIR_FazendaBauru.pdf</li> <li>○ Certidao-07549636.pdf</li> <li>○ CNPJ_AgropecuariaBauruLTDA.pdf</li> <li>○ dadosImovel-07549636.pdf</li> <li>○ MemorialDescritivo_GeorreferenciamentoSIGEF_Áreatotal.pdf</li> <li>○ Planta_GeorreferenciamentoSIGEF_Áreatotal.pdf</li> <li>○ QSA_AgropecuariaBauruLTDA.pdf</li> </ul> </li> <li>• FSM_E_FAZENDA_BAURU.png</li> <li>• FazendaBauru_CAR.png</li> <li>• RRD_and_FazendaBauru_Intersection_Calculations.xlsx</li> <li>• RRL_report_baseline.txt</li> <li>• RRD_and_FazendaBauru_Intersection_SIG.zip:             <ul style="list-style-type: none"> <li>○ FSM_RRD.shp</li> <li>○ SIGEF_FAZENDA_BAURU.shp</li> <li>○ FSM_deforest_utm_2007_2019.tif</li> <li>○ FSM_deforest_utm_2007_2019_at_RRD_and_RRD_FazendaBauru_Intersection.csv</li> </ul> </li> </ul> <p><u>Actions taken:</u></p> <ul style="list-style-type: none"> <li>• The project proponent justifies in detail the description of the new delimitation of the Leakage Belt (section 3.6.2 of the PD) and why the Baurú property should not be included in the analysis that leads to defining the Leakage Belt, considering that it is not necessary to adjust the PD.</li> </ul>	
--	--	--	--

		<ul style="list-style-type: none"> <li>The VVB adjusted section 3.3, improving the description, which allows it to meet the PRR requirement and based on the work carried out during the on-site visit and compliance with the conditions of section 1.1.3 of the VMD007 v3.3.</li> </ul> <p><u>VVB Response</u></p> <p>The VVB confirms the validity of the information provided by the project proponent in response to this PRR point, which is consistent with what was observed during the on-site audit and analyzed during the documentary review, which is described in section 3.6.2 of the PD and was documented by the VVB in the interviews and in the advance tours of the project limits, as described in Figures 1 and 2 of section 2.4 of the Verification Report.</p> <p>The evidence described above by the PP confirms that the Baurú farm does not show characteristics similar to those of the communities surrounding the project area (made up of farmers dedicated to small-scale agriculture and livestock), on the other hand there is a physical barrier between the property identified in the PRR (Baurú Farm) and the project area, as the Aripuaná River is located (non-navigable and with several rapids, as can be seen in the photograph and Figure shown below), and the distance through the reels and the Route 174 towards the Baurú property is so many that it can be concluded that the social context as well as the type of driver of deforestation is different from that described in the RRD and the project area.</p>	
--	--	---	--



**Photograph.** West boundary of FSM Farm (PA, in front of the Baurú Farm)



**Figure.** Tracks and points of the on-site visit to the west limit of FSM PA (Taken with Avenza Maps).

		<p>On the other hand, although the Baurú property presents an overlap (1,864 ha) with the RRD defined in the project, the registration was approved in 2020, that is, outside the analysis period used to establish the baseline (2007- 2019). In any case, as shown in the Excel file “RRD_and_FazendaBauru_Intersection_Calculations.xlsx”, the annual percentage difference in relation to the project's deforestation rate is - 0.24% and would not represent any change in the project's carbon calculations. The PP presents the additional evidence cited above, that the VVB evaluated and considers pertinent annex in response to this point for being considered by the VERRA team.</p>	
		<p><u>Verra Response</u>          Section 3.3 of the VR has been updated to provide a description of the steps taken and the evidence used to confirm the re-delineation of the leakage belt. This finding is closed, and no further action is required.</p>	

<b>4</b>	<b>Tree cover loss detected within the project area during the monitoring period</b>	
<u>Issues</u>	Round 1	Closed

Planet high resolution imageries show some tree cover loss during the monitoring period (see Background Section). It is not clear if it qualifies as a loss event.

Action Required

1. The VVB must details how the emissions related to the tree cover loss was quantified. If it qualifies as a loss, the details must be integrated in a loss event report and the related emissions must be discounted from this monitoring report ERRs.
2. The VVB must assess if the tree cover loss qualifies as a loss event. If it qualifies as a loss event, the VVB must verify the *Loss event report*. The monitoring report and the verification report must be updated to discount for the related emissions.

Program Rule

VCS Standard v4.4, Section 3.2.18; VCS Registration and Issuance Process, v4.3; Section 5.3

Background

*Example 1*

lat, lon: -9.08596, -59.33663

August 2021



PP Response

All deforestation described in the finding, which is actually the forest management area, counts on the order for the dates and locations presented in the figures in the finding text.

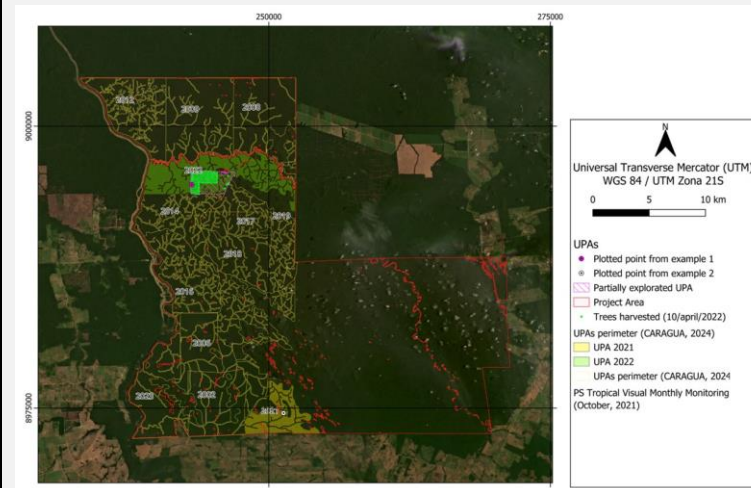


Figure 1 UPA's and Verra cordinates

The coordinates of the area indicated in example 1 are located in the UPA (Annual Production Unit) called 2022, which has a total area of 3,005.3227 hectares, as described in AUTEX 3388/2021, with management authorization (AUTEX) for the period from September 24, 2021 to December 31, 2021.

The management of the area started earlier than planned, but with the necessary authorizations from the competent bodies described in AUTEX and was not originally included in the MR. However, this data has been updated excluding a polygon (Figure 2) where the management extraction has taken place, which reinforces that the assumed polygon does not include the UPA area as a method, as it

d

October 2021



Example 2

lat, lon: -9.26958, -59.26368

Apr 2021



September 2021

is a very large UPA that will be explored until the current year (2024), so a polygon of the explored area (Figure 1) within the project period has been created with a more conservative size compared to the area actually managed during the project period.

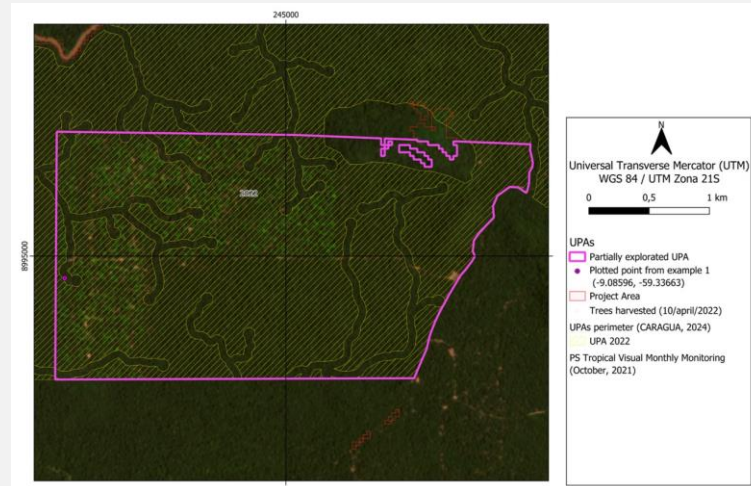


Figure 2 UPA and Example 1

The coordinate in example 2 is located on the UPA 2021 with a total area of 1391.2716 hectares, as described in AUTEX 3220/2021, with authorization for management (AUTEX) for the period from April 2, 2021 to December 31, 2021.

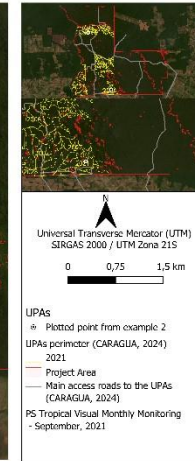
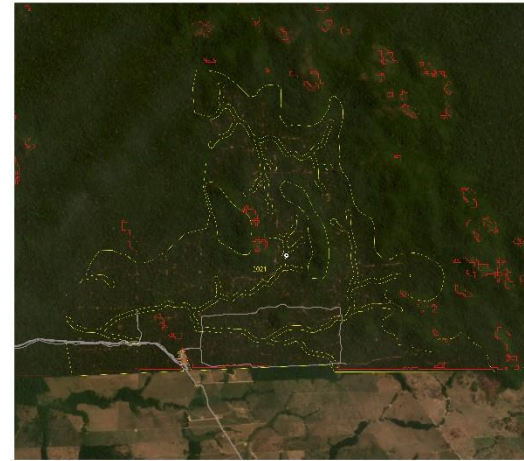


Figure 3 UPA and example 2

Remember also that these areas were excluded from the credit because they were not FSC-certified during the verification period, which is shown in the monitoring report under point 3.2.2 Deviations from the project description. The entire area of the 2019, 2020 and 2021 UPAs was completely excluded as they were managed in a complete area. However, a polygon was created for the 2022 UPA representing the area in which it was managed during the period, as it is a large UPA area that is still managed today. The overlaps of the removed areas with the deforestation projection assigned to the area can be seen in Figure 4. The exclusion of such areas has been done in the ex-post table, in the "deforestation" tab and in Table 5.2 of the MR, and the explanation for the exclusion of areas is better explained in the deviation of the MR.

Anexxes:

- A. AUTEX 3388\_2021.pdf
- B. AUTEX-3220\_2021.pdf

C. 240119\_Ex-post\_calculation\_FSM.xlsx

VVB Response

The VVB analyzes the information provided by the project proponent and the justification, according to the example figures that were included in this point of the PRR, finding the arguments relevant and consistent with what is stated in the spreadsheet "deforestation" of the ex post calculations (file "240119\_Ex-post\_calculation\_FSM.xlsx") of the project and Table 5.2 of the MR.

As noted in the last paragraph, this deviation is described in section 3.2.2 of the MR and the areas of the 2019, 2020 and 2021 UPAs were described as "deforestation" and their emissions were discounted as they did not have FCS certification. which is explained in the spreadsheet in text highlighted in yellow, as can be seen in the following screenshot of said spreadsheet:

Parameter	Unit	Years			TOTAL
		2019	2020	2021	
Aluvial	ha	3,24	91,80	128,61	223,65
Encosta	ha	7,02	117,90	109,80	234,72
FOS Densa Submontana	ha	10,80	78,75	56,43	145,98
FOS Submontana	ha	40,50	470,79	549,81	1.061,10
<b>Project Area</b>					
Aluvial	ha	61,56	759,24	844,05	1.665,45
Encosta	ha	61,56	820,80	1.665,45	
<b>UPA</b>					
Aluvial	ha	3,24	91,80	128,61	223,65
Encosta	ha	7,02	118,26	110,25	235,53
FOS Densa Submontana	ha	10,80	79,11	56,61	146,52
FOS Submontana Cipo	ha	41,49	477,00	553,86	1.072,35

**Note:** Project Area without UPA's like in 2019, 2020, and 2021 the FOS project didn't have FSC (Forest Stewardship Council) certification. The areas contemplated by the Annual Production Unit (Unidad de Producción Anual - UPA) for the year 2019 or did not consider in the calculation. However, from May 20th 2022, the FSC certification was recognized. The values of 2021 are just a projection based on management in recent years. Hence, the baseline deforestation per stratum in (i) 2019, 2020 and 2022 contemplate the project area without UPA area for corresponding year, and (ii) 2022, 2023, and 2024 contemplate the project area because the projection of management initiatives was consistent for these years.

The VVB confirms that the Figures that the project proponent includes in the response to this point are consistent with the areas that are included in AUTEX No.3388 of 2021 (Valid until 05/24/2023) and AUTEX No. 3220\_2021 (Valid until 02/06/2022), which are attached as evidence to this point.

The information of the points included in the example figures of this PRR point is verified in the Google Earth program with that of

		<p>the KML of the Project Zone, verifying that the points correspond to the coordinates of the UPA authorized in the AUTEX mentioned above.</p> <p>Due to the above, the VVB concludes that the emissions located in the figures included in this point of the PRR should not be considered as a “Loss Event”, in accordance with the rules of sections 3.2.18, 3.2.19 and 3.22.5 (Number 4) of the VCS v4.4 standard and the Program Definitions v4.3 document:</p> <p><i>“In an AFOLU project, any event that results in a loss of more than five percent of previously verified emission reductions and removals due to losses in carbon stocks in pools included in the project boundary <u>that is not planned for in the project description</u> (e.g., harvesting as set out in management plans and described in the project description is not a loss event).”</i></p> <p>Also, the VVB consider that these activities are described in the PD and included in the Sustainable Forest Management Plan, for that reason they could not be considered as Loss Event. In accordance with the above, the VVB does not consider it pertinent to advance any additional changes in the MR or the Verification Report.</p>	
		<p><u>Verra Response</u></p> <p>The explanation and evidence provided with regards to whether the emissions related to the tree cover loss were quantified is sufficient to close this finding.</p>	

5 Missing information on the assessment of the accuracy of GHG ERR Calculations			
	<p><u>Issues</u></p> <ol style="list-style-type: none"> <li>The procedure for the quantification of project emissions is not clearly presented in Section 5.2 of the MR</li> <li>The process and the results of the application of the “CDM Tool for testing significance of GHG emissions in A/R CDM project activities” are not clearly presented in the MR.</li> </ol>	<p><u>Round 1</u></p> <p><u>PP Response</u></p> <p>The project proponent clarified and added information about the accuracy of GHG calculations. The procedure for quantifying project emissions was detailed for clarification in Section 5.2 of the MR. In addition, the process and the results of the application of the “CDM Tool for testing significance of GHG emissions in A/R</p>	<p>Closed</p>

<p>3. The VVB did not identify the data and parameters used to calculate the GHG emission reductions and removals.</p> <p>4. The VVB did not describe the steps taken to assess whether GHG emission reductions and removals have been quantified correctly in accordance with the project description and applied methodology.</p> <p><u>Action Required</u></p> <p>1. The VVB must ensure that Section 5.2 of the MR is updated to include the process for the quantification of project emissions and how the “CDM Tool for testing significance of GHG emissions in A/R CDM project activities” was applied.</p> <p>2. The VVB must update Section 4.4 of the Verification report and include:</p> <p>a) The data and parameters used to calculate the GHG emission reductions and removals.</p> <p>b) The steps taken to assess:</p> <ul style="list-style-type: none"> <li>• The accuracy of GHG emission reductions and removals,</li> <li>• Whether the methods and formulae set out in the project description for calculating baseline emissions, project emissions and leakage have been followed.</li> <li>• The appropriateness of any default values used in the monitoring report.</li> </ul> <p><u>Program Rule</u>  <i>VCS Standard v4.4, Section 3.14; VCS Verification Report v4.3, Section 4.4; VCS Monitoring Report v4.3, Section 5.2</i></p>	<p>CDM project activities” were properly employed. According to the tool, it is possible to determine which GHG emissions by sources, possible reductions in carbon pools and leakage emissions are insignificant for a given CDM A/R project activity. The sum of reductions in carbon pools and increases in emissions that can be neglected must be less than 5% of total reductions in carbon pools and increases in emissions, or less than 5% of net anthropogenic removals by sinks, which is smaller:</p> <ul style="list-style-type: none"> <li>- Based on the overall area of roads and logging decks related to the Project Area, the values estimated for emissions from roads and decks are not significant according to T-SIG, as they represent much less than 5% of total emissions. There were no project emissions due to forest management issues, as can be seen in Section 3.2.2 – Project Description Deviations. Consequently, precise calculations of emissions from roads and decks are unattainable. Nevertheless, research by Braz et al. (2018) suggests optimal parameters for road density at 26 m ha<sup>-1</sup>, with a width of 4 m, and construction sites measuring 20 m x 20 m, accounting for an area opening of 1.35%.</li> <li>- This adheres to the legal threshold of 2%. Consequently, assuming a consistent carbon stock, emissions from roads and decks will remain below 5%.</li> <li>- Herbaceous non-tree vegetation is considered to be de minimis in all instances. For the determination which carbon pools must be included in the calculations as a minimum, use Tool T-SIG. This information is in line with studies by Didada et al. (2019), Pereira Júnior et al. (2016) and Walker et al. (2013), where they considered that the contribution of carbon reservoirs from herbaceous vegetation, litter and non-arboreal woody vegetation was insignificant (with herbaceous biomass of 0.57 t d.m. ha<sup>-1</sup>).</li> <li>-</li> </ul>	
---	--	--

		<p><u>VVB Response</u></p> <p>The VVB confirms the update of section 5.2 of the MR, including texts that allow verification of compliance with the conditions set out in the “CDM Tool for testing significance of GHG emissions in A/R CDM project activities”, which disposes:</p> <p><i>“The sum of decreases in carbon pools and increases in emissions that may be neglected shall be less than 5% of the total decreases in carbon pools and increases in emissions, or less than 5% of net anthropogenic removals by sinks, whichever is lower.”</i></p> <p>According with the observed during the on-site audit and the application of the tool, during the monitoring period there were no records of degradation due to tree extraction for illegal timber or firewood and charcoal, which is supported by the geospatial images presented by the project proponent, which are summarized in the document: "240124_Unificado_Monitoring_Results_FSM_2019_2022.pdf", which was delivered as evidence by the project proponent and which was analyzed by the team by the VVB to verify the information.</p> <p>The VVB updates section 4.4 of the Verification report, including tables 10 and 11, which include the data and parameters considered for the calculation of the reduction of emissions and removals of the project.</p> <p>Included in the update is an evaluation of the accuracy of the information used to calculate the reduction of GHG emissions, the way in which the formulas described in the PD for calculating baseline emissions and leaks have been followed, as well as the appropriateness of the default values used in the</p>	
--	--	--	--

		<p>monitoring report (Table 12).</p> <p><u>Verra Response</u>          Section 5.2 of the MR has been updated to include the process for the quantification of project emissions and how the “CDM Tool for testing significance of GHG emissions in A/R CDM project activities” was applied. The VVB also updated Section 4.4 of the VR. This finding is closed.</p>	
--	--	--	--

6 Missing information on the assessment of the quality of evidence to determine GHG ERRs			
	<p><u>Issues</u>          The verification report does not describe the steps taken to assess the sufficiency of quantity, and appropriateness of quality, of the evidence used to determine the GHG emission reductions and removals.</p> <p><u>Action Required</u>          The VVB must update Section 4.5 of the Verification report and provide the steps taken to assess the sufficiency of quantity, and appropriateness of quality, of the evidence used to determine the GHG emission reductions and removals.</p> <p><u>Program Rule</u>  <i>VCS Standard v4.4, Section 3.14; VCS Verification Report v4.3, Section 4.5</i></p>	<p><b>Round 1</b></p> <p><u>VVB Response</u>          The section 4.5 of the Verification report was updated included the steps to sufficiency of quantity, and appropriateness of quality, of the evidence used to determine the GHG emission reductions and removals.</p> <hr/> <p><u>Verra Response</u>          Section 4.5 of the Verification report has been updated to provide the steps taken to assess the sufficiency of quantity, and appropriateness of quality, of the evidence used to determine the GHG emission reductions and removals. This finding is closed.</p>	Closed

7 Missing information in the Verification opinion			
	<p><u>Issue</u>          The VVB did not state the non-permanence risk rating (as determined in the AFOLU non-permanence risk report) in Section 5 of the Verification report.</p> <p><u>Action Required</u></p>	<p><b>Round 1</b></p> <p><u>VVB Response</u>          The VVB update the section 5 of the Verification Report and include the overall risk rating in the end of the section.</p>	Closed

	<p>The VVB must update Section 5 of the Verification report and include the non-permanence risk rating (as determined in the AFOLU non-permanence risk report).</p> <p><u>Program Rule</u> VCS Verification Report v4.3, Section 5</p>	<p><u>Verra Response</u> The non-permanence risk rating (as determined in the AFOLU non-permanence risk report) is now stated in Section 4.6 of the VR. This finding is closed.</p>	
--	--	---	--

8 Incorrect and unclear deforestation projections			
	<p><u>Issues</u></p> <ol style="list-style-type: none"> <li>1. Areas that were projected to be deforested under the initial baseline (i.e., 18.391,2 ha, or 24% of the PA) have not been discounted from the new baseline projections which put the project at risk of double counting ERRs.</li> </ol> <p><u>Action Required</u></p> <ol style="list-style-type: none"> <li>1. The VVB must ensure that the new baseline projections are adjusted to discount deforestation already credited during the initial baseline (See background section A for guidance).</li> <li>2. The VVB must review the revised documents and update the verification report accordingly, describing the steps taken and the evidence used to assess the updates.</li> </ol> <p><u>Program Rule</u> VM0007, v1.6, Section 6.2 VMD0007, v3.3, Part 3, STEP 3.0 to 3.4</p> <p><u>Background</u></p> <ol style="list-style-type: none"> <li>A. The areas that would have been deforested under the initial baseline (i.e., 18.391,2 ha, or 24% of the PA) must be excluded from the new baseline projections. For instance, <b>the numerical output of the location analysis</b> (i.e., section</li> </ol>	<p><b>Round 1</b></p> <p><u>PP Response</u></p> <p>The exclusion of areas that were projected to be deforested makes sense when the projection for the second baseline period is a direct extrapolation of the prediction made for the first baseline period, in which case the starting point for the second baseline period is the fictitious scenario where the project area is partly deforested. The exclusion is therefore automatic if this recipe is followed, <i>but it is not explicitly required, neither by VM0007 nor VMD0007</i>, when alternative approaches are employed.</p> <p>For reasons explained below, we chose not to follow the recipe for baseline reassessment suggested in VM0007 v1.6 Section 6.2, but rather opted for a full re-evaluation of the baseline scenario, taking as starting point <i>the actual situation of the project area and its surroundings in 2019</i>, which led us to adopt a shorter historical reference period (see reply to Finding #9) and to develop a new risk map for location analysis. And since the project area is fully preserved in 2019, “areas projected to be deforested” are simply inexistent in the model.</p> <p>Our approach was motivated by changes in regional</p>	<p>Closed</p>

3.4.2 of module VMD0007, v3.3 “number of hectares in the project area that will be deforested each year in the baseline case for the baseline period”) **must be adjusted considering the proportion of area already credited** during the first baseline (i.e., 24%).

deforestation trends over the last years, to wit: a significant drop in deforestation rates was observed in the municipality of Colniza-MT, as depicted in Figure 4.5 of the updated PD, while the deforestation frontier, which during earlier times advanced primarily from south to north, is now embracing the project from both east and west – this is depicted in the figures below which show the evolution of the deforestation pattern during the historical periods considered for the modelling the first (Fig. 1) and second (Fig. 2) baselines.

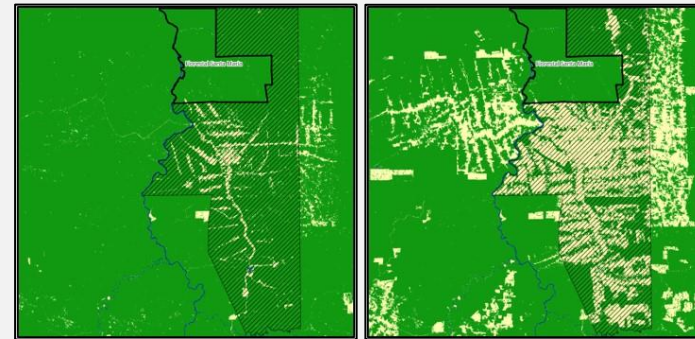


Fig. 1. Deforestation pattern: 1999 (left) to 2009 (right); hashed area is the old RRD used in the first baseline model.

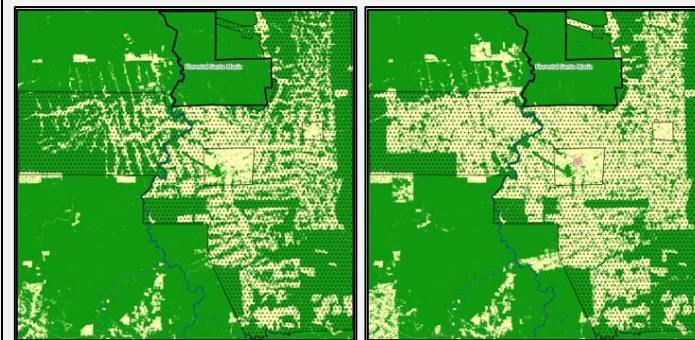


Fig. 2. Deforestation pattern: 2007 (left) to 2019 (right); dotted area is the new RRD used in the second (present) baseline model.

		<p>The adopted approach seeks to better reflect these new patterns and the current level of risk faced by the project.</p> <p>At the same time, it does not lead to double counting of credits since it is always implied that VCUs are being generated to protect <i>the project area as a whole</i> from the threat of deforestation, and not only the portions closer to its borders where the risk is usually concentrated. Indeed, double counting would only occur if the volume of VCUs surpassed the biomass-equivalent of the entire project area, but this is far from happening in the case of FSM – since the biomass density across project strata is sufficiently similar, this can be seen by directly comparing the accumulated baseline deforestation, which by 2025 will amount to ~24 kha (~18 kha for 2009-2019 plus ~6 kha for 2019-2025), to the project area, which is ~70 kha; therefore credits have so far been claimed for less than ~35% of the project area, meaning the project still has plenty of capacity for reducing emissions in upcoming years.</p> <p>We emphasize that our approach to model this second baseline period is allowed as a “Methodology Deviation” under the justification that it results in a more conservative creditation than would have been obtained by following the recipe suggested by VMD0007.</p> <p>To see this, consider the suggested propagation of the original baseline model, which directly projected the RRD deforestation into the Project Area (and only opted for location analysis to escape the conservative assumption that the forest stratum with lowest carbon density would be deforested first). The percentual rate, updated for the extended historical period, 1999-2019, is approximately 2.80% (representing a slight drop from the 2.94% used in the first baseline</p>	
--	--	--	--

		<p>projection, which considered the average from 1999-2009). This would result in a predicted deforestation in the project area of approximately 2000 ha/year, far below our estimate using a new historical period and a new risk model, which amounts to an average of 900 ha/year for the next 6 years.</p> <p>Annexes:</p> <ul style="list-style-type: none"> <li>A. FSM_PPR_Finding_08_Fig1a_MapBiomassCol7_1999.png</li> <li>B. FSM_PPR_Finding_08_Fig1b_MapBiomassCol7_2009.png</li> <li>C. FSM_PPR_Finding_08_Fig2a_MapBiomassCol7_2007.png</li> <li>D. FSM_PPR_Finding_08_Fig2b_MapBiomassCol7_2019.png</li> </ul> <p><u>Actions taken:</u></p> <ul style="list-style-type: none"> <li>• The baseline approach is now reported as a Methodology Deviation in both the PD and MR.</li> <li>• Other sections of the PD were amended to better clarify the motivations for adopting such approach (see actions taken in response to Findings #9 and #10).</li> </ul> <p><u>VVB Response</u></p> <p>The project proponent chose not to follow the conditions for the baseline reassessment suggested in VM0007 v1.6 Section 6.2, as these would indicate a scenario in which the entire forest area included in the defined leak belt would be lost. by the project for each baseline.</p> <p>Given that this did not actually occur during the period of validity of the first baseline, the project defines to advance the complete re-assessment of the base scenario, based on the real situation of the project area and its surroundings in 2019, adopting a historical reference period shorter and</p>	
--	--	---	--

		<p>develop a new risk map for the analysis of the location of deforestation.</p> <p>The VVB considers that the justification for advancing a modification of the approach is conservative, since it is based on the changes in the deforestation trend where there is a notable decrease in the deforestation rate in the municipality of Colniza-MT, for the previous period of baseline advanced mainly from south to north and now surrounds the project area to the east and west, as indicated in the explanatory figures of this NC and those included in the PD and MR.</p> <p>In accordance with the justifications presented by the project proponent, which are supported by the spatial analysis provided as an annex to the responses (Annexes A to D), the VVB considers that the conditions are met to include these changes as a methodological deviation, which are duly described in section 3.6.1 of the PD and in section 3.2.1 of the MR.</p> <p>In this sense, the VVB makes the respective modification including this methodological deviation in the Verification Report in section 3.2. The VVB understands that Verra has not defined this NC as something definitive, however the methodological deviation is based on the dynamics of regional and local deforestation in which the project is developed and therefore would comply with the criteria established in section 3.19.2 of VCS Standard v4.4.</p> <p><u>Verra Response</u>          The response is sufficient to demonstrate the absence of ERRs double counting risk for this monitoring period. However, this finding remains open. The baseline reassessment procedures and requested methodology deviation is covered by Finding #9 below.</p>	
--	--	---	--

		<b>Round 2</b>	
		<u>Issue</u> It is unclear how ERRs double counting will be prevented in future verifications.	
		<u>Action required</u> The VVB must raise a FAR to ensure that verified ERRs will never exceed the total available biomass that is maintained in the PA at the end of each future monitoring period.	
		<u>VVB Response</u> The VVB modified the Verification Report in Summary, Section 2.5.1 and the Appendix 2, including a FAR to ensure that the verified EERs in the next monitoring periods never exceed the total available biomass in PA.	
		<u>Verra Response</u> The VVB updated Section 2.5.1 and the Appendix 2 of the Verification Report to include a FAR to ensure that verified ERRs will never exceed the total available biomass that is maintained in the PA at the end of each future monitoring period. This finding is closed, and no further action is required.	

<b>9</b>	<b>The new historical reference period (HRP) not in compliance with the methodology</b>		
	<u>Issues</u> The new historical reference period (HRP; 2007 - 2019) does not include the entire original reference period (1999 - 2008) as requested by Section 6.2 of the methodology  <u>Action Required</u> 1. The VVB must ensure that:	<b>Round 1</b>	Closed
		<u>PP Response</u>  Adopting a new historical period which spans more recent years is part of our approach to model the second baseline period of the project, which in the updated version of the PD is introduced as a methodology deviation (more details in Finding #8).	

<p>a. The PP may request a methodology deviation in Section 3.6 of the new PD with regard to the HRP. – It must be demonstrated, using verifiable evidence, that the limiting the HRP is more conservative than what requested by the methodology; or</p> <p>b. If the point above cannot be demonstrated, the PP must follow the Section 6.2 of VM0007, v1.6</p> <p><u>Program Rule</u> VM0007, v1.6, Section 6.2</p>	<p>Although it deviates from the methodology, the new historical reference period leads to a more conservative baseline estimation. One way this can be seen is by comparing the average deforestation rates for different historical periods, for both the old and new reference regions, as schematized below (here we assume that location analysis would be carried out similarly in each scenario – the percentual rate is what is projected in the RRL).</p> <table border="1" data-bbox="1066 571 1759 734"> <thead> <tr> <th>Reference region</th> <th>Historical reference period</th> <th>Average deforestation rate [%/year] *</th> </tr> </thead> <tbody> <tr> <td>RRD (old)</td> <td>1999 - 2019</td> <td>2.80%</td> </tr> <tr> <td>RRD (new)</td> <td>1999 - 2019</td> <td>2.58%</td> </tr> <tr> <td>RRD (new)</td> <td>2007 - 2019</td> <td>2.31%</td> </tr> </tbody> </table> <p><i>* % relative to the forest area at the start of the respective historical period (computed using data from MapBiomas Col 7 considering only the net difference of the forest class area between initial and final years).</i></p> <p>The last line of the table corresponds to the adopted scenario, which employs a new historical period and new RRD.</p> <p>Actions taken:</p> <ul style="list-style-type: none"> <li>The change in the historical period is reported as a Methodology Deviation alongside the deviations introduced due to the selected approach for baseline modeling. The text also points to the fact that this choice is part of said approach, and therefore it is justified for the same reasons.</li> </ul> <p><u>VVB Response</u></p>	Reference region	Historical reference period	Average deforestation rate [%/year] *	RRD (old)	1999 - 2019	2.80%	RRD (new)	1999 - 2019	2.58%	RRD (new)	2007 - 2019	2.31%	
Reference region	Historical reference period	Average deforestation rate [%/year] *												
RRD (old)	1999 - 2019	2.80%												
RRD (new)	1999 - 2019	2.58%												
RRD (new)	2007 - 2019	2.31%												

		<p>The VVB analyzes the evidence provided by the project proponent and confirms its relevance and consistency with the justification provided in NC 8 of the present PRR. In this sense, it includes this item in the modification of section 3.2 of the Verification Report and concludes that it is part of the same methodological deviation from the previous point and although the VM0007, v1.6, Section 6.2 methodology is not textually complied with, the technical support is oriented towards compliance with the principles of the VCS Standard v4.4 and the requirements of section 3.19.2 and is an adaptation to dynamic of the deforestation process in the project zone.</p>	
--	--	---	--

		<p><u>Verra Response</u> The change in the historical period is now reported as a Methodology Deviation alongside the deviations introduced due to the selected approach for baseline modeling. However, these deviations are not acceptable. This finding remains open</p>	
		<p><b>Round 2</b></p> <p><u>Issue</u> The methodology deviation described in Section 3.6 of the new PD does not present conclusive evidence to demonstrate the conservativeness of the approach adopted for baseline reassessment (see background section).</p> <p><u>Action required</u> The VVB must ensure that the baseline is reassessed following the indications provided in Section 6.2 of VM0007, v1.6.</p> <ul style="list-style-type: none"> <li>- A detailed quantification analysis must be performed over the initial RRD over the extended HRP (1999-2019) following Section 2 of the methodology.</li> <li>- A revised spatial model must be developed following Section 3 of the methodology. The spatial model must be built using the new data collected over the extended HRP.</li> </ul> <p><u>Background</u></p> <ul style="list-style-type: none"> <li>- The PP presented average deforestation rates (%/year) for different RRDs and historical periods, to demonstrate that the selected approach is the most conservative. It is not possible to conclude on the conservativeness of the approach before a full historical deforestation analysis is performed over the RRD during the extended HRP (1999-2019) and before spatialization and allocation to the PA is conducted.</li> </ul>	

		<p>Manually defining proxy areas to estimate deforestation rate and manually changing the weights of evidence is not an acceptable deviation (see also finding #10). Additionally, this deviation is unnecessary if the methodology provisions are followed:</p> <ul style="list-style-type: none"> <li>- The historical analysis of deforestation is conducted over the RRD which exclude the PA, as per the module requirements.</li> <li>- While the spatial model is developed over the entire RRL (which include the PA), future deforestation will be spatialized considering the forest cover at the start of the new baseline validity period, i.e., taking into consideration the actual risks to the project area.</li> <li>- The spatial model must be built on the historical deforestation in the RRL from 1999 to 2019. To avoid bias due to active protection of the PA during the first baseline validity period (2009-2019), the project may test and add (if significant) a variable (e.g., presence/absence of a REDD project area) to the deforestation risk map, following Section 3.3. of the module.</li> </ul>	
		<p><u>PP Response</u></p> <p>To conclusively demonstrate the conservativeness of the adopted baseline revalidation approach we consider a detailed comparison between the emission reduction ex-ante estimates relevant to this discussion:</p> <p>a) The estimate reported in the PD, resulting from a full reassessment of the baseline scenario, which involves an updated RRD, a complete location analysis, and a more recent (and more representative) historical reference period, 2007-2019.</p> <p>b) The estimate that would result from the “standard”</p>	

		<p>approach for baseline revalidation according to VM0007’s guidelines, which implies using the same RRD defined for the first baseline period, adopting the extended historical reference period, 1999-2019, and directly projecting the RRD deforestation rate into the PA using an area-ratio factor.</p> <p>We point out that it suffices to make the comparison with respect to gross emission reductions, which here we take to be the estimated CO2 emission reduction before accounting for project emissions (due to sustainable forest management activities), and other such ex-post factors – the underlying assumption is that all such corrections would be equivalent in both scenarios, including corrections due to neglecting benefits from areas harvested during periods that the FSC certificate had expired. (For simplicity we ignored CH4 and N2O emissions from biomass burning, since they are much smaller than CO2 emissions).</p> <p>Importantly, in both estimates the same basic coverage dataset is employed (MapBiomass Collection 6) and the same biomass density values are used (the ones from the newest forest inventory). Updating basic datasets is, of course, part of the purpose of baseline revalidation.</p> <p>To eliminate any doubts about the conclusion of this analysis, we ensure that, within the standard approach (b), all calculations are made in the most conservative possible way.</p> <p>(A note: the predicted deforestation of approach (b) depends indirectly on the baseline deforestation predicted for the first period, 2009-2019; this is why, in our calculations, we approximately replicate the estimates of the original PD; “approximately” because the RRD rate reported in the</p>	
--	--	--	--

		<p>original PD was mistakenly computed; here we use the corrected rate, which is somewhat larger, and leads to more conservative results for the estimates of the <i>second</i> baseline period.)</p> <p>The details are reported in an attached spreadsheet (Comparing_adopted_and_standard_baselines.xlsx); next, we summarize the main steps of estimate (b):</p> <ol style="list-style-type: none"> <li>1. The average annual deforestation rate in the RRD for the extended historical reference period is computed using coverage data from MapBiomas Collection 6. In doing so, all transitions involving secondary vegetation are ignored, as well as any deforestation occurring within polygons delimitating areas of authorized suppression of vegetation (similarly to what was done in estimate (a)). The resulting RRD rate is 8,017 ha/year.</li> <li>2. In accordance with the procedures employed in the first baseline estimate, where location analysis was deemed optional, the deforestation predicted to occur within the project area is calculated directly from the RRD rate by a simple proportionality rule (VMD0007, v3.3, Section 3.4.1).</li> <li>3. Following the instruction that “[the] starting point for the baseline revision of the project will be the forest cover projected to exist at the end of the [first] baseline period” (VM0007 v1.6 Section 6.2), the part of the Project Area predicted to be deforested by 2019 is subtracted from the actual Project Area prior to the rate calculation. Then, the deforestation rate predicted for the second baseline period (2019-2025) within project borders is 1,207.54 ha/year.</li> <li>4. The conservative premise that “Future deforestation is assumed to happen first in the strata with the lowest carbon</li> </ol>	
--	--	---	--

		<p>stocks” is adopted (VMD0007, v3.3, Section 3.4.1). Notice that this contrasts with the approach undertaken in the first baseline design, where a location-analysis-like procedure was used to avoid this conservative premise.</p> <p>5. According to the newest forest inventory, the stratum of lowest biomass density is “FOB Submontana” (511.14 tCO<sub>2</sub>eq/ha) and, therefore, for quantification purposes, all allocation is assumed to occur in this stratum. Being the largest stratum in the PA, totaling approximately 42,000 ha, it is not exhausted by the accumulated baseline deforestation from 2009 to 2025, so the assumption is sound.</p> <p>6. Annual gross CO<sub>2</sub> emission reductions are computed using the predicted rate and biomass density of stratum “FOB Submontana”. Adding up the results for the period 2019-2025, the ex-ante estimate of emission reductions, according to the most conservative standard approach, would be: 3,924,238 tCO<sub>2</sub>eq.</p> <p>7. The above figure is to be compared with our estimate of gross CO<sub>2</sub> emission reductions under the full baseline reassessment of approach (a): adding up the gross reductions for the 2019-2025 we get 3,134,880 tCO<sub>2</sub>eq.</p> <p>8. Thus, we reach the conclusion that approach (a) is more conservative than (b) by approximately 800,000 tCO<sub>2</sub>eq, that is, by a relative factor of approximately 20%.</p> <p>We hope that this exercise settles that the approach we adopted for baseline revalidation does lead to a more conservative ex-ante estimate than the simple recipe of the standard approach. Moreover, from a modeling perspective, it constitutes an improvement over the standard approach,</p>	
--	--	--	--

		<p>since rather than relying on a simple proportionality rule to compute the Project Area baseline deforestation rate, it utilizes a full location analysis model with updated and more recent data that better reflects current deforestation patterns in the project region.</p> <p>Concerning the reviewer’s point related to the use of the Project Area as a model variable in our location analysis, to which a risk factor is manually assigned when projecting the without-project scenario: We kindly ask the reviewer to refer to the reply to Finding 10, where the topic is extensively discussed and where we argue that the risk-transfer procedure is not only acceptable as part of the modeling approach, but also sensible to the reality of forests whose protected status is threatened.</p> <p>***</p> <p>As a final note, we address the reviewer’s suggestion of what would be an alternative procedure for the baseline reassessment which would involve developing the location analysis using an extended historical reference period in a manner that would also avoid treating the Project Area variable the way we did.</p> <p>According to that suggestion, since the historical period would contain a sub-period during which the carbon project did not exist, it would be possible to test the significance of the variable “Project Area”, presumably by comparing its risk factor computed during periods with and without the carbon project.</p> <p>That procedure, however, has a major shortcoming: the risk factor that would be determined from the without-project period, 1999-2009, would most definitely not be an</p>	
--	--	--	--

		<p>accurate assessment of the level of risk at the Project Area and its surroundings in 2019.</p> <p>This is clear from a visual inspection of deforestation patterns in the region since 1999 – as we have previously pointed out, the pattern has evolved: the deforestation, which at first advanced from south to north, has been encircling the Project Area in more recent years, with the saturation of non-forested areas in the nearby regions suggesting a strong latent deforestation pressure which threatens the Project Area. It is precisely the risk associated with this latent pressure that our model seeks to describe – again, this point is fully explained in the reply to Finding 10.</p> <p>***</p> <p><u>Annexes:</u></p> <ul style="list-style-type: none"> <li>• Comparing_adopted_and_standard_baselines.xlsx</li> <li>• RRD1_deforestation_rates.csv</li> <li>• SIG.zip:</li> <li>• <i>Old RRD polygons (complete and excluding authorized suppression areas):</i>              FSM_RRD1_ANTIGA.shp              FSM_RRD1_ANTIGA_DIFF_AUT_DEFOR.shp  <i>Authorized suppression and fire use polygons:</i>              AUTORIZACAO_DESMATE_SEMA.shp              AQC.shp  <i>MapBiomass Col 6 rasters, reprojected and clipped:</i>              FSM_1999_utm.tif              FSM_2009_utm.tif              FSM_2019_utm.tif  <i>Secondary vegetation rasters, reprojected and clipped:</i>              FSM_vegsec_1999_utm.tif              FSM_vegsec_2009_utm.tif</li> </ul>	
--	--	---	--

		<p>FSM_vegsec_2019_utm.tif  <i>Deforestation in the relevant periods (binary rasters):</i>          FSM_defor_1999_2009.tif          FSM_defor_2009_2019.tif          FSM_defor_1999_2019.tif</p> <p><u>Actions taken:</u></p> <p>We believe our reply establishes the conservativeness of the adopted baseline revalidation approach and, alongside the arguments provided in the reply to Finding 10 – regarding the manner the Project Area variable is treated when predicting the without-project scenario –, strengthens our view that the adopted methods constitute acceptable deviations. It is our understanding that this removes the necessity of making the adjustments that would otherwise be required.</p> <p><u>VVB Response</u></p> <p>The VVB verifies the supporting information presented by the project proponent (GIS support), which gives rise to the analysis presented in the file “Comparing_adopted_and_standard_baselines.xlsx”, finding that it is consistent with the reported information. This information will be made available to the Verra review team to confirm its relevance.</p> <p>The VVB considers that the project proponent broadly justifies that, although the procedure contemplated in Section 6.2 of VM0007, v1.6 is not being strictly followed, the methodological deviation presented chooses an analysis subperiod (most recent historical period) in which the rate of deforestation is lower and represents lower emissions reduction results than those that would be obtained if the</p>	
--	--	--	--

		<p>provisions established in the aforementioned section of the VM0007 methodology are followed, therefore the assumption of the project is based on compliance with the main principles of the standard VCS v4.4, among the most important being Accuracy and Conservativeness.</p>	
		<p><u>Verra Response</u> The issues raised in the previous round have not been addressed. This finding remains open.</p>	
		<p><b>Round 3</b></p>	
		<p><u>Issue</u> The methodology deviation described in Section 3.6 of the new PD – and the additional evidence provided – do not conclusively demonstrate the conservativeness of the approach adopted for baseline reassessment (see background section).</p> <p><u>Action required</u> The VVB must ensure that the baseline is reassessed following the indications provided in Section 6.2 of VM0007, v1.6., including</p> <ol style="list-style-type: none"> <li>1. A detailed quantification analysis must be performed over the initial RRD over the extended HRP (1999-2019) following Section 2 of the methodology.</li> <li>2. A revised spatial model must be developed following Section 3 of the methodology. The spatial model must be built using the new data collected over the extended HRP.</li> </ol> <p>Background <b>Insufficient evidence to demonstrate conservativeness</b></p> <ul style="list-style-type: none"> <li>- The conservativeness of a methodology deviation can only be assessed against the normal procedure. In the response above and document named</li> </ul>	

		<p>“Comparing adopted and standard baseline.xlsx”, the PP compares the deviation (i.e., the alternative adopted baseline, a complex, full location analysis model) with an incomplete model that does not comply with the methodology (i.e., a simple area-proportion model). VM0007 provisions for baseline reassessment require spatialization and allocation of deforestation. The comparison can’t be deemed valid unless the element of comparison is a complete model (i.e., post-spatialization and allocation)</p> <ul style="list-style-type: none"> <li>- Deforestation detected in the initial reference region during the 2009 – 2019 period is significantly lower when compared with the 1999-2009 period. Such reduction suggests a decreasing trend over the extended historical reference period (i.e., 1999-2019). Before a comparison can be deemed valid, the methodological provisions must be followed to assess whether a decreasing trend should be applied instead of a simple historical average.</li> </ul> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Period *</th> <th>Unplanned deforestation [ha]</th> <th>Unplanned deforestation (annual average) [ha/year]</th> </tr> </thead> <tbody> <tr> <td>1999-2009</td> <td>125,466.48</td> <td>12,546.65</td> </tr> <tr> <td>2009-2019</td> <td>36,370.53</td> <td>3,637.05</td> </tr> <tr> <td><b>1999-2019</b></td> <td><b>160,350.30</b></td> <td><b>8,017.51</b></td> </tr> </tbody> </table> <p><b>Spatial model</b>            Defining proxy areas to estimate deforestation rate and changing manually and arbitrarily the weight of evidence is:</p> <ul style="list-style-type: none"> <li>- not an acceptable deviation (see also finding #10).</li> <li>- unnecessary if the methodology provisions are followed.</li> <li>-</li> <li>- Indeed, if the historical analysis of deforestation is conducted over the RRD which excludes the PA, as per the module requirements.</li> <li>- While the spatial model is developed over the entire</li> </ul>	Period *	Unplanned deforestation [ha]	Unplanned deforestation (annual average) [ha/year]	1999-2009	125,466.48	12,546.65	2009-2019	36,370.53	3,637.05	<b>1999-2019</b>	<b>160,350.30</b>	<b>8,017.51</b>	
Period *	Unplanned deforestation [ha]	Unplanned deforestation (annual average) [ha/year]													
1999-2009	125,466.48	12,546.65													
2009-2019	36,370.53	3,637.05													
<b>1999-2019</b>	<b>160,350.30</b>	<b>8,017.51</b>													

		<p>RRL (which include the PA), future deforestation will be spatialized considering the forest cover at the start of the new baseline validity period, i.e., taking into consideration the actual risks to the project area.</p> <p>The spatial model must be built on the historical deforestation in the RRL from 1999 to 2019. To avoid bias due to active protection of the PA during the first baseline validity period (2009-2019), the project may test and add (if significant) a variable (e.g., presence/absence of a REDD project area) to the deforestation risk map, following Section 3.3. of the module</p>	
		<p><u>VVB Response:</u></p> <p>To address the corrective action defined by Verra, the VVB carried out several activities, including these meetings with the PP to discuss the scope of section 6.2 of the VM0007 and the review of the progress of the variable analysis and the final version of the response.</p> <ol style="list-style-type: none"> <li>1. A detailed quantification analysis must be performed over the initial RRD over the extended HRP (1999-2019) following Section 2 of the methodology VM0007.</li> </ol> <p>The VVB confirmed that the spatial model used to predict the second reference period of the project was thoroughly reviewed by the project proponent and that the version presented in the PD was updated, complying with the requirements of VM0007 and VMD007. The version presented in the updated PD was verified during several meetings held with the PP and based on the clarifications that the Verra technical team deemed necessary and that</p>	

		<p>were presented and discussed in a virtual meeting on January 31, 2025, for this reason the VVB ensures that the required re-evaluation guidelines are met.</p> <p>The VVB assessed that the PP improved the baseline information for building the reference model and the procedures for producing more accurate factor maps and location analysis models (better FOMs). Adjustments include greater detail in the hydrographic layer (previously only the Aripuanã River was included), all areas of authorized deforestation were excluded from the model, land tenure layers were combined into a single background variable, and filters were correctly applied. In Section 4.1.3 of the PD, subsection “Preparing Data Sets for Spatial Analysis” the PPD provides the necessary information.</p> <p>Considering the Background indicated by Verra, the PP no longer uses the proxy areas in the reference model. To avoid the bias that protection measures in the PA may cause during part of the historical period to affect the baseline prediction, forests within the boundaries of the FSM are removed from the coverage maps during the calibration stage of the baseline model, which is included as a Methodology Deviation.</p> <p>The change in the perimeter of the RRD (which is different from that used in the original PD) is included as a deviation from the PD.</p> <p>The PP included auxiliary spreadsheets with detailed calculations to support the reference modeling approach. Some modifications were made to the text of the PD (see the change tracking version of the PD).</p> <p>2. The VVB ensured that the PP revised spatial model</p>	
--	--	--	--

		<p>following Section 3.3 of the module VMD007, which was built using the data collected over the extended HRP (1999-2019).</p> <p>The project proponent structured the set of adjustments, based on the queries to Verra and responses from the exchange of emails related to the case (RE CASE28079 project ID 875 - SANTA MARIA FLORESTAL PROJECT - VCS - Verification approval requested). In the statement sent by Verra on December 20, 2024 (ID0875 Baseline reevaluation_DEC 20, 2024.doc) the admissible steps were consolidated, in accordance with the methodological requirements, to support the baseline reevaluation modeling and the VVB confirmed that the PP followed these guidelines to develop the model.</p> <p>The project proponent illustrates the effect of the changes made in the following table, which consolidates the data of the expected reference deforestation for this next monitoring period, calculated according to the new model and compares it with the previous result (1st and 2nd round) and with the estimate based on the provisional allocation data of VM0048 for the state of Mato Grosso, which Verra recently made available:</p>																															
		<table border="1"> <thead> <tr> <th colspan="5">Florestal Santa Maria</th> </tr> <tr> <th colspan="5">Avoided deforestation from 2019 to 2022 according to different models (values in hectares)</th> </tr> <tr> <th>Model</th> <th>2019/2020</th> <th>2020/2021</th> <th>2021/2022</th> <th>3-year total</th> </tr> </thead> <tbody> <tr> <td>VM0007 Previous</td> <td>61.56</td> <td>759.24</td> <td>844.65</td> <td>1,665.45</td> </tr> <tr> <td>VM0007 Updated</td> <td>156.33</td> <td>241.38</td> <td>524.43</td> <td>922.14</td> </tr> <tr> <td>VM0048 Provisional</td> <td>427.43</td> <td>427.43</td> <td>427.43</td> <td>1,282.28</td> </tr> </tbody> </table>	Florestal Santa Maria					Avoided deforestation from 2019 to 2022 according to different models (values in hectares)					Model	2019/2020	2020/2021	2021/2022	3-year total	VM0007 Previous	61.56	759.24	844.65	1,665.45	VM0007 Updated	156.33	241.38	524.43	922.14	VM0048 Provisional	427.43	427.43	427.43	1,282.28	
Florestal Santa Maria																																	
Avoided deforestation from 2019 to 2022 according to different models (values in hectares)																																	
Model	2019/2020	2020/2021	2021/2022	3-year total																													
VM0007 Previous	61.56	759.24	844.65	1,665.45																													
VM0007 Updated	156.33	241.38	524.43	922.14																													
VM0048 Provisional	427.43	427.43	427.43	1,282.28																													

		<p>As can be concluded from the comparative analysis, the adjustment made by the PP not only allowed for an improvement in the accuracy of the base information for building the predictive model, but also generated more conservative mitigation results, which is what underlies the methodological deviations.</p> <p>In summary, the VVB assessed all the actions taken by the PP to ensure compliance with the actions required by VERRA, which are described below:</p> <p>The revision of the baseline model entailed extensive changes in the PD, particularly in sections 3 and 4. Related adjustments were made to several other parts of the document. To address points 1 and 2 of the corrective action required by Verra, the PP carried out the following activities:</p> <p>a) In the reviewed model the extended historical period, from 1999 to 2019 is adopted.</p> <p>b) It is demonstrated in the updated PD that, although observed deforestation rates in the RRD during the first half of the extended HRP are considerably higher than in the second half, an attempt to describe the data using linear regression results in a fit that is not significant (<math>R^2 &lt; 0.75</math>) and a simple historic average approach for projecting the baseline rate of deforestation is justified.</p> <p>c) The calculation of the baseline deforestation rate allocated to the RRL now accounts for the loss that would be predicted to occur in the RRL during the first baseline period, had the same RRD been used in that prediction. This procedure, which complements the methodology, is introduced to satisfy VM0007's requirement that <i>"The starting point for the baseline revision of the project will be the forest cover</i></p>	
--	--	---	--

		<p><i>projected to exist at the end of the [first] baseline period.”</i></p> <p>d) The datasets used for building the baseline model and procedures involved in the preparation of factor maps were revisited, resulting in the development of more accurate location analysis models (better FOMs). Changes include: enhancing the hydrography layer (previously only the Aripuanã river was included), excluding all areas of authorized deforestation from the model (irrespective of the date of authorization), combining the land tenure layers into a single background variable (as opposed to using simplistic presence/absence variables for each type of territory), and correctly applying noise-reduction filters when constructing distance variables (sieve procedure in target pixels). This description is included in Section 4.1.3, subsection “Preparation of data sets for spatial analysis” of the PD.</p> <p>d) Proxy areas are no longer employed in the baseline model. Instead, to prevent the protection bias of the project during part of the historical period from affecting the weights assigned to the variables that are used for baseline prediction, the forest areas within FSM borders are removed from the coverage maps during the baseline model calibration stage. This procedure is reported as a methodological deviation.</p> <p>e) The change in the RRD perimeter (which is different from the one used in the original PD) is now reported as a PD deviation.</p> <p>The PP prepared auxiliary spreadsheets with detailed calculations related to the baseline modeling approach and attached them as annexes. Additionally, the PP made various amendments in the text of the PD which are included in track-change version.</p>	
--	--	---	--

		<p>The VVB analyzed all the information that the PP attaches as evidence of the deforestation weighting and projection process, which is consistent with that which was presented to Verra at the meeting of January 31, 2025 (the document in word format sent by Verra and the presentation made by the PP are included). Likewise, in accordance with what is stated in this response and with the updates presented in the PD and MR, calculations and other supporting information, the VVB updates the corresponding sections of the Verification Report (Sections 1.4, 3.2, 3.3, 5, the Summary and others with minor changes).</p> <p><u>Annexes:</u></p> <p><b>Folder Finding 09</b></p> <ul style="list-style-type: none"> <li>- 250224_PROJ_ID0875_FSM_Annex_BaselineResults.xlsx</li> <li>- 250224_PROJ_ID0875_FSM_Annex_FactorMapAnalysis.xlsx</li> <li>- 250224_PROJ_ID0875_FSM_Annex_RateCalculation.xlsx</li> <li>- 250224_PROJ_ID0875_FSM_Annex_VariableCorrelation.xlsx</li> <li>- 250224_PROJ_ID0875_FSM_Annex_VariablesWOEs.xlsx</li> <li>- ID0875 Baseline Reassessment_20 DEC 2024.docx</li> <li>- 250131_PROJ_ID0875_FSM_SystemicaVerra.pdf</li> <li>- RE CASE28079 Project ID 875 - FLORESTAL SANTA MARIA PROJECT - VCS - Verification approval requested.msg</li> </ul> <p>Also, the PP included the link to consult the modeling supports which is included in the response e-mail.</p>	
--	--	---	--

		<b>Folder Additional annexes</b> <ul style="list-style-type: none"><li>- 240902_Deed of Partial Release - September 2024.pdf</li><li>- 250124_Ex-ante_calculation_FSM.xlsx</li><li>- 250124_Ex-post_calculation_FSM.xlsx</li><li>- 250214_FSM_NPRR_Economic Viability.xlsx</li><li>- 250217_FSM-Annex-Additionality.xlsx</li></ul>	

		<p><u>Verra response:</u>          The PP provided extensive details in the project documents, including some supporting material to justify the methods adopted to reassess the baseline. The baseline is now revised in compliance with the methodology provisions. The VVB provided a relevant assessment in response to this finding. No further action is required.</p>
--	--	--

10 Unclear and incomplete deforestation location analysis				
	<p><u>Issues</u></p> <ol style="list-style-type: none"> <li>1. The deforestation location analysis does not follow the requirements in module VMD0007, v3.3, Part 3.</li> <li>2. Section 4.1.3 of the revised PD doesn't provide sufficient details on the spatial variables and how they have been used in the deforestation location model:               <ol style="list-style-type: none"> <li>a. The project identified different types of roads in the RRL, however the variable "Distance to roads" does not differentiate between road types (see background section of this finding)</li> <li>b. Insufficient evidence is provided to demonstrate the selection and definition of the variable "Distance to deforestation", which consider deforestation accumulated over the past 6 years, while no other temporal scale has been tested.</li> <li>c. It is unclear why the project included the variable "presence/absence of the PA".</li> </ol> </li> </ol> <p><u>Action Required</u></p> <ol style="list-style-type: none"> <li>1. The VVB must ensure that the deforestation location analysis is performed over the entire RRL including the PA, following the indications provided in module</li> </ol>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="background-color: #1a3d54; color: white;">Round 1</th> </tr> <tr> <td> <p><u>PP Response:</u></p> <p>1) Location analysis is performed in a manner consistent with the approach chosen to model the second baseline period, which includes defining a new RRL (with location analysis being performed over its full extent). Under the selected approach, there is no "forest cover projected to exist at the end of the initial baseline" because the starting point of the model is the actual status of the project area and its surroundings in 2019. This also means that no adjustments are needed in the deforestation predicted to occur within the PA; although this deviates from the methodology, it is properly justified on the basis of conservativeness (see response to Finding #8).</p> <p>2a) That's correct. The roads used in the baseline model consist of a combined dataset of main and secondary roads, both "official" types of roads, obtained from a governmental source [Ref. 1]. We did not distinguish between these two categories of roads in the risk analysis since, by visually inspecting the geospatial data, deforested areas are found to be similarly distributed along both types – in the leftmost panel of the image below, the main road is indicated by  and secondary roads by  , while the 2019 forest coverage of the RRL is shown in green.</p> </td> </tr> </table>	Round 1	<p><u>PP Response:</u></p> <p>1) Location analysis is performed in a manner consistent with the approach chosen to model the second baseline period, which includes defining a new RRL (with location analysis being performed over its full extent). Under the selected approach, there is no "forest cover projected to exist at the end of the initial baseline" because the starting point of the model is the actual status of the project area and its surroundings in 2019. This also means that no adjustments are needed in the deforestation predicted to occur within the PA; although this deviates from the methodology, it is properly justified on the basis of conservativeness (see response to Finding #8).</p> <p>2a) That's correct. The roads used in the baseline model consist of a combined dataset of main and secondary roads, both "official" types of roads, obtained from a governmental source [Ref. 1]. We did not distinguish between these two categories of roads in the risk analysis since, by visually inspecting the geospatial data, deforested areas are found to be similarly distributed along both types – in the leftmost panel of the image below, the main road is indicated by  and secondary roads by  , while the 2019 forest coverage of the RRL is shown in green.</p>
Round 1				
<p><u>PP Response:</u></p> <p>1) Location analysis is performed in a manner consistent with the approach chosen to model the second baseline period, which includes defining a new RRL (with location analysis being performed over its full extent). Under the selected approach, there is no "forest cover projected to exist at the end of the initial baseline" because the starting point of the model is the actual status of the project area and its surroundings in 2019. This also means that no adjustments are needed in the deforestation predicted to occur within the PA; although this deviates from the methodology, it is properly justified on the basis of conservativeness (see response to Finding #8).</p> <p>2a) That's correct. The roads used in the baseline model consist of a combined dataset of main and secondary roads, both "official" types of roads, obtained from a governmental source [Ref. 1]. We did not distinguish between these two categories of roads in the risk analysis since, by visually inspecting the geospatial data, deforested areas are found to be similarly distributed along both types – in the leftmost panel of the image below, the main road is indicated by  and secondary roads by  , while the 2019 forest coverage of the RRL is shown in green.</p>				
		Closed		

VMD0007, v3.3, Part 3 (See the background section for more guidance)

2. The VVB must ensure that section 4.1.3 of the new PD and the deforestation location model are updated to:
  - a. reflect the different road types (i.e., official and unofficial) and the impact they have on deforestation.
  - b. include evidence supporting the decision of defining the variable “distance from deforestation” based on the accumulated deforestation precisely during a 6-years period.
  - c. Provide additional evidence and clarify why the categorical variable “presence/absence of the PA was added to the model.”
3. The VVB must ensure that all the changes requested above are also reflected in the monitoring report.
4. The VVB must assess the revised project documents and updated the verification report accordingly, describing the steps taken to validate and verify the information provided.

Program Rule

VM0007, v1.6, Section 6.2

VMD0007, v3.3, Part 3, STEP 3.0 to 3.4

Background:

At baseline reassessment, the spatial model must be calibrated and validated over the entire RRL (i.e., including the PA) as for the initial baseline.

Using the deforestation risk map that is produced, future deforestation must be projected over the entire RRL (i.e., including the PA) to extract the quantity of deforestation

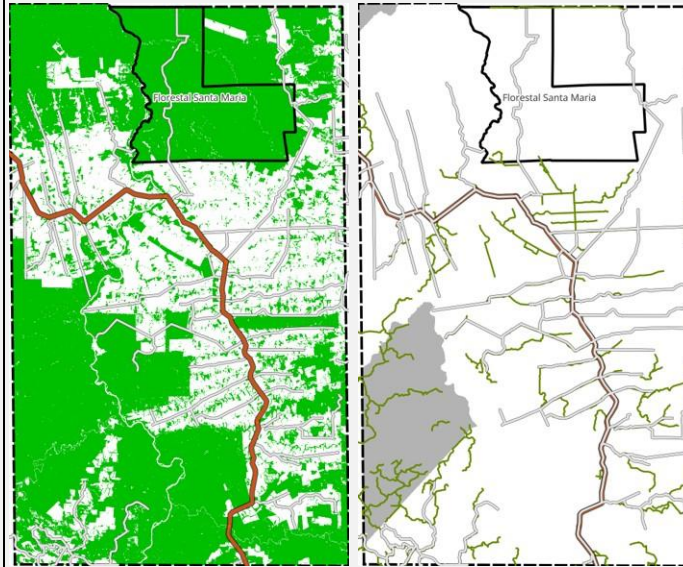



Fig. 2. Left: main (orange) and secondary roads (grey), background: MapBiomass Col7 2019 forest coverage. Right: main and secondary roads overlaid with “unofficial” roads (green); indigenous lands are indicated by the shaded areas.

Additionally, main and secondary roads are physically similar: both are dirt roads that allow for passage of the same types of vehicles, and which are transitable at the same seasons of the year.

The PD also mentions “unofficial roads” (Section 4.1.1 - Definition of Boundaries - Similarity Analysis) but these were left out of the baseline model since they are not reliably mapped in available datasets. The rightmost panel in Fig. 1 shows some of these minor “unofficial” local roads [Annex D], indicated by ; they also cannot be said to correlate with deforestation the same way as the main and secondary roads, e.g. part of them is located inside indigenous lands (the shaded areas).

	<p>expected in the PA. Once this quantity is estimated, it must be adjusted based on the forest cover projected to exist at the end of the initial baseline (refer to finding #8 for further details)</p>	<p>2b) Choosing a 6-year interval for constructing the “distance to recent deforestation” variable is not arbitrary: the interval equals the baseline validity period, so that the variable correctly captures the expected “depth” of baseline deforestation (i.e. how far it infiltrates the forest areas). Moreover, the interval is sufficiently short to capture time-localized trends in deforestation patterns (a much larger one would “dilute away” such trends; a much shorter one would be bad for statistics). Finally, since the 6-year interval splits the chosen 12-year historical period in half, it allows for the calibration, confirmation, and baseline projections to be consonant while making maximum use of the datasets.</p> <p>2c) The categorical variable “presence/absence” of the PA (actually, all the area within project borders) is a key factor in our baseline model due to the approach we adopted to predict the without-project scenario for this second baseline period. As mentioned above, the starting point of our model is the real-life scenario in 2019, and not the fictitious projection of the model used in the first baseline period.</p> <p>As explained in the PD, the variable has a dual role in the model, and it is used differently in the calibration-confirmation stages and in the baseline prediction stage.</p> <p>To put it briefly: during the analyzed historical period the carbon project was in full effect and thus areas within project borders were subjected to a much lower risk of deforestation; in other words, during those years the PA effectively acted as a conservation unit. Candidate models must take this into account to achieve significant accuracy during calibration and validation. However, when predicting the “without project” scenario, the reasoning is different – the premise adopted was that, were the carbon project suddenly terminated, the project area would inherit the background risk of neighboring zones,</p>	
--	---	--	--

		<p>meaning it is assigned the same deforestation probability weight of those adjacent zones.</p> <p>The explanation is given in greater detail in the PD and the rather special use of the categorical variable was duly reported as a “Methodology Deviation”. The text has been improved in the updated PD (the corresponding subsection has been renamed to: “Location analysis and the use of the project are as a categorial variable”).</p> <p>As a final comment, we note that, despite being employed in a rather unusual way (because models are most often considering new projects, and not projects that have been on-going for more than 10 years) a similar “transfer” of risk from adjacent areas would occur had we followed the recipe for baseline reassessment delineated in VM0007 and VMD0007, which takes as starting point for the second baseline the scenario predicted to exist by the end of the first baseline. In that case, the areas predicted to be deforested within project borders would be “carrying” the risk towards the inner regions of the PA.</p> <p>References:</p> <ol style="list-style-type: none"> <li>1) IBGE – Bases cartográficas contínuas – Brasil. File: <a href="#">Downloads</a> &gt; bc250 &gt; versao2019 &gt; shapefile &gt; bc250_shapefile_06_11_2019.zip &gt; rod_trecho_rodoviario_l.shp.</li> </ol> <p>Annexes:</p> <ol style="list-style-type: none"> <li>A. FSM_PPR_Finding_10_distance_to_roads.png</li> <li>B. FSM_PPR_Finding_10_Fig1_Left.png</li> <li>C. FSM_PPR_Finding_10_Fig1_Right.png</li> <li>D. estradas_vicinais_csr.zip</li> </ol>	
--	--	---	--

		<p><u>Actions taken:</u></p> <ul style="list-style-type: none"> <li>• A footnote was included in the updated PD which provides information regarding the datasets used for constructing the “distance to roads” factor map (see subsection “Preparation of spatial datasets”); the footnote reads: <i>“The roads used in the baseline model consist of a combined dataset of official main and secondary roads obtained from a governmental source (IBGE, 2019). We did not distinguish between main and secondary roads in the risk analysis since, by visually inspecting the geospatial data, deforested areas are found to be similarly distributed in their surroundings.”</i></li> <li>• Justification for adopting a 6-year interval when constructing the “distance to recent deforestation” factor map was included in the updated PD in the subsection “Preparation of spatial datasets”, the added text reads: <i>“This interval was primarily chosen because it equals the baseline validity period, thus capturing the expected “depth” of baseline deforestation (i.e. how far it infiltrates the forest areas) during model calibration.”</i></li> <li>• The text that reported the role of the variable “presence/absence of PA” as a methodology deviation has been improved; see subsection “Location analysis and the use of the project are as a categorial variable.”</li> </ul> <p><u>VVB Response</u></p> <p>1) The VVB considers that the project proponent approaches the response to this point based on an analysis consistent with the approach provided in the responses to NC08 of this PRR. In this sense, the project proponent pertinently justifies the reasons why the conditions of module VMD0007, v3.3, Part 3 could not be met, and includes this change, considering it as a methodological deviation.</p>	
--	--	--	--

		<p>2a) In the annexes included to support the justification presented by the project proponent, the VVB confirms that only official sources of information (IBGE) on primary and secondary roads were used for the road proximity analysis. According to what was observed during the on-site audit and what was stated by the project regarding this point, there is no difference in the deforestation trends in relation to the proximity to this type of roads that are identified with a different color in the graph integrated in the response and in the annexes available for the VVB.</p> <p>2b) The project proponent justifies the decision to carry out the analysis of proximity to roads in a period of 6 years in which it is the same temporality in which the validity of the baseline is proposed (half of the historical period of analysis) and that this allows observe changes that can be integrated into a spatial trend, which complies with the VCS standard's own orientation, therefore, the VVB considers appropriate, since shorter periods of analysis may not be representative of the dynamics of transformation of forests for other uses in the project zone.</p> <p>2c) The project proponent points out that, as observed in the trend analysis of deforestation in the figures provided to justify the responses to points 8 and 9 of this report, the project area has been acting almost as a strict conservation unit. thanks to the deforestation control activities developed.</p> <p>If the carbon project were terminated, the project area would have the inherent background risk of the neighboring areas, this fact justifies that the project proponent assigns the same weight of probability of deforestation as those adjacent areas. If the guidelines for the reevaluation of the baseline described in VM0007 and VMD0007 had been followed, the areas in which the proponent projects deforestation within the project limits would be conducting the risk towards the internal regions of the AP.</p>	
--	--	--	--

		<p>The VVB confirms that this change was included in section 3.6.1 of the PD as a methodological deviation, which is considered relevant and appropriate to the local and regional reality that was documented during the on-site audit, based on direct observation and measurements. graphic evidence collected during this phase of the audit.</p> <p>3. The VVB confirmed that the description of these changes was also incorporated in section 3.2 and described in a manner consistent with section 3.6.1 of the PD.</p> <p>4. The VVB updates the Verification Report in sections 3.2 and 3.3 so that the modifications described by the project proponent are included. This report includes the steps taken to validate and verify the information provided.</p> <p><u>Verra Response</u> The project proponent provided additional details on the spatial variables used in the deforestation location model (i.e. road types; recent deforestation). However, it is not allowed to manually change the weights of evidence of the spatial variables, and to define proxy areas to increase deforestation risk in the PA. Additionally, as described in finding #9, the deforestation location analysis does not follow the requirements in module VMD0007, v3.3, Part 3.</p> <p><b>Round 2</b></p> <p><u>Issue:</u> This finding remains open until finding #9 is closed.</p> <p><u>PP Response</u> In this reply we address an issue that was pointed out by the reviewers in both Findings 9 and 10, namely, the special use of the factor map “absence/presence of the Project Area” (or, simply, the variable “project area”) for location analysis in the context of the adopted baseline reassessment approach. (The related issue of using a more</p>	
--	--	--	--

		<p>recent historical period is addressed exclusively in the reply to Finding 9).</p> <p>The PP make the next considerations:</p> <p>First, despite the constrains imposed by the methodology on the location modeling (e.g. using trustworthy software, employing at least one factor map related to selected types of variables, performing calibration/validation tests to determine the best model, and other similar-purposed requirements that seek to ensure model integrity) there are always choices involved during model construction which must be made on the basis of qualitative evaluations.</p> <p>This qualitative input, we sustain, is of great importance to develop sensible models. To put it another way: we hold that it would not be a good practice to simply construct all possible different risk maps, using all combinations of every conceivable spatial variable, and then simply select the “best” model using some accuracy metric. The result would likely be an overfitted model, detached from reality, and that only accidentally happened to optimize the result for that particular situation – the opposite of a robust model.</p> <p>The reason we bring this theme is because one of the points we want to make is that the specific way the variable “project area” is employed in our location analysis is an example of how that sort of qualitative input enters the model.</p> <p>This brings us to the second consideration: the purpose of adjusting the risk factor (or “weight of evidence for forest loss transition”) of the variable “project area”, when using it for predicting the without-project scenario, is <i>to capture the effects of the status change of the forests within project borders that would take place in such a scenario</i>: that is, if the carbon project was terminated we must assume that all presently ongoing monitoring, patrolling, and surveillance activities, both required by VCS rules and supported by the generation of carbon credits, would cease. But, while the risk factors associated with the other spatial variables can be computed probabilistically from the coverage and transition data of the RRL, the status change is less tangible – we simply don’t have the data for “FSM as a once-existing-and-then-terminated carbon project” to compare with “FSM as an existing carbon project”, the same way we have the data to compare,</p>	
--	--	--	--

		<p>for example, “presence of indigenous area” and “absence of indigenous area”. (To be sure, the special nature of the “project area” variable only comes about when predicting the without-project scenario; during the calibration and validation stages it is used precisely in the same way as other categorical variables.)</p> <p>As a final consideration – before going into the main argument – we address the reviewer’s comment that, in the context of location analysis modeling, “<i>it is not allowed to manually change the weights of evidence of the spatial variables</i>”. We fully agree with this statement in what concerns the ordinary spatial variables. But, as explained, the “project area” variable is not an ordinary variable; it has a special role when predicting the baseline scenario, and it is just not possible to assign to it a weight that would be adequate for that type of prediction by the same methods used for the other variables.</p> <p>That being said, if there were “retired” VCS/AUD projects, they would likely be good proxies for estimating the risk factor in the without-project scenario. But such cases do not exist in Brazil, let alone in regions bearing similarity to the FSM surroundings, which would be more fitting (we nevertheless explore something akin to this idea in the argument that is laid out below).</p> <p>It is for those reasons – to solve the problem of how to assign risk factors to the project area in the without-project scenario – that we introduced “proxy areas” located in the immediate vicinities of the project. As explained in the PD, the underlying assumption is that they capture the imminent risk that the forests within project borders would be facing in case the carbon project ended.</p> <p>In what follows we provide evidence that this assumption is plausible, at the very least.</p> <p>***</p> <p>To understand the level of threat that a protected forest bordering anthropically occupied areas is subjected to when a weakening of its protection status is perceived by ever-present deforestation agents,</p>	
--	--	--	--

		<p>we examined the representative cases of three conservation units: “Parque Estadual do Guajará-Mirim” (PES do Guajará-Mirim), “Floresta Nacional do Jamanxim” (FLONA do Jamanxim), and “Reserva Extrativista Guariba-Roosevelt” (RESEX Guariba-Roosevelt), located in the states of Rondônia, Pará, and Mato Grosso, respectively.</p> <p>To contextualize: the PES allows only for restricted visitation and scientific research activities. On the other hand, occupation by native and traditional peoples is allowed in the FLONA and RESEX, as long as activities developed by these peoples are of sustainable (FLONA) or subsistence (RESEX) nature.</p> <p>As is unfortunately common in Brazil, despite their protected status, all three units have an history of illegal occupation and deforestation. But in more recent years, unprecedented levels of deforestation were observed in those areas, being this the focus of our exposition.</p> <p>Importantly, to establish a connection between conclusions drawn from the study of these areas and the case of FSM, minimal similarity must be asserted. Thus, the examined conservation units are found approximately at the same latitude as Florestal Santa Maria, and display characteristics, such as the presence of neighboring anthropic areas and some infrastructure implemented within their perimeters (due to the abovementioned illegal occupation) which are comparable to the latter. This is key since the existence of easy accesses to the forest obviously tends to facilitate deforestation activities in the areas in the event that their protected status is challenged.</p>	
--	--	---	--

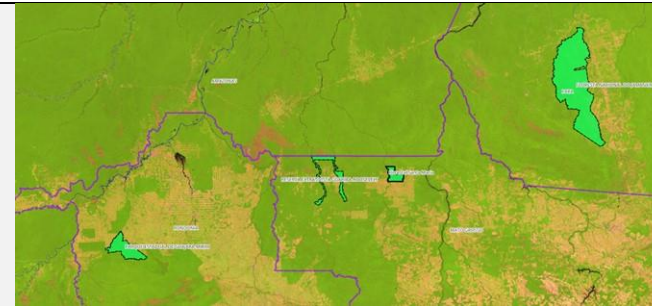


Figure 4. Location of the areas examined relative to FSM.

Now, the common factor between the considered units that make them relevant to the analysis of FSM is that their protected status has been threatened by unconscionable political decisions; and, although the areas ultimately did not have their status revoked, the geospatial data suggests that the perceived turmoil served as pretext to criminal agents to engage in illegal activities within the areas, generating an increasing trend in deforestation rates in subsequent years.

Next, we summarize the history of events for each of the conservation units. A more detailed account can be found in an attached document (Case Study of Three Protected Areas.pdf).

All information was gathered from the official website: <https://uc.socioambiental.org/en> (specific links to the page of each conservation unit and to other supporting materials are listed in the references below).

\*\*\*

PES do Guajará-Mirim

In May 2021 the then governor of Rondônia was able to pass a law that subtracted an area of approximately 16,000 ha from the northern part of the state park, where the construction of a roadway in previous years had already driven a wave of deforestation.

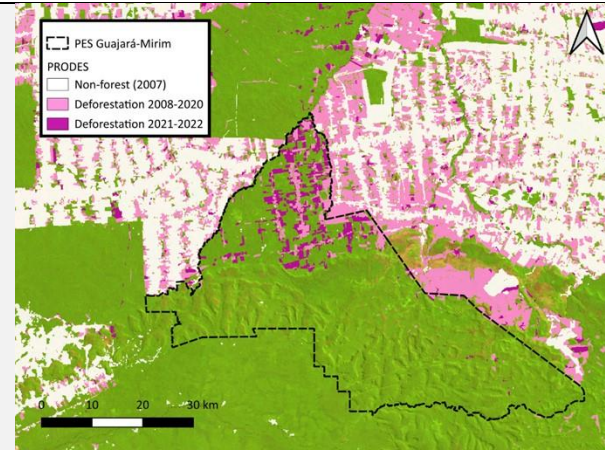


Figure 5. PES do Guajar-Mirim and forest loss in different periods.

While the change proposed in that law was later deemed unconstitutional by the state public ministry, the temporary uncertain status contributed to an abrupt rise of deforestation rates.



Figure 6. Historical deforestation in PES do Guajar-Mirim.

FLONA do Jamanxim

In December 2016 a provisional measure (MPV756/2016), which originally aimed at enlarging the FLONA's area, was heavily modified during its passage through Congress, with the final version of the would-be law predicting a substantial reduction of its territory (the modification is shown in the attached document).

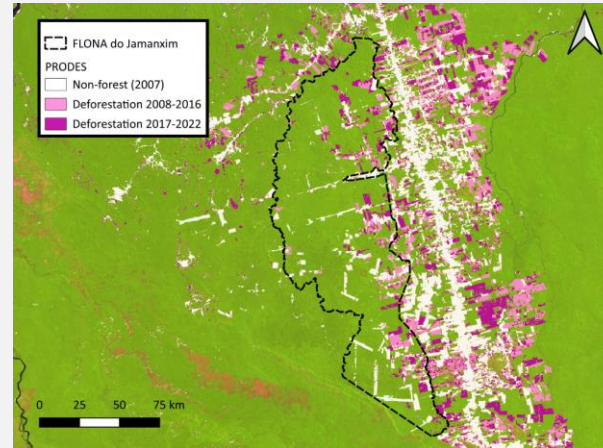


Figure 7. FLONA do Jamanxim and forest loss in different periods.

While the bill was ultimately vetoed by the President of Brazil, it was in effect for a short period in 2017 and this inconstancy regarding the status of portions of the FLONA was sufficient to spur a wave of increasing deforestation rates that persisted up to 2022.

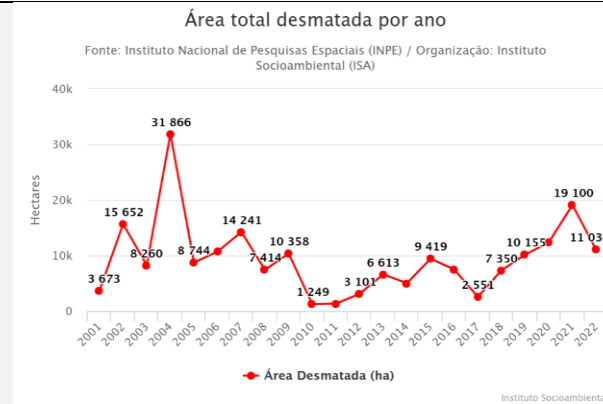


Figure 8. Historical deforestation in FLONA do Jamanxim.

RESEX Guariba-Roosevelt

Starting in 2015 several attempts were made to reduce the area of the RESEX, as recorded in the RESEX’s documental history (see the transcribed version in the attached document).

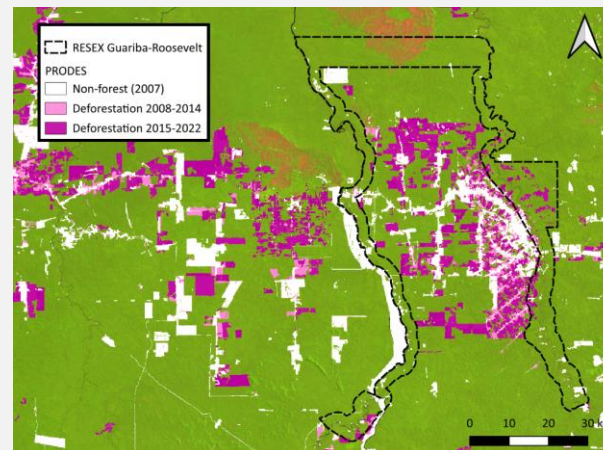


Figure 9. RESEX Guariba-Roosevelt and forest loss in different periods.

While all such attempts have been so far revoked by judicial decisions, the perceived instabilities seem to have encouraged illegal activity, leading to an increasing trend in deforestation rates registered in the RESEX's territory, starting in 2015.

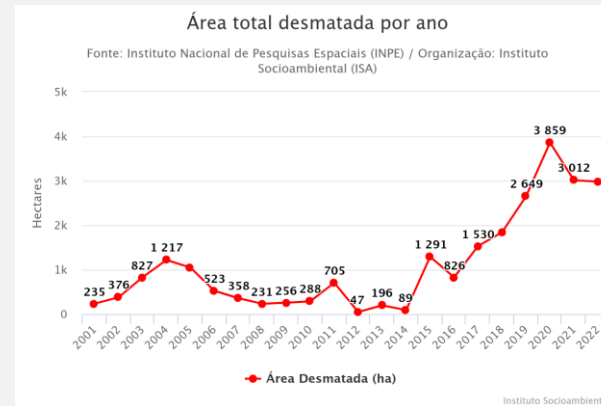


Figure 10. Historical deforestation in RESEX Guariba-Roosevelt.

\*\*\*

What we intend to show with these case studies is that, when forested areas closely located to anthropic zones, where access routes already exist and where presumably commercially-valuable timber can be found – and therefore, where a strong latent deforestation pressure exists – it is *plausible* to expect that, once a weakening of the protection status of the area is perceived by deforestation agents who always operate under a sense of impunity, illegal deforestation will take place *at an accelerated rate*.

Now, we are aware that this conclusion is made based on a small sample of three conservation units, but we also consider this sample sufficiently representative (at least in what concerns their most relevant features, emphasized above) to allow this conclusion to be extended to the Florestal Santa Maria's Project Area.

		<p>In other words, we find that these case studies provide justification to the premise that, if the carbon project ends, the project area inherits the risk factor of the areas in its immediate surroundings, that is, the “proxy areas” used in the location analysis model – thus capturing the effects of a sudden release of the latent pressure that was being withheld by the project (the basic idea here is very similar to leakage modeling, the activity-shifting in this case occurring from the project’s surroundings to its interior) –, which in turn imply a larger loss probability to be assigned to the Project Area than if the project area variable was simply not included in the baseline projection, in accordance with the abrupt increase of deforestation rates that should be expected under the modeled scenario, considering what we learned from the case studies. (Ideally, the risk factor of the threatened areas could have been measured before and after the pivotal events, leading to a more quantitative assessment; but this would be unpractical and completely out of the scope of the location analysis; for instance, it would require defining a reference region appropriate for each area, introducing a whole host of related complications.)</p> <p>***</p> <p>In summary, we argue that: i) due to the special role the project area variable has when modeling the baseline scenario, its risk factor cannot be determined like other ordinary spatial variables; ii) that, in view of this limitation, we must make use of our best-knowledge to inform the model of what this risk factor should be; iii) that estimating the risk factor using proxy areas around the project is an acceptable procedure as part of modeling; and iv) that the assumptions underlying the procedure are well-grounded in reality, and its outcome is compatible with what is expected from the conclusions of the qualitative case studies.</p> <p>We hope the present exposition (taken together with arguments delineated in the response to Finding 9) brings the reviewer to reconsider hers/his opinion regarding our modeling approach.</p> <p><u>Annexes:</u></p> <p>Case_study_of_protected_areas.pdf</p>	
--	--	---	--

		<p><u>Actions taken:</u></p> <p>The project proponent does not update any of the main documents, waiting for the evaluation of the answer to point 9 and the present point.</p> <p><u>VVB Response</u></p> <p>The VVB considers relevant the main approach of the analysis prepared by the project proponent, according to which, strictly following VM0007, v1.6, Section 6.2 and VMD0007, v3.3, Part 3, Steps 3.0 to 3.4, could result in a bias in the deforestation projections for the new baseline period.</p> <p>For this purpose, it takes into consideration some case studies, especially in conservation units (protected areas) that are located in proximity to the project area, which as a consequence of government decisions that jeopardize the existence of each comparable protected area com which would be to assume the scenario that the Florestal Santa María REDD project is not being executed. These decisions have been reflected in increases in deforestation outside of historical averages that have put the existence of protected areas at risk. In this sense, considering within the model the non-existence of the project could overstate the projection of future deforestation and would not be a reliable or conservative scenario.</p> <p>Although the evaluation of this point is connected to that of point 9, the VVB considers that the justification presented by the project proponent is based on compliance with the same principles of the VCS v4.4 standard that were announced in said spot. For this reason, the information attached to the project proponent's response is put into consideration by the Verra evaluation team.</p>	
		<p>Verra Response</p> <p>This finding remains open until finding #9 is closed.</p>	
		<p><b>Round 3</b></p> <p><u>VVB Response:</u></p>	

		<p>The VVB evaluated the spatial model used to predict the second baseline period of the project, which had a structural revival, based on the adjustment and improvement of the accuracy of the information to feed the model and strict compliance with the VM0007 Methodology and the VMD007 Module.</p> <p>The PP has updated the PD considering the clarifications and technical guidelines from the Verra technical team (which were included in document “ID0875 Baseline Reassessment_20 DEC 2024.doc” sent by Verra to the PP), which was verified by the VVB, ensuring that it complies with the baseline re-assessment guidelines VM0007 and VMD0007. (Annex: Finding #10 folder).</p> <p><u>Actions taken:</u></p> <p>Following the corrective action requested by Verra in Finding #9, the PP no longer uses proxy areas in the reference model. To avoid bias in the variables, forest areas within the FSM boundaries are removed from the coverage maps during the model calibration stage and this procedure is included as a methodological deviation. The VVB assessed the relevance of the PD update, of the supporting information used, in accordance with what was suggested by Verra, confirming that the methodological requirements are met and that the adjustments in the model are of greater precision and more conservative, in accordance with the requirements of the VCS standard.</p> <p>The VVB made some updates according to the evaluation of the PD and MR adjustments and generated a new version of Verification Report accordingly.</p> <p><u>Verra response:</u> The responses provided are sufficient to close findings #9 and #10.</p>	
--	--	--	--

11 The project did not reference the most recent version for all external sources																
<p><u>Issue</u></p> <p>Several parameters reported in the new PD are not referenced from the most recent version of the external source (e.g., The 2019 Refinement to the 2006 IPCC Guidelines for National GHG Inventories). More precisely:</p> <ol style="list-style-type: none"> <li>1. Wood density of commercially harvested species</li> <li>2. Root to shoot ratio</li> <li>3. Fraction of dry matter</li> <li>4. Biomass expansion factor (BEF)</li> </ol> <p><u>Action Required</u></p> <ol style="list-style-type: none"> <li>1. The VVB must ensure that the new PD is updated so that all reference values used are coming from the most recent version of the document (i.e., replacing 2006 IPCC values with the 2019 refinement).</li> </ol> <p><u>Program Rule</u></p> <p>VCS Standard, v4.4 , Section 1.1</p>	<p><b>Round 1</b></p> <p><u>PP Response</u></p> <p>The project proponent reviewed the updated source for the parameter values described in the PD and the following parameters were justified or updated (from the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories <a href="#">Publications - IPCC-TFI (iges.or.jp)</a>, in the document and calculations:</p> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Described value</th> <th>Updated value</th> </tr> </thead> <tbody> <tr> <td>Wood density of commercially harvested species</td> <td>0.59 (<a href="#">Nogueira et al. 2007</a>)</td> <td>No IPCC, no refinement</td> </tr> <tr> <td>Root to shoot ratio</td> <td>0.37 (table 4.4 IPCC, 2006)</td> <td>0.221 (<a href="#">IPCC, 2019</a>, Table 4.4)</td> </tr> <tr> <td>Fraction of dry matter</td> <td>0.47 (table 4.3 IPCC, 2006)</td> <td>Table 4.3 no refinement (<a href="#">IPCC, 2019</a>)</td> </tr> <tr> <td>Biomass expansion factor (BEF)</td> <td>1.66 (<a href="#">Brown et al., 1989</a>, Table 4, page 890)</td> <td>No IPCC, no refinement</td> </tr> </tbody> </table> <p>Wood density is a conservative value taken from Nogueira et al. 2007 because it corresponds to tropical forests and is a biomass estimation study.</p> <p>The biomass expansion factor is the minimum value deduced from the lower limit, according to Brown et al. (1989) on biomass estimation methods for tropical forests with applications to forest inventory data. Minimum value deduced from lowest limit: 1.743 - 0.083 = 1.66. This is a conservative value for the project forest types, compared to IPCC values (it was not evident that the BEF was updated in the refinement).</p> <p>The Root to shoot ratio parameter was already being used in the first baseline PD. Therefore, after being updated by the IPCC report</p>	Parameter	Described value	Updated value	Wood density of commercially harvested species	0.59 ( <a href="#">Nogueira et al. 2007</a> )	No IPCC, no refinement	Root to shoot ratio	0.37 (table 4.4 IPCC, 2006)	0.221 ( <a href="#">IPCC, 2019</a> , Table 4.4)	Fraction of dry matter	0.47 (table 4.3 IPCC, 2006)	Table 4.3 no refinement ( <a href="#">IPCC, 2019</a> )	Biomass expansion factor (BEF)	1.66 ( <a href="#">Brown et al., 1989</a> , Table 4, page 890)	No IPCC, no refinement
Parameter	Described value	Updated value														
Wood density of commercially harvested species	0.59 ( <a href="#">Nogueira et al. 2007</a> )	No IPCC, no refinement														
Root to shoot ratio	0.37 (table 4.4 IPCC, 2006)	0.221 ( <a href="#">IPCC, 2019</a> , Table 4.4)														
Fraction of dry matter	0.47 (table 4.3 IPCC, 2006)	Table 4.3 no refinement ( <a href="#">IPCC, 2019</a> )														
Biomass expansion factor (BEF)	1.66 ( <a href="#">Brown et al., 1989</a> , Table 4, page 890)	No IPCC, no refinement														

Closed

		<p>(2019), a text was inserted in the PD, Section 3.6.2 - Project Description Deviations.</p> <p><u>Actions taken:</u></p> <ul style="list-style-type: none"> <li>• <a href="#">Updating the ex ante calculation spreadsheet</a></li> <li>• <a href="#">Updating the ex post calculation spreadsheet</a></li> <li>• <a href="#">Updating text in PDF</a></li> <li>• <a href="#">Updating text in MR</a></li> </ul> <p><u>VVB Response</u></p> <p>The VVB confirms the updating of the PD according with the updating of the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories and verify the changes in the calculations of the project in consequence of the adjustments in the root to shoot ratio parameter.</p> <p>The project proponent includes as evidence the new calculations files: “240119_Ex-ante_calculation_FSM.xlsx” and “240119_Ex-post_calculation_FSM.xlsx” which are analyzed, and confirms the changes made in the MR and PD and do the consequent changes in the Verification Report: Summary, Section 1, and Section 5.</p> <p><u>Verra Response</u></p> <p>The updates provided are sufficient to close this finding.</p>	
--	--	--	--

12 Incorrect forest cover and LULC change maps			
	<u>Issue</u>	<u>Round 1</u>	
	<p>1. Section 5.1.1 of the MR includes incorrect forest cover and LULC maps:</p> <p style="margin-left: 20px;">a. Information on deforestation that occurred in the PA and in the LB during</p>	<p><u>PP Response</u></p> <p>Action taken:</p> <ul style="list-style-type: none"> <li>• The required maps for the years of the corresponding monitoring period, i.e., from 2019 to 2022, were included as</li> </ul>	Closed

	<p>the first baseline validity period have not been included in the maps.</p> <p><u>Action Required</u></p> <ol style="list-style-type: none"> <li>a. The VVB must ensure that LULC change maps are updated in Section 5.1.1 of the MR to represent the conditions at the beginning of baseline reassessment including, i.e. specify the areas that have been deforested during the previous monitoring periods.</li> <li>2. The VVB must ensure that the same maps are also included in the relevant section of the new PD.</li> </ol> <p><u>Program Rule</u>          VM0007, v1.6, Section 6.2          VMD0015, v2.2, Sections 5 &amp; 6.2</p>	<p>part of an annex to the updated monitoring report, referenced in Section 5.2.1 of the “Monitoring deforestation and monitoring forest degradation”. The document, whose file is named “240124_Unificado_Monitoring_Results_FSM_2019_2022.pdf” also delineates the procedures used to produce each map.</p> <ul style="list-style-type: none"> <li>• Furthermore, to address the discovery comprehensively, the land use maps used in compiling the first baseline, and the class transition maps, highlighting areas of deforestation were attached. The file called “240301_FCM-FSM-1999-2019.zip” provides a detailed view of forest cover and LULC changes spanning from 1999 to 2019. The 'Deforestation' folder contains the transition tracks with deforestation classes for the period of 1999-2019. The 'FCM' folder contains the basemaps that were used to perform the transitions. In addition, three maps were generated for easy visualization of information related to the years 2007, 2010, 2013, referring to the historical period, as a supplementary map called 'FCM - historic period - 2007.png' 'FCM - historic period - 2010.png' 'FCM - historic period - 2013.png' aims to increase the clarity and integrity of our monitoring efforts, ensuring a comprehensive representation of deforestation and changes in land use during the specified period.</li> </ul> <p><u>VVB Response</u></p> <p>The VVB confirms that section 5.2.1 Monitoring of deforestation and monitoring of forest degradation of the MR was adjusted and that the file “240124_Unificado_Monitoring_Results_FSM_2019_2022.pdf” is incorporated as a source of information(cited as #114) to describe the procedure, in which the results are included for each year within the monitoring period the spatial analysis of: 1) Area burned in layer i at time t (<math>A_{burn,i,t}</math>), 2) Area covered by stratum i (<math>A_i</math>) and 3) Area disturbed in stratum I at time t (<math>A_{dist,i,t}</math>) – No natural fire.</p> <p>For each of the three topics, the steps taken to consolidate the information, the periodicity, the official information sources used, the resolution levels and the resulting map image for each year are described. The VVB accesses the links of the references included in each document</p>	
--	--	---	--

		<p>and verifies the relevance of the information included in the mentioned document and the compliance with the procedures and steps included in VMD0015, v2.2 Sections 5&amp;6.2.</p> <p>Also, the project proponent provides the information on the deforestation that occurred in the PA and in the LB during the first baseline validity period have been included in the file “240301_FCM-FSM-1999-2019.zip” which contains maps analysis that includes forest cover and LULC changes spanning from 1999 to 2019, according to the requirement of section 6.2 of the VM0007, v1.6. The information includes maps used in the compilation of the first baseline and the class transition maps, highlighting the areas of deforestation, which are evaluated by the VVB using the Google Earth program, verifying its relevance.</p> <p>The VVB reviews the resulting adjustments and the inclusion of the same maps in the corresponding sections of the MR and the PD, concluding that they are pertinent to respond and ensure compliance with the requirements of this point of the PRR.</p>	
		<p><u>Verra Response</u> Section 5.2.1 Monitoring of deforestation and monitoring of forest degradation of the MR has been adjusted. This finding is closed.</p>	

13 Missing VVB validation assessment on multiple section of the verification report			
	<p><u>Issue</u></p> <ol style="list-style-type: none"> <li>1. Section 3 (“validation findings”) of the verification report does not describe the steps taken to validate the new PD and the reassessed baseline. In particular, the verification report does not include an assessment of the following sections:             <ol style="list-style-type: none"> <li>a. Applicability of the methodology</li> <li>b. Project boundary</li> <li>c. Baseline scenario</li> <li>d. Quantification of GHG emission reduction</li> </ol> </li> </ol>	<p><b>Round 1</b></p> <p><u>VVB Response</u></p> <ol style="list-style-type: none"> <li>1. a. The VVB performs a comprehensive adjustment of section 3.3 of the Verification report in accordance with the requirements of the VCS Standard v4.4 sections 3.14.1, 4.1.16 &amp; a.1.17.</li> <li>1 b. Section 3.3 includes now the comprehensive evaluation of sections i, ii, iii and iv, in accordance with the</li> </ol>	<p>Closed</p>

<p><u>Action Required</u></p> <ol style="list-style-type: none"> <li>1. The VVB must update section 3 of the verification report to include:             <ol style="list-style-type: none"> <li>a. A description of the steps taken to validate of the new PD and baseline</li> <li>b. A comprehensive assessment of the following sections:                 <ol style="list-style-type: none"> <li>i. Applicability of the methodology</li> <li>ii. Project boundary</li> <li>iii. Baseline scenario</li> <li>iv. Quantification of GHG emission reduction</li> </ol> </li> </ol> </li> <li>3. The VVB must demonstrate whether regulatory surplus has been updated in accordance with the requirements set out in the VCS Program rules.</li> </ol> <p><u>Program Rule</u> VCS Standard, v4.4, Sections 3.14.1, 4.1.16 &amp; 4.1.17</p>	<p>requirements of the standard. VCS.</p> <p>3. The VVB updates section 3.3 of the Verification report by including the demonstration that the VVB evaluation included review of the additionality analysis in relation to the regulatory surplus that the project proponent describes in section 3.5 of the PD, agreeing with the requirements set out in the VCS v4.4 Program rules in section 3.14.1.</p> <p><u>Verra Response</u> Section 3 (“validation findings”) of the verification report has been updated to describe the steps taken to validate the new PD and the reassessed baseline. This finding is closed and no further action is required.</p>	
---	---	--

<b>14</b>	<b>Missing LULC change map accuracy assessment</b>	
	<p><u>Issue</u></p> <ol style="list-style-type: none"> <li>1. Section 4.1.2 (“Map Accuracy Assessment”) of the new PD indicates that the project performed an independent verifiable accuracy assessment of the historical deforestation in the RR using high resolution images. However, the methods and results of the assessment are not reported in the new PD.</li> </ol> <p><u>Action Required</u></p> <ol style="list-style-type: none"> <li>1. The VVB must ensure that Section 4.1.2 is updated to include more details on the methodology used to perform the accuracy</li> </ol>	<p style="text-align: center;"><b>Round 1</b></p> <p><u>PP Response</u></p> <p>Action taken:</p> <p>The methods employed for accuracy assessment and corresponding results are reported in the annexed document: “240131_Accuracy_Assessment_FSM_2016_2019.pdf”, which is referenced in Section 4.1.2 of the updated PD.</p> <p><u>VVB Response</u></p> <ol style="list-style-type: none"> <li>1. The project proponent provides for the VVB the</li> </ol> <p style="text-align: right;">Closed</p>

	<p>assessment, and the results (i.e., accuracy matrix including omission and classification errors).</p> <ol style="list-style-type: none"> <li>1. The VVB must share with Verra a copy of the Annex: Map_Accuracy_Assessment.</li> <li>2. The VVB must update the verification report to describe the steps taken to validate methodology used to perform the map accuracy assessment, the QA/QC procedures and the results of such assessment.</li> </ol> <p><u>Program Rule</u> VMD0007, v3.3, Sections 2.1.1 &amp; 2.1.4</p>	<p>document “240131_Accuracy_Assessment_FSM_2016_2019.pdf”, which is annexed to the present document as is required by Verra.</p> <p>2. The VVB updates the section 4.5 of the Verification report in conformance with the corrective action requested.</p> <p><u>Verra Response</u> The issues were addressed, and no further action is required.</p>	
--	--	--	--

<b>15</b>	<b>Missing PD deviation to describe baseline reassessment</b>		
	<p><u>Issue</u> Section 3.2.2 of the MR does not include the baseline reassessment as PD deviation.</p> <p><u>Action Required</u> 1. The VVB must ensure that Section 3.2.2 is updated to include a PD deviation that describes the baseline reassessment 2. The VVB must review the PD deviation accordingly (refer to finding #13)</p> <p><u>Program Rule</u> VCS Standard v4.4, Section 3.20</p>	<p><b>Round 1</b></p> <p><u>PP Response</u></p> <p>According to Section 3.20 of the VCS Standard v4.4: “Projects are permitted to deviate from the validated project description in certain cases in order to accommodate changing circumstances post-validation.”</p> <p>Furthermore, “Where the deviation impacts the applicability of the methodology, additionality or the appropriateness of the baseline scenario, the deviation shall be described and justified in a revised version of the project description.”</p> <p>Indeed, the present PD is a revised version of the original PD, and the baseline reassessment constitutes a broad-scale change that impacts the appropriateness of the original baseline scenario (by replacing it), and therefore the reassessment should have been reported as a PD</p>	<p>Closed</p>

		<p>deviation.</p> <p>Action taken:</p> <p>The deviation sections in both PD and MR were updated and both now include the baseline reassessment as a PD deviation.</p> <p><u>VVB Response</u></p> <p>The VVB confirms the inclusion of the baseline re-assessment as a “methodological deviation” in section 3.2.1 of the MR and section 3.6.1 of the PD, which is analyzed together with the set of evidence included by the project proponent, considering that it meets the conditions of the VCS Standard v4.4 section 3.19.2 and 3.20.</p> <p><u>Verra Response</u></p> <p>Section 3.2.2 has been updated to include a PD deviation that describes the baseline reassessment. The VVB assessed the deviation. This finding is closed.</p>	
--	--	---	--

16	<b>No information on the possible risk of overlap with private and public lands in Brazil</b>		
	<p><u>Issue(s)</u></p> <p>It is not clear if the VVB has assessed the risk of overlap between the project area and private land, other CARs plots, public lands, indigenous territories or quilombo lands.</p> <p><u>Action Required</u></p> <p>The VVB must update Section 4.2.3 of the VR to describe how they confirmed – using which evidence – that the project area does not overlap with private land, other CARs plots, public land, indigenous territory or quilombos land. The updated VR should include a map to easily visualize the outcomes of this assessment. The evidence must</p>	<p><b>Round 1</b></p> <p><u>VVB Response</u></p> <p>As part of the analysis of the information of each project, the VVB cross-checks the GIS information available on the official platforms of Brazil, to ensure that the rights of third parties are not violated or there are no overlaps with collective territories of traditional communities. The analysis includes the overlap analysis with all the types of stakeholders focused on avoiding violation of the rights of the following types of properties: settlements, private lands, indigenous lands or quilombolas, public lands and SNUC conservation units, this analysis and the</p>	Closed

include the most up-to-date national and state level GIS information available.

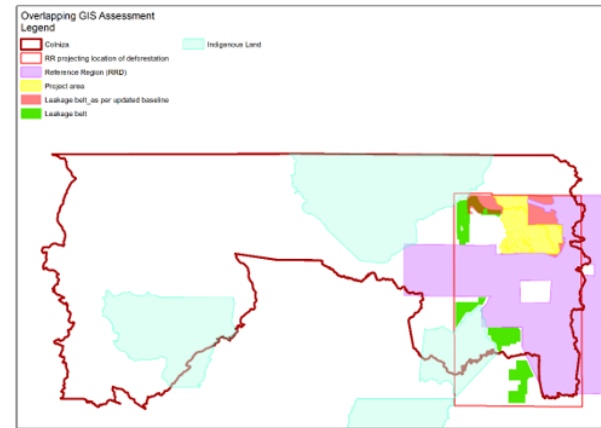
Program Rule(s)

VCS Standard 4.4, Section 3.18.12-2.

source of consultation for each topic can be seen in the following figure:

**Indigenous lands**

Official database consulted on 8/21/2024, observe the overlaps with indigenous territories of the polygons in blue-green color, source <https://www.gov.br/funai/pt-br/atuacao/terras-indigenas/geoprocessamento-e-mapas>



Likewise, the Findings report included in Appendix 2 of the Verification Report (CL01) details the procedure carried out by the VVB to ensure the Project Ownership associated with the Florestal Santa María REDD project, to ensure the compliance with the conditions of the Standard VCS and the non-existence of conflicts over the project area, in accordance with the official Land Tenure sources existing in Brazil, confirmed by the VVB.

The section 4.3 of the VR was updated describing how it was confirmed – using what evidence – that the project area does not overlap with the set of public and private lands that could be affected by third parties due to the development of the project. A map (Figure 4) is included in the section to visualize the results of this evaluation.

Annex:

		<p>- File: GIS analysis of overlaps FSM.pdf</p>	
		<p><u>Verra Response</u> The VVB has provided an assessment of the risk of overlap between the project area and private land, other CARs plots, public lands, indigenous territories or quilombo lands. This finding is closed and no further action is required.</p>	