PACAJAI REDD+ PROJECT

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Document Prepared By

KANAKA MANAGEMENT SERVICES PRIVATE LIMITED

Project Title	Pacajai REDD+ Project
Version	01
Date of Issue	15-12-2020
Project Location	Northwest of Brazil, in the State of Para, micro region of Portel, municipality of Portel
Project Proponent(s)	Mr.Mark Salmon, Oak Trust Mr.Zaque Hideaku Morioka, Floyd Producoes Ltda Mr. Michael Greene , Brazil Agfor LLC
Validation Body	EPIC Sustainability Services Private Limited
Project Lifetime	January 1, 2009 to January 1, 2049
GHG Accounting Period	02-Jan-2012 to 31-Dec-2017
History of CCB Status	Revalidation
Gold Level Criteria	Community: Exceptional Community Criteria (GL2.1) Short-term and Long-term Community Benefits (GL2.2) Net Impacts on Women (GL2.5) Climate: Regional Climate Change Scenarios (GL1.1) Climate Change Impacts (GL1.2) Measures Needed and Designed for Adaptation (GL1.3)
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1 SUMMARY OF PROJECT BENEFITS

This section highlights some of this project's important benefits. Section 1.1 (Unique Project Benefits) should be aligned with a project's causal model and is specific to this project. Section 1.2 (Standardized Benefit Metrics) is the same quantifiable information for all CCB projects. This section does not replace the development of a project-specific causal model or the monitoring and reporting of all associated project-specific impacts (positive and negative) that are described in Sections 2-5 of this document.

1.1 Unique Project Benefits

Outcome or Impact Estimated by the End of Project Lifetime	Section Reference
Geo-referenced information will be gathered and provided for villagers to know which areas can be claimed without incurring in private land encroaching. Additionally, the Project will provide support to enhance communities' organizational capabilities for a better management of local resources.	2.1.2
Project will provide capacity building on agroforestry systems and on implementation of energy efficient cook stoves for cassava production to villagers within and nearby the Project Boundary.	2.1.2
The Project will manage the land as a private protected area, thus conserving local ecosystems through avoided unplanned deforestation and will enhance ecosystem functionality by allowing patched of deforestation to regenerate thus eliminating ecosystem fragmentation.	2.1.2
The medium term goal is to allow forest regeneration thus increasing the amount of carbon sequestered in the forest	2.1.2

1.2 Standardized Benefit Metrics

Category	Metric	Estimated by the End of Project Lifetime	Section Reference
GHG emission reductions or removals	Net estimated emission removals in the project area, measured against the without-project scenario	NA	
	Net estimated emission reductions in the project area, measured against the without-project scenario	95,82,742	2.3.3
Forest[1] cover	For REDD[2] projects: Estimated number of hectares of reduced forest loss in the project area measured against the without-project scenario	123,066	2.1.4
	For ARR[3] projects: Estimated number of hectares of forest cover increased in the project area measured against the without-project scenario	NA	
Improved land management	Number of hectares of existing production forest land in which IFM[4] practices are expected to occur as a result of project activities, measured against the without-project scenario	NA	
	Number of hectares of non-forest land in which improved land management practices are expected to occur as a result of project activities, measured against the without-project scenario	NA	

[1] Land with woody vegetation that meets an internationally accepted definition (e.g., UNFCCC, FAO or IPCC) of what constitutes a forest, which includes threshold parameters, such as minimum forest area, tree height and level of crown cover, and may include mature, secondary, degraded and wetland forests (*VCS Program Definitions*)
[2] Reduced emissions from deforestation and forest degradation (REDD) - Activities that reduce GHG emissions by slowing or stopping conversion of forests to non-forest land and/or reduce the degradation of forest land where forest biomass is lost (*VCS Program Definitions*)
[3] Afforestation, reforestation and revegetation (ARR) - Activities that increase carbon stocks in woody biomass (and in some cases soils) by establishing, increasing and/or restoring vegetative cover through the planting, sowing and/or human-assisted natural regeneration of woody vegetation (*VCS Program Definitions*)
[4] Improved forest management (IFM) - Activities that change forest management practices and increase carbon stock on forest lands managed for wood products such as saw timber, pulpwood and fuelwood (*VCS Program Definitions*)

Category	Metric	Estimated by the End of Project Lifetime	Section Reference
Training	Total number of community members who are expected to have improved skills and/or knowledge resulting from training provided as part of project activities	45	2.3.7
	Number of female community members who are expected to have improved skills and/or knowledge resulting from training as part of project activities	500	2.3.7
Employment	Total number of people expected to be employed in project activities,[5] expressed as number of full-time employees[6]	25	2.3.8
	Number of women expected to be employed as a result of project activities, expressed as number of full-time employees	15	2.3.8
Livelihoods	Total number of people expected to have improved livelihoods[7] or income generated as a result of project activities	600	2.1.4
	Number of women expected to have improved livelihoods or income generated as a result of project activities	300	2.1.4
Health	Total number of people for whom health services are expected to improve as a result of project activities, measured against the without-project scenario	350	2.1.7
	Number of women for whom health services are expected to improve as a result of project activities, measured against the without-project scenario	350	2.1.7

[5] Employed in project activities means people directly working on project activities in return for compensation (financial or otherwise), including employees, contracted workers, sub-contracted workers and community members that are paid to carry out project-related work.
[6] Full time equivalency is calculated as the total number of hours worked (by full-time, part-time, temporary and/or seasonal staff) divided by the average number of hours worked in full-time jobs within the country, region or economic territory (adapted from the UN System of National Accounts (1993) paragraphs 17.14[15.102];[17.28])
[7] Livelihoods are the capabilities, assets (including material and social resources) and activities required for a means of living (Krantz, Lasse, 2001. *The Sustainable Livelihood Approach to Poverty Reduction*. SIDA). Livelihood benefits may include benefits reported in the Employment metrics of this table.

Category	Metric	Estimated by the End of Project Lifetime	Section Reference
Education	Total number of people for whom access to, or quality of, education is expected to improve as result of project activities, measured against the without-project scenario	450	4.4
	Number of women and girls for whom access to, or quality of, education is expected to improve as result of project activities, measured against the without-project scenario	190	4.4
Water	Total number of people who are expected to experience increased water quality and/or improved access to drinking water as a result of project activities, measured against the without-project scenario	120	
	Number of women who are expected to experience increased water quality and/or improved access to drinking water as a result of project activities, measured against the without-project scenario	80	
Well-being	Total number of community members whose well-being[8] is expected to improve as a result of project activities	380	
	Number of women whose well-being is expected to improve as a result of project activities	270	
	Expected change in the number of hectares managed significantly better by the project for biodiversity conservation,[9] measured against the without-project scenario	NA	

[8] Well-being is people's experience of the quality of their lives. Well-being benefits may include benefits reported in other metrics of this table (e.g. Training, Employment, Livelihoods, Health, Education and Water), and may also include other benefits such as strengthened legal rights to resources, increased food security, conservation of access to areas of cultural significance, etc.

[9] Managed for biodiversity conservation in this context means areas where specific management measures are being implemented as a part of project activities with an objective of enhancing biodiversity conservation, e.g. enhancing the status of endangered species

Category	Metric	Estimated by the End of Project Lifetime	Section Reference
Biodiversity conservation	Expected number of globally Critically Endangered or Endangered species[10] benefiting from reduced threats as a result of project activities,[11] measured against the without-project scenario	NA	

[10] Per IUCN's Red List of Threatened Species
[11] In the absence of direct population or occupancy measures, measurement of reduced threats may be used as evidence of benefit

2 GENERAL

2.1 Project Goals, Design and Long-Term Viability

Project Proponent (G1.1)

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Project Developer and Implementation Organization

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2.1.2 Project Objectives (G1.2)

Climate Objectives

The Climate objective of the Project is to avoid and prevent unplanned deforestation in native forests thus avoiding the emission of 9,582,742 tCO2e through a period of 40 years of Project crediting period.

Such objective was achieved by managing the land in the form of a “private reserve” by monitoring and operating a pre-designed plan created in 2009. This operation is ever changing as we learn new things about the forest, the riverine people community and adapt to government related policy changes. The operation includes rigorous enforcement, anthropologist professional, social workers, survey technicians, attorneys, satellite monitoring, and government database monitoring, to come together to maintain such a large area of property.

The medium term goal is to allow forest regeneration by reducing the area of cassava, by focusing on crops that are alternatives, and smaller foot print crops. Thus increasing the amount of carbon sequestered in the forest

Community Objectives

The Project has provided the first stage of land tenure process to over 200 different households in the region, with all the households in the project area receiving what is known as the Cadastrol Ambiental Rural otherwise known as CAR. This is the Environmental Certificate that both demarcates the boundary of the area of their land and places the name of the owner in the government database showing who owns the property. This provides land tenure security to riverine villagers living within the Project Boundaries but outside the Project Area. For those living outside the Project Boundary, capacity building workshops on land titling have been held to

provide clear information about which steps villagers need to take in order to legally claim use rights and if possible ownership over free lands.

The CAR has been provided in the leakage management area as well. Some CAR has been placed in areas outside the leakage management area. Further CAR documents are planned to be completed in the future.

Geo-referenced information has been gathered by the technicians for each household in the region. Additionally, the Project has already provided a basic new governance structure for a new association which helps enhance community's organizational capabilities for a better management of local resources.

Finally, the Project has provided a one on one course for agroforestry systems and on implementation of energy efficient cook stoves for cooking and cassava production to villagers within and nearby the project boundary. The project took pictures at each time a cook stove was delivered of both the person receiving the cook stove and for the person giving the cook stove, – with the cook stove present in the picture. In additional to this an additional 350 cook stoves are planned for in February, March of 2021 with the goal to provide cook stoves to all riverine people in the Project Area, Leakage Management Area and in select communities outside the Leakage Management area.

There have been community meetings at each village, but the real communication and the real training has been found to have been most successful during one-on-one communications. There are Picture evidence of the community meetings taking place, there are for DPML project over 200 interview sheets for one-on-one interviews and discussions that are carried out either by the technicians and anthropologist. Thus as they are structured in villages, the community is seen as a whole, as there is very little deviation between the wants and the needs of the villages. The main difference found between villages is organizational level within the village, where some villages are very well organized and are well operated and others are very poor and have low education, but from a response and social interaction they all want the same results 95% of the time.

Rio Curupau
Rio Marinau
Baia de Caxiuna
Baia de Caxiuana
Ilha Tapera
Rio Guajara
Furo da Laguna
Sao Pedro de Viseu
Furo do Pacajai
Sao Pedro
Baia Pacajai
Corrego da Onea
Ilhas do Comandai
Bahia do Cachuana
Boa Vista

Bom Jardim
Baia de Caxuana
Sao Joao do Pracajuba

Biodiversity Objectives

The Project has been managed the land as a private protected area, thus conserving local ecosystems through avoided unplanned deforestation and did enhance ecosystem functionality by allowing patched of deforestation to regenerate thus eliminating ecosystem fragmentation.

Local riverine people that wish to participate in the monitoring program have received training on biodiversity monitoring and identification, so they did conduct a fundamental component of the Project activities.

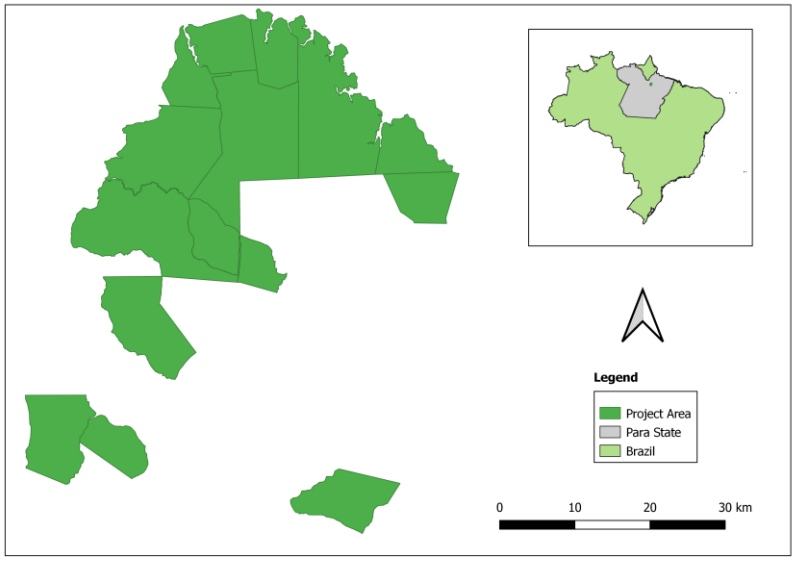
2.1.3 Physical Parameters (G1.3)

1. Location of the Project

General Location

The project is located in northwest of Brazil, in the State of Para, micro region of Portel, municipality of Portel (Map 1). The regular main transport to arrive in Portel is by boat, the trip takes approximately, 20 hours from Belem. Some parts of the area are also accessible by car, as the network of roads of the Transamazonica highway (BR-230) has already connected to logging (pioneer) roads that keep developing in the project area.

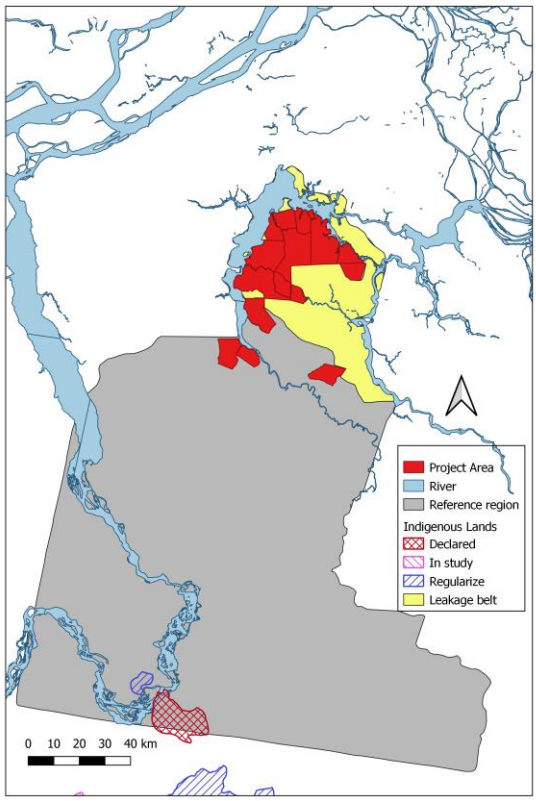
Map 1: Project Location



Project Area

The land of the Project (LP) has 120,418.11 and the Project Area (PA) has 123,066 ha. In total, the project area is constituted by 15 individual Glebas (plots) that contain only forest at project start date. The leakage management area is located within the Land of the Project and is entirely outside the project area (Map 2).

Map 2: Leakage Management Area

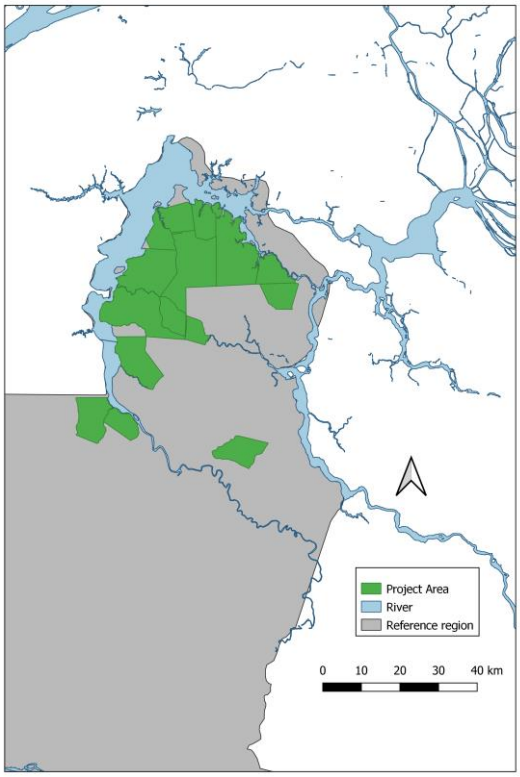


2. **Basic Physical Parameters**

Climate

Climate in the Marajó region, as it is in the great Amazon region, is tropical rainy (SEMA 2010). The average annual temperature is never above 27 degrees Celsius and rainfall ranges between 2,800 and 3,400 mm with relative humidity 85%. Rain is concentrated during six months between January and June. The summer is dry with sparse rain from August to December. It is a humid tropical climate with 350mm of precipitation in April and 60mm in October. The rainiest season is between February and April while the driest months are August, September and October (annual precipitation 2.200mm). Average annual temperature is 21o Celsius. Average insolation is 2,200 hours per year.

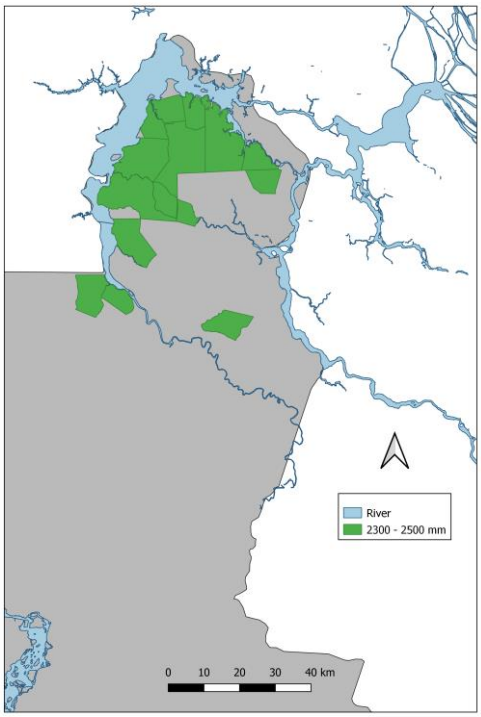
Map 3: Annual Precipitation



Hydrography

This municipality has 3 big rivers that drain the entire region: Anapu River, Pacajá River, and Camairapiri River. They flow from south to north. The Anapu river flows to the Pracui bay and Caxiuana bay and the major tributaries are: from the right – Marinau river, Tueré river and the igarapés: – Itatira, Merapiranga, Janal, Umarizal, Marapua, Atua and Majua. From the left – Pracuruzinho river, Curio river and Pracupi river, and the igarapés: Carunbé, Itatinguinho, Tatingao, Cocoajá e Tapacú.

Map 4: Hydrography

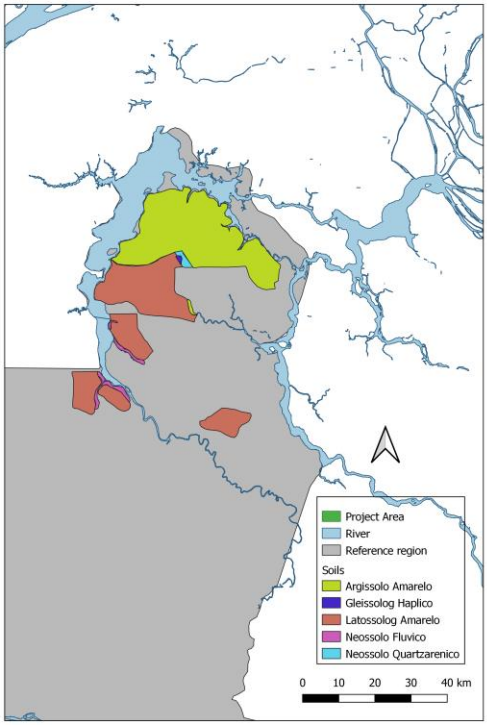


Soils

Soils in the Project Area appear to be mostly Latosol Amarelo, with some Agrisol Amarelo and some minor areas of Neossol Fluvico, according to the Brazilian System of Soil Classification (SEMA 2010). Soils in the Project Area and its surroundings are showed in the map below.

Latossolo Amarelos contain clay B horizon with a range from 15% to over 60%. It is possible to define a sort of intermediate texture of the soil (15% to 35% of clay), clay (35% to 60% of clay) and other clay (more than 60% of clay). Soils in the Project Area are showed below in Map 5.

Map 5: Soil types in the project area



Geology

Geologic formations in the Project Area belong almost entirely to one single class Formacao Alter do Chao with some areas with Tucunare formations and a little of Fluvial alluvion.

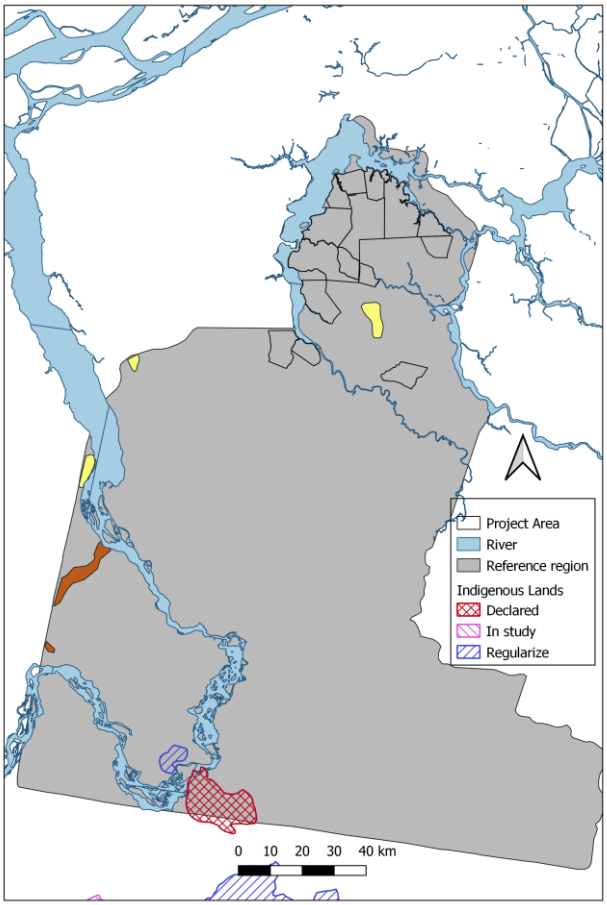
Fluvial deposits, fluvial-lacustrine and estuarine: these Quaternary deposits are associated with the basin of the Tocantins River, whose deposition formed large alluvial subject to tidal action. These unconsolidated deposits consist of fine sand, silt, clay and gravel, which develop sandy-argillic soils.

On top of these deposits can be observed plains associated with Argissolos Amarelos and Plintossolos Háplicos; Fluvial plains with low terraces and floodplains, on areas, which develop Neossolos Quartzarênicos, Neossolos Flúvicos and Gleissolos.

Alluvial deposit: This unit is composed of clay, silt, sand, fine gravel and unconsolidated organic matter and its deposition is associated with the flood plains of the rivers Tocantins, Crenicichla Pacajá and their major tributaries. This fine sediment gives origin to soils such as Gleissolo Flúvico Neossolo and Háplico.

Geologic formations in the Project Area are showed below in Map 6:

Map 6: Geology in the project area

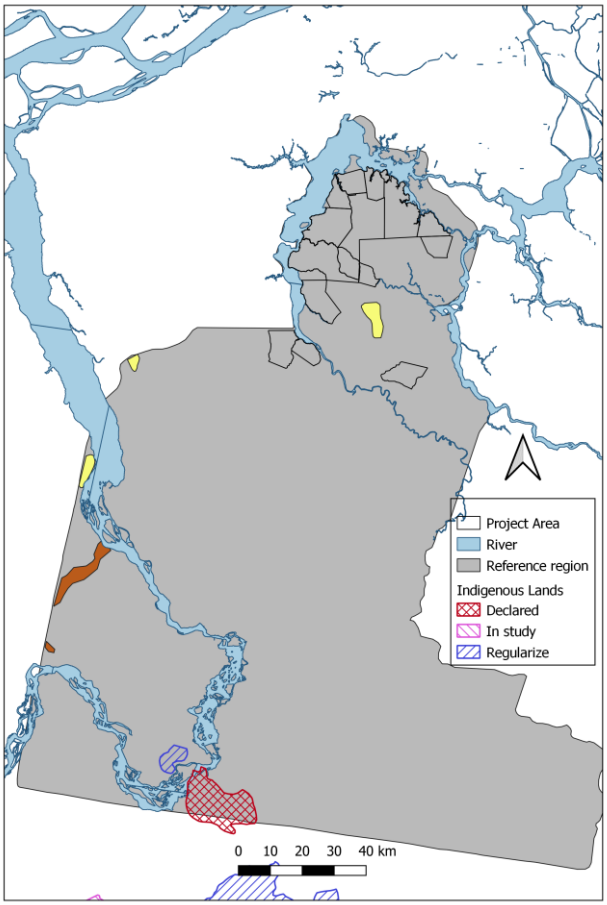


Land Use

According to Imazon (SEMA 2010) land uses in most of the Project Boundary is constituted by primary and secondary ombrophilous forest with very small patches of human activity. These small patches constitute small-scale cassava agriculture (conducted by riberinhos[12] using slash and burn technique). From our social assessment (ESLLC 2012) conducted in the months of December 2011 and January-February 2012, it is known that there were nearby areas under timber extraction within the past ten years. Settlers claim they are not involved with illegal logging companies in the area, although settlers state they extract one or two trees per year to support their households' income and pay for school and health services (ESLLC 2012).

Nevertheless, the Proposer has been implementing on-the-ground efforts to deal with invaders and illegal logging activities in the Project Area since 2005, having a success rate proportional to the finance availability for the Project. Selective logging activities -as identified and defined by SEMA (SEMA 2010)- have been spotted in the Project Area and its vicinity since 2004 through our historical baseline analysis using Landsat TM imagery. Land-uses in the Project Area (SEMA 2010) are presented in Map 7:

Map 7: Land Use in the Project Area



2.1.4 Social Parameters (G1.3)

From 2008 through 2012 the only activity implemented by the Project has been monitoring and enforcement to remove squatters and illegal loggers. Although some interaction with local villagers took place, it was with the sole purpose of spreading the word on the Project Boundary being privately owned. According to information provided by Big Lands Brasil (who was in charge of surveillance activities from 2008) the approximate number of villagers contacted is less than 10% of the total population in the area.

Given the fact that monitoring activities from 2008 until 2012 didn't involve or affect villagers, the Project has not conducted a Free, Prior, and Informed Consent (FPIC) process. It is only in 2012 that an initial Participatory Rural Appraisal (PRA) takes place when the Project contemplates the opportunity to implement activities with local villagers, to improve local livelihoods, and to scale-up forest surveillance. It is from the information of this PRA that the Project will conduct a census and a FPIC process, which will be completed before the first verification process.

During the months of December 2011 and January-February 2012, Participatory Rural Appraisals (PRAs) were conducted in the area constituted by the Project's Boundary and a 15km buffer to gather socio-economic information. All the information presented in this section is derived from such study. It should be remarked that the Project couldn't find available official demographic and socio-economic information at villages" level for the sampled area so it was necessary to conduct an exploratory fieldwork to gather as

much information as possible from primary sources. It is worth mention that the Project's limited economic resources and time availability neither allowed to identify nor to perform a census of all the villages within the sampled area. As a result, surveyed villages do not represent an exhaustive list of those participating in the activities of the Project.

Upon the first validation, the Project had access to available funds to cover most of the costs until it reaches a break-even point. This allowed the Project to conduct a thorough census in the Project's Boundary and Leakage Belt to identify all affected villagers and to geo-reference active and resting agricultural plots. This census already took place within the first twelve months after validation and the gathered information was be used to develop a detailed social monitoring plan.

Proposal for Census Protocol

Intervention area:

The intervention area has settlements called "villages" which are made up of 3 to 15 homes and the population is known as "riberinhos" or in English riverine which refers to people who live along the riverbank. Such population share common settlement characteristics, economic activities and livelihoods, fairly adapted to the existent conditions. The social baseline study has not identified indigenous peoples dwelling in the project area. Funai the federal indigenous agency has clarified there are no indigenous people in the area and no reserves in the area.

General Objective

The project completed a census in the intervention area, was completed, for the Project to obtain definite and total information about the reality of the territory and the populations settled in the zone in order to implement the strategies and indicators to be followed in the monitoring plan, upon approval by the populations through a process of Free prior and informed consent (FPIC).

Specific Objectives

1. Share with local riberinhos the results of the PRA developed by project proponent and the proposed Project activities. Such information will be assessed and potential impacts and benefits to local livelihoods will be identified in a participatory approach with local villages. These participatory evaluations will constitute the base information for a Free, Prior, and Informed Consent assessment of the Project by local riberinhos living in the Leakage Management Area.

2. Participatory construction of social and environmental indicators for a Social Monitoring System of the impacts of the project in the quality of life of the population.

3. The project has obtained, update and systematize socioeconomic and organizational information of all the riverine population in the project area.

4. The project has obtained spatial information and maps the natural resources extraction areas, crops and the settler's territories.

Methodological proposal

Selection of the technical and professional staff for the development of the activities

The Project Proponent will direct the execution of all the activities through its social specialists who will be in charge of the designing a definite methodological proposal for this work, selecting the technical staff, work functions distribution and the initial follow-up of the field work.

The project has a team of local professionals with experience in conducting rural workshops and communitarian management. The PP, through its social teams, have completed social related field activities, establish contact and negotiation with local leaders, carry out interviews with key informal actors from the community and completed community meetings in each village.

The social teams included field technicians, who were properly trained for the collection of relevant information through surveys, obtaining geographical information and assist the personnel in the workshops and assemblies with the population.

Logistics and work distribution

The PP supervised one team on one large boat to complete the fieldwork throughout the Anapu and Pacajá rivers. Three anthropologist were on the team and as well as four technicians. Additionally, a the security persona and boat piloted that have been with the project from the beginning, along with a local woman who was a cook and other support staff and other interested parties worked on the project.

The work took six two ten days (or when the fuel on the boat was running low) to visit for each locality depending of the location, the household distribution and the amount of settlers. The total time it took to complete workshops and follow up meetings was 150 days of field work, including back and forth time and re-supply times.. The activities for each locality were distributed as follows (Table 3):

Table 3: Census activities

Day	Activity	Brief description
Day 0	Inform the communal authorities about the visit	Two days before the visits to each locality, one team formed with each team leaders has informed the communal authorities about the project activities and visits, ask for their consent to carry out the project and request the support to the planned activities from the dwellers in each locality.
Day 1, day 2 and day 3	Informative assembly to inform about the details of the project and PRA results.	One assembly with the population was carried out in order to inform about the details of the project. A simplified and short version of the PDD in Portuguese was distributed and explained for those who cannot read. Such version was be developed in a simplified language without leaving out any important details.
	Participatory assessment of the project activities and the impacts in involved villages.	Project activities was assessed jointly with the villages and a participatory evaluation was carried out in order to know local perceptions. Comments were collected and used to improve/adapt the activities to local expectations
	Request free, prior and informed consent to implement the project.	The project has developed a Free prior and informed consent –FPIC (see section G.5.3.) protocol in order to promote awareness and participation in the decision-

		making processes and avoid future possible setbacks with the population.
	Workshop for planning of activities and the construction of social and environmental indicators.	Once FPIC is obtained, one workshop was carried out to detail and plan several activities and also determine the participation of the population. The indicators to monitor the benefits of the projects were constructed in a participatory manner.
Day 4, day 5 and day 6	Community census and mapping	The census and surveys, agricultural parcels mapping, natural resources extractive areas and the community territory determination were be carried out.

Specific Objective 1.- Share with local Riverine the results of the PRA developed by the PP and the proposed Project's activities. Such information has been assessed and potential impacts and benefits to local livelihoods have been identified in a participatory approach with local villages. Such participatory evaluations have constituted the base information for a Free, Prior, and Informed Consent assessment of the Project by local riberinhos living in the Leakage Management Area.

The communitarian representatives/leaders have been asked to support a communal assembly where the results of the Social Study and the Participatory Rural Diagnosis, carried out from November to December 2011 and January 2012, were presented. For this purpose, a simplified version of the PD has been distributed and explained for those who cannot read. This simplified version of the PD as well as the presentation has been done in Portuguese, in a friendly format and in an easy-to-understand language. Also, flipcharts with didactic images have been used, always looking to account for the particularities of the local reality of each village.

Afterwards, the Project's activities have been presented and assessed in a participatory approach with each riverine person identifying the potential impacts and options to mitigate them. All the feedbacks from these participatory workshops have been recorded in audio and the results were included in an annex of the original PD. All potential negative impacts identified helped the PP implement appropriate mitigation activities.

The project has asked for the population conformity on the planned activities and their free, prior and informed consent to implement the project. All those that participated in the Project's activity signed a document that states that they received all appropriate information about the Project and that they have participated in a participatory rural appraisal to identify impacts and mitigation activities.

Later, the representatives were invited to the workshop designed to plan the project activities and construct the social-environmental indicators for the social monitoring of the project.
Specific Objective 2.- Participatory construction of social-environmental indicators for the social monitoring system of the impacts of the project over the quality of life of the population.

One workshop carried out to detail and plan the activities related to the participatory census and determine the participation modality of the settlers according to their level of specific knowledge in order to accompany the project technicians.

Afterwards, the Project team worked with the population on the construction of social environmental indicators that are easy to understand and manage to them, allowing an assessment of the impacts of the project about the quality of life of the community and the establishment of a monitoring system to measure the benefits for the project. These indicators were included in the social monitoring plan.

Specific Objective 3 - Census, systematization and updating of the social-economic and organizational information.

The families or settlers participating of the activities in each location were identified with the authorities and local dwellers, generally associated to the mass, and several visits were carried out in the totality of households in which the surveys were taken place with the head of the family or and elder.

All the surveys applied were organized and completed by the end of the work day in each locality and delivered to the person in charge of each team, who did take care of these documents.

The information was uploaded in a database by the end of the field work and was systematized in a final report of the indicators that did allow measuring the impacts of the project in the population during its implementation.

Specific Objective 4.- To collect spatial information and mapping agricultural parcels, relevant areas intervened by the population and the territories occupied by riberinhos.

The areas utilized by the population were identified in a workshop, based on the maps elaborated by PRA and/or satellite images provided by the project. Geo-reference activities of the total amount of agricultural parcels were carried out in order to know the areas being used, the ones being prepared and the lands

that have been abandoned in the previous year. Likewise, the limits indicated in reference to the area utilized by each community and other relevant areas for the project and the populations were identified.

The riverine people did accompany the mapping activities carried out by the project specialists were selected in a workshop in accordance to their knowledge over the territory.

These people were trained in the use of GPS technology and registration templates filling in order to support the technicians in the activities of geo-referencing relevant land spots.

Agricultural parcels were identified for each dweller, were also be geo-referenced to thecenter of each parcel, data were collected (according to local terminology and/or estimation in meters), cultivated species, agricultural technologies and productive timeframes.

The natural resources areas exploited by the riberinhos were identified in the workshops and several spots in specific locations, or relevant to the project, were taken if possible.

Likewise, the communitarian territory, the area indicated to be occupied by the riberinhos were mapped.

All the information collected in regards to villages, households and parcel location were geo-referenced. Pioneer roads and pathways in the project zone were collected.

Isolated households

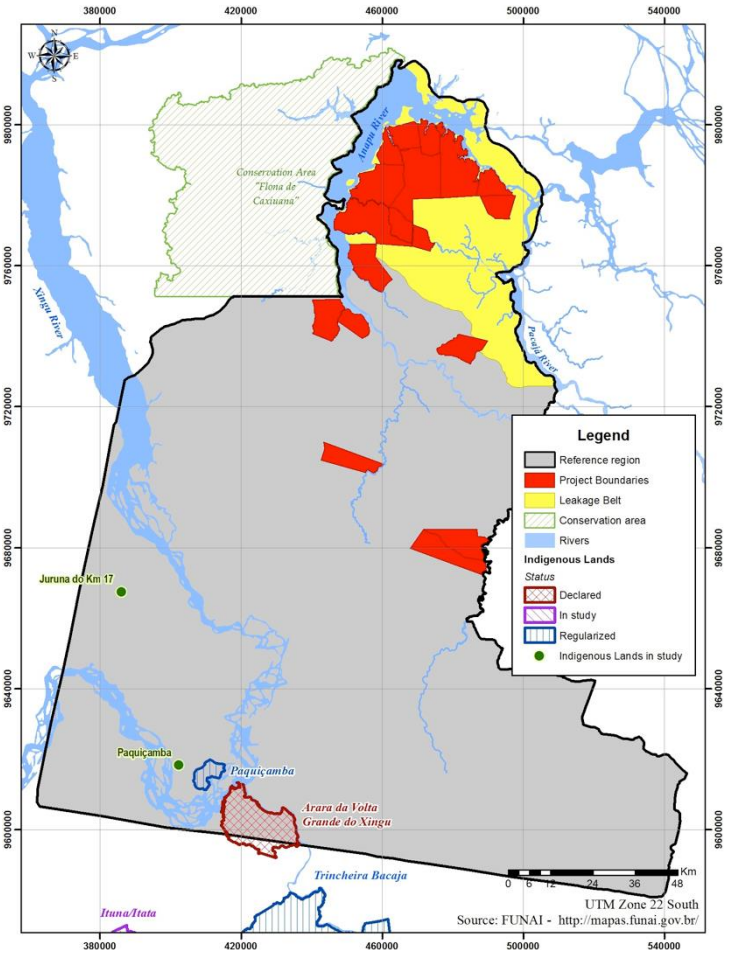
Isolated households or the ones not participating or inserted in some locations and cannot participate in the workshop in the nearest community, were informed about the project, its activities and benefits, directly. The survey were carried out and the household, agricultural parcels and if possible the land occupied by them, were geo-referenced as well.

It is important to remark that the definite census protocol were defined after the validation of the project and included an extensive development of each one of the activities, protocols, annexes, formats and tools to be used as well as the designation of the direct responsible people for the activities and results.

Indigenous People in the Project Area or LMA

As for indigenous groups, according to official information from FUNAI (FUNAI 2012) indigenous lands recognized by FUNAI are not present in the Project' Boundary or Leakage Belt (see Map 8). Therefore, the project will not involve or affect indigenous people.

Map 8: Indigenous Lands in the Project's Area and RRD according to official FUNAI database



Source: ESLLC, based on official information from FUNAI available at http://mapas.funai.gov.br/

The smallest administrative unit at which population information can be found is at sector scale, which is smaller than municipalities but still broad divisions of the territory. Sectors are smaller administrative units known by ID codes designated by IBGE.

Population in the project zone is completely rural (the only urban center is in Portel city, capital of the micro region of Portel). Population in the micro region of Portel is classified as belonging to sectors. Sectors have been defined as registry units by the 2010 census (IBGE 2011).

Impacted population is distributed along Anapu and part of Pacaja rivers and its tributaries, thus receiving the definition of *riberinhos* (people who live along river shores).

Stakeholders involved by the Project are those living in the LMA, which is located around the Project Area, in a buffer of 3Km form river shores. Total population in this area is approximately 860 villagers having a demographic density of 1.5 person/Km according to the latest demographic census at sectors level (IBGE 2011).

Local Economy

In the project area, the main economic activity is cassava growing. Cassava is processed and commercialized as farinha in Portel or with traders that come along travel along villages.

Households perceive income from the following economic activities according to our PRA: 62.1% of households live mainly from agriculture, 18.2% has specialized in farinha production, 4.5% declares to receive money as an Aposentado16 and 6.1% receives income from sporadic timber extraction and sale. It should be mentioned that some households receive money from the program Bolsa Familia.

Now, farinha is produced through a set of steps. These steps are:

a. Cassava growing - Cassava is an annual crop, the first clear cut activities happen in October and planting happens in December, and in some cases where re-planting is necessary, it happens in July. A single plot can be productive for one year or maximum two years, and then is abandoned to let it rest for three to five years. All the members of a household participate in these activities.

Local stakeholders differentiate two main types of Cassava, the one commonly called Cassava (cultivated and processed to make farinha) and the other called Macaxeira that is cultivated for direct self-consumption. All farmers surveyed indicate to grow these two species, which are complemented by corn, banana and cane.

Cassava farming requires little investment, inputs and mechanization, which make this activity highly dependent of labor. Operations that require more labor are: planting, weed removal and harvesting. Cassava is a wild and resistant crop that can grow in low fertility soils. In one single plot is common to find

Cassava that presents different growing cycles (short, medium and long growing cycles). As Yam, Cassava does not have a defined ripening period thus, after eight months; one can harvest it according to necessity.

Each farmer handles between 2 to 3 fields which are used according to the household labor capacity. Agricultural fields are measured in “brazas” (equivalent to the height of the farmer rising his arm holding a machete; a braza can measure between 2m and 2.5m) and areas are measured in tarefas “tarefas” (1 tarefa = 25 brazas x 25 brazas = 2500 to 3900 m2).

b. Farinha processing - Farinha processing starts right after harvesting (farinha quality is strongly correlated to this fact). Processing starts by soaking or washing the Cassava (which is done on the river shores), followed by peeling and shredding it to turn it into starch (which is done in a specific place within the house). The next step is to press the starch to dehydrate it. Then, the dry starch is cooked in an open oven where its hand-tossed until it reaches the desired point. The final step is packing, for which it’s used an empty oilcan as a measurement unit that contains 30 Kg of farinha

As for the energy required to prepare farinha, for each work day, 6 feixes are used (feixe is the local name for a package of fuelwood and each feixe contains approx. 8kg of fuelwood) which adds for a total of 48 Kg of fuelwood for one farinhada (the process of making farinha) Each farmer makes two farinhadas per week gathering fuelwood.

Most of the farmers collect fuelwood from their own lands without travelling more than 1 Km (31.6%) while others travel up to 3 Km to gather fuelwood (14%). Others (21%) just cover sort distances (150meters on average). Fuelwood is collected mainly on forests perceived to be under control of the farmer.

According to Ramos (2001), each 1 kg of farinha produces 0,2 kg are coroeira (farinha process wastes that are fed to chickens and ducks) and requires burning 2Kg of fuelwood. In general, a family (4 members) can produce 40 Kg of farinha in one day (8 hours).

c. Farinha commercialization - Some local people in the project leakage management area sale farinha to traders that travel along the river and barter farinha for other goods. Other people sale farinha in their villages or barter it for rice, beans, coffee, sugar, oil, etc. All these products are obtained by villagers through barters.

The PRA indicates that the monthly income from farinha sale is about 600 Reais that come from selling 20 fardos (packages) of farinha per month (on average 5 fardos per week). Villagers sale each fardo of

30 kg for 30 Reais. These amounts are variable and depend on market prices and to family production/consumption of farinha.

The second economic activity in the project area is small scale extraction and sale of wood, where villagers can either work independently and sale wood to larger companies that visit the area or work directly for such companies. One survey carried out in the influence areareveals that 13% of the villagers incur in timber extraction as a second economic activity.

In the project area, timber extraction was an important activity that was undertaken in most of the villages around 5 years ago. This is because of the presence of large timber extraction companies that would employ local villagers as workers to extract timber giving the lack of qualified work force in the area. Past timber extraction can be verified in many villages by the presence of unpaved roads (locally known as estradas).

Local villages in the project area do not have local businesses such as restaurants, lodging facilities, drugstores, etc. The PRA shows that 70.0% of the households do not have a secondary business and that 27.7% of the households considers farinha sale as a lucrative business. In the whole surveyed area, only one small convenience store was identified.

The PRA shows that average monthly income in the project area from agricultural activities is 269.7 Reais (ranging between 60 and 1000 Reais), the average revenue from farinha production is 434.3 Reais (ranging from 90 to 1,200 Reais), and the average revenue from timber extraction is 862.5 Reais 9ranging between 150 to 1,800 Reais). It should be pointed out that the aforementioned revenue values for farinha production do not include the benefits recovered through bartering.

The minimum legal salary in Brazil starting in 2012 is 620 Reais, thus local villagers are below the minimum salary line (except when wood sale happens).

Farming Activities

As mentioned before, villagers in the project area have agriculture as main economic activity and the main crop is Cassava.

Plots are traditionally prepared by slash and burn technique having as final products Capoeiras (cleared lands ready for sowing). This technique includes making aceiros or fire barriers to prevent uncontrolled forest fires. In order to sow beans, slashes happen in May and to sow Cassava slashed happen in June or July. Slash and burn happens in August and planting start in September. In the case of corn, planting happens in November and December. Many villagers associate Cassava with Corn crops.

About agricultural land ownership, only 45.6% of all surveyed farmers indicate they somehow have rights of ownership on their lands. Such land ownership rights come from old agreements with former landowners that later on sold their properties.

Individual agricultural lands have an average extension of 2,923.1 m2, with a medium of 1,000 m2. Each land has large extensions of forested areas. In these forests, villagers do not conduct slash and burn. They would rather conduct slash and burn in the Capoeiras that are easier to slash. In Capoeiras villagers will not sow perennial trees, as these lands are used and abandoned for a period of 4 to 5 years and then re-used.

On average each villager has 3 plots, each one of approximately 1 Tarefa18. One Tarefa is about one quarter of a hectare used for agriculture.

From the total, 79.2% grows Cassava, 1.3 % Corn and 19.5% does not grow anything. This last percentage is related to those who claim to not own land, with a difference of 3.9% corresponding to villagers that although claiming to own land, do not cultivate anything.

Products to be sold in markets - The main commercialized product is farinha (44.2% of households) then cassava (29.9% of households), timber (5.2% of households) and corn(1.3% of households). Those who grow Cassava diversify and complement their production by growing banana, maize, black pepper, cane, rice and some fruits. Rice farming is not significant, being growth for self-consumption together with maize.

Many of the households complement their diet by growing other products in small flowerpots. Such products are cabbage, black pepper, pepper, chili, eggplant, tomatoes, chicory and basil. Villagers also use these flowerpots to grow medicinal plants such as aloe and mint.

It should be pointed out that not a single household in the project area undertakes cattle ranching activities as shown by the surveys and the PRA. They only raised animals by local households are some pigs and chicken that are fed with leftovers.

Forestry Activities

The PRA shows that most of the households (82.4%) do not claim to be owners of forested land although not owning such lands it does not mean they do not extract timber from it. Most of those who claimed to be owners of forested land do not have titles or any proofs for that matter to support ownership.

Households in the project area extract timber mostly for self-consumption (raw materials for construction and one or two trees per household per year for sale). They extract timber in areas they claim are under their control or under communal control.

Even when local villagers do not extract timber at medium or large scales, they do have knowledge and experience on timber extraction, this because of the extractive history that these communities have. For this matter, only 17.6% of the households state they extract timber, being the most extracted species (in order of importance): Acapu, Macaranduba, Cupiuba, Itauba, Piquiá, Sucupira, Guariquara y Tarú (peca). Timber extraction by Riberenhos is not significant at is happens at a subsistence level.

Those who sell timber state they do so out of necessity and their main selling points are the same village (buyers are traveler merchants) and Portel.

On the other side, although most of the households do not extract and profit from timber, they do extract and profit from other forest resources such as: Acai (66%) and Brazil nuts (57%) as main products followed by Abacaba (7.3%), Copuazú and Cipó (with 5.6% each) and other resources (12.1%) such as oxi, piquiá, bacuri, abacaxi, andiroba, buriti, jamoba, miriti, fruits and medicinal plants.

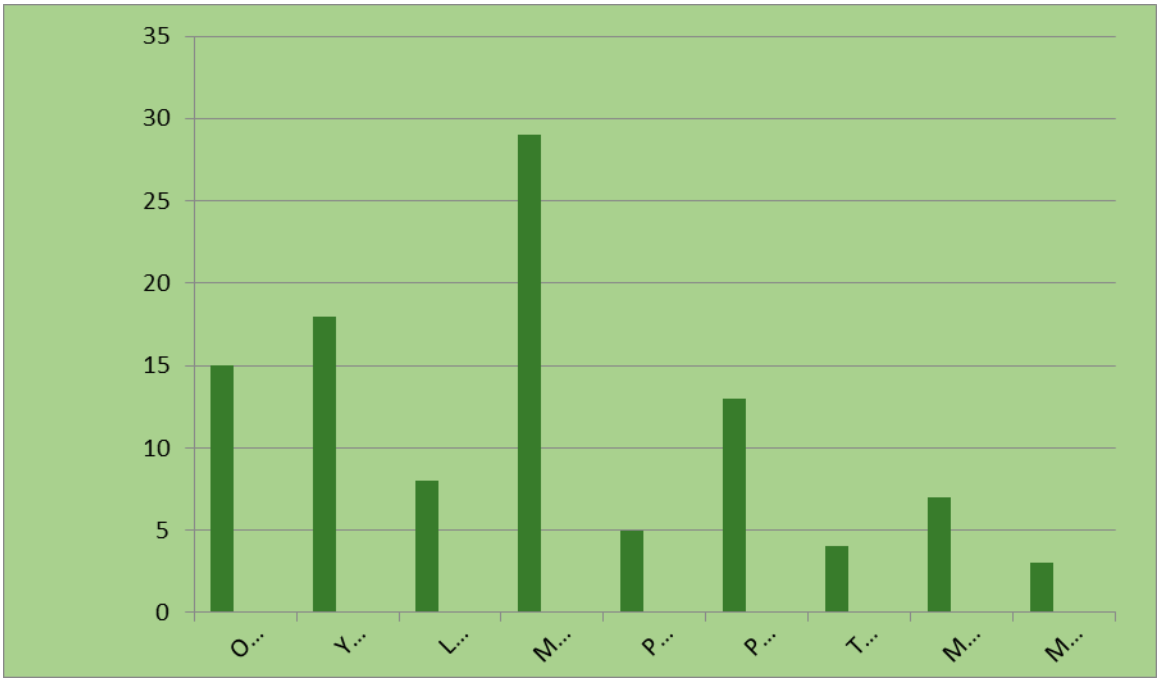
Most of the households collect Brazil nuts for self-consumption (starts in December and ends in March) and for some sporadic sales in Portel. Despite the fact that this product has a good selling price (1 can has a price between 10 to 12 Reais), it is not very common to sell this product due to the high transportation cost to Portel and the lower production costs of bigger producers.

Hunting is an activity that happens intensively and frequently in the forest (on average hunter covers up to 3Km from his village). However, the PRA indicates that nowadays villagers hunt less because it"s harder to find preys because of human intervention such as invasions and logging activities.
The PRA shows that 57% of the households have a high hunting frequency (every day 33.8%; each week 22.1%). About hunting places, those who hunt state that 28.6% hunt in forest of their property, 5.2% hunt in common village areas and 14.3% hunt in other villages. All of those who hunt state that they do so only for self-consumption.

Among the hunted species can be found (from the most hunted to the least): tatu (armadillo), the paca (majaz), the venado (deer), the cutia (rodent), the jabuti (turtle) and the porco, catitu, guariba, anta, macaco, námbu, among others. No other species have been identified by the hunters, which may reflect the low availability of fauna in the areas nearby the villages.

Firewood comes mainly from residues from the clear cut before applying fire to prepare agricultural plots. Householders only cut trees not related to slash and burn residues only when they run out of biomass toburn, but in general this does not happen. Firewood is used exclusively to produce farinha. According to the PRA firewood is collected by most householders in their agricultural plot (76.7%), in the standing forest in their agricultural land 5.8% and in other peoples forested agricultural land 5.6%. It should be remarked that villagers would not collect firewood from a source farther than 3Km from the river shore.

Figure -1 : Wood species used for firewood



Social Organization and cultural identity

All villages are agglomerations of small families and are organized according to religious beliefs. Thus, some villages can be catholic and others evangelic (in the project area there are 6 catholic and 3 evangelic villages). According to the PRA 68.1% of the people in the project area are catholics, 30.4% evangelic and 1.5% didn"t want to respond about their religion.

Churches are the meeting points for each village and it is there where –after mass- interest topics for the community are discussed. In the case of each cult, the person that offers the mass acts as a local leader as well.

The church is an important system of support for the towns. From Portel, there are coordinators for rural sectors that support the formation and registry of the communities" affiliates. The leaders go first to the Church of Portel, from where they request support and soon they go to the municipal prefecture. This it is the reason by which, the settlers of the populated centers do not count on a variety of social organizations, to a certain extent because the system of communal organization based on the religion is moderately effective and efficient. In the zone of the project they were only mentioned the Aposentados Union, the Fishing Associations and the Association of Riberinhos.

Infrastructure and services

Households in the LMA have the following characteristics: 83.8% of residents own their own house and 16.2% have a home transferred, leased or relatives. Houses are mostly wooden planks constructions processed by chainsaw (not sawn).

Appliances in households: 37.7% of residents have radio, 42.0% of the local population has TV, 62.3% have a gas stove and 16.9% of residents have a refrigerator.

Drinking water. Local population uses water from rivers and streams as well as groundwater. In the project area 47.8% of the families mentioned that draws groundwater (through artesian wells) and 52.2% from streams and / or rivers. With regard to water quality, 73.9% of respondents mentioned that the water is clean, 15.9% said is muddy and 10.1% said it contains debris.

Drinking water is not treated, and in some towns several illnesses associated with consumption of contaminated water have been identified.

Urban wastewater is eliminated in the backyard and in the local creek or river. The sanitation system is negligible, only 10.1% of households have a silo at home and 89.9% make their hygienic needs in the field or forest.

Energy consumption - None of the families have public electricity service. Families get electricity by using a diesel-powered electric generator.

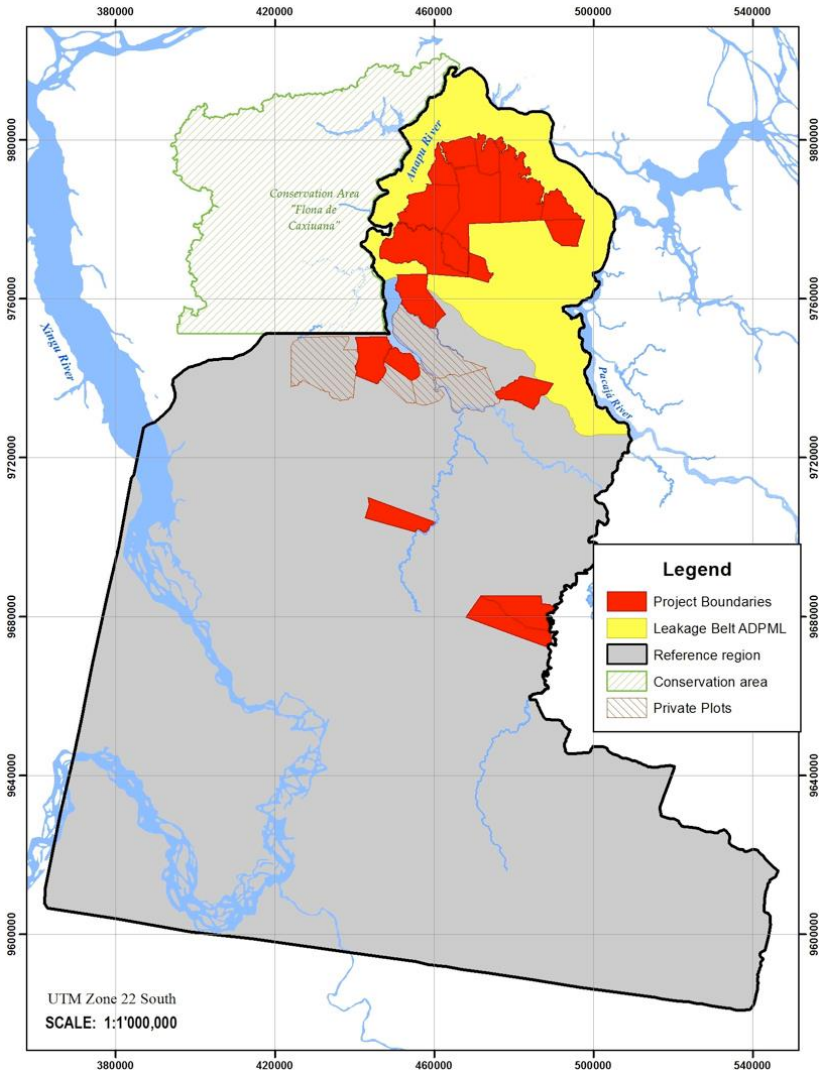
Food cooking, most families use gas stoves. Very few households use firewood for cooking, wood is used principally and almost exclusively for the preparation of farinha.

Regarding education - Educational services are highly demanded by local households. Most villages have schools only with elementary level education and only one village (Menino Deus) provides high-school level education covering only the first grade of high school. Once reached this level, young people that wish to continue studying must migrate to Portel.

Regarding health - Most villages in the project area have no health centers; villagers have to be assisted in the health center of Villa Monte Horebe and Santo Amaro. The most common serious diseases are malaria, diarrhea and vomiting in addition to snake bites.

2.1.5 Project Zone Map (G1.4-7, G1.13, CM1.2, B1.2)

The Project Zone includes the Project Area and a 15km buffers that encompasses other privately owned land, Government owned land and part of the rivers Anapu and Pacaja. It should be remarked that no indigenous or native communities are found within the Project Zone area.



2.1.6 Stakeholder Identification (G1.5)

The process to identify the stakeholders was completed by identifying everyone who lived within the project area and leakage management area via census work. All people identified can be quantified as riverine people. The riverine people are the single type of community group on site.

In the project area there is 1 community, only one group, it is made up a single group of people known as riverine people. They are classified as a traditional people. There are no other types of people within the project area, or leakage management area. The community group are all related to each other and are 1st, 2nd, 3rd, 4th cousins. They are, sisters, and brothers, and brother-in-law and sister-in-law's. It is a giant interconnected family in the project area, all classified as one community.

This committee is a proposal that emerged from the initial analysis of the involved stakeholders related to the project, the ones potentially interested and the actors that maintain a recognized influence in the zone. This committee will be formed at the beginning of the FPIC process and would be in charge of the participatory and independent surveillance.

Its conformation will be defined through a process to raise public awareness, dialogue and negotiation. This committee should also try to incorporate an even number of representatives from the civil society and governmental institutions. The committee must include representatives from:

- The National Environmental Authority, such as the Ministry of Environment and its entities involved in the Project
- Local and Provincial authorities: municipalities, council, government, police, church.
- Population settled within the limits of the project
- Civil society organizations
- Organizations invited to contribute in the process: public programs and institutions.

The committees were a participative inter-sectorial consultative body that watched over an appropriate implementation of the project and its members and has the capacity to deliberate and decide over the affairs considered in their statutes and regulations.

The members of the committee did not receive any sort of economic retribution or recognition for their participation and assistance. The project did provide logistical support to these councils in order to complete their functions.

2.1.7 Stakeholder Descriptions (G1.6, G1.13)

As listed the stakeholders were identified as anyone who lives within the project area or leakage management area. They are described as traditional people in Brazil and are all characterized as single community group.

The relevance to the project is that they live next to the preserved area. They have a human rights situation that is dire and this dire situation brings a lack of stability to the preservation work, as the riverine people face displacement without the project. Thus this is why the project brought cook stoves, did training on other crops besides Casava and did the land tenure certificates known as the Cadastrol Ambieintal Rural (environmental certificate) to demarcate their lands. The local population then acts as a human fence between the land invaders and the preserved area. With the local riverine people having their land rights then they are less likely to be displaced by the drivers of deforestation and illegal logging.

Riverine community group is a single community group; they are all related to each other in the region, where they have intermarried with each other. It was about 1 family per river branch that came to the region. They are broken up into small villages of 4 to 15 houses, and each village typically makes up of the same family. Thus the patriarch mother and father, and their multiple grown children and their wives or husbands will make up one village.

The PRA was developed through a series of field visits, observations, surveys, workshops and interviews to local leaders and experts whom were informed about the project idea, its activities, the potential benefits to the communities and their participation in the project. To complement field information, the team used secondary information from IBGE"s 2010 Census.

Picture: Surveys and interviews applied to villagers and local leaders

Carrying out workshops has been one element of great relevance for the design of the project in PRA. The villagers were informed about the project idea and the potential benefits for the communities and how their participation will be throughout the entire process. Likewise, “speaking maps" were constructed in a participatory manner in each one of the workshops which has allowed the villagers to face and describe their current life conditions identifying the main existing problems and the future conditions they would like to have in a situation where the project is being developed.

Table 1: Communities engaged in the Participatory Rural Appraisal (PRA)

Sl.No.	**Village Name**	**Number of households**	**Number of surveys**	**People interviewed**	Workshops \participants
1	Sítio do Pai Antônio	14	01	11	11
2	Santa Maria	43	02	17	17
3	Marinaú	32	02	12	12

4	N.Sa. Aparecida	49	02	14	14
5	São Sebastião	27	01	06	06

The information gathered in the field work through the tools, especially the needs and problems pointed out by the leaders and local villagers, has been the basis upon which the proposal for the activities of the project has been developed. The project staff believes that it is better to reach the villages with a clear open mind in order to understand local needs and later shape the activities based on the results of the PRA.

For this matter, project activities were conceived right after the social evaluation and not the other way around. Thus, local settlers not only have participated in the design of the project but have indeed provided inputs to PP staff for such design.

The following table shows the main problems, priorities and necessities identified by the population in the workshops and interviews to the local leaders.

Table:2 Main problems, priorities and necessities identified by the population

Main identified problems	Identified priorities
• Low family income • Limited work opportunities • Increased difficulty to get resources from • hunting and fishing • Low training levels in relation to agricultural activities • Limited knowledge and training on productive activities alternative to farinha. • Low training levels in the organizations for communitarian management • Low levels of citizen participation in communitarian management • Land tenure uncertainty and insecurity • Unsafe water consumption • Limited access to health services • Limited access to education for children • Limited access to communication	• Access to job opportunities • Agricultural production improvement • Access to communitarian transportation means in order to facilitate access to Portel • New productive alternatives (fisheries and minor animal breeding) • Access to drinking water • Access to electricity • Access to health services • Access to communication • Access to education • Land tenure resolution • Acceso a la educación media.

The proposal for the project activities has been designed based upon the problems and priorities identified and pointed out by the villagers.

The project knows that the activities do make an improvement in the quality of life of the local villagers in terms of strengthening their capacities and provide opportunities for the economic development of the families. Likewise, being aware that it is not the role of the project to cover and comply with the functions and competencies of the State, the project considers that the proposed activities related to organizational and communitarian managerial capacity building did provide enough skills for the community to manage their public services requirements before the correspondent authorities.

Additionally, the project has determined the creation of an additional fund to the budget to develop and implement project activities. The amount is 5% of the annual income from carbon credits to support the initiatives that arise from the capacities strengthening in the localities.

2.1.8 Project Activities and Theory of Change (G1.8)

Refer to Appendix 2 for description of theory of change

2.1.9 Climate, Biodiversity and Community Benefits Assessment Period (G1.9)

The GHG Crediting Period is 40 years (2009-2048) during which net revenues from carbon payments during this period will be used to further develop and implement surveillance and social activities that did yield net positive impacts to the climate, communities and biodiversity of the area.

2.1.10 Differences in Assessment Periods (G1.9)

There are no differences between the duration assessment periods of GHG emissions accounting, climate adaptive capacity and resilience, community, and biodiversity.

2.1.11 Implementation Schedule (G1.9)

Funding for Project's activities was secured by funds committed by the Project Proponent from 2009 to 2013. After 2013 the project did generate enough revenues from carbon credit sale to cover Project costs and security. The Project financial analysis makes clear how important are the revenue generated through carbon credits to protect the Project Area and to implement the Project's activities. The project proponent has made a financial statement to demonstrate their commitment to cover costs in the event carbon credit sales are not enough, the project receives credits for the emissions achieved since the Project start date until validation date. For a detailed financial analysis refer to the attached Financial Evidence of this Project's VCS PD.

Date	Milestone(s) in the project's development and implementation
2005 to present	Forest protection initiatives and activities were developed back in 2005 and forest protection in the project area to provide a healthy ecosystem with much greater adaptation potential to climate change, with a higher resistance and recovery capability to extreme meteorological phenomena and a wide range of benefits to the neighbouring people.
2012 to present	Community Development: Number of community leaders trained to improve their level of organization, management and democratic governability.
2012 to present	People have always focused on Cassava (Mandioca). Starting in 2012 and at the request of the project to focus on Acai and other low-footprint activities and to consider the more expensive and complex crop of Black

	Pepper in order to improve the economic situation, black pepper still has not taken off, however now some people are focused on Honey and tree oils. From 2012 and onward as stated in the original PD a community census started, with this further analysis of the riverine communities took place, during this time interviews, land disputes were worked out amongst neighbour's, and interviews were conducted to get free and prior consent by the project to start helping each family gain the Cadastrol Ambientel Rural for the land.
1/2008	Project Start date
2012 to present	Project Implementation: Attract investors and gain government approval for the Project – continue forest protection and community development activities.
2013	March 2013 CCB Validation completed
2018	February 2018 CCB validation expired
2019	September 2019 VCS 2nd verification completed
January 2021	CCB Project re validation and first verification
March 2021	Project Registration

2.1.12 Risks to the Project (G1.10)

1. Communities lack of effectiveness to control the Conservation Forest area

The Project did provide permanent land use rights against results for conservation to those families living within the Project Boundary. Families were trained to monitor the area and to protect the forest.

With the completed census, and knowing who individually owns what, if a family breaks the Conservation Forest Area plan, it is easy to identify who this is and future benefits from the project will be curtailed if the behavior continues. The project will have no way to revoke title that has been provided the riverine people.

The process to complete the census is as follows:

The census work was completed in a separate section (normally one river branch was the focal point each year) of the project area between 2012 to 2017 due to lack of funding to do a full census in one go and due to the huge manpower and transportation needed it was impossible. Each year there was one branch of the river systems that crosses the project area targeted for review. Each arm had to have two census's complete as there is a normal case that 30% to 40% of the people were not home. Most were tending to their Casava plantations, and the project did not want to proceed to the work on Sundays as it could cause conflicts due to the highly evangelical nature of the riverine people.

In cases of this census work there was also a requirement to send a separate boat back to specific homesite as the Identification Data previously provided was either incorrect when it was attempted to be entered into the Government Database to give each family a Environmental Certificate(CAR) for their land, or because the name was spelled wrong and did not match the CPF number (which is the tax ID

number). This resulted 3 trips to every house just to gain an accurate situation of who lives in which house for the Census.

Upon the census work the data was taken back to Belem where Professor David Vale of the University Federal of Para state and his team of technicians would sort through the names along with the property line points and work to de-conflict a region that is known to be the most unstable in Brazil.

With this data it was then confirmed again a second time in the field where permanent cement marker was placed according to the deconflicted map. With these permanent cement markers in the ground the Cadastrol Ambiental Rural was submitted to the environmental ministry where each family was able to gain a CAR with their name on it and the demarcation of where their land is.

The process is not a process that can be completed in 1 month, 6 months or a year. Due to the various trips and funding the process took place from 2012 to present.

The future process related to the land tenure is to request from the government to issue the final title deed. As much as the goal is to give title in exchange for preserving, it is also a human rights factor where we cannot skip even one household no matter if the person is bad or deforested, the stability brought will bring preservation. The environmental certificate will help monitor the persons activities.

2. Population growth forces agricultural expansion in project area.

Although population is growing in the area, it is clear from the PRA and the LULC change analysis that small-scale agriculture is not a significant driver of deforestation in the area. Nevertheless, the Project includes capacity building on agroforestry techniques to help riberinhos to develop more efficient crop systems that require less area and longer rotation times, thus reducing the need of clearing forest patches under regeneration.

3. Loss of carbon stocks through fire, illegal felling, and land clearing

The Project has reduced the risk of leakage, illegal logging and fire by building strong partnerships with villagers in the Project Boundaries and it its vicinity thus preventing deforestation activities to start. This includes by giving out cook stoves and also paying for the riverine in these locations to gain title. Also, capacity building workshops were held with cattle ranchers that get in the vicinity of the project to show them the benefits of intensified pasture management, thus preventing further LULC change in the area.

Illegal logging risks were mitigated through a number of measures including demarcating boundaries and posting signage, blocking machinery access through trenching and other methods, regular patrolling, development of a network of patrol huts to facilitate rapid movement, rapid response and confiscation of chainsaws and other equipment, and improved communications with local authorities in Portel through two-way radios and cell phones (where available).

Land grabbing were addressed in two ways. First PP's local team have met with new migrants and neighboring villages and leaders, as well as the municipal authorities to make sure the Project Boundaries are known and resolve any existing conflicts. Communities were encouraged to inform prospective migrants that the forests are protected and that there are no opportunities for new migrants to

the area. Second, PP did demarcate boundaries with pillars and signage, maintain regular patrols, and call in the support of the local authorities and police.

2.1.13 Benefit Permanence (G1.11)

The project focuses on three principal strategies to ensure the maintenance and enhancement of the project benefits beyond the project lifetime.

1. Skill and capacity development.
2. Goal of permanent Land ownership
3. Health benefits

1. The skills are learnt by the communities throughout the projects lifetime. These relate to better land resource management. The project has initiated several awareness programmes for efficient use of land for agricultural practices and has also provided cook stoves which have the benefit of lessening the time for Farinha production and the overall cooking time. The protection of the forests itself ensure that due to lesser degradation there is greater potential to provide timber and non-timber forest products on a sustainable basis. The community has been made aware and trained in alternative crops of agroforestry such as black pepper, honey or andiroba oil. The increment of traditional Cassava plots pushes the agricultural frontier towards forest covered areas thus generating deforestation. Hence the alternative techniques of agroforestry help the community to make farming sustainable.
2. The goal of permanent land ownership to the communities is one of the main initiatives of the project and this provides permanent ownership even beyond the project lifetime. This provides the community to implement the skills and learnings on their own land which is self-sustainable and provides benefits beyond the projects lifetime.
3. The health benefits to the women and to the overall community is expected to continue beyond the projects lifetime. In a 2002 report, WHO listed indoor smoke from solid fuels among the top 10 risks to human health. "Day in and day out, and for hours at a time, women and their small children breathe in amounts of smoke equivalent to consuming two packs of cigarettes per day," WHO reported in the 2006 report Fuel for Life: Household Energy and Health. As greenhouse gas emissions have increased, the smoke from kitchens in the developing world has escalated from a local to a worldwide threat. The average cooking fire produces about as much carbon dioxide as a car, and produces more soot, also known as black carbon. Reducing these emissions may be among the fastest, cheapest ways to fight global climate change.

   The permanence of the benefits associated with the project are captured during the feedback from the community during the periodic community meetings in which the majority of them prefer to continue the good practices.

2.1.14 Financial Sustainability (G1.12)

Funding for Project activities is secured by funds committed by the Project Proponent until the end of 2013. After 2013 the project is expected to generate enough revenues from carbon credit sale to cover Project costs. The Project financial analysis makes clear how important is the revenue generated through carbon credits to protect the Project Area and to implement the Project's activities.

The project proponent has made a financial statement to demonstrate their commitment to cover future costs until the project receives credits for the emissions achieved since the Project start date until validation date. For a detailed financial analysis refer to the attached Financial Evidence of this Project's VCS PD.

2.1.15 Eligibility Criteria for Grouped Projects (G1.14)

This is not a grouped project.

2.1.16 Scalability Limits for the Grouped Projects (G1.15)

Not Applicable

2.1.17 Risk Mitigation Approach for Grouped Projects (G1.15)

Not Applicable

2.2 Without-project Land Use Scenario and Additionality

2.2.1 Land-Use Scenarios without the Project (G2.1)

The risks for the Project objectives originated by climate change and climate variability are limited to:

The land use scenario without the project clearly has a negative effect on the climate and creates severe climate variability. The project works extremely hard to preserve a project that is in a difficult region with high land invasion threats. Land invasion brings roads, and roads bring settlers and more land invaders.

To give an understanding of the Project Reference Region, we can simply look directly south, west and east of project area by only a few kilometres depending on the location in the project.

The project area is directly north of Anapu and Pacaja municipalities, two lawless areas with approximately 4000 small family farms that have been deforested from about 1995 to present. Each farm is typically between 100 to 500 hectares with most under 200 hectares. These people were told of free land by the location by the government. They were told they only need to go there and claim it.

The regions lawlessness has come with notoriety with the American nun Dorthy Stag murdered in the region by landgrabbers and groups that promote deforestation.

As the years have passed since the first settlers in the region, and the lack of law, the children of the small scale cattle ranchers now seek out their own farm. They are constantly going into the large expanse of forest area just north of their farms and entering into the private property of PP project area.

Under Brazilian law private property can be claimed if it is deemed unused or abandoned. It is impossible to claim land that is public land as it is illegal to claim publilc land; thus large forest owners property are the target of these land invaders from the south.

They know if they are able to deforest with a fire 50 hectares, they are able to claim possession. The problem is that there are over 5000 families in Anapu and Pacaja with children now looking for their plot. This is their culture, they are taught to take their opportunities, and they must take to be successful.

This human nature both threatens the forest, but it is also threatening the way of life of the Riverine communities as they lack the money to fight off a person specifically funded to take land from others.

In the absence of the project this entire project area would be deforested the same way Anapu and Pacaja were deforested in such short order prior to this date.

If the project was not to exist then the land around the riverine communities are invaded then the way of life for these traditional people will be lost.

If the project was not to exist then it would be claimed and deforested in short order and be lost. By law the claimants (small plot holders under 200 hectares) could deforest up to 50% of the land, and this would have a severe consequence for the climate.

2.2.2 Most-Likely Scenario Justification (G2.1)

The steps described below are in accordance with the "Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities"

Step 1. Identification of alternative land use scenarios to the proposed VCS AFOLU project activity
Sub-step 1a. Identify credible alternative land use scenarios to the proposed VCS AFOLU project activity

In 2010 a group that is a partner entity named Agropecuria e Industrial Rio Tuere Ltda which owns property between the project area and Anapu municipality. The group is owned by the Art-Therapy creator Mokiti Okada Association of Japan. Due to the world economic crisis of 2009 they removed their security on the land in 2010. By 2012 the land was 100% invaded by over 300 families each claiming 200 hectares. This land is already in 9 years 30% degraded or deforested, due to small land claims. In the next 4 years due to the Bolsanaro government this land were 50% deforested.

In 2010 a group named Megatown Trading Company that owns 76,230 hectares north of the municipality of Pacaja, Para, it is a strip of properties. This is owned by an individual from Sao Paulo, that went broke in 2010 due to the world economic crisis. The land was completely invaded after the property keepers were removed in 2010 and within 2 years the entire property was invaded and today the land is about 30% degraded or deforested. In the next 4 years due to the Bolsanaro government this land were 50% deforested the legal limit for small parcels under 200 hectares.

In accordance to the justification of scenario, in the event that the security is removed from the project area, the children of these farmers south of the project area in Pacaja and Anapu will immediately move in and stake their claim to the land. It is already occurring and there is a constant push by the Riverine people in coordination with the project to have these invaders ejected before the can make a homestead.

2.2.3 Additionality (G2.2)

As shown in the PD for VCS in Section 2.5 "Additionality Assessment", the main barrier for the implementation of the project is the financial barrier.

Even though the old and new version of the Brazilian Forestry Code indicates that 80% of the forest within a privately owned area should be preserved, it is well know from the literature and re-affirmed by our historical analysis with Landsat TM imagery and interviews with local experts that such regulations is weakly enforced.

Finally, the Project did develop and implement activities not only for ecosystem protection but also to generate social benefits. The Participatory Rural Appraisal makes evident that such benefits were not generated under a without project scenario.

2.2.4 Benefits to be used as Offsets (G2.2)

Not Applicable

2.3 Stakeholder Engagement

2.3.1 Stakeholder Access to Project Documents (G3.1)

All the documents/results were published in the project website and communicated in Portuguese in a simple language to the council of stakeholders for their awareness and free participation.

Each of the communities has some sort of access to basic communication. Making a website appropriate form to relay information There is wi-fi available in some of the communities where the project documents can be presented. The community members also travel to the other communities that due have wi-fi so they can connect to the outside word.

In additional to this the project technicians completing the survey work carry a copy of the project documents in the event they have questions related to what is taking place.

2.3.2 Dissemination of Summary Project Documents (G3.1)

All the documents/results were published in the project website and communicated in Portuguese in a simple language to the council of stakeholders for their awareness and free participation. Annual meeting were also being held to disseminate the same.

As soon as the monitoring results are complete they were published on the project website giving the riverine people access to all the information as soon as it is available.

2.3.3 Informational Meetings with Stakeholders (G3.1)

Good amount of information about the characteristics of the population in the Project zone was collected through PRA. The surveys applied to the local villagers have allowed knowing the main social and economic characteristics of the population, and the interviews held with the local leaders have brought information about the characteristics regarding their organization, production, relation with state authorities and other institutions, mains needs and concerns, among other. The results for this information are resumed in the section G1 original conditions in the project area.

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

The project has no costs to the communities, the team of technicians have always based the modus operandi as go-to-the point, thus the project team goes to the community, and we don't request the community to come to the project team. The travel cost is the greatest burden for the community. It was discussed and explained during all meetings that the carbon credit project will not cost the community anything, it was explained that the project is 100% there to benefit the locals in a business-as-usual situation.

The Risks, zero, as explained in the community meetings and one-on-one discussions that there is no risk to the community.

The benefits are explained to be cookstoves, land tenure documentation and survey work and training for a better economic situation, with future goal of paying for the new economy of the region which would be to expand the Jatai honey and Adiroba Oil.

2.3.5. Information to Stakeholders on Validation and Verification Process (G3.3)

Information to stakeholders on Validation and Verification process was provided at the same time and using the same channels as other project operation information previously addressed.

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

The team has been on the land for much of 2017 and 2018 and informed everyone in the villages that the auditor for the project was planning for the site visit for CCB revalidation and first verification.

Two weeks prior to site visit, verbal communication shall be done, and it was requested that 3 to 5 people in each village be prepared to answer questions of the auditor. One on one interview of the village people with the auditor shall be arranged

2.3.7. Stakeholder Consultations (G3.4)

The Project designed its activities based on the results of the PRA. It was intended since the beginning to develop activities that were tuned with local livelihoods and the best way to do so was by first consulting with local stakeholders.

All Project activities are based fundamentally on local customs and needs. Such activities do not constitute dramatic changes on local ways of life or customs but only provide knowledge and finance to improve and make more efficient what is already happening on the ground.

The team was able to consult with the community originally in 2012 with large organized community meetings.

But it was discovered that when everyone raises their hand in agreement, people were more so following their neighbors hand-raising. This has been a learning process, and we discovered the local population did not have in their vocabulary the word “carbon”, or “credit” in Portuguese “carbono“ or “credito” thus from 2012 after these large community engagements, the consultantions went to questionaires and training forms, with one-on-one discussions that can take up to a couple hours or even with the team hanging out in a village for a few days to better understand the expectations and way of life.

The technicians who go to the land stay in the houses of the riverine people while doing survey work, eat at their table and greatly support the project, this has greatly help build trust with the stakeholders.

2.3.8 Continued Consultation and Adaptive Management (G3.4)

Two of the project team live in Portel and have been with the project since 2012. They were hired as they know each family in the project area their local knowledge facilitated the warm reception for the project. They are both the project guides and pilots for the technicians and team. They know first-hand everyone in the community and this knowledge allows there to be seamless communication between the project team and the local communities. It may require a cell phone call to representative, who will then call on the radio to the specific village, or vice versa.

Throughout the lifetime of the project, we maintain a direct line of communication with community members, and relevant stakeholders. This establishes a commitment to communication and consultation to keep stakeholders informed of project activities including restoration, maintenance, monitoring and the CCB validation and verification process.

With-project scenario there is an increase to the socio-ecological resilience, reduce the vulnerability and improve the adaptation capacity through a better management of the natural resources, including adaptive management. In addition to this, forest protection in the project area does provide a healthy ecosystem with much greater adaptation potential to climate change, with a higher resistance and recovery capability to extreme meteorological phenomena and a wide range of benefits to the neighboring people.

2.3.9 Stakeholder Consultation Channels (G3.5)

We have conducted a number of stakeholder engagement and consultation meetings with identified project communities and other stakeholders from the nearby villages and settlements. Our project staffs have conducted participatory surveys with the Participatory Rural Appraisal (PRA) method as part of the consultative process. This included focus group discussions (FGDs), interviews with men and women living in nearby settlements and villages, and observation and ground checks with local residents including participatory visits to a variety of important areas and community epicenters.

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

The project proposes conduct a process of FPIC to continue the informative process initiated with the PRA in order to promote a reasonable understanding about the project is and their activities, an equitable participation in decision-making processes and the involvement of the population in the implementation of the proposed project. Consultations ensure to engage with both men and women, and more marginal stakeholder groups culturally appropriate ways to ensure that the project can hear a wide range of perspectives.

2.3.11 Anti-Discrimination Assurance (G3.7)

The Project Proponent has company policies to prevent discrimination and outline a course of action, should it occur, the human resource (HR) policy provides a clear statement on discrimination relating to gender, religion or sexual discrimination. Discrimination is considered a level A misconduct under the HR policy. Where discrimination occurs within the company, partner organisations or within project areas (project participants), actions are outlined in the grievance policy to ensure that any discrimination is dealt with by the senior management. All company employees and field partners sign a code of conduct with ES that includes anti-discrimination.

2.3.12 Feedback and Grievance Redress Procedure (G3.8)

The conflict resolution approach will be sequentially adopted and will respond to the conformity or inconformity of the complainer to the proposed solution. The evaluator may also propose a specific approach for the resolution depending on the complexity of the case and the assessment of the same. The present mechanism does not exclude the right of local people to present the case to any public entities estimated to be convenient. Actually, during the census, the Projects management team will

inform local people of the creation of such committee and will be informed of their right to present grievances directly to public entities, making a clear point that all claims and/or complaints will be addressed equally notwithstanding the line of grievance.

2.3.13 Accessibility of the Feedback and Grievance Redress Procedure (G3.8)

Our project encourages identified community members, stakeholders, and employees to visit the project office and forest patrol posts which are located around the perimeter of the project area to discuss any issues or feedback directly with project staff. Verbally reported grievances will be documented by project staff and submitted into the formal system for resolution. At these project locations, grievance submission forms will be available and can be submitted directly to project staff. In nearby settlements, the projects community liaison officers' phone number and email will be distributed to village leaders and will be available to meet with stakeholders to receive reported grievances. To ensure transparency, the project will maintain a record book with all received and resolved grievances, which can be viewed upon request by project stakeholders or auditors.

2.3.14 Worker Training (G3.9)

Project's activity is designed to provide training to local villagers that did generate the required capabilities to undertake forest monitoring as well as monitoring for social and biodiversity variables. Please refer to Section G.3.2 item 1 and section CM4.2 for more details in regards to how these capacity building efforts did target a wide range of people in the communities.

The Project did make sure that all members of local villages have the same opportunity to attend capacity building workshops and participate in demonstrational activities, regardless of race, religion, sexual orientation, or gender. Although the opportunity to actively participate in all the activities of the Project, it is finally a decision of each stakeholder to participate and the managerial team did not try to put any sort of pressing to involve villagers.

Special attentions were put to make sure that under-represented groups (elder people, woman and children) are aware of the on-going training workshops and activities. The content and language of capacity training and demonstrational activities were adapted accordingly to each participating group. The Project considers developing and implementing workshops specifically designed for age classes groups to better transmit the information.

Capacity building is a relevant aspect in the implementation and operation of the project. In order to achieve the goals successfully the member of the community must be trained to have the skills and knowledge to effectively carry out the work.

A number of specific capacity building programs, researched by project proponents as potentially applicable to Project Zone community needs, are presented below . However, the final programs were designed in collaboration with the communities to ensure that they address current community concerns and prioritize community needs for capacity building.

2.3.15 Community Employment Opportunities (G3.10)

The Project did design employment opportunities to make sure the underrepresented riverine people have equal opportunities of finding employment in within the Project management and demonstrative activities.

Employment positions primarily are assisting the technicians go from plot to plot and house to house, carrying equipment and brining cement property markers for the survey work. Some work has required demanding physical work and a higher risk (i.e. on the ground monitoring of former logging trails, sampling biomass in forest plots, monitoring of Project Boundaries by boat to detect illegal logging activities, setting and revisiting biodiversity camera traps) were filled by persons between the age of 18 and 60 years and/or according to the experience and physical strength of a person, assessed on and individual basis.

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

Local villages did receive clear and adequate information about the requirements of national and international regulations on workers' rights before entering in a contract agreement with PP.

PP did make sure to comply with the applicable national regulations on workers' rights. This was assured by yearly audits held by a third party that were identified once the project starts its census in the area. Such audits were announced to local authorities and villagers and they were encouraged to meet with audit entity. This way, local people can rest assure that all their complaints about workers' rights are known in a straightforward and clear way.

The following is a list of Brazil's all relevant laws and regulations covering worker's rights:

- The Brazilian Constitution, Chapter II-Social Rights, Articles 7- 11 which addressed: o Minimum wage o Normal working hours o Guidance on vacation and weekly leave o Guidance on maternity and paternity leave o Recognition of collective bargaining o Prohibition of discrimination.

- In addition to the Constitution, there are two additional decrees related to Brazilian labor laws. Consolidação das Leis do Trabalho (CLT): DECRETO-LEI N.o 5.452, DE 1o DE MAIO DE 1943 (Consolidate of Working Laws)35. This decree gives more clarification on: o Hourly, daily, weekly and monthly work hours o Employment of minors and women o Establishes a minimum wage o Worker safety and safe working environments o Defines penalties for non-compliance by employers Establishes a judicial work-related process for addressing all worker related issues.

- Estatui normas reguladoras do trabalho rural: LEI No 5.889, DE 8 DE JUNHO DE 1973 (Establishes Regular Norms for Rural Workers)36. This is a complimentary law to the aforementioned 1943 decree because prior to 1973, rural workers did not have the same rights as urban workers. In 1973, this law was established to specify the equality between urban and rural workers, along with compensation for overtime.

The labour laws in Brazil, although they have previous origin, are born in the government of Getúlio Vargas. From the year 1930, President Vargas joined a group of lawyers and legislators to elaborate the Consolidation of Labour Laws - CLT.

The labour laws of Vargas's era, as they are also called, took 13 years of development, and sought to guarantee a series of securities and regulations in the relationship between employers and employees.

Since 1943, the CLT has undergone a series of modifications - natural, in Law. The Labour Laws in 2015 best represent the new labour relations, and the main changes relate to new technologies, and their use in work.

There are a number of issues addressed in the CLT, but some stand out due to the advances that have accrued for the living conditions of the working classes and to the systematization of the Brazilian labour market.

Undoubtedly, the CLT is one of the greatest examples of a law that is concerned with the worker. The following are the main Brazilian labour laws:

- Law 605/1949 - Repouso Semanal Remunerado (Paid Weekly Rest);
- Law 2.959/1956 - Contrato por Obra ou Serviço Certo (Contract for Work or Right Service);
- Law 3.030/1956 - Desconto por Fornecimento de Alimentação (Discount for Food Supply);
- Law 4.090/1962 - Gratificação de Natal;
- Law 4.749/1965 - 13º Salário
- Law 4.886/1965 - Representantes Comerciais Autônomos (Autonomous Business Representatives);
- Law 4.950-A/1966 - Remuneração de Profissionais

2.3.17 Occupational Safety Assessment (G3.12)

Project's activities do not hold risk besides those inherent to the day a day life in the forest. Project's activities do not require the use of heavy machinery or dangerous substances. Nevertheless, the Project management team did provide adequate protection equipment to employees working in forest monitoring activities. Also, monitoring staff were equipped with first aid kits. Protection equipment did include but was not limited to:

- Hard hat
- Cap with the company's logo
- Reflective/fluorescente security vest with the company's logo
- Rubber boots
- Gloves
- Fast-dry uniforms with the company's logo
- Two-way rádios
- GPS
- Digital camera
- Field backpack
- Camelpack
- LED Flashlight

- Whistle
- Machete
- Pocket knife
- First aid kid

Risks for each type of work were assessed and safety guidelines were developed help identifying and reducing such risks. Guidelines were written in clear and adequate language and distributed among workers. Additionally, workers did receive safety inductions to make sure any doubts and suggestions are taken care of.

2.4 Management Capacity

2.4.1 Project Governance Structures (G4.1)

Oak Trust

Oak Trust is the Project Proponent and the entity that provides funding to develop, implement and run the Project. Oak Trust sole activity is that of carrying out a carbon credit generation scheme REDD+ in the state of Para, Brazil.

SETA Ambiental

SETA Ambiental is a technical partner that provided logistic support during the field activities for the carbon inventory and social assessment as well as for the data analysis of carbon content in forest biomas. SETA Ambiental will be sub-contracted by Oak Trust in case by- case approach according to the logistic requirements of the Project. Activities of SETA Ambiental will include travel logistics, networking with local specialists and provision of expertise to conduct forestry-related activities.

2.4.2 Required Technical Skills (G4.2)

Project participants			
Key Function	**Organization involved**	**Type of group /organization**	**Brief description of activities**
Project administration	Oak Trust	Project Participant	- Administrative - Reinvestment - Financial planning - Market research Project prospecting - Administer funds - Review field data, track project developments - Serve as key actor in dispute resolution
Technical Support	KMSPL	Project consultant	- Ensure project implementation in accordance with contract and PD

			- Manage and support technical demands of project

2.4.3 Management Team Experience (G4.2)

Mr. Mark Salmon, Manager, Mark grew up in Cape Town, South Africa, where he spent his formative years prior to emigrating to the United Kingdom. After completing his A-Levels at Abingdon School in Oxfordshire, Mark secured an audit position with PricewaterhouseCoopers in London. He went on to study for a Bachelor of Science Honours degree in Money, Banking, and Finance at the University of Birmingham. Mark joined the Oak Trust Guernsey office in 2007 and has completed the Society of Trust and Estate Practitioners Diploma under support from Oak.

Michael Greene – Project Coodinator and landowner. Is currently responsible for the general coordination of the project. He has a Bachelors degree in Industrial Engineering from Kettering University in Michigan. He has lived in Brazil for 10 years, consulting related to complex real estate situations. Michael's specialty is the coordination of the program plots for the poor. This is a program to help each family gain title. He oversees an engineer and geomancer team of 4 people in the field and 2 people in front of computers, categorizing each family and there their plots of land are located. He also directs the security boat patrols and is taking quotations from companies to build 25 security houses within the project area.

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

Mr.H.B.Muralidhara, Director – Technical & Operations - Murali is a strategic leader with proven track record of building and leading effective cross-functional, multisite, multi-business teams and driving change initiatives and implementing Climate change, Sustainability, EHS and Systems strategies. Murali is a graduate engineer with nearly 40 years of professional experience. Besides an engineering degree he has earned several PG Diplomas in Ecology, Environment, Safety and Risk management. During the past four decades he has worked in various organizations including Bureau Veritas. Head quartered in France, Bureau Veritas is a recognized world leader in testing, inspection and certification services. In the past Murali was heading the CDM, VCS, GS, Sustainability and GHG auditing and assurance services division of BV. He was involved in several thousands of audit days and hundreds of projects as a Lead Auditor, Technical Reviewer and Approver. He has provided several hundreds of days of training on various subjects since last twenty years to thousands of participants in various countries across the World.

Dr.R.Madhukara, Director – Projects & Client Engagement – Dr. Madhu is a Doctorate in Environmental Science. He has more than ten years of experience in GHG auditing, consultancy, research and development in Environment and climate change related areas. He has participated as Auditor, Lead Auditor, Technical Reviewer in various validation, verification and certification audits for CDM, VCS, GS, CCB, Plan Vivo, REDD+ and GHG projects globally for various UNFCCC/VERRA/GS approved auditing agencies. He has undergone extensive training on CDM, VCS, VCS+CCB, GS, Plan Vivo, REDD+ project development and involved technically in various successful projects across the World. Madhu is a Lead Auditor for ISO 26000 certified by Professional Evaluation and Certification

Board (PECB). He has successfully completed various training courses on carbon monitoring in REDD+, afforestation and reforestation projects.

Bipin Charles – Director - Bipin Charles has a Bachelor's in Botany, Zoology & Environmental Science and Master's in Environmental Science. Bipin is having around 22 years of industry experience. His research and teaching interests include conservation planning of non-charismatic species, Biodiversity assessment, risk assessment of invasive species and applications of Geographical Information System & Remote Sensing in conservation biology. He has more than 10 years of experience in managing various GIS and Remote Sensing projects. He has extensive experience in managing GIS and RS projects viz., Land Use Land Cover change modelling, time series analysis of Land surface temperature, digitization and spatial analysis. He has been a key resource for training RS and GIS modules in various reputed universities and institutes in Asia. He has completed around 20 training workshops on RS, GIS and species distribution. He has the distinction of winning various fellowships and grants programmes related to conservation, ecology and environment. He has various technical publications to his credit since many years.

All relevant project management experience is present in the current KMSPL. Consultancy and project development has been a part of our DNA since 2004. We are working as a team since 2004 and formally established this organization in the year 2007. We started our operations on the premise that there is a better and meaningful way to deliver to the clients, industry and society at large. Climate change is a real danger to this planet and it is our collective responsibility to address and work towards climate change mitigation and adaptation.

Our ability to draw upon our long years of proven expertise in consultancy, training and project development makes us truly unique and we are able to continuously deliver insights and services.

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

Funding for Project activities is secured by funds committed by the Project Proponent until the end of 2013. After 2013 the project is expected to generate enough revenues from carbon credit sale to cover Project costs. The Project financial analysis makes clear how important is the revenue generated through carbon credits to protect the Project Area and to implement the Projects activities.

For a detailed financial analysis refer to the attached Financial Evidence of this Projects VCS PD.

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

As a collaborative effort, the PP is committed to upholding a high level of integrity and professionalism throughout all aspects of project design and implementation. We have a zero-tolerance attitude towards corruption and unethical behaviour, and are not involved in, or complicit in, any form of corruption such as bribery, embezzlement, fraud, extortion, and collusion.

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

There is no commercially sensitive information in this project description document, itself. Supporting documents which include commercially sensitive information that will not be made publicly available include: the MOU; Contracts with Buyers and Service Providers; and documents related to project financials.

2.5 Statutory and Customary Property Rights (G5.1)

2.5.1 Statutory and Customary Property Rights (G5.1)

Currently there aren't any laws or regulations related to REDD projects in Para or Brazil (Santos et al. 2012). Nevertheless, the following area the regulations that apply to conservation activities in privately owned land such as the case of this Project:

- The Principles and rules established in the Federal Constitution.
- The compromises of the Brazilian government to the United Nations Framework Convention on Climate Change (UNFCCC) ratified by the Legislative Decree n° 1 on February 3rd 1994.
- Federal Law n° 12.187 from 2009 (which institutes the National Policy on Climate Change), the Federal Decree n° 7390 from 2010 (which regulates the National Policy on Climate Change) as well as all the legislation related with the aforementioned legal instruments.
- Federal Law n° 6.938 from 1981 about the National Environmental Policy.

2.5.2 Recognition of Property Rights (G5.1)

Name of the Law	Description	Project Compliance
Law number 4771, September 15th 1965 (D.0.U of September 16th 1965).	The Brazilian forest code of 1965 – Brazilian Forest Code –provides for example: II – area of permanent preservation: protected area in the terms of article 20 and 30 of this law, covered or not by native vegetation, with the role of protecting the water resources, landscape, geological stability, biodiversity, flux of genes of plants and animals, protect de soil and secure a good environment for the human population; III – Legal Reserve Areas: Area located in the property or "posse rural" excluding the areas of permanent preservation, for the sustainable use of the natural resources, conservation and restoration of the ecological process, biodiversity conservation and refugee and protection of native animals and plants; Art. 150 – It is prohibited under empirical form	All properties have legal reserve areas and APPs defined. In accordance with the CARs (Environment Rural Registry) at SEMA (Environment State Institute).

Normative Instruction number 003 of May 23th 2007 – Executive office of environment , science and technology – SECTAM.	the exploration of primitive forest of the Amazon watershed, but only can be explored in accordance of technical management plans approved by act of Public authorities, to be issued in oneyear term. Regulatory of the Environmental Rural Registry -CAR in the state of Pará and providence of other requirements. Art 1 – establish criteria and procedures for implementation of the CAR – PA as an instrument for identification of the rural properties in the state of Pará that must be issued by SECTAM-PA in accordance with this Normative Instruction. Art 2 – It is necessary for all rural properties in the state of Pará to be registered in the CAR-PA, even the properties that have no production activity. Art 3 – The issuance of the CAR-PA, as toll for identification of the property will be done only once for each property. It will be a registry number with a sequential number. This number will be in all licenses, authorizations, and other documents issued for the environmental regularization of the rural property. This registry number will be linked to the land, independent if the land is sold, transferred or taken possession by other person. Single paragraph – There will be no concession of any license for the land that has no registry at CAR-PA. Art 4 – In the CAR-PA it will be mentioned all the basic data of the rural property, Total area-AT, Area of permanent preservation – APP, legal reserve areas – ARL, and area of alternative use of the soil – AUAS , in addition the name and profession of the land owner, geographic coordinates and other information required by complementary laws.	Development of CAR in all lands in the Project Area.
Federal Decree number 5.975/2006	Art. 10 – Forest exploration and succession formations that require shallow harvest of the forest only will be permitted under specific authorization for alternative land uses issued by SISNAMA. # 1o By alternative land use is understood any	All properties have legal reserve areas and APPs defined. In accordance with the CARs (Environment Rural Registry) at

	conversion of the forest to other land cover, such as settlements, agriculture, pasture, industry, energy generation, mining and transportation.	SEMA (Environment State Institute).

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

Free prior and informed consent (FPIC) is the principle that a community has the right to give or withhold its consent to proposed projects that may affect the lands they customarily own, occupy or otherwise use.

The project proposes conduct a process of FPIC to continue the informative process initiated with the PRA in order to promote a reasonable understanding about the project is and their activities, an equitable participation in decision-making processes and the involvement of the population in the implementation of the proposed project.

In this regard, we will consider the following elements conductors for this process

Avoiding the exercise of coercion, intimidation or manipulation (FREE);

- Consent is required in advance to any authorization or beginning of the activities (PRIOR);
- Providing information that covers the following information:

a. The nature, importance, rhythm, reversibility and approach of the project and the proposed activities;

b. The purpose of the project and its activities;

c. The duration of the project;

d. The area where the project and its activities will be developed, as well as the localities involved;

e. The results of the initial diagnosis of the economic, social, cultural and environmental situation, including possible risks and benefits;

f. The institutions and staff that probably will intervene in the implementation of the proposed project, and

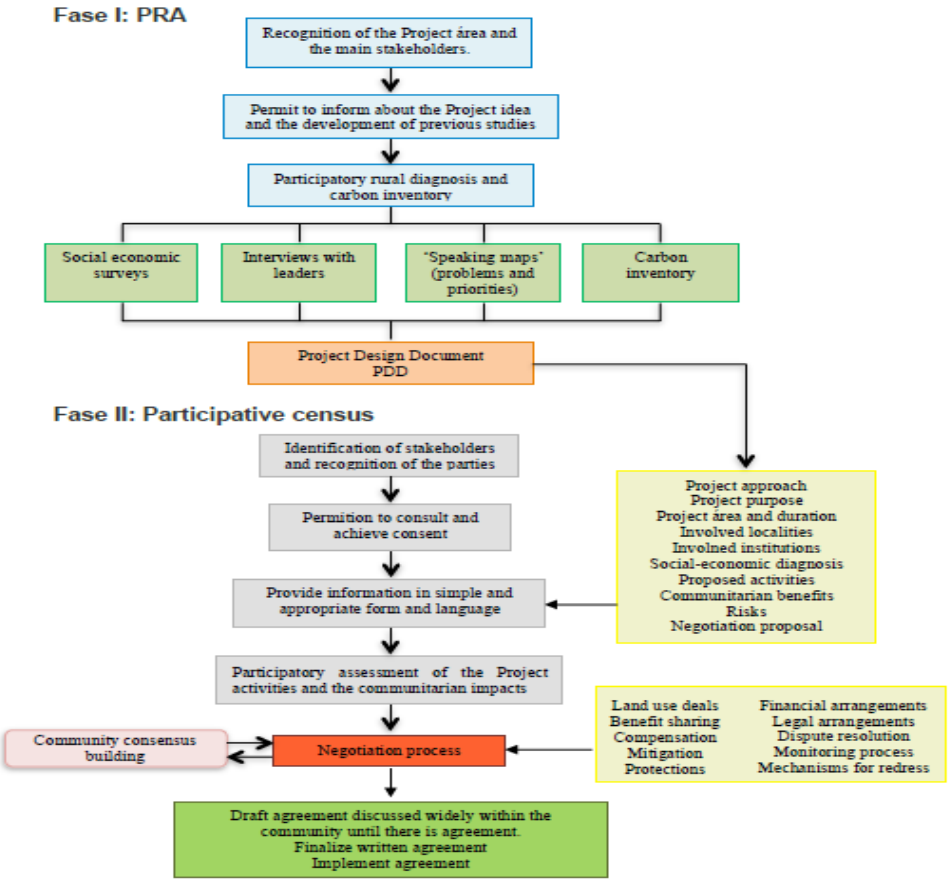
g. The procedures the project may include (claims resolution mechanism);

- The consultation must be carried out through the establishment of a frank dialogue within an atmosphere of mutual respect, good faith and full and equitable participation (CONSENT);

The process must include genre perspective. Women participation is essential, as well as the involvement of children, young people and vulnerable groups. It is important to mention that the definite protocol for FPIC will be produced after the validation of the project and will include a detailed development of each one of the activities, protocols, annexes, formats and tools that will be utilized.

The following flowchart intends to represent the protocol to be followed in order to comply and ensure the FPIC standards and criteria are implemented.

Figure 9: Flowchart for FPIC



2.5.4 Property Rights Protection (G5.3)

Our project activities do not lead to involuntary removal or relocation of property rights holders from their lands or territories and does not force rights holders to relocate activities important to their culture or livelihood. If in the future any relocation of activities needs to be undertaken, it will take place with a written agreement that demonstrates that the agreement was made with the free, prior, and informed consent of those concerned and includes provisions for just and fair compensation.

2.5.5 Illegal Activity Identification (G5.4)

Illegal activities in the area are constituted by unplanned timber extraction. Such logging operations are evidentiated by the proliferation of pioneer roads. It is known from literature that extractive operations will take advantage from the fact that local farmers don"t have land titles to displace them or to gain access to the forest resources nearby villages (Araujo, Bonjean et al. 2009). At the same time, illegal logging operations thrive whenevere there are forested areas that seem to be under no-use and where the presence of the landowner is not made evident.

The Project has trained local villagers to work as monitoring staff in the Project Area and the LMA. This is the main activity to identify, prevent and avoid illegal activities from taking place in the Project Area.

As support measures against illegal activities, the Project did provide land titles against conservation results to villagers living within the Project Boundaries and did provide support to neighbour villagers to achieve land tenure on unused public lands.

Stakeholders in neighbouring villages were encouraged to report encroachers and illegal loggers trying to get into nearby forests. The Project did proceed to make the respective denounce to local authorities as just like the situation is occurring in the Project Area. Through this mechanism the project were generating positive leakage.

2.5.6 Ongoing Disputes (G5.5)

There are no ongoing disputes or any previously unresolved conflicts inside the project area.

2.5.7 National and Local Laws (G5.6)

Even though there aren't any national law or regulations regarding REDD policies, there are some local initiatives to encourage REDD projects. The majority of these initiatives are at the municipality level. For example: Paragominas, a municipality located at about 400 km from the project area, has approved (July 26th 2011) a municipality environmental policy (Law number 765/2011) that includes REDD. With this it was created a municipal-level system for reduction of emissions from degradation and deforestation that were linked to a potential national or state REDD system.

2.5.8 Approvals (G5.7)

The Project is developed on privately owned land and complies with all the required laws and regulations regarding forest protection in private lands. Given the fact that in Brazil there are not regulations regarding REDD projects and the fact that the Project does not undertake extractive activities but does preserve 100% of its Project Area, permits are not required from municipal, state or federal authorities.

The REDD initiative in Paragominas is a precedent created that did encourage new REDD projects and strengthen the existing ones towards a solid and robust system in Para. For this reason the Project – although not required to do so yet- will make arrangements to inform about its activities to local institutions at state and federal level.

To this end, the Project did design a strategy to properly identify and approach institutions that most likely will have key roles in a potential REDD framework in Para or in Portel.

During the preliminary social evaluation, the informed consent about the development of activities for the study, the design of the project and its latter implementation37 was obtained from 19 leaders and local authorities.

The population has also been adequately informed and has actively participated in the elaboration of a diagnosis through the participatory workshops carried out in 4 localities and in which 50 settlers have participated and have expressed their main needs and local priorities. During these activities the population was consulted about the implementation of the project being studied and has manifested much interest in participating in it.

In addition to this, already carried out was a participatory census in the entire project zone in order to have a complete and appropriate participation before the beginning of the social activities of the project. During this census, several meetings did take place with the local leaders from all the communities involved in the project area boundaries. Meetings with the population were also developed in order to inform the details of the activities of the project and the PRA results were shared.

2.5.9 Right to Claim Benefits (G5.8)

All the Project Boundary is privately owned land under complete control of the Project Proponent. The Cadeia Dominial is a certificate provided by the registry office where the land's deed and title are registered. This certificate is used to show the history of the property and the owners. This document show any updates on the property. Also, a law firm was hired by the landowner to perform a due diligence process to verify that there were no claims on his lands. Finally, the landowner provided copies of the original land titles for each one of the Glebas that constitute the Project Boundary.Proofs of ownership and land titles also exist.

2.5.10 Other Programs (G5.9)

The project has not nor does it intend to create non-VCS/CCB GHG emissions reductions or any another form of environmental credits.

2.5.11 Double Counting (G5.9)

The carbon credits generated from the project were registered under the Verified Carbon Standard and sold under that mechanism. Credits from the project will not be registered or sold under any current regulatory scheme, as these schemes currently do not allow REDD credits to be sold. If and when the credits become eligible under a regulatory scheme, the proper procedures were taken to ensure that credits are not sold twice.

3 CLIMATE

3.1 Without-Project Climate Scenario

3.1.1 Without-Project Estimated Greenhouse Gas Emissions (CL1.1)

The Project will prevent and avoid unplanned deforestation mainly through monitoring activities. The Project aims at avoiding a net baseline release of 10,564,630tCO2e at the end of its 40-year crediting period. Refer to validated VCS PD for details.

3.2 Net Positive Climate Impacts

3.2.1 With-Project Estimated Greenhouse Gas Emissions (CL2.1)

The Project will prevent and avoid unplanned deforestation mainly through monitoring activities. The Project aims at avoiding a net baseline release of 10,564,630tCO2e at the end of its 40-year crediting period. The project applies VCS methodology VM 0015. Refer to validated VCS PD for details.

3.2.2 Net Impact (CL2.2)

The Project activities will avoid the release of CH4 emissions that are released through fires used to clear the forest cover when slash and burn is used to deforest. For this reason, non- CO2 avoided emissions are counted towards the positive climate impacts of the Project.

CH4 emissions have been calculated based on the equation presented in the VCS VM0015 methodology Section 6.2. Refer to validated VCS PD for details.

3.3 Offsite Climate Impacts (Leakage)

3.3.1 Types of Expected Leakage (CL3.1)

GHG emissions by activity displacement could only be considered as leakage if such emissions are located within the leakage belt (LK) and happen above baseline projections. A mobility analysis was used to calculate the extent of the leakage betl of the Project and results from this analysis are presented in Section 2.3.1 of the Project's VCS PDD.

Also, the VM0015 methodology indicates that the amount of leakage will depend on the Leakage Displacement Factor (LDF) which is equal to the proportion of agents of deforestation that do not participate in the Project's activities.

Following these guidelines, the Project will not generate displacement leakage as the Project's activities are designed to provide all the deforestation agents that arrive to the Project's Boundary with the opportunity to participate. Refer to validated VCS PD for details

3.3.2 Quantity of Expected Leakage (CL3.1, 3.3)

The Project's activities won't generate GHG emissions thus there won't be GHG emissions from leakage prevention activities. *Refer to validated VCS PD for details*

3.3.3 Leakage Mitigation (CL3.2)

The Project main climate objective is to manage the Project Area in the form of a "private reserve" by developing and implementing a management plan. Such plan will include a rigorous monitoring and enforcement plan built up on the existing experience of on going surveillance activities in the area since 2008. Such scaled-up monitoring activities will actively count with the participation of local villagers that were trained in forest management and monitoring techniques.

The Project will also address cattle ranchers, which are the main agents of deforestation that arrive to the Project Boundary. The objective is to provide them with training to understand the benefits of better managing their pastures with the expected result of enhanced pastures productivity and lower deforestation. Refer to validated VCS PD for details

3.4 Climate Impact Monitoring

3.4.1 Climate Monitoring Plan (CL4.1)

The justification for the selection of the carbon pools is presented below (see Table 3). Selection of carbon pools followed the guidelines of VCS VM0015 methodology. Refer to validated VCS PD for details

Table 3: Carbon pools considered by the Project

Carbon pools	Included / TBD/Excluded	Justification / Explanation of choice
Above-ground	Included	Carbon stock change in this pool is always significant
Below-ground	Included	Included to account for all the Trees biomass.
Dead wood	Excluded	This pool is less present in the Baseline scenario than in the Project scenario, thus is conservatively excluded.
Harvested wood products	Excluded	This pool didn't pass 5% significance test.
Litter	Included	This pool should be excluded according to VCS VM0015 methodology.
Soil organic carbon	Excluded	Not to be measure when forest is Converted to pastures according To VCS VM0015 methodology.

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

A monitoring plan for climate benefits along with the monitoring plan and results were communicated to the communities and other stakeholders via the website for the project where the Monitoring plan is listed.

In addition to this the technicians who travel to the land are required to carry all the most up-to-date documents and go through them with the communities at their request.

The head of each village were shown a hard copy of the results and a discussion took place to make sure that this person understood it.

3.5 Optional Criterion: Climate Change Adaptation Benefits

NA

3.5.1 Regional Climate Change Scenarios (GL1.1)

The risks for the Project objectives originated by climate change and climate variability are limited to:

- Increased area for cropland as a result of a decrease in food security by affected agricultural fields due to higher temperatures and the change in rainfall frequency.

Subsistence agriculture represents the basis of the rural localities way of life and it is also their main source of economic support and can be affected by the factors previously mentioned. The increase in the temperature, seasonality variations and the foreseeable extreme events can affect the production of the main self-consumption products of the population (e.g. beans, corn and rice). Likewise, rainfall reduction during critical months in the dry season can provoke the increase in the evapotranspiration and the emergence of pests and diseases that can negatively affect the crops.

In order to mitigate these risks, the project has several proposals for training activities directed to the population with aims at diversifying the crops with appropriate and adaptive agroforestry practices contributing to guarantee food security in the intervention area.

Moreover, it is foreseen to maintain a better water table level and the precipitations patterns in a microclimate environment by maintaining a forest coverage, which at the same time provides protection to extreme events, Activities and/or Processes Implemented for reducing the impact of heavy rain erosion and level the air temperature.

3.5.2 Climate Change Impacts (GL1.2)

The aforementioned evidence show that the Amazon forest is being already disturbed. This is attributed to two main factors. The first is the natural phenomena of El Niño (and la Niña) which affect great regions of South America. Such phenomena could have its effects and frequency enhanced due to the influence of global warming. The second is the increasing deforestation in very vast areas causing sudden and strong changes in the rainfall patterns regarding amount and frequency.

In a non-project scenario, the foreseen changes will impact the people in the Project area due to their high vulnerability, widespread poverty, the scarce individual or communal organizational capacity to face the changes and adapt to them, and the lack of adequate infrastructure. These impacts are compiled in the “Climatic and environmental changes and their effect on health: Scenarios and uncertainties for Brazil” report; develop d by the *Health ministry of Brazil and the Pan American Health Organization.*

On the other hand, the with-project scenario will increase the socio-ecological resilience, reduce the vulnerability and improve the adaptation capacity through a better management of the natural resources, including adaptive management. In addition to this, forest protection in the project area will provide a healthy ecosystem with much greater adaptation potential to climate change, with a higher resistance and recovery capability to extreme meteorological phenomena and a wide range of benefits to the neighboring people. The possible future impacts is summarised below:

Table 4 Possible future scenario in the Brazilian Amazon

Climate changes	❖ In the pessimistic scenario (A2): It is expected to have a temperature increase between 4^{o} and 8^{o}, and a reduction in the precipitation between 15% to 20%. ❖ In the optimistic scenario (B2): It is expected to have a temperature increase between 3^{o} and 5^{o}, and a reduction in the precipitation between 5% to 15%. ❖ Increase of extreme precipitation in the west amazon and consecutive dry in the east.

	❖ Possible more frequent and intense droughts from 2050 on.
Possible impacts	❖ Ecosystems, biodiversity and forests environmental services losses in the amazon. ❖ Lower river flows that will affect transportation and energy generation. ❖ Greater dryness in the air and favourable conditions for fires. ❖ Risk of savannah development in the Amazon. ❖ Impacts in human health, agriculture, migration and commerce. ❖ Negative effects on the transportation of atmospheric humidity to the southwest part of South America.

Source: Derived from model analysis from IPCC AR4 and from the Climatic report from INPE for high (A2) and low (B2) emissions scenarios, as well as its impacts in a regional level (Marengo, 2007).

3.5.3 Measures Needed and Designed for Adaptation (GL1.3)

In the with-project scenario will increase the socio-ecological resilience, reduce the vulnerability and improve the adaptation capacity through a better management of the natural resources, including adaptive management. In addition to this, forest protection in the project area will provide a healthy ecosystem with much greater adaptation potential to climate change, with a higher resistance and recovery capability to extreme meteorological phenomena and a wide range of benefits to the neighbouring people.

4 COMMUNITY

4.1 Without-Project Community Scenario

4.1.1 Descriptions of Communities at Project Start (CM1.1)

The most likely land use scenario without the project has the following features, the same that have been projected by local households. From these analyses we can come to the following conclusions about the without project scenario:

The following points were both visualized and discovered in the community meetings with the local Riverine population. These are from discussions that the project has had and are information provided to the project by the Riverine and are based on what the Riverine people have told the project. The Riverine people did not provide evidence to their thoughts, but the following are rational and logical based on what an outsider would expect from the region:

- As listed the people in the project area are Riverine people, or “river people”, they live along the banks of the river and are typically descendants of Europeans that worked as

rubber tappers, and when the rubber tapping economy ended they decided to stay in the forest. They are considered a traditional people in Brazil.

- The communities at the start of the project were more remote, they have no real communication, no internet it had not yet arrived into this region at this time, the only time they communicated with the outside world is when they travelled to the city, which was very expensive at the time as there is only one government funded boat per week and that still had a fee.
- The environment in 2009 was much more tree cover in the region, as poverty increased the communities have had to increase Cassava production to chase after miniscule profits.
- The social economic situation was still at less than 1 dollar a day, and resulted in each community opening up a few hectares each year, as they believe that the most fertile soil is right after a fire clearing a few hectares.
- The spiritual situation in the region is that everyone is devote evangelical, nearly every community has a church and the churches may only have 4 or 5 houses that belong to the church. Most churches are made the same way as their houses, but some communities may have a church that cost more than all the housed combined.
- Of the various villages in the project area, they all have the basic beliefs: The best way to survive is to grow Cassava, that no one wants to buy our products we produce as we are too remote, that God is supreme, and that trading between the other villages is pointless, because if they can grow a product, we can as well.
- A few households have been able to have better conditions, they own a boat and are able to catch fish and sell in the city.
- Life was definitely better at one time, there are old satellite TV antennas on properties that are probably left over from when Georgia Pacific had a large laminate operation in the region and the entire region had thousands of employees directly and indirectly associated with this business.
- The communities in 2009 was completely sustained on the Brazilian welfare system in 2009, but today with the new president welfare has been cut by half, thus making the communities more dependent on the success of the carbon credit project.
- The women are the head of the household, while the men are the head of land ownership. This is still the same, but it is interesting to know that woman control the family.
- Each village has a village leader who makes decisions on behalf of the village, a type of “final word”.
- The community is not treated well by politicians or other groups in the region, they have restrictions on if they are allowed or not allowed to have livestock for personal use.
- They have been told by local groups not to gain title and even have been told they are not allowed when clearly the law states differently.
- The illegal loggers make promises of help bring them a better life, in exchange for the right to gain access to the land behind their house. They are paid pittances and millions of dollars of wood are basically taken.
- The local population uses open fire cooking scenario with their pot of rice or beans sitting on two logs with the fire in between. .
- Some houses have gas stoves, but they have no money to buy gas.
- Increase in agricultural areas use to grow mainly cassava. Thereby, it is projected substantial increase in the forest areas affected by slash and burn.Incursion of illegal loggers and illegal activities (invasions) seeking areas to extract timber. It should be remarked that this is the most common perception of the future among villages.
- Increase in timber extraction in the core sections of the project areas, with a related diminishment of timber resources nearby the villages.
- Decline of fish stocks in rivers and water bodies due to over-fishing by large companies coming from Portel and Breves.

4.1.2 Interactions between Communities and Community Groups (CM1.1)

There is one community, there are no groups. The villages make up that one (1) community. There are no sub-groups, other groups that live in the land. All the people present are Riverine people.

They are so intertwined with each other they all are related and are 1st, 2nd, 3rd, 4th cousins with each other. They are all brothers, or sisters, or sister in laws or brother in laws.

It is rarely and outsider moves to the region and marries into a riberinho community, but in the event this happened, they would enter into the one (1) community.

The interactions between the project and the community group was a well-received interaction, they were very pleased to hear about the project. They are very much desperate for everything or anything they can gain from. In all questionnaires, there is always a 93% to 97% acceptance rate, with normally the 3% to 7% believing that they already have something we are offering.

In the case of offering land title 3% thought they already had title, but when we investigated in the government databases they did not.

4.1.3 High Conservation Values (CM1.2)

High Conservation Value	Caxiuana National Forest
Qualifying Attribute	The Caxiuana National Forest is considered the oldest in the Amazon region and the second in Brazil. It is amongst the most known conservation units in north of Brazil, and it has the presence of many important researchers from Brazil and abroad.
Focal Area	On the northern border of the reference region there is a national conservation unit called National Forest Caxiuanã. It was created in 1961 and today it has an area of 322,694.34 hectares. The Conservation Units are types of conservation areas that were created to allow sustainable use of the forest and its natural resources.

4.1.4 Without-Project Scenario: Community (CM1.3)

The most likely land use scenario without the project has the following features, the same that have been projected by local households. From these analyses we can come to the following conclusions about the without project scenario:

- Drastic increase in people who would be settled in the project area within 5 years. The project has helped demarcate the Riverine plots and this has given each family 100 hectares, this also has prevented settlers from taking this land. Either the project did this for the Riverine people or a land grabber would do it for themselves. Two evidences represent why the project would be completely invaded within 3 years if the project was to seize its security and land tenure operations: Megatown Trading Ltda a Brazilian company owned by a person from Sao Paulo had 76,230 hectares in Portel, Para, just north of the thousands of farms in Pacaja, Para. They removed their securities 2010 and within 2 years the land was completely claimed by new farmers and now the land is being completely

dismantled. A second case is a group named: Agropecuaria e Industrial Rio Tuere Ltda. This is owned by a Japanese group and they have 69,696 hectares in Portel, Para, slightly south of the project area between Anapu, Para and Pacaja, Para. In 2010 they removed their security and lost all their land to invasion in 3 years. Now the land of these two entities is lost to the title holders and over 500 land claims have been made on these properties. The properties are severely dismantled in the last 9 years and thus these are the predecessor examples to the project. The evidence is an evidence of two example landowners that were decimated in the direct vicinity and neighbour to this project.

- Local population with no plans or hopes for other economic factors such as black pepper or honey production. Black Pepper is an expensive investment at over 12,000 dollars per hectare. There is no financing at the bank for this type of project, thus without the project this would never even been considered – so without the project this is not happening.
- The local Riverine population would not have access to markets for their projects as well. The project is building up a supply chain – that is in the discussion and planning stages – that has the goal to help bring the products to the market at market prices.
- The local Riverine population would not have cook stoves and thus would be cutting more wood to make the large open fire cooking scenario, causing there to be more forest degradation.
- Increase in agricultural areas use to grow mainly cassava. Thereby, it is projected substantial increase in the forest areas affected by slash and burn.
- Incursion of illegal loggers and illegal activities (invasions) seeking areas to extract timber. It should be remarked that this is the most common perception in each village.
- Increase in timber extraction in the core sections of the project areas, with a related diminishment of timber resources nearby the villages.
- Decline of fish stocks in rivers and water bodies due to over-fishing by large companies coming from Portel and Breves.

According to the land use scenarios projected by local households, we summarized the Information in two possible outcomes:

- Cassava farming is incentivized thus occupying more and larger areas.
- The increment of Cassava plots pushes the agricultural frontier towards forest covered areas thus generating deforestation.
- Forested areas area degraded due to the dynamics of illegal logging activities.
- Fauna is even harder to find thus reducing the food options for local villagers.
- Degraded forest due to selective logging is sold to ranchers that implement pastures.

4.2 Net Positive Community Impacts

4.2.1 Expected Community Impacts (CM2.1)

Community Group	• Riverine Community • The entire community is all the riverine in the project area. • The community is broken into villages; these villages are better described as families. Each village had at least one riverine people trained in biodiversity and forest Monitoring
Impact(s)	• Number of riverine people participating in the monitoring • Improved livelihood • monitoring activities each month • One person in each village, with a general awareness to all members in each village.

	• Team of technicians completing the survey work for each family are trained to biodiversity monitor and report back any unique events.
Type of Benefit/Cost/Risk	• Actual benefit. • Capacity building related to the monitoring and management of the forest and biodiversity. • Very little cost, as the monitoring is done via cell phone camera when there is a unique event, such as large carnivores enter the village. • Job Opportunities
Change in Well-being	• Improved livelihood – more aware of the flauna and flora.

Community Group	• Riverine Community • Community leaders, one for each village, were trained of the riverine communities.
Impact(s)	• Better governance • They are trained to be the point person for the project to improve their level of organization, management and democratic governability • An association was set up to help the governability it is called: • Associacao de Ribeirinhos e Moradores de Portel, Para Ltda. • The goal is eventually to have this person to be the organization head of the project village and the person to head up large scale socio economic activity.
Type of Benefit/Cost/Risk	• Actual benefit • overall satisfaction of community
Change in Well-being	• Better governance

Community Group	• Riverine Community
Impact(s)	• Number of improved cooking stoves pilots implemented in local families • Capacity building related to efficient and improved cooking stoves • improvement in health
Type of Benefit/Cost/Risk	• Actual benefit • overall satisfaction and health of community
Change in Well-being	• Improvement in overall satisfaction and health of community

Community Group	• Riverine Community

Impact(s)	• Number of people trained in agroforestry techniques • Number of implemented agroforestry pilot projects • Capacity building • Improved agricultural practices
Type of Benefit/Cost/Risk	• Predicted benefit • overall satisfaction and food security of community
Change in Well-being	• Improvement in overall understanding that Casava, just because it is comfortable, is not the only option. • In all meetings and interviews and discussions it was informed way that cassava was not the best option from and economic standpoint. • At least 200 people.

Community Group	• Riverine Community • All riverine communities inside and outside within the leakage belt will also receive land title. • Each land title results in a commitment to the project.
Impact(s)	• Providing land ownership legal rights
Type of Benefit/Cost/Risk	• The land title undermines the illegal loggers • The land title brings stability to the local community. • It prevents land invasion by land invaders.
Change in Well-being	• Improvement in overall satisfaction and security of community

4.2.2 Negative Community Impact Mitigation (CM2.2)

There are no negative community impacts and hence there is no need for mitigation.

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

Net Positive community impacts are expected to be:

- A point of contact in each village for the project to be able to liason to allow better communication for the project. Better reporting of events.
- Governance and an association were set up to help coordinate the giving and coordinate better interactions in the community. A better collective group to defend off illegal loggers and drivers of deforestation(land grabbers)
- Cook stoves to replace what appeared to be open fires, making cooking more efficient and easier.
- Land tenure inside the community group for each family.
- Land title to bring stability in the area outside the project area in the leakage belt which will help bring a critical mass of de-conflicted land tenure.

4.2.4 High Conservation Values Protected (CM2.4)

The HCVs related to community well-being will not be negatively affected by the project; on the contrary, only positive impacts are expected

4.3 Other Stakeholder Impacts

4.3.1 Impacts on Other Stakeholders (CM3.1)

The Project is designed to generate only positive impacts to the stakeholders living in the LMA and it won't generate impacts to those living outside the 3Km buffer identified during the PRA. No other stakeholders have been identified to use or depend from the resources in the Project's Area or LMA.

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

As mentioned in the previous item, there are no expected negative offsite impacts thus no mitigation strategies are required.

4.2.3 Net Impacts on Other Stakeholders (CM3.3)

NA

4.4 Community Impact Monitoring

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

The project proponents have designed a Social Impacts Monitoring Plan in accordance to the results obtained in the rural participatory diagnosis developed in the project area and initially considering the indicators for the products of the proposed activities based on the identification of the necessities indicated by the population and the strategies foreseen to accomplish the project goals.

Table 5: Some activities and indicators of the social monitoring

Activity	Product Indicator
1. Capacity building related to the monitoring and Management of the forest and biodiversity. Opportunities to work as control/supervision *staff.*	• Community leaders of trained people in biodiversity and forest monitoring. Project made a goal to have 1 point person to talk to at each village, who would then follow the flow chart to relay information to the riverine people in that area. • Each village was trained to participating in the monitoring activities each month. • Technicians completing survey work in the project area and staying in the forest for long period of time are able to monitor biodiversity.
2. Improving organizational Capacities of each *community.*	• Number of local leaders participating in the development of an organization system • Number of local associations/organizations strengthened by the project activities
3.Providing land ownership legal rights versus *conservation results*	legal land owners (inside and outside project area and LMA)
4. Providing assistance to obtain land use rights over the forest owned by the private property landowners	Registered in the program to obtain the use from land that was titled as private property as par to the project and is shifted over to the riverine people to be their land. The CAR documents can be found in the government website for

	the Environmental Ministry for the state of Para.
5. Providing assistance and training in agroforestry techniques and implementing *pilot cases.*	Two trial projects for honey and andiroba oil with no pilot project yet for black pepper due to the massive implementation expenses.
6. Capacity building related to efficient and improved cooking stoves and implementation of pilot *demonstrative cases*	• People trained in the use of efficient improved cooking stoves •Improved cooking stoves pilots implemented *in local* families
8. Capacity building on the development of small *communitarian enterprises.*	• villages, trained in the development and management of a small scale enterprise • Number of small scale enterprises developed in the *project area*

A Participatory Census was carried out previously to the design of the definite Monitoring Plan in the Project area. This intends to collect information about the unsatisfied basic needs, health, education, family economy, communal organization, etc., which were come the project baseline and also represent the social indicators to be monitored throughout the project´s execution.

Likewise, in order to develop de social-environmental indicators for the results, several communitarian workshops will take place as a fundamental part of the Social Communitarian Monitoring System that will facilitate the follow-up and evaluation of the benefits of the project to improve the quality of life of the communities.

This system will have trained communitarian monitors that will continuously carry out the follow up activities evaluating the commitments, project activities and communities every 3 to 6 months. Also, the Communitarian Impacts Monitoring Plan will carry out an exhaustive annual assessment of the indicators. The Social Impacts Monitoring Plan aims at creating an association and mutual responsibility sense between the project and local communities in the management of social environmental impacts, as well as improving the perception of the social responsibility adopted by the project. PP is committed to develop a complete Social Impacts Monitoring Plan with the characteristics here mentioned in the first year from validation.

4.4.2 Monitoring Plan Dissemination (CM4.3)

The monitoring strategies will involve the participation of the Scientific Station Ferreira Penna (ECFPn) in Caxiuanã national forest and local community through participatory methods. The project is committed to develop a full monitoring plan within six months of the project validation and all data gathered from the monitoring strategies were part of a bigger database. The knowledge of the status of threatened species within the boundaries was enhanced with the monitoring strategies. Moreover, the communities and stakeholder were not only communicated about the monitoring reports, but also included in some of the strategies.

The plan was provided to local access via the project webpage and they have this.

In addition to this the technicians who travel to the land are required to carry all the most up-to-date documents and go through them with the communities at their request.

The head of each village were shown a hard copy of the results and a discussion took place to make sure that this person understood it.

4.5 Optional Criterion: Exceptional Community Benefits

4.5.1 Exceptional Community Criteria (GL2.1)

The project has identified the vulnerable and marginalised riverine community as the only community in the project area. In spite of having the strongest economy in Latin America, Brazil still has extremely high levels of poverty and inequality (Ferreira *et al*. 2006). According to Brazil's Institute for Applied Economic Research (IPEA), 21.4% of the population live below the poverty line and, as of 2009, the country ranked among the most unequal in the world (IPEA 2010). At the national level, however, poverty is spatially concentrated with significantly higher levels in the Northeast and North.

While in the Northeast both poverty and inequality are high, in the North there are high levels of poverty but relatively low levels of income inequality. This is partially explained by a relatively high prevalence of smallholders in the rural areas (Aldrich *et al*. 2006; Brondizio *et al*. 2009) and the unique quality of Amazonian urbanization where city dwellers maintain a strong link to rural areas (Godfrey and Browder 1996; Padoch *et al*. 2008). Government sponsored Amazonian settlement projects and various types rural development programs designed to foster family-based agriculture have had limited impact in reducing poverty.

Hence the location of the project itself in the north east part of Brazil, in the portel state of para assumes significance in the context of exceptional community benefits. Often, conflicts over land and forest resources with large capital enterprises and cattle ranchers have threatened the viability of smallholder agriculture (Walker *et al*. 2000; Aldrich *et al*. 2006). In some cases a lack of technical assistance combined with a disregard for rural infrastructure further add to the hardship of rural populations (Brondízio and Moran 2008; Ludewigs *et al*. 2009; Brondizio *et al*. 2009). At the local level, rural households react to these pressures by:

(1) selling farm lots and migrating to marginal lands or new settlements (Walker *et al*. 2000),
(2) moving to peri-urban areas or commuting to urban centers in search of off-farm employment (Murphy 2001), and/or
(3) adapting their portfolio of economic activities to benefit from changing market opportunities (Brondízio and Moran 2008).

For instance, smallholders contribute a significant share of the food commercialized and consumed in regional urban centers. While suffering from poor infrastructure and limited access to market and social services, rural small-holders do benefit from a rich natural capital in forest and water resources which can reduce their dependence on the cash economy (Murphy 2001; Perz 2005). As in other parts of the world, the ability of smallholders to adjust their livelihood strategies continues to be a key element in their long-term survival (Sherbinin *et al*. 2008).

According to results from analysis of "Poverty and Inequality in the Rural Brazilian Amazon: A Multidimensional Approach" by Gilvan R. Guedes et. Al., the state of Pará was considered the poorest among the Legal Brazilian Amazonian states in 1997 (excluding Maranhão, which has only a part of its territory included), with 50% of its population classified as living below the poverty line. In 2005, the Head Count (HC) ratio dropped to 44%, representing a proportional reduction of 12% in 8 years. Among the extreme poor, the HC ratio dropped from 21% to 16% (a relative decrease of 24%). Over the same period, the percentage of poor individuals in Brazil dropped from 35% to 31% (a relative reduction of 11%), while the percentage of extremely poor dropped from 16% to 11% (a relative decline of 31%). In spite of this decline, income poverty in Pará continues to be widespread as per the below table:

Headcount ratio (HC) in Pará and Brazil - 1997 and 2005

Geographic unit	Population group	1997 HC (Caloric Consumption Insufficiency)	2005	Δ (%)
Pará	Poor	50.00	44.00	−12.00
	Extremely Poor	21.00	16.00	−23.81
Brazil	Poor	35.00	31.00	−11.43
	Extremely Poor	16.00	11.00	−31.25

IPEADATA (2008); PNAD (1997, 2005)

Hence the identification of the riverine community categorizes as pro-poor and qualifies for the criteria under gold level: exceptional community benefits.

4.5.2 Short-term and Long-term Community Benefits (GL2.2)

Some of the short term benefits, which are estimated to occur during the project lifetime are summarised below:

Cook Stoves: The project has implement distribution of energy efficient cook stoves for farinha production for the community members. A number of people have been trained in the use of efficient improved cooking stoves and the number of improved cooking stoves pilots implemented in local families is part of the monitoring plan and theory of change. This ensures capacity building related to efficient and improved cooking stoves, improvement in health and Improvement in overall satisfaction and health of community. Also this reduces the firewood consumption as cook stoves are more efficient compared to open stoves traditionally used. This results in long term community benefits.

Land Tenure: The 2012 to 2017 period dealt with numerous trial and error type census of going back and forth to each house to gain the data necessary for entering the data into the system, and then came the deconfliction. So in the short term we were able to be successful in getting enough data to complete the CAR for each household. This qualifies under both short term and long term benefits.

The CAR is required to be able to gain bank financing for any type of project from sustainable fishing, to agro-forestry, to black pepper, to even buy the seeds for the Cassava. Thus the project saved the entire community from being unable to continue gaining the 2000 to 3000 reais from the government's development bank financing that Riverine people are entitled to, to gain their seeds for the Casava plantings.

Better land resource management. The project has initiated several awareness programmes for efficient use of land for agricultural practices and has also provided cook stoves which have the benefit of lessening the time for Farinha production and the overall cooking time. The community has been made aware and trained in alternative crops of agroforestry such as black pepper, honey or andiroba oil. The increment of traditional Cassava plots pushes the agricultural frontier towards forest covered areas thus generating deforestation. Hence the alternative techniques of agroforestry help the community to make farming sustainable. This qualifies under both short term and long term benefits.

The project focuses on three principal strategies to ensure the maintenance and enhancement of the project benefits beyond the project lifetime which categorise as long term benefits.

- Skill and capacity development.
- Goal of permanent Land ownership
- Health benefits

The skills are learnt by the communities throughout the projects lifetime. These relate to better land resource management. The project has initiated several awareness programmes for efficient use of land for agricultural practices and has also provided cook stoves which have the benefit of lessening the time for Farinha production and the overall cooking time. The protection of the forests itself ensure that due to lesser degradation there is greater potential to provide timber and non-timber forest products on a sustainable basis. The community has been made aware and trained in alternative crops of agroforestry such as black pepper, honey or andiroba oil. The increment of traditional Cassava plots pushes the agricultural frontier towards forest covered areas thus generating deforestation. Hence the alternative techniques of agroforestry help the community to make farming sustainable.

The goal of permanent land ownership to the communities is one of the main initiatives of the project and this provides permanent ownership even beyond the project lifetime. This provides the community to implement the skills and learning's on their own land which is self-sustainable and provides benefits beyond the projects lifetime.

The health benefits to the women and to the overall community are expected to continue beyond the projects lifetime. In a 2002 report, WHO listed indoor smoke from solid fuels among the top 10 risks to human health "Day in and day out, and for hours at a time, women and their small children breathe in amounts of smoke equivalent to consuming two packs of cigarettes per day," WHO reported in the 2006 report Fuel for Life: Household Energy and Health. As greenhouse gas emissions have increased, the smoke from kitchens in the developing world has escalated from a local to a worldwide threat. The average cooking fire produces about as much carbon dioxide as a car, and produces more soot, also known as black carbon. Reducing these emissions may be among the fastest, cheapest ways to fight global climate change.

The permanence of the overall short term and long term benefits associated with the project are captured during the feedback from the community during the periodic community meetings in which the majority of them prefer to continue the good practices.

4.5.3 Community Participation Risks (GL2.3)

There are a few risks associated with the participation in the project;

The acceptance of the CAR by the community faced several cultural barriers which are associated with the animosity generated towards the scheme by the illegal loggers. Hence the one on one meetings mitigated this risk by explaining that that CAR is the first step is a bureaucratic process to gain title, but CAR does allow bank financing, it does allow the map of the farm to be seen, etc.

Due to the patriarchal system in the riverine community the risk was that women will be excluded from participating in some activities due to cultural barriers and existing gender imbalances. The project endeavors to minimise this risk by providing more opportunities for women to express their views during the community meetings.

4.5.4 Marginalized and/or Vulnerable Community Groups (GL2.4)

Community group 1	Riverine community which are categorised as poor
Net positive impacts	With improvement in livelihood, the riverine community will experience the net benefits associated with the project at both short term and long term levels.
Benefit access	The short term and long term benefits ensure a better safety, security and sustainable living. Also the door to door meetings ensure that the project calibrates itself to meet the expectations of the benefit programmes implemented.
Negative impacts	The project has a role to facilitate feedback from the most poor members of the community. This process of regular interaction will prevent negative impacts on community members.

Community group 2	Women in riverine community
Net positive impacts	Improved livelihood of the women is expected to occur from the health benefits of using improved cook stoves for cooking. Also the lesser time it takes for farinha productions means they can spend more time involving in other activities such as agroforestry which ensures overall better livelihood.
Benefit access	The short term and long term benefits for women ensure a better safety, security and sustainable living. Also the door to door meetings ensure that the project calibrates itself to meet the expectations of the benefit programmes implemented.
Negative impacts	The project has a role to facilitate feedback from the most vulnerable and marginalized members of the community. This process of regular interaction will prevent negative impacts on community members.

4.5.5 Net Impacts on Women (GL2.5)

Cook Stoves: The net impacts on women trained in use of energy efficient cook stoves is positive as it saves time and there is a general improvement in the health due to improvement of indoor air quality. The health benefit to the women and to the overall community is expected to continue beyond the projects lifetime. In a 2002 report, WHO listed indoor smoke from solid fuels among the top 10 risks to human health. "Day in and day out, and for hours at a time, women and their

small children breathe in amounts of smoke equivalent to consuming two packs of cigarettes per day," WHO reported in the 2006 report Fuel for Life: Household Energy and Health. As greenhouse gas emissions have increased, the smoke from kitchens in the developing world has escalated from a local to a worldwide threat. The average cooking fire produces about as much carbon dioxide as a car, and produces more soot, also known as black carbon. Reducing these emissions may be among the fastest, cheapest ways to fight global climate change.

Also the lesser time it takes for Farinha productions means they can spend more time involving in other activities such as agroforestry which ensures overall better livelihood.

Women risk being excluded due to illiteracy and lack of time to attend meetings. The project addresses this issue by relying on door-to-door meetings.

4.5.6 Benefit Sharing Mechanisms (GL2.6)

- The focus of the project is to eventually give out a quarterly financial contribution to each family, but the project has not had the financial wherewithal to do that, as well as implementation of the social aspects.
- It is to set up a governance structure operated by the locals throughout the community.
- It is to counter other syndicates in the region that are set up and backed by the illegal logging syndicates. These other syndicates have no clear governance structure on what their actual goals for the people are. Such as granting them title. The other syndicates were behind the campaigns telling the riverine people not to do the government required CAR certificates – which resulted in the project doing it for everyone.
- To pay for the boat, the team, the survey work, and the work related to the land tenure has resulted in a cost of over USD 400,000 Dollars and this has been the focus as of this time. This land tenure is the first step, this is the CAR.
- The 150 cook stoves cost about USD 50 dollars, each but delivery to the region is an additional USD 100 dollars including freight, staff salaries.
- The cost of anthropologist and the staff and security has been a large overall factor taking up expenses. The anthropologists have been used to better address the social wants and needs of the population.
- 100% of the funds from credit sales have gone toward operational and benefit sharing expenses. The project has not reached a point of break even at the current time and will not yet.

4.5.7 Benefits, Costs, and Risks Communication (GL2.7)

Benefits to the community are listed in sections 4.5.2 and 4.5.6 above. Both short term and long term benefits result in net benefits to the community.

There is no cost borne by the community due to project implementation. The project staff bears the expense for the survey and travel.

There are no major perceived risks to the community due to the project implementation. However during the one to one meetings, the feedback of risks if any is received and appropriate mitigation steps are implemented. One of the examples of this is educating the community on the many benefits of obtaining CAR. The other examples include promoting the shift of interest towards sustainable agroforestry techniques.

The inherent risk associated with the project such as the failure to be able to sell the carbon credits at an acceptable price is beyond the control of the PP, though these were informed to the community.

4.5.8 Governance and Implementation Structures (GL2.8)

- The project has hired Anthropologists who specialize in traditional people to work as the liaisons for the project and interface with the locals. The project technicians are very good at interfacing, but the anthropologist and their ability to analyze the people helped improve on communication and implementation of the needs.

- The project governance is set up to work though the boat pilot who is the point of communication for the project, when the team is not on the ground. He relays all communication to back to the operational team; he does surveys of the people when the operational team needs information. He has been involved in the project since 2009, and knows every person in the project area, making ease of communication very good.

- The project works from small community of 4 to 10 houses at a time. It focuses on individual explanation and one on one discussion. It was very difficult to explain what “carbon” is or “credit” is and the word carbon credit is even more foreign to them. Carbon they don’t know what it is thus individual discussions has been key. However based on the questions that took place between 2012 and 2017 everyone accepted the project and wants to do the project. They see any benefit better than no benefit.

- Most discussions revolve around what they are comfortable with working on versus what we want them to do. Some more complex agriculture projects have been deemed uncomfortable and they prefer to focus on projects that have already been proven to work by someone else in the region. In other words: “no re-inventing the wheel”

- The governance is not designed to make broad and general decisions, it is to focus on each group of houses and their goals. Thus if one group of houses wants to do honey as a way to improve their economy then we don’t try to force this onto another group. We do what the other group of houses wants to complete.

4.5.9 Smallholders/Community Members Capacity Development (GL2.9)

a) The project has been working with the Professors of Geography at the University of Para. They have been advising and coordinating the aspect of land Tenure for the rural population within the project area. The University of Para is not directly affiliated with the project, but as Professor brings a major expertise to the programs and procedures related to fulfilling the more complex land tenure questions within the project area. Professor and his team of interns and technicians have been successfully working to implement these land tenure aspects and explain to the local community that benefits from this.

b) The Association of Riberinhos and Moradores of Portel, Para is working to become the representative body for the local population, by helping defending their rights against illegal loggers in the region, to help coordinate a formal security presence and to help represent them legally from illegal land invasion threats that are still ever present.

c) The Association of Ribeiorinhos and Moradores of Portel, is also acting as a custodian for those landowners who do not possess a Birth Certificate, tax ID number or ID number. For many people the distribution of these documents was done by the association for this monitoring period. Those people need to gain these documents before they are able to own the land the project is arranging for them. So the association holds the title as a custodian, where the title can only be transferred at the time that they possess this. Once all the paperwork is complete the project will pay for the people to gain these documents, in this case the main cost is transportation as the local notary is obliged by law to provide for free.

5 BIODIVERSITY

5.1 Without-Project Biodiversity Scenario

5.1.1 Existing Conditions (B1.1)

The Eastern Amazon, where the project is inserted, is an area that holds the biggest concentration of the timber industries (74% of timber production in Pará comes from the Eastern Amazon). The logging industry is responsible not only for feeding illegal logging schemes, but also cleaning the forest to build roads. Specifically these roads built by the loggers are determining a new pattern of occupation inside public lands (IBGE 2007). Nonauthorized logging is more concentrated in the extreme east of Pará, but it is moving *towards the Xingu-Tocantins interfluvium (Veríssimo et al. 2011).*

As part from the "without project" scenario it is likely that the deforestation drivers continue to push forward, and human occupation follows this movement. Eastern Amazon is the most populated region of the Brazilian Amazon and anthropogenic actions, such as forest cleaning, are one of the many aspects affecting local biodiversity, especially mammalian diversity rates (Lopes & Ferrari 2000).

It is likely that "without project" we would at a minimum have 100% land claims on all aspects of the land within 2 to 5 years, with massive small plots opened up to make claims within this period of time as well, and 50% deforestation within 15 to 20 years.

Highway paving is not only intrinsically connected with anthropogenic actions but also with either the expansion of the soybean industry or cattle raising activities. These commodities have experienced a considerable growth in 2005 and the constant market demands indicate that this growth tends to continue (Nepstad et al. 2006). Under the "without the project" scenario it can be inferred that this area might be affected by this expansion, causing *biodiversity losses and soil degradation.*

5.1.2 High Conservation Values (B1.2)

High Conservation Value	Caxiuana National Forest
Qualifying Attribute	The Caxiuana National Forest is considered the oldest in the Amazon region and the second in Brazil. It is amongst the most known conservation units in north of Brazil, and it has the presence of many important researchers from Brazil and abroad
Focal Area	On the northern border of the reference region there is a

	national conservation unit called National Forest Caxiuanã. It was created in 1961 and today it has an area of 322,694.34 hectares. The Conservation Units are types of conservation areas that were created to allow sustainable use of the forest and its natural resources

5.1.3 Without-project Scenario: Biodiversity (B1.3)

Another element that encourages anthropogenic actions along with deforestation in the area is road construction and paving (Nepstad et al. 2001). Within a distance of approximately 60km of the project zone boundaries, is the municipality of Senador José Porfírio, which possesses an interconnection with the Transamazônica Road (BR-230) through the road PA-167. Considering that more than two-thirds of the Brazilian Amazon deforestation has taken place within 50km of major highways, deforestation close or in the project zone is likely to happen under the "without project" scenario, especially with Brazilian Federal Governmental Development Plan (Soares-Filho et al. 2004).

5.2 Net Positive Biodiversity Impacts

5.2.1 Expected Biodiversity Changes (B2.1)

As described in B2.1, the project focus exclusively on conservation measures within the project boundaries and its buffer, which makes negative offsite effects unlikely to happen. Besides, monitoring of flora and fauna will assure that any minimal offsite negative effects were taken care of immediately. Also, as mentioned on G3.2, the Project's activities do not involve the introduction of non-native species and the engagement of local community contributes for the socio-environmental safeguarding activities.

It is also very unlikely that the Project's activities within its boundaries (implementation of agroforestry techniques, energy efficient cook stoves for farinha production, and tenure rights) have any offsite impact. Therefore, considering these activities and "with project" scenario, the effects of the project on biodiversity is positive.

Biodiversity Element	Monitor vegetation cover / land use patterns via satalltes from both Google Earth, and the Brazilian Space Agency which has more up to date maps and fire situations. Monitor INCRA the federal land agency and ITERPA the state land agency for land claims in the project area which may show in very short order where someone plans to enter and start deforesting. http://terrabrasilis.dpi.inpe.br/app/map/deforestation?hl=pt-br This shows all the deforestation in the area, with the project area

	are able to contain most deforestation to very small "planned plots". So most tree cover and animal corridors stay intact. Just south of the project area is pure destruction in the same time period.
Estimated Change	Maintenance or improvement of carbon stocks
Justification of Change	Periodic analysis of satellite imagery and GIS analysis

Biodiversity Element	Monitor area-limited species: species that require large patches to maintain viable populations, such as large carnivores. That will indicate potential habitat losses and prey availability
Estimated Change	Increase in number of specific category species noted by sightings during regular patrolling
Justification of Change	Increase in number of specific category species as the project area is not disturbed by agents of deforestation. This is noted by sightings during regular patrolling

Biodiversity Element	Monitor resource-limited species: species requiring specific resources, such as frugivorous species, nectar species, snags etc. Bats can be great bio indicators as they have different feeding habits, such as insects, fruits, nectar/pollen, blood etc. They are also abundant through the region and its taxonomy has been well documented
Estimated Change	Increase in number of specific category species noted by sightings during regular patrolling
Justification of Change	Increase in number of specific category species as the project area is not disturbed by agents of deforestation. This is noted by sightings during regular patrolling

Biodiversity Element	Monitor "special interest" species, critically endangered species, endangered species, and threatened species (IUCN, IBAMA)
Estimated Change	Increase in number of specific category species noted by sightings during regular patrolling

Justification of Change	Increase in number of specific category species as the project area is not disturbed by agents of deforestation. This is noted by sightings during regular patrolling

5.2.2 Mitigation Measures (B2.3)

Although the Project activities are not fully implemented, monitoring and reporting activities to prevent and remove land grabbers and illegal logging activities (thus stopping the first stages of the deforestation process) have been happening on the ground since 2009 These activities help ensuring that local biodiversity is protected and that their ecosystems are not fragmented even when we still do not have an implemented biodiversity inventory.

5.2.3 Net Positive Biodiversity Impacts (B2.2, GL1.4)

Net impacts on biodiversity resulting from the project activity are expected to be positive, as outlined in the baseline scenario. Net positive impacts on biodiversity were demonstrated over time through periodic monitoring and reporting of biodiversity indicators as per the Biodiversity Monitoring Plan.

5.2.4 High Conservation Values Protected (B2.4)

The project helps make a major animal corridor with the following reserve in the state of Para.

The reserve of Caxiuna, the 2nd oldest reserve in the Amazon, and the project area connecting to the reserve, this allows for animals to traverse in this corridor back and forth. In absence of the project the animals would not have the ability to do this. This proves the project has a significant bio-diveristy impact as animal corridors are critical for various reasons.

5.2.5 Species Used (B2.5)

Refer Appendix 3 of this report Tree species in the Project area and Project Zone

5.2.6 Invasive Species (B2.5)

None of the Project's activities will introduce invasive species or genetically modified organisms. The Project's developer will only approve agroforestry activities that use native species commonly known to occur in the Para region and are not in the Global Invasive Species Database before approving the utilization of particular species.

5.2.7 Impacts of Non-native Species (B2.6)

NA

5.2.8 GMO Exclusion (B2.7)

Guaranteed that no GMOs are used to generate GHG emissions reductions or removals.

5.2.9 Inputs Justification (B2.8)

NA

Waste Products (B2.9)

NA

5.3 Offsite Biodiversity Impacts

5.3.1 Negative Offsite Biodiversity Impacts (B3.1) and Mitigation Measures (B3.2)

The conservation itself as the aim of the project is already a mitigation strategy. The entire area werenefit from it since there is no activity involving any kind of human disturbance. Furthermore, conservation of the project area increases landscape integrity and adaptation, avoiding edge effect, as described in the "with project" scenario, benefiting biodiversity (Wunder 2008).

A representative conservation area in which biodiversity can persist guarantees the maintenance of ecological processes and contributes to avoid fragmentation of the ecosystem, both through timber extraction and agricultural activities. The project will help landscapes enhancing its ecological health, including its adaptability to climate change and consequently reducing offsite greenhouse gas emissions (Wunder 2008). Moreover, the conservation of this area will maintain microclimate, avoiding wildfires (Soares-Filho *2006).*

Hence as there are no offsite negative biodiversity impacts, there are no planned mitigation measures.

5.3.2 Net Offsite Biodiversity Benefits (B3.3)

The Project is expected to generate positive leakage on biodiversity by avoiding ecosystem fragmentation through voluntary engagement of neighbour communities in the Project's activities. As described above, the project focus exclusively on conservation measures within the project boundaries and its buffer, which makes negative offsite effects unlikely to happen. Besides, monitoring of flora and fauna will assure that any minimal offsite negative effects were taken care of immediately. Also, as mentioned on G3.2, the Project's activities do not involve the introduction of non-native species. Therefore, considering these activities and "with project" scenario, the effects of the project on biodiversity is positive

5.4 Biodiversity Impact Monitoring

5.4.1 Biodiversity Monitoring Plan (B4.1, B4.2, GL1.4, GL3.4)

Biodiversity Element	Monitor vegetation cover / land use patterns
Estimated Change	Maintenance or improvement of carbon stocks
Justification of Change	Periodic analysis of satellite imagery and GIS analysis

Biodiversity Element	Monitor area-limited species: species that require large patches to maintain viable populations, such as large carnivores. That will indicate potential habitat losses and prey availability
Estimated Change	Increase in number of specific category species noted by sightings during regular patrolling
Justification of Change	Increase in number of specific category species as the project area is not disturbed by agents of deforestation. This is noted by sightings during regular patrolling

Biodiversity Element	Monitor resource-limited species: species requiring specific resources, such as frugivorous species, nectar species, snags etc. Bats can be great bio indicators as they have different feeding habits, such as insects, fruits, nectar/pollen, blood etc. They are also abundant through the region and its taxonomy has been well documented
Estimated Change	Increase in number of specific category species noted by sightings during regular patrolling
Justification of Change	Increase in number of specific category species as the project area is not disturbed by agents of deforestation. This is noted by sightings during regular patrolling

Biodiversity Element	Monitor “special interest” species, critically endangered species, endangered species, and threatened species (IUCN, IBAMA)
Estimated Change	Increase in number of specific category species noted by sightings during regular patrolling
Justification of Change	Increase in number of specific category species as the project area is not disturbed by agents of deforestation. This is noted by sightings during regular patrolling

5.4.2 Biodiversity Monitoring Plan Dissemination (B4.3)

A summary of the monitoring plan were translated to local language and disseminated to the community groups and other stakeholders prior to validation. Monitoring results were planned to communicate through meetings with the local administration on an annual basis.

In addition to this the technicians who travel to the land are required to carry all the most up-to-date documents and go through them with the communities at their request.

The head of each village were shown a hard copy of the results and a discussion took place to make sure that this person understood it.

5.5 Optional Criterion: Exceptional Biodiversity Benefits

5.5.1 High Biodiversity Conservation Priority Status (GL3.1)

Not applicable as this gold level biodiversity criteria is not claimed due to insufficient data

5.5.2 Trigger Species Population Trends (GL3.2, GL3.3)

Not applicable as this gold level biodiversity criteria is not claimed due to insufficient data

APPENDICIES

The following appendices may be used if appropriate. Delete the instruction and heading if not used.

Appendix 1: Stakeholder Identification Table

Use this appendix, if necessary, to identify stakeholders and fulfill the requirements of Section 2.1.7 above. Modify the table, if necessary, to suit the project activities, or delete if not used.

Stakeholder *Identify communities and any community groups within them, any cross-cutting community groups, and list other stakeholders*	Rights, Interest and Overall Relevance to the Project
Local Villages Individual houses outside of villages	Right to 100 hectares per family, limited by government regulations. These communities are old communities that are along the river. They complete small cassava plantations. They have an interest in direct benefits from the project, such as the cook stoves they have, the agro-education about black pepper plantations – which is a much better economic activity.
Fifteen Private Property Landowners	Titled land of 1, 23, 066 hectares. Some land was divided out and set aside for the local villagers, so the area of land owned has transferred to the people who need it more.
Local villages outside of Project Area.	Right to 100 hectares per family. These families that live near the project area, and are not in the project area, but the project also sees it necessary to help them gain title to their land of 100 hectares per family. The reason is that all the local inhabitants inside and outside the project area that were able to gain title will also be able to bring stability because they were less reliant on the illegal loggers and operators in the region.

Appendix 2: Project Activities and Theory of Change Table

Use this appendix, if applicable, to identify project activities and fulfill the requirements of Section 2.1.8 above. This is an example of just one method of representing the theory of change. Results chains/flow diagrams are another effective way to represent the theory of change. Modify the table, if necessary, to suit the project activities, or delete if not used.

Activity description	Expected climate, community, and/or biodiversity			Relevance to project's objectives
	Outputs (short term)	Outcomes (medium term)	Impacts (long term)	
Capacity building	Better understanding of the importance of protecting the forest and how forest conservation werenefit their livelihoods. Opportunity to develop local businesses through an external fund.	In own land illegal activity is minimised and protection is enhanced	Forest is protected Illegal activities are minimized	Improved forest management practices with community participation
Improve local livelihoods for villagers	Secured land tenure Diversification of food through agroforestry practices thus an improvement in local nutrition More efficient technologies to produce farinha therefore less time is consume in this activity. Generation of income from monitoring activities.	Improvement in agricultural practices and promotion of income from other activities	Food security is increased Positive impact on average income	Improvement of livelihoods by capacity building

Participatory Rural Appraisal	Survey conducted in area constituted by the Project's Boundary and a 15km buffer to gather socio-economic information	Identification of deforestation drivers and agents by means of survey	Implementation of mitigation measures to reduce impact by drivers of deforestation	Positive effect on maintenance of carbon stocks
Improvement of health	Distribution of improve cookstoves to households	Better air quality is ensured in households	Longer life expectancy	Improvement of livelihoods

Appendix 3:

Commonly used tree species timber by local habitants

Common name	Scientific name
Acapu	*Vouacapoua americana*
Cupiuba	*Goupia glabra*
Cedro vermelho	*Cedrela odorata L*
Itauba	*Mezilaurus*
Jacareuba	*Calophyllum brasilense*
Maçaranduba	*Manilkara huberi*
Paricarana	*Parkia*
Piquia	*Caryocar villosum*
Tachi preto	*Tachigalia paniculata*
Louro preto	*Ocotea sp.*