

SURUÍ FOREST CARBON PROJECT MONITORING REPORT



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1 PROJECT DETAILS

1.1 Summary Description of Project

Responsible for most of the greenhouse gas (GHGs) emissions in Brazil, the forestry sector accounts for 58% of national emissions¹. Most of those emissions originate from deforestation in the Amazon. The State of Rondônia (RO), which contains most of the Suruí Forest Carbon Project (SFCP) and where the Suruí have economic access and relationships with stakeholders, is one of the states that lost the most forest in the Brazilian Amazon. More than 2.4 million hectares were deforested between 2000 and 2009, which accounts for approximately 14% of total deforestation in the Brazilian Amazon² during this period. The other fraction of the PCFS is located in the State of Mato Grosso which accounted for 36% of Amazon deforestation during the same period.

The Paiter Suruí indigenous people inhabit the northeast of Rondônia, a region that comprises the western flank of a long corridor of indigenous lands surrounded by consolidated agricultural areas. Suruí contact with non-Indians first occurred in 1969. The demarcation of the Paiter Suruí's territory was ratified by Decree No. 88.867 of October 18, 1983, and defined what was called the Sete de Setembro Indigenous Land (TISS). Some farmers, who occupied lands in what is now TISS, were expelled from these areas and these were eventually occupied by the Paiter Suruí. The surrounding region is heavily deforested and pressure from loggers and ranchers on the border of TISS is increasingly intense. The Suruí are currently distributed in 25 villages across an area of approximately 247,845 hectares between the central-eastern region of the State of Rondônia, Municipalities of Cacoal and Espigão D'Oeste, and the northwest region of the State of Mato Grosso, Municipality of Rondolândia.

Contact with non-Indians increasingly changed the livelihoods standard for the Suruí, with the consumption of manufactured goods and the need for health services and education promoted by the surrounding society. As a result, beyond benefitting from coffee plantations inherited from a portion of their land that once belonged to rural settlements, the Suruí began practicing commercial activities, with logging as their first significant and accessible source of resources. The Paiter Suruí sold wood in their territory for approximately 40 years to purchase goods and services.

Logging has caused profound social changes that include the formation of new villages. From the 2000s, beginning with the depletion of timber resources and the consolidation of most of the surrounding areas by livestock and coffee, the Paiter Suruí people began investing in alternative land uses and means of income generation. In this context, the main driver of deforestation in the TISS has been a change of strategy from the Paiter Suruí people to replace timber with other sources of income, particularly coffee and livestock production.

The Suruí Forest Carbon Project (SFCP) aims to halt deforestation and its associated greenhouse gas (GHG) emissions in an area under intense deforestation pressure in the TISS. The region is located in one of the main centres of the Brazilian Amazon's "deforestation arc", and is shaped by the expansion of consolidated farms requiring new forest areas for agricultural activities. The remaining forests in these regions are primarily limited to protected areas. The trend indicates that the Indigenous are increasingly turning to alternatives to earn the monetary income once provided by timber. These alternatives include

¹ MCT 2009.

² PRODES *ibid*.

crops such as coffee and extensive livestock systems, and leasing and "sharecropping"³ with surrounding farmers and ranchers. The most likely future scenario for the TISS is shaped by the interaction between external and internal factors, where productive agreements would lead to a consequential acceleration in the rate of forest cover loss.

The SFCP emerged as a pioneering initiative led by the Paiter Suruí, the Chief Almir Suruí in particular⁴, searching for financial mechanisms to ensure the implementation of a forest conservation strategy, the improved quality of life of their populations, and the preservation of their traditional culture.

The project is based on four strategies:

1. **Forest Protection and Environment**
2. **Food Security and Sustainable Production**
3. **Institutional Strengthening**
4. **Development and implementation of a financial mechanism - Suruí Fund**

This set of activities is designed to end deforestation in the TISS by attacking its two main roots: the lack of economic alternatives to ensure the well-being of the Paiter Suruí, and the appearance of external actors to conduct illegal activities.

1.2 Sectoral Scope and Project Type

The SFCP falls within the scope of the AFOLU sector (Agriculture, Forestry and Other Land Use), and in the category of Reducing Emissions from Deforestation and Degradation (REDD) in particular. The proposed type of activity is Avoided Unplanned Deforestation and/or Degradation.

1.3 Project Proponent

The Suruí Forest Carbon Project proponent is the **Metareilá Association of the Suruí Indigenous People**, an institution representing the Paiter Suruí people.

The Metareilá Association works to defend and preserve the cultural and territorial heritage of the Paiter Suruí, protect biodiversity and ensure the training of indigenous peoples and leaders to build and strengthen the autonomy of the Paiter people.

³ A "moiety" system is an agreement made between indigenous and foreign producers for a production where an individual contributes with land, the other one contributes with work and/or inputs, and production or revenues are divided between them whether it is fifty-fifty or not.

⁴ <http://www.fastcompany.com/most-creative-people/2011/chief-almir-surui-amazon-tribe>

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Position: General Coordinator

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E-mail: metareila@paiter.org

Website: www.surui.org

1.4 Other Entities Involved in the Project

(i) Kanindé Association for Ethno-environmental Defense:

Technical Skills: Operates in the surveillance and monitoring of Indigenous Lands, providing assistance to indigenous organizations, environmental impact reports, ethno-environmental diagnosis of participatory indigenous lands, environmental education, project design, and public policy monitoring.

Functions in the project: Responsible for the ethno-zoning of TISS. Coordination and organization of activities for Food Security and income generation, monitoring of biodiversity and socio-economic benefits, and Communications Office.

Name of Contact Person: Ivaneide Bandeira Cardozo

Address: rua D. Pedro II, 1892, sala 7 Nossa Senhora das Graças, Porto Velho – RO, Brazil

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E-mail: ivaneide@kaninde.org.br

Website: www.kaninde.org.br

(ii) Amazon Conservation Team - ACT Brazil:

Technical Skills: Operates in the strengthening of traditional communities and environmental conservation. Coordinated the construction of the "Free Prior Informed Consent" process with the Paiter Suruí in addition to providing legal, anthropological and geo-processing assistance to the PCFS.

Functions in the Project: Support to activities for food security and income generation, monitoring of biodiversity and socio-economic benefits, legal advice and communication to the project. Development of the Land Protection Plan, environmental monitoring and carbon stocks (remote sensing).

Name of Contact Person: Marcus Vasco van Roosmalen

Position: President

Address: SAS, Edifício Business Point, Quadra 03, Bloco "C", sala 306, Brasília - DF, Brazil

Phone: +55 (61) 3323-7863

E-mail: vasco@actbrasil.org.br

Website: <http://www.equipe.org.br/>

(iii) Forest Trends:

Technical Skills: Works to promote sustainable forest management and conservation through the valuation of ecosystem services. Supports projects and initiatives aimed to develop the market for ecosystem services to improve the living conditions of local communities.

Functions in the Project: Provides support in the formulation and implementation of the project and strategy for raising funds and selling carbon credits generated by the PCFS.

Name of Contact Person: Michael B. Jenkins

Position: President

Address: 1050 Potomac Street NW, Washington, DC 20007, USA

Phone: +1 (202) 298-3000

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Website: <http://www.forest-trends.org>

(iv) Institute for Conservation and Sustainable Development of Amazonas - IDESAM

Technical Skills: Works to promote the enhancement and sustainable use of natural resources in the Amazon, seeking alternatives for environmental conservation, social development and climate change mitigation. The Institute develops projects and activities related to REDD+ and Payment for Environmental Services (PES), having previous experience in the preparation of methodologies, the elaboration of PDDs and project validation.

Functions in the Project: Technical coordination in the elaboration of the baseline scenario and preparation of Project Design Document (PDD) as well as the validation and verification to VCS and CCB standards. Coordination of biomass and carbon inventories and forest monitoring in support of the PCFS (remote sensing). Also supports policy and technical coordination related to REDD for the PCFS.

Name of Contact Person: Mariano Colini Cenamo

Position: Deputy Executive Secretary

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Website: www.idesam.org.br

(v) **Brazilian Biodiversity Fund - FUNBIO:**

Technical Skills: Working towards the conservation of biological diversity in Brazil. Arranges and prepares economic and financial mechanisms to ensure the long-term financial sustainability of conservation initiatives in addition to enhancing the capacity of local actors to work with the resources that it helped to provide.

Functions in the Project: Responsible for the financial resources management mechanism generated by the Suruí forest carbon projects - Suruí Fund - and other income activities within the Management Plan.

Name of Contact Person: Angelo Augusto dos Santos

Address: Largo do IBAM (sixth floor), Humaita, Rio de Janeiro, RJ

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e-mail: angelo@funbio.org.br

Website: www.funbio.org.br

1.5 **Project Start Date**

The start date of the Suruí Forest Carbon Project is June 9, 2009, when the Memorandum of Understanding was signed between the clans in which the Paiter Suruí agreed to close down deforestation and illegal wood sale in the TISS

1.6 **Project Crediting Period**

The start date of the crediting period coincides with the start date of the project on June 9, 2009. The crediting period of the PCFS is 30 years, ending on June 9, 2038.

1.7 **Project Location**

The TISS is located in the Brazilian Amazon at the border between the states of Rondônia and Mato Grosso, in a region of strong deforestation pressure known as "deforestation arc". The Suruí territory is part of a broader ethno-environmental corridor that includes the Aripuanã Indigenous Lands, Aripuanã Park, Sierra Morena, Roosevelt, Zoro, Rio da Flor do Prado and Iquê Ecological Stations, and Igarapé Lourdes Indigenous Land. It is also complemented by the Jarú Biological Reserve (Figure 1).

The right to land of the Paiter Suruí People was officially recognized with the approval of the demarcation of TISS by Decree No. 88.867 of October 18, 1983 and subsequent registration. The TISS covers approximately 247,845 hectares in three different municipalities - Cacoal, Espigão D'Oeste and Rondolândia.

The municipality of Cacoal (RO), which covers most of the TISS, has a population of 78,601 inhabitants⁵ and a local economy mainly driven by timber and agriculture industries. Due to the intense exploitation of natural resources in this municipality, 65% of its total area⁶ is currently deforested and most open areas are now occupied by pasture and coffee cultures (predominant in the region).

Another part of TISS is located in the municipality of Rondolândia / MT. This municipal area has a population of 3,538 inhabitants⁷ and has deforested 15% of its territory⁸, largely because of agricultural expansion.

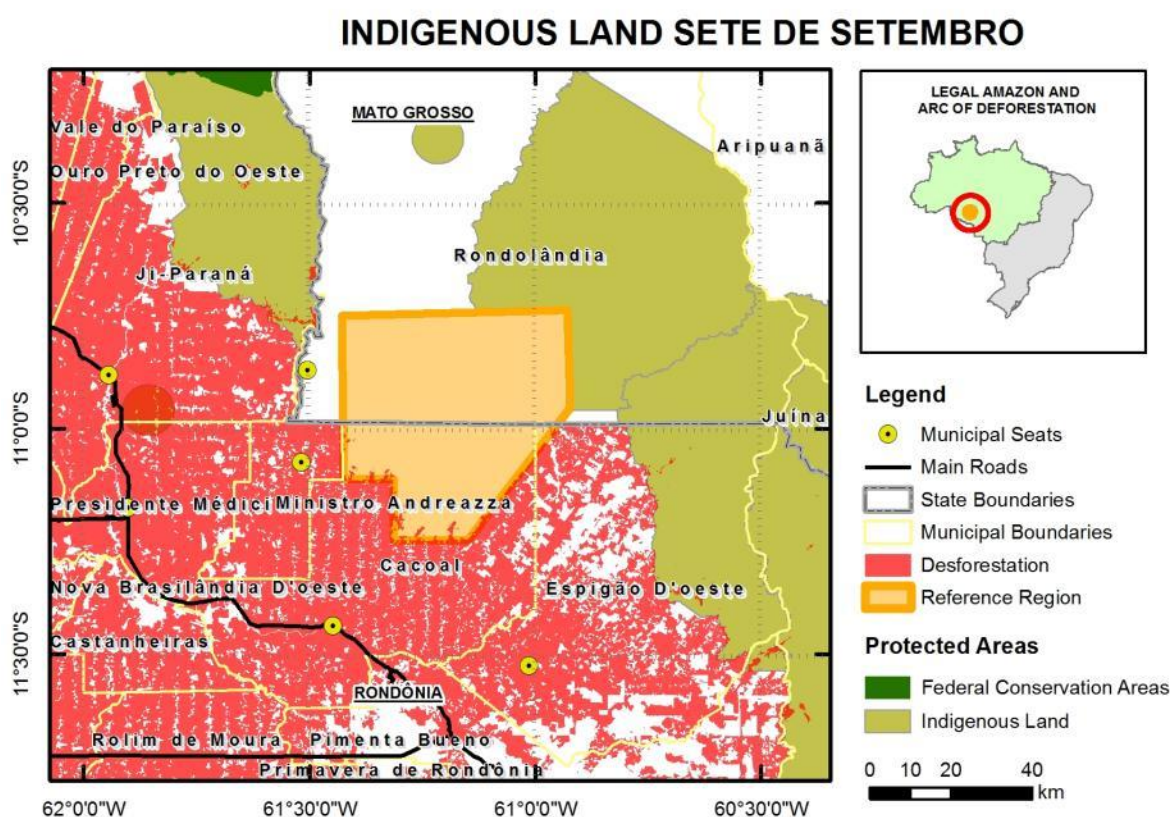


Figure 1. Location of Sete de Setembro Indigenous Land and its surrounding area between the states of Rondônia and Mato Grosso.

⁵ IBGE 2010.

⁶ PRODES *op. cit.*

⁷ IBGE *op. cit.*

⁸ PRODES *op. cit.*

1.8 Title and Reference of Methodology

The methodology used in the project is the Avoided Unplanned Deforestation- (AUD) - VCS VM0015 version 1.1 (VM0015 v1.1)

2 IMPLEMENTATION STATUS

2.1 Implementation Status of the Project Activity

During this first monitoring period of the Surui Forest Carbon Project (SFCP) – from June, 2009 to July, 2012 – the project was not able to reach any agreement for transacting the carbon credits generated *ex ante* (at validation). So far, unfortunately no investment had reached the ground allowing the development of the project activities.

Currently, the market willingness for purchasing carbon credits from REDD projects - even from those ones that have already reached validation under international standards, as the VCS and CCB – is limited and constrained. The potential buyers for the SFCP carbon credits are requesting that the project goes through the verification process, before reaching a financial agreement and conclude a financial transaction. Without the income from carbon credits sales, the project cannot afford the high costs of fully implementing the proposed project activities.

Thus, the market pre-conditions are pushing the projects to go through really expensive and demanding activities (such as validation and verification procedures) before receiving rewards for all this effort. All activities implemented so far were accomplished through a huge effort carried on by the Paiter Surui and partner organizations, that raised funds from grants and philanthropic foundations.

2.2 Project Description Deviations

The Surui Forest Carbon Project had to deal with non-planned activities during this first monitoring period. The most significant was a catastrophic series of forest fire events that happened within September and November 2010 and burned 4.224,86 ha of tropical forests within the TISS. This incident has been addressed as a catastrophic event and it is fully presented at Annex I – Technical note about the forest fires in TISS, 2010”.

As presented in the Annex I, the SFCP had to re-assess the project baseline for this first monitoring period, as recommended by the AFOLU Requirements v.3.3.

As mentioned in 2.1, Metareila has been unable to fully implement the planned project activities due to lack of external funding from sale of carbon credits during this monitoring period. Nevertheless, significant efforts were made by Meteraila, the Paiter Surui people and project partners that have resulted in effective reductions in deforestation.

Table 01. Overview of Progress in Implementation of Project Activities (Based on Table 4.4 of Validated Project Description)

Project Activity	Objective	Planned Activities (through 2015)	Activities Implemented during Monitoring Period
Forest Protection and Environment	Support the Paiter Suruí and non-indigenous people's monitoring and surveillance capacity to defend their territory	1 - Mapping risks, threats and vulnerability of Indigenous Lands; 2 - Re-establish and rehabilitate demarcating lines; 3 - Construction of bases for surveillance; 4 - Training of environmental agents; 5 - Provide enforcement with FUNAI and the Environmental Police. 6 - Implement routine surveillance expeditions.	1 - Introduction of potential conflicts by representatives of Suruí's Parliament (assemblies of Suruí's Parliament); 2 - Developed in 2010 and validated in 2011, with FUNAI's support; 3 - Not done yet; 4 - Developed 3 trainings financed by USAID; 5 - 3 participations of FUNAI in surveillance expeditions 6 - It is implemented, but with adjustments due to social aspects and available budget.
Food Security and Sustainable Production	Organize the possibilities of sustainable economic use of natural resources within the Sete de Setembro Indigenous Land	1 - Diagnose the productive potential and the need for technical assistance; 2 - Promote discussion about the Network of Farmers; 3 - Identify sustainable alternative income generation; 4 - Promote courses in agro-extractive production; 5 - Identify technological problems and pinpoint improvement procedures; 6 - Implement agro-ecological management of plantations; 7 - Structure and improve supply chains; 8 - Prepare communication materials; 9 - Promote reforestation and agroforestry systems, and planting density; 10 - Provide technical assistance for local production; 11 - Analyze the possibility of	1 - The diagnosis was started on some productive fronts; 2 - The discussion started in 3 fronts: Brazilian nut, tourism and handcraft; 3 - Accomplished. Presentation of the document "Subsídios para construção do Plano de Promoção às Alternativas Econômicas da TISS" (Milanez 2011); 4 - Not done yet; 5 - Not done yet; 6 - Not done yet; 7 - Development of business plans of the supply chains of Brazilian nut, tourism and handcraft; 8 - Development of folder of the 50 years plan; 9 - Start of planting activities (150 seedlings planted in 12 villages); 10 - Initial discussions with the Secretary of Agriculture of the municipality; 11 - Not done yet.

		certification	
Institutional Strengthening	Contribute to the autonomy of the Paiter-Surui indigenous people through institutional strengthening of their organizations.	1 - Plan structure of Support Centers; 2 - Present Plan for approval of the Paiter. 3 - Equip Support Centers (computers, printers, telephones, etc.) and vehicles; 4 - Technical Consultancy (management and administrative organization). 5 - Hire staff	1 – Rehabilitation of the Paiter Surui training center; 2 – Preliminary talks about the “Plano de Política Pedagógica” for the Surui; 3 – Partially equipped with computers and printers; 4 – Not done yet; 5 – Not done yet.
Development and implementation of the Financial Mechanism (Surui Fund)	Development and implementation of Surui Fund for the financial management of the PCFS	1 - Create a financial management model for the Surui Fund; 2 - Diversify funding sources for implementation of project activities;	1 – Development of manual (by Funbio) validated by the Surui leaders; 2 – New projects (counterparts, i.e, ECAM and FT projects, financed by Fundo Vale; Project of Idesam, ECAM, Kanindé and Metareilá, financed by Skoll).

2.3 Grouped Project

Not applicable

3 DATA AND PARAMETERS

3.1 Data and Parameters Available at Validation

Data Unit / Parameter:	Deforestation
Data unit:	Hectares/year
Description:	The annual area of forest converted to non-forest vegetation.
Source of data:	IDESAM

Value applied:	157.4 ha/year (annual average 2000-2009).
Purpose of the data	To measure deforestation using a supervised classification with the maximum likelihood method and update the Forest Cover Benchmark Map of 2009 to obtain annual increments in classes of non-forest land in the period 2009-20012.
Any comment:	See respective PD section (4.1)

Data Unit / Parameter:	Carbon stock in aboveground biomass
Data unit:	Tons C/ha
Description:	Tons of carbon per hectare in aboveground biomass within the forest degradation class in the TISS.
Source of data:	Forest inventory conducted by IDESAM, ACT and Metareilá.
Value applied:	128.72 tC/ha
Purpose of the data	To calculate the carbon stock of the forest degradation class in the TISS.
Any comment:	See respective PD section (4.1)

3.2 Data and Parameters Monitored

Data Unit / Parameter:	Deforestation
Data unit:	Hectares/year
Description:	The annual change in area of forest converted to non-forest vegetation.
Source of data:	LANDSAT Images for the years 2010 and 2011, and RESOURCESAT-1 for the 2012, available in: http://www.dgi.inpe.br/CDSR/ . Calculations made by IDESAM.

Description of measurement methods and procedures to be applied:	Through supervised classification of time series of satellite images(2009-2012) using the MAXVER algorithm, with selected “regions of interest” based on the spectral response of each class and used points collected in the field to train the classifier. It was made Field Validation of the more significant changes.
Frequency of monitoring/recording:	Annual
Value monitored:	Hectares of forest converted to non-forest vegetation.
Monitoring equipment:	ENVI 4.8, ARCGIS 10.0, ERDAS 9.2, GPS Garmin 76 cSX
QA/QC procedures to be applied:	The minimum classification accuracy of each class or category in the LU/LC map and LU/LC change should be more than 80%. Quality Control and Assurance procedures are detailed in the “Methodology for LU/LC change analysis_vs_2009-2012”.
Calculation method:	If applicable
Any comment:	Please, see “Methodology for LU/LC change analysis_vs_2009-2012”, which describes the methodology applied.

3.3 Description of the Monitoring Plan

TASK 1. Monitoring of carbon stocks changes and GHG emissions for periodic verification.

- 1.1 Monitoring of actual carbon stocks changes and GHG emissions within the project area;
- 1.2 Monitoring of leakage;
- 1.3 Ex-post calculation of net anthropogenic GHG emission reduction;

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

1.1.1 Monitoring of project implementation

As presented at item 2.1, the lack of financial investments limited the project activities implemented in the TISS. This task (to monitor the project implementation) remains a responsibility of ACT Brazil, Kanindé, Metareilá and other indigenous associations on further verifications.

1.1.2 Monitoring of land-use and land-cover change.

This task is responsibility of IDESAM and ACT Brazil and is the main monitoring advance for this first three years of project implementation.

The assessment of land-use and land-cover change was done using LANDSAT 5 TM and RESOURCESAT-1 images to generate the annual deforestation data throughout the Reference Region of the project. The methodology used the supervised classification of images with the maximum likelihood method (described in the supplementary material 03, of the PD). This analysis generated classes of deforestation and forested areas, updated every year, and compared with previous years. Deforestation estimates obtained from this analysis has been compared with the deforestation model designed by "SIMSURUI" that was used to established the baseline scenario in the region of interest⁹, and differences between projected and observed values is presented for every year (see item 4 below – Quantification of GHG emission reductions and removals).

Further information regarding the "Methodology for LU/LC change analysis_vs_2009-2012" is available at Annex II.

Table 02. Data used for historical LU/LC change analisys (**Table 5 VM0015 v1.1**).

Vector (Satellite)	Sensor	Resolution		Coverage	Acquisition date	Scene or point identifier	
		Spatial	Spectral	(km ²)	(DD/MM/YY)	Orbit	Point
Landsat 5	TM	30m	0,45 - 2,35 µm	34.225,00	03/09/2009	230	068
Landsat 5	TM	30m	0,45 - 2,35 µm	34.225,00	08/10/2010	230	068
Landsat 5	TM	30m	0,45 - 2,35 µm	34.225,00	23/07/2011	230	068
Resourcesat-1	LISS III	23,5m	0,52 - 1,7 µm	19.881,00	07/07/2012	314	084
Resourcesat-1	LISS III	23,5m	0,52 - 1,7 µm	19.881,00	12/07/2012	315	084

1.1.3 Monitoring of carbon stocks and non-CO2 emissions.

This task is responsibility of IDESAM, and was developed through satellite images analysis (step 1.1.2 above) – for determining the activity data of land use change at TISS for the monitoring period.

As presented on the PD, the re-measurements of the 36 permanent plots will be done every 5 years (the next re-measurement will be on 2016).

Regarding the non-CO2 emissions, the SFCP decide not to account for these emissions in the baseline scenario, as a conservative strategy of the project (the project is not asking for credits from non-CO2 emission reductions). Besides, the emissions of CH4 from biomass burning are not significant, as indicated in the PD.

⁹ The baseline had been reassessed due to the catastrophic event (forest fire) that started on September of 2010

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

The SFCP faced a catastrophic event during this first monitoring period, and the project proposes to reassess the project baseline – as guided by VCS AFOLU Requirements 3.3. This issue is present in more details in the Annex I.

1.2 Monitoring of leakage

1.2.1. Reduction of carbon stocks and GHG emissions due to activity shifting leakage.

The monitoring activities carried out by Idesam (through satellite images analysis) identifies in 2010, a small deforested area within the leakage belt of the SFCP (2.79 ha), that was not predicted under the baseline scenario. This deforestation has been deducted from the total amount of credits generated by the project during this period.

1.2.2. Total estimates *ex-post* leakage.

The total carbon stock changes in the leakage belt during this monitoring period are shown in Table 03 below. Briefly, during this first monitoring period 2.79 ha of deforestation was detected in 2010, plus a forest fire of 6.86 ha, in 2012, in the leakage belt. **This resulted in total ex post leakage of 5,665.85 tCO₂.**

1.3 Ex-post calculation of net anthropogenic GHG emission reduction;

Results for net anthropogenic GHG emissions are presented below (Table 17). **The project expects to generate 251,529 tCO₂ of VCUs issued**, for this first monitoring period.

TASK 2 - Revisiting the projected baseline at fixed periods.

The variables used to project future deforestation from the reference region will be reviewed at 10-year fixed periods, and the first review is expected to happen in 2019. But due to the catastrophic event that happened in 2010, the baseline had to be reassessed and its re-validation is mandatory during this verification process.

4 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

4.1 Baseline Emissions

The baseline carbon stock changes in the initial (pre-deforestation) forest classes in the project area and leakage belt during the monitoring period are presented in Tables 02 and 03 below. Due to the catastrophic event presented in Annex I, the project baseline had to be revisited, and the new values are presented in the tables below. **The overall baseline deforestation for this first monitoring period is 4,075.90 ha (updated baseline) for the project area, and 1,045.9 ha (updated baseline) for the leakage belt.**

Table 03. Annual areas of baseline deforestation in the project area (Table 9b VM0015 v1.1)

Project year t	Stratum i of the reference region in the project area	Total	
	1 <i>ABSLPA_{i,t}</i> ha	annual <i>ABSLPA_t</i> ha	cumulative <i>ABSLPA</i> ha
2009	194,99	194,99	194,99
2010	3.074,51	3.074,51	3.269,51
2011	548,39	548,39	3.817,90
2012	258,00	258,00	4.075,90

Table 04. Annual areas of baseline deforestation in the leakage belt (Table 9c VM0015 v1.1)

Project year t	Stratum i of the reference region in the leakage belt	Total	
	1 <i>ABSLLK_{i,t}</i> ha	annual <i>ABSLLK_t</i> ha	cumulative <i>ABSLLK</i> ha
2009	0.0	0.0	0.0
2010	846.1	846.1	846.1
2011	199.9	199.9	1,045.9
2012	0.0	0.0	1,045.9

The following tables present the baseline deforestation per forest class (icl) within the project area (Table 04) and leakage belt (Table 05).

Table 05. Annual areas deforested per forest class icl within the project area in the baseline case (baseline activity data per forest class) (**Table 11.b of VM0015 v.1.1**)

Area deforested per forest class icl within the project area		Total baseline deforestation in the project area	
IDicl> Name >	icl1	ABSLPA _t annual ha	ABSLPA cumulative ha
	Floresta Ombrófila em degradação		
Project year t	ha	ha	ha
2009	195,0	195,0	195,0
2010	3.074,5	3.074,5	3.269,5
2011	548,4	548,4	3.817,9
2012	258,0	258,0	4.075,9

The baseline reassessment, due to the catastrophic event, also caused changes in the baseline deforestation projections in the leakage belt of the SFCP. These changes are presented below.

Table 06. Annual areas deforested per forest class icl within the leakage belt area in the baseline case (baseline activity data per forest class) (**Table 11.c of VM0015 v.1.1**)

Area deforested per forest class icl within the leakage belt		Total baseline deforestation in the leakage belt	
IDicl> Name >	icl1	ABSLK _t annual ha	ABSLK Cumulative ha
	Floresta Ombrófila em degradação		
Project year t	ha	ha	ha
2009	0,0	0.0	0.0
2010	846.1	846.1	846.1
2011	199.9	199.9	1,045.9
2012	0.0	0.0	1,045.9

The Surui Forest Carbon Project established one single post-deforestation class (vegetation in equilibrium) for all deforestation projected in the baseline scenario. Thus, tables 13b and 13c are exactly the same of tables 11b and 11c.

Tables 14b and 14c are not applicable, as the project chose to go through the Method 1: Historical LU/LC change.

Table 07. Carbon stocks per hectare of initial forest -classes (icl) existing in the project area and leakage belt (**Table 15.a VM0015 v1.1**):

LU/LC class		Average carbon stock per hectare $\pm$ 95% CI					
		Cab_{cl}		Cbb_{cl}		$Ctot_{cl}$	
		average stock t CO ₂ e ha ⁻¹	$\pm$ 90% CI t CO ₂ e ha ⁻¹	average stock t CO ₂ e ha ⁻¹	$\pm$ 90% CI t CO ₂ e ha ⁻¹	average stock t CO ₂ e ha ⁻¹	$\pm$ 90% CI t CO ₂ e ha ⁻¹
ID _{cl}	Name						
icl1	Floresta Ombrófila em degradação (AP)	472.0	65.6	161.9	22.5	633.9	88.1
icl2	Floresta Ombrófila em degradação (CV)	472.0	65.6	161.9	22.5	633.9	88.1

Tables 19b, 19c are not applicable, as the project chose to go through the Method 1: Historical LU/LC change.

Tables 21.b.1, 21.b.2, 21.b.3, 21.b.4, 21.b.6, 21.c.1, 21.c.2, 21.c.3, 21.c.4, 21.c.6 are not applicable as the project went through Method 2: Activity data are available for categories.

Table 08. Baseline carbon stock change in the above ground biomass in the Project Area (**Table 22.b.1 of VM0015 v1.1**)

Project year t	Activity data per category x Carbon stock change factor for above ground biomass in the project area		Total baseline carbon stock change in the project area	
	ID _{cl1}	= Degraded Ombrophyllous Forest (PA)	annual	cumulative
	ABSLPA _{ct,t}	Ctot _{ct,t}	DCBSLPA _{it}	DCBSLPA _i
	ha	tCO ₂ -e ha-1	tCO ₂ -e	tCO ₂ -e
2009	195	425,0	82.863,2	82.863,2
2010	3.074,5	425,0	1.306.520,6	1.389.383,8
2011	548,4	425,0	233.041,0	1.622.424,8
2012	258,0	425,0	109.638,3	1.732.063,1

Table 09. Baseline carbon stock change in the below ground biomass in the Project Area (**Table 22.b.2 of VM0015 v1.1**)

Project year t	Activity data per category x Carbon stock change factor for below ground biomass in the project area		Total baseline carbon stock change in the project area	
	<i>IDic1</i>	= Degraded Ombrophyllous Forest (PA)	annual	cumulative
	<i>ABSLPA ct,t</i>	<i>Ctotct,t</i>	DCBSLPAit	DCBSLPAi
	ha	tCO ₂ -e ha-1	tCO ₂ -e	tCO ₂ -e
2009	195,0	161,9	31.567,3	31.567,3
2010	3.074,5	161,9	497.727,6	529.294,9
2011	548,4	161,9	88.778,5	618.073,4
2012	258,0	161,9	41.767,4	659.840,8

Tables 22.b.3, 22.b.4, 22.b.5 e 22.b.6 are not applicable to the Surui Forest Carbon Project, as these carbon pools are not being considered by the project.

Table 10. Baseline carbon stock change in the above ground biomass in the leakage belt area (**Table 22.c.1 VM0015 v1.1**)

Project year t	Activity data per category x Carbon stock change factor for above ground biomass in the leakage belt		Total baseline carbon stock change in the leakage belt	
	<i>IDic1</i>	= Degraded Ombrophyllous Forest (PA)	annual	cumulative
	<i>ABSLPA ct,t</i>	<i>Ctotct,t</i>	DCBSLPAit	DCBSLPAi
	ha	tCO ₂ -e ha-1	tCO ₂ -e	tCO ₂ -e
2009	0,0	425,0	0,0	0,0
2010	846,1	425,0	359.537,8	359.537,8
2011	199,9	425,0	84.927,1	444.464,9
2012	0,0	425,0	0,0	444.464,9

Table 11. Baseline carbon stock change in the below ground biomass in the leakage belt area (Table 22.c.2 VM0015 v1.1)

Project year t	Activity data per category x Carbon stock change factor for below ground biomass in the leakage belt		Total baseline carbon stock change in the leakage belt	
	<i>IDicI1</i>	= Degraded Ombrophyllous Forest (PA)	annual	cumulative
	<i>ABSLPA ct,t</i>	<i>Ctotct,t</i>	DCBSLPAit	DCBSLPAi
	ha	tCO ₂ -e ha ⁻¹	tCO ₂ -e	tCO ₂ -e
2009	0,0	161,9	0,0	0,0
2010	846,1	161,9	136.968,3	136.968,3
2011	199,9	161,9	32.353,5	169.321,8
2012	0,0	161,9	0,0	169.321,8

Tables 22.c.3, 22.c.4, 22.c.5, 22.c.6 are not applicable to the Surui Forest Carbon Project, as these carbon pools are not being considered by the project.

Tables 23 and 24 of VM0015 v1.1 were omitted (the project is not asking for credits from non-CO₂ emission reductions).

4.2 Project Emissions

Tables 25.a, 25.b, 25.c and 25.d are not applicable, as planned deforestation and fuel wood collection (and consequent decrease in carbon stocks) did not happen in the Project area during this first monitoring period. For the logging activity, this activity is considered as “non-significant” as presented on the PD, item 3.4 – Summary of GHG Emission Reductions and Removals, Significance Assessment section, durable wood products.

The Project accounted for the carbon stock increase due to planned protection without harvest in the Project area, but as these values are still estimated (the next carbon stock inventory will happen in 2016) the project proponent will request these credits on the next verification process.

Tables 26.a, 26.b, 26.c and 26.d are not applicable to the Surui Forest Carbon Project, as the project are not requesting credits from “carbon stock increase due to planned protection without harvest” and planned logging and planned fuel wood and charcoal collection did not happen during this first monitoring period.

Tables 26.e, 26.f and 26.g cannot be filled at this moment, as the Project partners could not re-measure the carbon stocks from areas recovering after the catastrophic events. These values will be presented for the next verification.

For the table 12, the *ex post* carbon stock decrease due to unavoided unplanned deforestation was calculated by the sum of: (i) the baseline reassessed due to the impact of the catastrophic event (forest fire) in each year, and (ii) the deforestation verified for this first monitoring period. It was also considered the “project performance rate” of 90%, as established on PD and presented during the validation process.

The carbon stock change verified “ex post”, in the Project case, is of -2.086.342,2 tCO₂.

Table 12. Ex post estimated net carbon stock change in the Project area under the Project scenario (Table 27 VM0015 v1.1)

Project year t	Total carbon stock decrease due to planned activities		Total carbon stock increase due to planned activities		Total carbon stock decrease due to unavoided unplanned deforestation		Total carbon stock change in the project case	
	annual	cumulative	annual	cumulative	annual	cumulative	annual	cumulative
	DCPAdPA _t	DCPAdPA	DCPAiPA _t	DCPAiPA	DCUDdPA _t	DCUDdPA	DCPSPA _t	DCPSPA
	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e
2009	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
2010	0,0	0,0	0,0	0,0	1.848.188,3	1.848.188,3	-1.848.188,3	-1.848.188,3
2011	0,0	0,0	0,0	0,0	183.566,7	2.031.755,0	-183.566,7	-2.031.755,0
2012	0,0	0,0	0,0	0,0	54.587,1	2.086.342,2	-54.587,1	-2.086.342,2

Table 28 of VM0015 v1.1 is not applicable to the SFCP, since forest fires have not been included in the baseline scenario.

Table 13. Total ex post estimated actual net carbon stock changes and emissions of non-CO₂ gasses in the project area (Table 29 VM0015 v1.1)

Project year t	Total ex post carbon stock decrease due to planned activities		Total ex post carbon stock increase due to planned activities		Total ex post carbon stock decrease due to unavoided unplanned deforestation		Total ex post net carbon stock change		Total ex post estimated actual non-CO ₂ emissions from forest fires in the project area	
	annual	cumulative	annual	cumulative	annual	cumulative	annual	cumulative	annual	cumulative
	DCPAdPA _t	DCPAdPA	DCPAiPA _t	DCPAiPA	DCUDdPA _t	DCUDdPA	DCPSPA _t	DCPSPA	EBBPSP _{At}	EBBPSPA
	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e
2009	-	-	0,0	0,0	0,0	0,0	0,0	0,0	-	-
2010	-	-	0,0	0,0	1.848.188,3	1.848.188,3	-1.848.188,3	-1.848.188,3	-	-
2011	-	-	0,0	0,0	183.566,7	2.031.755,0	-183.566,7	-2.031.755,0	-	-
2012	-	-	0,0	0,0	54.587,1	2.086.342,2	-54.587,1	-2.086.342,2	-	-

It is important to note that, in 2012, a fire was identified in the TISS – not related to the catastrophic event that happened in 2010, that burnt 34.11 ha (27.24 ha within the project area, presented on Table 12 above, and 6.86 in the leakage belt, presented on Table 13 below). These areas are **not expected** to

be converted to other land uses - the most likely scenario is that they recover to forest - the SFCP commits to monitor these areas to guarantee that the carbon stock losses will be fully recovered in the next years.

However, the VM0015 v1.1 establishes that “no VCUs can be issued to the project until all carbon stock losses and increases in GHG emissions have been offset”¹⁰. This means that the project has to deduct the emissions generated by this fire, from the total amount of GHG emission reductions expected for this first monitoring period. The project applied the same emission factor of PD (586,8 tCO₂/ha) to conservatively calculate the emissions from the forest fires. The project partners will develop a full forest inventory in these areas, and the results will be presented for the next verification.

4.3 Leakage

Tables 30.a, 30.b and 30.c are not applicable to the SFCP, as the project did not commit to monitor the leakage management areas.

Tables 31 and 32 are not applicable as grazing activities were not included in the baseline scenario.

Table 14. Ex post estimated leakage due to activity displacement (**Table 34 VM0015 v1.1**)

Project year t	Total ex post estimated decrease in carbon stocks due to displaced deforestation		Total ex post estimated increase in GHG emissions due to displaced forest fires	
	annual DCADLkt tCO ₂ -e	cumulative DCADLK tCO ₂ -e	annual EADLkt tCO ₂ -e	cumulative EADLK tCO ₂ -e
2009	-	-	-	-
2010	1.637,29	1.637,29	-	-
2011		1.637,29	-	-
2012	-	1.637,29	4.028,56	-

¹⁰ VM0015 v1.1, section 1.1.4 – Monitoring of impacts of natural disturbances and other catastrophic events, pg 112.

Table 15. Ex post estimated total leakage (Table 35 VM0015 v1.1)

Project year	Total ex post GHG emissions from increased grazing activities		Total ex post increase in GHG emissions due to displaced forest fires		Total ex post decrease in carbon stocks due to displaced deforestation		Carbon stock decrease due to leakage prevention measures		Total net carbon stock change due to leakage		Total net increase in emissions due to leakage	
	annual	cumulative	annual	cumulative	annual	cumulative	annual	cumulative	annual	cumulative	annual	cumulative
	<i>Eg</i> Lkt tCO ₂ -e	<i>Eg</i> Lkt tCO ₂ -e	<i>EAD</i> Lkt tCO ₂ -e	<i>EAD</i> LK tCO ₂ -e	<i>DCAD</i> Lkt tCO ₂ -e	<i>DCAD</i> LK tCO ₂ -e	<i>DCLPML</i> Lkt tCO ₂ -e	<i>DCLPML</i> LK tCO ₂ -e	<i>DCL</i> Lkt tCO ₂ -e	<i>DCL</i> LK tCO ₂ -e	<i>EL</i> Lkt tCO ₂ -e	<i>EL</i> LK tCO ₂ -e
2009	-	-	-	-	-	-	-	-	-	-	-	-
2010	-	-	-	-	1.637,29	1.637,29	-	-	1.637,29	1.637,29	1.637,29	1.637,29
2011	-	-	-	-	-	1.637,29	-	-	-	1.637,29	-	1.637,29
2012	-	-	4.028,56	-	-	1.637,29	-	-	4.028,56	5.665,85	4.028,56	5.665,85

4.4 Summary of GHG Emission Reductions and Removals

Table 16. Ex post estimated net anthropogenic GHG emission reductions (REDDt) and Voluntary Carbon Units (VCUt) (**Table 36 VM0015 v1.1**)

Project year t	Baseline		Baseline		Ex post project		Ex post project		Ex post leakage		Ex post leakage		Ex post net anthropogenic GHG emission reductions		Ex post VCUs tradable		Ex post buffer credits	
	carbon stock changes		GHG emissions		carbon stock changes		GHG emissions		carbon stock changes		GHG emissions							
	annual	cum.	annual	cum.	annual	cum.	annual	cum.	annual	cum.	annual	cum.	annual	cum.	annual	cum.	annual	cum.
	DCBSLP _{At}	DCBSLP _A	EBBBSLP _{At}	EBBBSLP _A	DCPSP _{At}	DCPSP _A	EBBPSP _{At}	EBBPSP _A	DCLK _t	DCLK	ELK _t	ELK	DREDD _t	DREDD	VCU _t	VCU	VBC _t	VBC
	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e	tCO ₂ -e
2009	114.430,5	114.430,5	-	-	-	-	-	-	-	-	0,00	0,00	114.430,5	114.430,5	98.410,2	98.410,2	16.020,3	16.020,3
2010	1.804.248,2	1.918.678,7	-	-	-1.848.188,3	-1.848.188,3	-	-	1.637,29	1.637,29	0,00	0,00	- 45.577,4	68.853,1	- 45.577,4	52.832,8	-	16.020,3
2011	321.819,5	2.240.498,2	-	-	- 183.566,7	-2.031.755,0	-	-	-	1.637,29	0,00	0,00	138.252,7	207.105,8	118.897,3	171.730,2	19.355,4	35.375,7
2012	151.405,7	2.391.903,9	-	-	- 54.587,1	-2.086.342,2	-	-	4.028,56	5.665,85	0,00	0,00	92.790,0	299.895,8	79.799,4	251.529,6	12.990,6	48.366,3

5 ADDITIONAL INFORMATION