AMAZON RIO REDD+ APD

GHG EMISSION REDUCTIONS FROM AVOIDING PLANNED DEGRADATION

EBCF Empresa Brasileira de Conservação de Florestas

VCS+CCB Draft Project Description prepared by:

CO2X Conservação de Florestas

Project Title	**Amazon Rio REDD+ APD Project** GHG Emission Reductions from Avoiding Planned Degradation
Version	V1.0
Date of Issue	16/09/2013
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1 GENERAL

1.1 Summary Description of the Project (G3)

The Amazon Rio Project consists in the conservation of four private areas - the Amazon Rio I, II, III and IV Reserves in the Manicoré Municipality in the state of Amazonas, Brazil. The project activity is based on the cessation of the planned logging that had been operational since 1999, added to the implementation of a Management Plan focused on emission reductions, biodiversity conservation and sustainable social development in the region, including the promotion of eco-tourism and scientific research.

The project seeks the conservation, management and monitoring of the Amazon Rio Reserves through the protection of the area and promotion of sustainable practices in the buffer zone. It aims to protect an area of approximately 20,387 hectares (ha) of primary forest by avoiding planned deforestation (APD). In 1998 a logging plan was approved for 25 years on 19,800 ha and between 1999 and 2010 approximately 4,348 ha were degraded due to the logging operation. In February 2011 the area was acquired by *Empresa Brasileira de Conservação de Florestas* (EBCF) with the purpose of conserving the forest and an application to transform the areas into Private Reserves for Sustainable Development (*Reservas Particulares de Desenvolvimento Sustentável – RPDSs*)[1], was filed at the same time.

The project will avoid the emissions of carbon dioxide (CO2) by avoiding the planned logging of 19,800 ha that would have occurred without the intervention of the carbon project, and the revenues from the carbon credits will be use to keep the forest intact through the implementation of the Management Plan. The project intends to ensure its financial sustainability by selling carbon credits for the environmental services the forest area provides such as carbon storage, and is also considering other sources of income due to its high implementation and operational costs. The project is estimated to avoid the emissions of approximately 2,3 million tonnes of carbon dioxide into the atmosphere over a period of 38 years.

The project area is of outstanding conservation importance, especially considering its (i) high biological diversity and concentration of endemic and pharmacological species; (ii) extensive areas of plains, which are important for reproduction and survival of many plant and animal species, specially birds and *herpetofauna* and (iii) potential for ecotourism and environmental education, including scientific research.

[1] State Conservation Unit model provided in the Amazonas State Law no. 53 of June 2007, which instituted the SEUC (State System of Conservation Units) and Decree 30.108 of June 2010, which regulated the RPDSs.

The creation of these Private Reserves in this region also corroborates to the consolidation of the strategy of mosaic and ecological corridors, combining public and private Conservation Units. This situation prevents situations of conflict between the State, landowners and residents in the buffer areas and creates opportunities to establish integrated actions, optimizing human and financial resources, especially for law enforcement and environmental control.

In addition to this, it is important to considerer the fact that local communities that do not live in these areas, usually use the forest for extractivism (e.g. nuts, fruits), fishing and hunting, and have direct interest in conserving the forest for their food and economic security and cultural practices. Because of this, these communities play an important role as 'guardians', contributing significantly to the monitoring and control against illegal logging, fishing and hunting as well as forest fires. In this context, the Amazon Rio Project plays an important role in this corridor of Conservation units, as the implementation of the project will be responsible to help the livelihood of the population and consequently the conservation of the forest.

There is an estimated population of approximately 350 families living in 15 communities surrounding the project area. The social-economic benefits will derive from the implementation of the Management Plan, which has a strong social development component that will support the local communities and promote sustainable development in the region.

The project will be based on participatory processes in which local communities located in buffer zone will contribute to the protection of the area. Several community programs focused on improving access to health, education and income generation are being designed using as reference the "Programa Bolsa Florest" [2] (Forest Conservation Allowance), the largest and most successful PES program implemented in Amazon. These programs have the purpose of improving the livelihoods of these communities, strengthening their organizational capacity and promoting long-term conservation and sustainability.

1.2 Project Location (G1 & G3)

The Amazon Rio Project is located in the Southern region of the Amazonas State in Brazil, by the riverbanks of Madeira River in the municipality of Manicoré (Figure 1), between the Sustainable Development Reserves (*Reservas de Desenvolvimento Sustentável – RDSs*) of Rio Madeira and Rio Amapá (Figure 2) and approximately 333 km from the capital Manaus by plane and 427 km by river navigation.

[2] Bolsa Floresta-FAS, http://fas-amazonas.org/programa-bolsa-floresta/?lang=en

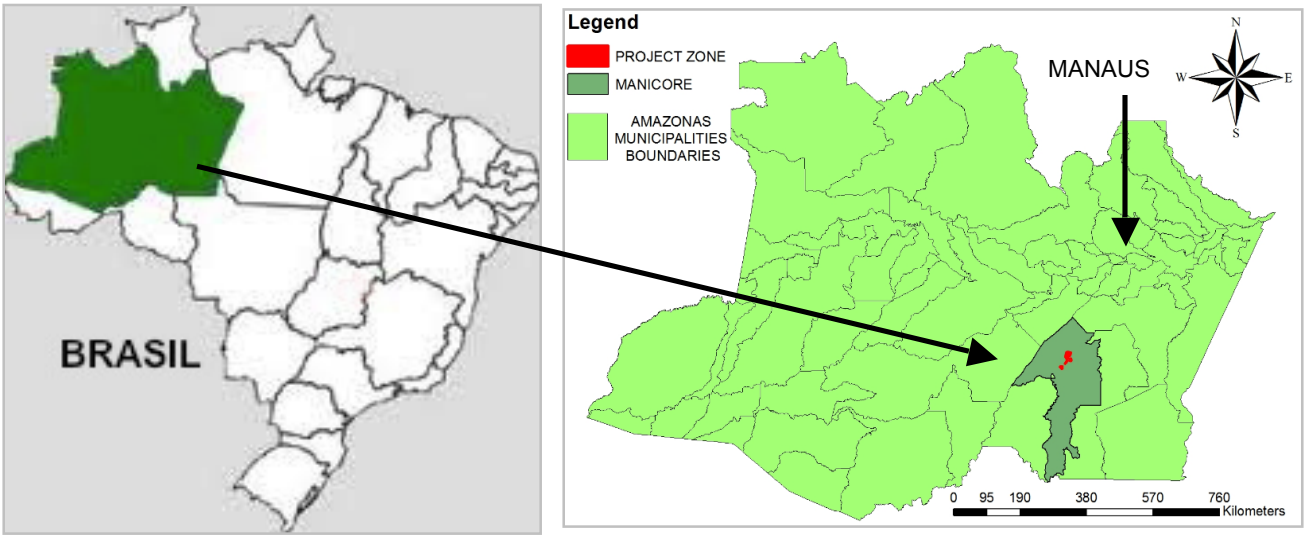

Figure 1. Project location in the Municipality of Manicoré, Amazonas State, Brazil

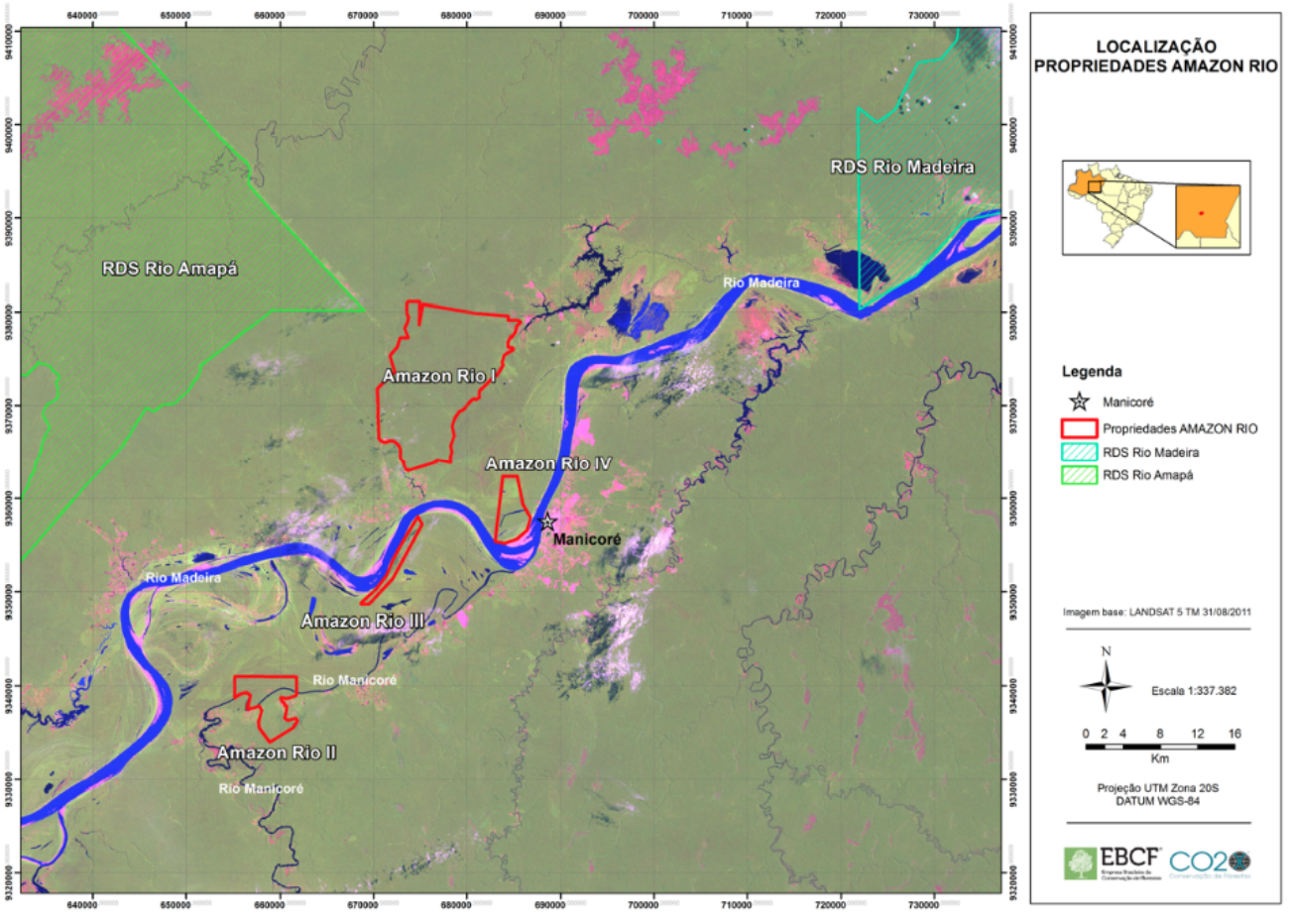

Figure 2. Project location

Geology and Geomorphology

The state of Amazonas is characterized by an extensive and sedimentary phanerozoic rock coverage (*Paleozoic Era*) distributed in three main basins knowing as Acre, Solimões, Amazonas & Alto Tapajós basins, dominated by igneous, metamorphic and sediment rocks. Specifically, the region of the Amazon Rio Project is located in the same sedimentary base of Solimões basin and for this reason has similar characteristics, such as the Aluviões Holocênicos, Içá and Detrito-Laterítica rock formations.

Topography and Soil

This region is characterized by a flat terrain (plains) and primary vegetation, composed by dry land and floodplains with some *igapó* areas due the influence of Manicoré River. According to the IBGE[3] and EMBRAPA[4], the most common soil types in the region are *latossolo* and *argissolo*, but it is also possible to find *gleissolo*, alluvial, *neossolo*, *planossolo*, *plintosolo* and *nitosolo* soils.

Climate and Hydrography

The climate in the region of the Rio Madeira is known as humid equatorial, with an average temperature of 27 °C, the humidity relative of the air ranging between 85 and 90% and the annual rainfall is between 2.200mm to 2.800mm/year. Information available from RDS Rio Amapá indicates that between January and March the rainfall is more intense with monthly precipitation between 300 and 350mm, while the driest months are July and August with average monthly precipitation around 50mm.

The Amazon region is defined by watersheds with 'white' (muddy) water rivers and tributaries of the Amazon River. The city of Manicoré is influenced by the Madeira and Manicoré rivers that are respectively 'white' and black water rivers and contribute to the local biotic and abiotic conditions. The areas considered more ecologically fragile are located on the left bank of the Madeira River. The importance of the Madeira River in the region is evidenced by its drainage basin, which includes 15% of the Andes, 41% of the Brazilian shield basin and 44% of the Amazon floodplains, and Manicoré is located in the last two formations.

1.3 Conditions Prior to Project Initiation (G1)

The Southern region of the Amazonas State is extremely important from an environmental conservation perspective since it serves as buffer to the Amazonian "arch of deforestation" originating from the Southeast border with Mato Grosso State, where large-scale land use conversion, in which the forest is felled in order to establish soy farms and cattle ranches, is a major threat to the environment.

[3] Brazilian Institute of Geography and Statistics (IBGE) 2000, http://goo.gl/CNQbex
[4] Brazilian Agricultural Research Corporation (EMBRAPA), http://www.cnps.embrapa.br/

Historically this deforestation has occurred mainly in the states of Pará, Mato Grosso, Rondônia, Tocantins and Maranhão, which comprise the frontier areas known as the "arc of deforestation". Until now, the state of Amazon was kept relatively conserved, however, the decline in forest cover and the lack of available land due to the dense population in this region has been driving a visible tendency of migration towards the central Amazon region, in particular the Amazonas State, resulting in illegal occupancy and illegal deforestation. Therefore, preventing deforestation and conserving private areas is a major challenge to sustainable development in the Amazon and of vital importance.

The four properties comprising the project area were acquired by *Empresa Brasileira de Conservação de Florestas* (EBCF) in February 2011 with the main purpose of conserving the forest, its biodiversity and improving the living conditions of local communities that use the forest resources as a part of their livelihood system. Until then the project area had been managed for over a decade for timber extraction through a 25-year logging plan. In 1998 the operator had gained authorization to undergo selective logging in 97% of the property. To date 4,348 ha have been harvested and without the ceasing of the operations in 2011 it is estimated that approximately 2,3 million tonnes of CO2 would be released to the atmosphere over 38 years.

The project area is composed of Dense Ombrophilous Forest ("terra firme") (79%), Alluvial Dense Forest ("varzea") (19%) Pioneer Formations (1%) and water streams (1%) (Figure 3). Most of the area has been used by the 15 communities that live nearby for many generations. From the dry land they extract Brazil nut and fruits and from the alluvial forest rubber. They cultivate manioc, banana, açaí and coffee amongst other crops. They rely on these traditional foods as well as fishing and hunting for subsistence and some income. Access to health care and education have always been a major problem within these communities, and it is one of the programs to be implemented with the carbon finance through the RPDS's Management Plan.

Figure 3: Vegetation in the project area

1.4 Project Proponent (G4)

Empresa Brasileira de Conservação de Florestas S.A. (EBCF)

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1.5 Other Entities Involved in the Project (G4)

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1.6 Project Start Date (G3)

The project start date is 08 February 2011, the date in which EBCF acquired the properties with the purpose of conservation and ceased all logging operations.

On 11 February 2011 EBCF initiated the process to convert the area into a mosaic of four Private Reserves for Sustainable Development (RPDSs) as per State Law no. 53 of June 2007 and Decree 30.108 of June 2010. The project proponent's motivation, as clearly stated on the application, is to conserve the area and its biodiversity, promote sustainable development by supporting local communities, reduce emissions by avoiding deforestation and to offer carbon offsets in the voluntary carbon market, consequently helping to address climate change.

1.7 Project Crediting Period (G3)

The project has a crediting period of 38 years. The start date of the crediting period is 08 February 2011 and the end date of the crediting period is 07 February 2049.

The first crediting period of 38 years is equivalent to the number of years remaining in the authorized Logging plan (25 years starting in 1999) and another 25 years referent to a new forest management plan that would be required, as per common practice in the host country. The logging activities could continue beyond the 38 years for a second crediting period.

2 DESIGN

2.1 Sectoral Scope and Project Type

- Project Scope: Agriculture, Forest and other Land Use (AFOLU)
- Project Category: Reduction Emission from Deforestation and Degradation from Planned Deforestation (REDD-APD)
- Type of Activity: Improved Forest Management - Logged to Protected Forest (IFM LfPF)

2.2 Description of the Project Activity (G3)

The Amazon Rio Project consists in the conservation of the forest area at Amazon Rio Reserves. The main project activity is the cessation of the planned logging that was operational since 1999 as well as the design and implementation of a Management Plan focused on GHG emission reductions, biodiversity conservation and sustainable social development for the communities living around the project area, including the promotion of eco-tourism and scientific research as part of the activities.

Several community programs focused on improving access to health, education and income generation are being designed as part of the Management Plan. The purpose is to improve the livelihoods of these communities, strengthen their organizational capacity and promote forest conservation. These programs are being designed using as reference the "Programa Bolsa Floresta" (Forest Conservation Allowance), the largest and most successful PES program implemented in the Amazon.

3 LEGAL STATUS

3.1 Compliance with Laws, Statues, Property Rights and Other Regulatory Frameworks (G4 & G5)

Considering that the project is based in conservation activities and sustainable management of non-timber products, there are no conflicts between these activities and any national (municipal, state, or federal) or international laws and regulations, the relevant laws and regulations that support this assumption are listed below:

- Federal Law no. 12.187 of 2009 – instituted the National Policy on Climate Change and Federal Decree no. 7390 of 2010 – regulates the National Policy for Climate Change
- Federal law no. 6.938 of 1981 – regarding the National Policy for the Environment
- Federal Law no. 12.651 of 2012 – established the new Forest Code
- Federal Law no 9.985 of 2000 – established the Private Reserve of Natural Heritage
- The country's commitment with the UNFCCC, ratified by the Decree no.1 of 03/02/1994
- State Law no. 3135 of June 2007 – instituted the National Policy on Climate Change, environment conservation and sustainable development in Amazonas
- State Law no. 53 of June 2007 – instituted the SEUC (State System of Conservation Units) and Decree 30.108 of June 2010 - regulated the RPDSs.

- Decree 5.975/2006 – regulate the exploitation of forests and succeeding formations mentioned in art. 19 of Law 4.771/1965, as well as the application of articles 15, 16, 20 and 21.
- Instruction no. 5 11/12/2006/MMA, Ministry of Environment[5] – this law gives all the technical procedures for the preparation, presentation, execution and evaluation of technical sustainable management plans for forests and its primitive forms of succession in the Amazon.
- CONAMA Resolution – no. 406/2009 – establishes technical parameters to be adopted in the preparation, presentation, technical evaluation and implementation of Sustainable Forest Management Plan for native forests timber and its forms of succession in the Amazon.

With regards to laws, legislation and policies about REDD+, at the time of the elaboration of this document, none national or international framework have been established. There are, however, some ongoing processes that were considered in this study.

Current negotiations at UNFCCC indicate a phased-approach implementation of REDD+ mechanisms in which pilot projects are also recognised. The Amazon Rio Project is a pilot initiative and the first of its kind, as it is being developed in a Private Reserve for Sustainable Development, also the first RPDS registered in the country. This tends to help with the national process as a reference in the design of the national REDD+ mechanism.

The total project area is composed by 12 separate properties that together represent 4 contiguous areas. The land and carbon rights are supported by 12 public deeds issued in name of the project proponent, EBCF. All the documentation is available upon request.

3.2 Evidence of Right of Use (G5)

Between the 1970s until 2011 the project area was owned by Valdenor Campos da Costa's family. In 2011 the properties were transferred to *Empresa Brasileira de Conservação de Florestas* (EBCF), in which Valdenor Campos da Costa Junior became a partner, with the purpose to transform the areas into four Conservation Units. The land tittles are registered in the Land Registry Office of Manicoré-AM, under registration nos. 2045, 2046, 2047, 2048, 2049, 2050, 2052, 2053, books 2-6, pages 116-123.

All the legal rights for land use within the project limits are justified by the State System of Conservation Units of Amazonas, in the category of Conservation Unit for Sustainable Use establishing the Private Reserve for Sustainable Development (RPDS), regulated by the Decree 30.108 of June 2010. RPDS is defined as a private Conservation Unit created from a voluntary manifestation of its owner for environmental conservation with the intention of promoting nature conservation and natural resources management for sustainable development in perpetuity. These areas also accept the presence of local communities, within or outside its boundaries, which may use its natural resources.

[5] This normative is relevant for this project, since it determines the time of the activities of a sustainable forest management plan, as the 25-year cycle and also the procedures to implement a low-impact logging plan

4 APPLICATION OF METHODOLOGY

4.1 Title and Reference of Methodology

VCS VM0011: Methodology for Improved Forest Management – Logged to Protected Forest (LtPF): Calculating the GHG Benefits from Preventing Planned Degradation, version 1.0.

4.2 Applicability of Methodology

The project activity fully complies with each of the applicability criteria stated in the methodology VM0011 v.1, as described below:

Table 1: Methodology applicability criteria

Criteria	Conditions of applicability of Methodology	Justification
Project Type	Improved Forest Management - Logged to Protected Forest; with no removals (e.g. harvesting, planned biomass burning) occurring in the Project Area upon implementation of the actual project (with the exception of felling sample trees for validating or deriving project-specific parameters presented in Section 7.2.4).	The project activity consists in the complete cessation of the selective logging plan activities, operational between 1999 and 2010 (12 years).
Condition of the Forest	Intact forest or previously logged forest (also known as forest degraded due to logging) Land within the Project Area must have qualified as forest at least 10 years before the project start date.	The project area (which had a license for the logging plan) encompasses 19,800 ha of primary Amazon rainforest, which 4,348 ha were degraded due to the logging operation between 1999 and 2010. Nonetheless the total area of project was forested 10 years before the project start date (February 2011).
Type of Forest	Tropical forests including evergreen tropical rainforests, moist deciduous forests, tropical dry forests and tropical upland forests (see Appendix A for definition), except peat swamp forests.	The vegetation cover in the project area is Dense Ombrophylous Forest (Amazon rainforest).

Forest Product Type	Harvested wood products i.e., sawlog, pulplog and commercially harvested fuelwood	The logging plan approved in 1998 encompasses harvested timber for wood products purposes. The harvested wood was sold as sawlog to be used in civil construction.
Driver of Degradation	Legally sanctioned logging (timber and commercially harvested fuelwood) undertaken in accordance with the relevant laws, regulations and codes of practice of the country in which the Methodology is being applied.	The project area was legally sanctioned for selective logging in accordance with the relevant laws and regulations in Brazil, approved in 1998 by IPAAM[6] and IBAMA[7].
Baseline Activities to be Displaced	Legally sanctioned selective logging for specific forest product types presented above.	The project area is legally sanctioned for selective logging for commercial timber purposes.
Project Area	Must be designated, sanctioned or approved by the relevant authority in the host country for the selective logging	The project area was designated, sanctioned and authorized by the relevant authority in Brazil for the selective logging of 19,800 ha, which represents the project area.
Carbon Pools	**Carbon Pools considered:** • Aboveground biomass (AGB) of all trees as defined by the relevant authority in the host country • Harvested wood products (HWPs) based on domestic production not domestic consumption • Deadwood (DW) **Carbon Pools not considered:** • Aboveground biomass (non-trees) • Belowground biomass • Soil • Litter	The only carbon pools considered are: aboveground biomass (AGB), harvested wood products (HWPs) based on domestic production not domestic consumption, and deadwood (DW).

[6] Environmental Protection Institute of Amazonas, http://www.ipaam.am.gov.br/
[7] Brazilian Environmental Protection Agency, www.ibama.gov.br

4.3 Methodology Deviations

As at today, no deviations have been identified.

4.4 Project Boundary (G1).

Although the project boundary encompass 20,387 ha in total and defines a buffer zone around each of the four areas in order to include all the communities that use these reserves (figure 4), the project area[8] includes only the area that had been authorized for selective logging, totalling 19,800 ha (figure 5), excluding Permanent Protected Areas (APPs) and water bodies.

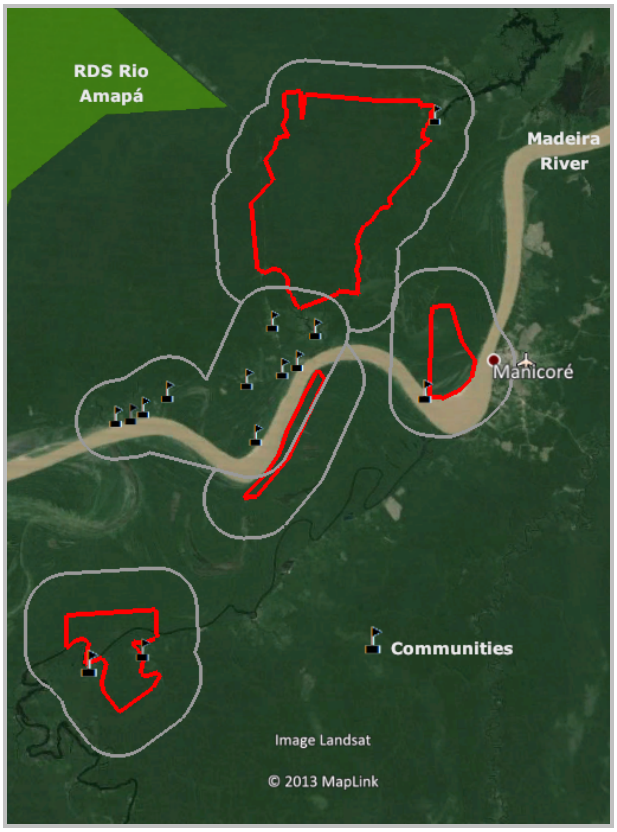

Figure 4: Project boundaries

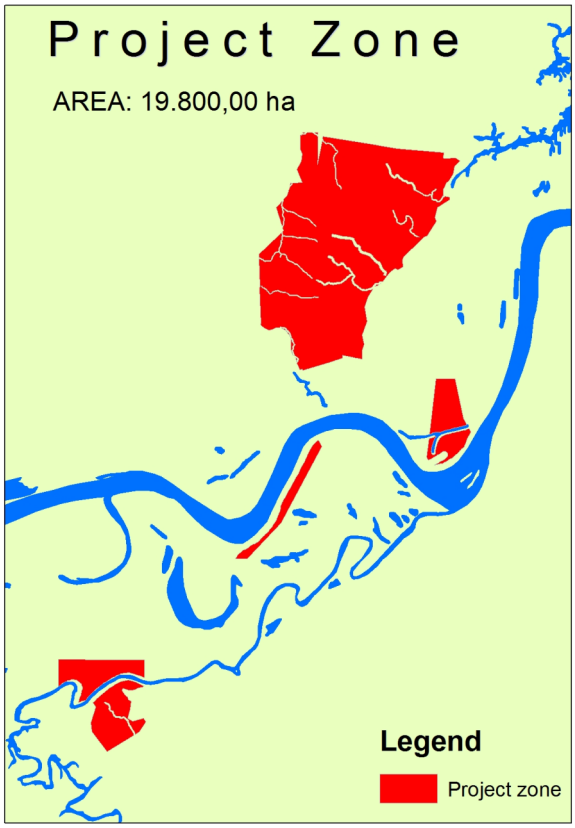

Figure 5: Project area

Below are the sources of GHG emissions associated with the Baseline and Project activities. The only carbon pools considered are aboveground biomass (AGB), harvested wood products (HWPs) based on domestic production and not domestic consumption, and deadwood (DW).

[8] According to the Methodology, the Project Area is the forest area within the defined Geographic Boundary which would be degraded through selective logging under the baseline scenario

Table 2: Relevant GHG sources, sinks and reservoirs for the project and baseline scenarios

Source		Gas	Included?	Justification/Explanation
Baseline	Biomass	CO_2	Yes	Main source, considered through forest degradation, harvested wood products, deadwood and forest regrowth
		CH_4	No	Conservatively excluded
		N_2O	No	Conservatively excluded
		Other	No	-
	Fossil Fuel consumption	CO_2	Yes	Main source, considered through fossil fuel use in machinery
		CH_4	Yes	Included but subject to significance, since logging is the most likely scenario
		N_2O	Yes	Included but subject to significance, since logging is the most likely scenario
		Other	No	-
	Electricity consumption	CO_2	Yes	Main source
		CH_4	No	-
		N_2O	No	-
		Other	No	-
Project	Biomass	CO_2	Yes	Main source, considered through natural disturbances such as forest fires
		CH_4	Yes	Considered through natural disturbances such as forest fires, but subject to significance
		N_2O	Yes	Considered through natural disturbances such as forest fires but subject to significance
		Other	No	-
	Fossil Fuel consumption	CO_2	Yes	Main source, considered through flights, ground travel, aerial surveillance (if applicable)
		CH_4	Yes	Included but subject to significance
		N_2O	Yes	Included but subject to significance
		Other	No	-
	Electricity consumption	CO_2	Yes	Main source
		CH_4	Yes	Included but subject to significance
		N_2O	Yes	Included but subject to significance
		Other	No	-

4.5 Baseline Scenario (G2)

The baseline scenario identified as the most plausible is Selective Logging (Business As Usual - *BAU)*.

The baseline scenario considers 38 years of Selective Logging, according to the logging plan of 25 years, approved in 1998, that in the absence of the project activities would be renewed in 2023 for another 25 years, until 2048.

It assumes execution of the ceased logging plan which resulted in the degradation of 4,348 ha (Table 3). Under this scenario, the area would be selectively logged, with timber extracted for sawnwood markets. Below is a summary of timber harvesting areas between 1999 and 2010, showing the plots managed to date.

Table 3. Summary of timber harvesting area since 1999

Date	Harvesting Area (ha)
1999	586.69 (Plot 1)
2000	688.0 (Plot 2)
2001 - 2002	831.5 (Plot 3)
2003 - 2004	750 (Plot 4)
2005 - 2007	750 (Plot 5)
2008 - 2010	741.50 (Plot 6)
TOTAL	**4,348 hectares**

Other potential baselines, such as clearcut of the 20% permitted by law, were discussed with the project proponent but were discarded as unrealistic due to the nature of the business and the application already in place to transform the areas into Conservation Units.

4.6 Additionality (G2)

To determine the project additionality the project proponent applied the latest version of the VCS tool for the Demonstration and Assessment of Additonality in AFOLU following four steps:

Step 1. Identification of alternative land use scenarios to the AFOLU project activity;
Step 2. Investment analysis to determine that the proposed project activity is not the most economically or financially attractive of the identified land use scenarios; or
Step 3. Barriers analysis; and
Step 4. Common practice analysis.

Selective Logging of native forest with sales of wood, according to the authorized logging plan (Business As Usual), was identified as the most plausible scenario when compared to the other three potential land use scenarios identified for the project, which would faced many implementation barriers:

- Selective logging on 80% of the area and agribusiness on 20% of the area (clearcut)
- Agribusiness only on 20% of the area (clearcut)
- Conservation on 100% of the area (project scenario)

The Selective Logging scenario was considered the most realistic which complies with mandatory legislation and regulations, this is because this scenario has clear economic returns. The logging plan was granted in 1998 (with all legal documentation and authorizations available for consultation) and was operational for 12 years, until 2010 when the operations ceased to be replaced by the conservation strategy.

In this context, the selective logging is the only alternative scenario that fully complies with the legislation and is not prevented by any barrier (investment, institutional, prevailing practice, social conditions and/or local traditions barriers); therefore this scenario is identified as the baseline activity.

Regarding the common practice, to date only a handful of carbon conservation pilot projects have been implemented in Brazil and not one Improved Forest Management (planned deforestation) project have been implemented in the region on private land. The other AFOLU project implemented in the Amazonas State, the JUMA REDD project, consists in avoiding unplanned deforestation on government land (RDS). This is a completely different approach with essential distinctions such as i) unplanned vs. planned deforestation or degradation and ii) government vs. private land. Therefore, the proposed project activity is not only a no-common practice, but also can be considered the first of its kind in the region as well as in the host country.

As demonstrated above, the project activity without the revenue from carbon credits would face many barriers to its implementation, and it is not a common practice in the region. Therefore, the project is considered additional.

5 QUANTIFICATON OF GHG EMISSION REDUCTIONS AND REMOVALS (CLIMATE)

5.1 Project Scale and Estimated GHG Emission Reductions or Removals

The Amazon Rio project is considered a Project and is expected to avoid approximately 2,3 million tonnes of CO2 that would be released into the atmosphere over 38 years without the project (table 4).

Project	X
Large project	

Table 4: Estimated GHG emission reductions for the crediting period of 38 years (first 10 and the next 28 years of the project).

Years	Estimated GHG emission reductions or removals (tCO2e)
2011	73,618
2012	73,469
2013	73,319
2014	73,17
2015	73,02
2016	72,87
2017	72,721
2018	72,571
2019	72,422
2020	72,272
2030	47,081
2048	66,010
Total estimated ERs	2,297,369
Total number of crediting years	38
Average annual ERs	60,457