MONITORING & IMPLEMENTATION REPORT

Prepared by:

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<th>Project Title</th>
<th>Amazon Rio REDD+ IFM</th>
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<td>Reduction of GHG emissions avoided by degradation</td>
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<td>Project Name</td>
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<td>Reduction of GHG emissions avoided by degradation</td>
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<td>Localization Project</td>
<td>Brazil, Amazonas State, Manicoré City.</td>
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<td>Project Proponent</td>
<td>EBCF – Empresa Brasileira de Conservação Florestal</td>
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<td>Contato: Leonardo Barrionuevo (CEO) <a href="mailto:Leonardo@ebcf.com.br">Leonardo@ebcf.com.br</a> – fone +1 305-321-4577</td>
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<td>Auditor</td>
<td>Rainforest Alliance (Klaus Geiger <a href="mailto:kgeiger@ra.org">kgeiger@ra.org</a>; Tel: +1 (802)923-3766) e Imaflora (Bruno B. Souza, <a href="mailto:bruno@imaflora.org">bruno@imaflora.org</a>; Tel +55 (19) 98324 5522.</td>
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<tr>
<td>Project start date</td>
<td>August 17, 2012; crediting period of 37 years, 37 years of project time (can be extended for longer).</td>
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<td>Period Covered by the PIR</td>
<td>17 - August - 2012 to 29- March -2016</td>
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<td>Historical status CCBA</td>
<td>No history; first proposition (Validation and Initial verification)</td>
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<td>Summary of the results generated by the project</td>
<td>As expected, there was no logging activity in the project areas as occurred effective control of deforestation in both areas of the project and in the surrounding communities. With this, REDD + project EBCF shows a reduction of emissions in the order of 430,873.68 tCO2e to the balance sheet reductions and emissions between the years 2011 until 2015. The project conducted a sense of basic social conditions, the activities of zoning and implementation of sustainability matrix. This set of instruments will be used for the planning of future activities as well as measure the different dimensions of local social progress. The benefits to biodiversity present in the drastic reduction of</td>
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deforestation since the project implementation. Also, if conducted preliminary studies on the management plan to monitor the practice of hunting in the area. It was also initiated the activities related to health and income generation in partnership with local communities.

| Gold Level Criteria | On the climate issue is understood that balanced ecosystems have greater ecological and social resilience and adaptability to climate change, whether through the protection of water bodies and flow regulation of rivers on the peaks of flood and drought, is the regular supply food products and environmental services. From the social point of view the project has a strong presence along the clearly marginalized populations the social care system of the State and was strategies interact with the communities to give more visibility to women, elderly and children. Exceptional benefits for biodiversity are realized on the fact that the Amazon River project present several qualifying attributes of "High Conservation Values", such as endemic species and / or rare and have several species protected by specific legislation prohibiting cutting, such as the Brazil Nuts tree, rubber tree and mahogany. |
| Date of Completion of this PIR | 10 September 2016. |
| Expected schedule check | Periodic every 5 (five) years. |
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ABBREVIATIONS

AFOLU: Agriculture, Forestry and Other Land Use
ANTAQ: National Agency for Waterway Services (Agência Nacional de Transportes Aquaviários)
AP: Project Area
APD: Avoided Planned Deforestation
APP: Areas of Permanent Preservation (Áreas de Preservação Permanente)
ATER: Technical Assistance and Rural Development (Assistência Técnica e Extensão Rural)
AUTEX: Logging Authorization (Autorização de Exploração Florestal)
CAAD: Council of Agro-Extrativist Associations of Democracia (Conselho das Associações Agroextrativistas de Democracia)
CAAM: Council of Agro-Extrativist Associations of Manicoré (Conselho das Associações Agroextrativistas de Manicoré)
CDM: Clean Development Mechanism
CFI: Continuous Forest Inventory
CNS: National Council of Extractivist Populations (Conselho Nacional das Populações Extrativistas)
CRA: Environmental Reserve Quotas (Cotas de Reserva Ambiental)
DBH: Diameter at Breast Height
DETER: Real Time Deforestation Detection System
DOF: Document of Forest Origin (Documento de Origem Florestal)
EIA: Environmental Impact Assessment
FAS: Amazonas Sustainable Foundation (Fundação Amazonas Sustentável)
FSC: Forest Stewardship Council
FUNAI: National Indigenous Peoples Foundation (Fundação Nacional do Índio)
GHG: Greenhouse Gases
GIS: Geographic Information System
HCV: High Conservation Value
IBAMA: Brazilian Institute of Environment and Renewable Natural Resources (Instituto Brasileiro de Meio Ambiente e Recursos Naturais)
do Meio Ambiente e dos Recursos Naturais Renováveis)

ICU: Intensive Care Unit
IDAM: Institute of Agricultural and Forestry Development of the State of Amazonas (Instituto de Desenvolvimento Agropecuário e Florestal do Estado do Amazonas)
IEA: International Energy Agency
IEB: International Institute of Education of Brazil (Instituto Internacional de Educação do Brasil)
IFM-LtPF: Improved Forest Management - Logged to Protected Forest
IMAZON: Institute of Man and Environment in the Amazon (Instituto do Homem e Meio Ambiente da Amazônia.
INPE: National Institute for Space Research (Instituto Nacional de Pesquisas Espaciais)
IPAAM: Amazon Institute of Environmental Protection (Instituto de Proteção Ambiental do Amazonas)
IPCC: Intergovernmental Panel on Climate Change
LR: Legal Reserve (Reserva Legal)
MCT: Ministry of Science and Technology (Ministério da Ciência e Tecnologia)
MMA: Ministry of Environment (Ministério do Meio Ambiente)
MP: Monitoring Plan
NTFP: Non-Timber Forest Product
PD: Project Description
PES: Payment for Environmental Services
POA: Annual Operational Extraction Plan (Plano Operacional Anual de Extração)
PPE: Personal Protective Equipment
PROARCO: Program for the Prevention and Control of Forest Fires in the Arc of Deforestation (Programa de Prevenção e Controle às Queimadas e Incêndios no Arco do Desflorestamento)
PROBUC: Program for Monitoring Biodiversity and Use of Natural Resources in Conservation Units (Programa de Monitoramento da Biodiversidade e Uso do Recursos Naturais em UCs)
PRODES: Program to Calculate Deforestation in the Amazon (Programa de Cálculo do Desflorestamento da Amazônia)
RDS: Sustainable Development Reserves (Reservas de Desenvolvimento Sustentável)
RPDS: Private Reserves for Sustainable Development (Reserva Particular de Desenvolvimento Sustentável)
RPPN: Private Reserve of Natural Heritage (Reserva Particular do Patrimônio Natural)
SAD: Deforestation Allert System (Sistema de Alerta de Desmatamento)
SDS: Secretary of the State for the Environment and Sustainable Development of Amazonas (Secretaria de Estado do Meio Ambiente e Desenvolvimento Sustentável do Amazonas)
SEUC: State System of Conservation Units (Sistema Estadual de Unidades de Conservação)
<table>
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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>SFM</td>
<td>Sustainable Forest Management</td>
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<td>SFMP</td>
<td>Sustainable Forest Management Plan</td>
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<td>UC</td>
<td>Conservation Units (Unidade de Conservação)</td>
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<td>UEA</td>
<td>State University of Amazonas (Universidade Estadual do Amazonas)</td>
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<td>UFAM</td>
<td>Federal University of Amazonas (Universidade Federal do Amazonas)</td>
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<td>UNFCCC</td>
<td>United Nations Framework Convention on Climate Change</td>
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<td>UPA</td>
<td>Annual Production Unit (Unidade Produtiva Anual)</td>
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<td>VCU</td>
<td>Verified Carbon Unit</td>
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<td>WBCSD</td>
<td>World Business Council for Sustainable Development</td>
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<td>WRI</td>
<td>World Resources Institute</td>
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1 GENERAL

1.1 Summary Description of the Project

The Amazon Rio project consists of the conservation of a mosaic of four private areas called Amazon Rio I, II, III and IV, which add up to 20,387 hectares (ha) of primary forest, located in the municipality of Manicoré in the state of Amazonas. The project's target area is characterized by being a region of sedimentary Solimões Basin, dominated by Alluvial Holocene, Içá Training and Detritus-lateritic formation. The relief is of the flat type with primary vegetation formation consisting of areas of land, floodplain and some formations igapó due to the influence of Rio Manicoré.

The Amazon Rio areas dominated forests of humid tropical rainforest Lowlands emerging Canopy and Forest Open Rain Lowlands with palm trees (79%), the Atlantic rain forest Alluvial emerging canopy (11%), Rain Forest Open Alluvial with palm trees (8%), Pioneer formations influenced fluvial and /or lacustrine - herbaceous and shrubby with palm trees (1%).

The main focus of the project is: (i) the conservation of forest ecosystems and biodiversity; (ii) the sustainable social development of the region, including the promotion of ecotourism and scientific research, and (iii) the reduction in carbon dioxide (CO₂) emissions through the prevention of deforestation and forest degradation.

In 1998, a logging plan for logging activities was approved by the authorized environmental agencies on 19,800 ha of land over a period of 25 years (the total area does not include Permanent Preservation Areas (APP) and water bodies. Between 1999 and 2010, 4,347.69 ha were degraded due to an authorized logging operation (Annexes 1, 2, 3 and 4). In February 2011, the area was acquired by the Empresa Brasileira de Conservação de Florestas (EBCF) which, in order to implement the objectives of the project, made two important decisions: to suspend the logging operations underway in the project areas since 1999 and transform them into Private Reserves for Sustainable Development (Reservas Particulares de Desenvolvimento Sustentável - RPDSs), supported by State Law no. 53 of June 2007 and Decree no. 30,108 of June 2010.

With this new land use strategy 20,387 ha of primary forest will be preserved, avoiding the CO₂ emissions that would have occurred without the implementation of the project. Revenues obtained from the carbon credits will be used to maintain the primary forest with the implementation of the activities described in the Reserve’s Management Plan (Annex 9), including social programs and environmental monitoring.

The project intends to maintain financial sustainability through the sale of carbon credits obtained from the conservation of the area and maintenance of environmental services. Another source of
income planned by the project relates to the national market for legal reserve compensation (Environmental Reserve Quota (Cotas de Reserva Ambiental (CRA) in Portuguese)). Using these two financial mechanisms for conservation, the emission of approximately 2 million tons of carbon dioxide into the atmosphere over a period of 37 years will be avoided.

It is important to emphasize that the project area is crucial for conservation, especially considering its characteristics, such as (i) high biological diversity and concentration of endemic and pharmacological species (Section 7); (ii) extensive areas of plains, which are important for the reproduction and survival of many species of plants and animals, especially birds and reptiles, and (iii) high potential for ecotourism and environmental education, including scientific research.

The creation of these private reserves also contributes to the consolidation of a strategy to establish ecological corridors and mosaics in the region, creating a territorial connection between public and private conservation areas. This situation reduces potential conflicts between the state, landowners and residents in the buffer areas and creates opportunities for implementing integrated actions, optimizing human and financial resources for environmental monitoring and control actions.

Another important fact to consider is the surrounding communities who use the project areas for their own subsistence, extracting non-timber forest products (e.g., nuts, fruits, oils, vines), fishing and hunting. For that reason they have direct interest in the conservation of the forest to obtain food, economic security and maintain their cultural practices.

The environmental benefits that the communities receive make them "guardians" of the forest, contributing significantly to the monitoring and controlling of illegal activities practiced in the region such as logging, fishing and poaching, as well as supervision and control of forest fires. In this context, the Amazon Rio project plays a role of great environmental importance for the region, also contributing to the improvement of livelihoods of the local population and, consequently, to the conservation of the forest.

A population of 350 families distributed among 15 communities is estimated to reside around the area of the Amazon Rio project. The environmental benefits provided by the implementation of the project and Amazon Rio I RPDS Management Plan, and posteriorly including Amazon Rio II, III and IV, demonstrate a strong social development component and includes several socio-economic support programs to local communities which promote sustainable development in the region.

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1 § 2, Art. 15 of the new Brazilian Forest Code (Law 12.651/2012) provides for voluntary forest reserves, i.e., the excess of forest required by law on rural property. According to this law all preserved area that exceeds the minimum required by law may be used for creation of environmental easement or Environmental Reserve Quotas in the same biome and State.
The project will be implemented starting from the introduction of participatory processes, ensuring active involvement of the local communities around the area, as in the aforementioned development programs and in decision-making. The community programs that aim to improve access to health, education and income generation will use the “Bolsa Floresta” program as reference, a program of great relevance for payments for environmental services (PES) in the state of Amazonas. In the medium and long terms these programs intend to significantly improve the living conditions of these communities, strengthening their organizational and institutional capacity, including their productive, environmental and financial sustainability.

1.2 Project Objectives

General objective

The objectives of this project takes a holistic approach to the region and keep full affinity to the recent statement of the United Nations in the design of the seventeen goals of Sustainable Development2 (ODS). In this sense, the project objectives have a direct relationship with some of the ODS and take others as a source of inspiration for the implementation of activities in partnership with local communities. These guidelines will be key elements in the local discussion process around the project activities.

Thus, it is assumed as a general objective of the project "contribute to the maintenance of global climate (goal 13), through the implementation of activities to prevent the emission of greenhouse gases locally by replacing the forest selective logging for a project conservation of forest biodiversity (goal 15), preserving the traditional culture of the population of surrounding communities (goal 3), promoting income generation (goal 1, 8) and contributing to local social development (goals 2, 5, 4, 6, 7) ".

Specific objectives

Specifically, the project aims to:

\[\text{2 The seventeen Sustainable Development Goals at the United Nations are: (1) Ending poverty in all its form everywhere; (2) Ending eat hunger, achieve food security, improve nutrition; (3) To ensure a healthy life and promote well-being for all; (4) To ensure inclusive education, equitable and quality; (5) Achieving gender equality and empower all women; (6) Ensure availability and sustainable water management; (7) Ensure access energy, reliable and sustainable; (8) To promote sustained, inclusive and sustainable economic growth; (9) Building resilient infrastructure, promote inclusive industrialization; (10) To reduce inequality between and within countries; (11) Making cities inclusive human settlements, secure, resilient; (12) To ensure standards of sustainable consumption and production; (13) Take urgent action to combat climate change; (14) To preserve and promote the sustainable use of the oceans; (15) To protect, restore and promote the sustainable use of forests; (16) To promote peaceful and inclusive societies for sustainable development; (17) To strengthen the implementation mechanisms and revitalize the global partnership.}\]
1. Implement economic alternative activities to selective logging to generate revenue for the project, benefiting at least 300 families surrounding the target area;
2. Reduce approximately 3.2 million tons of carbon dioxide as a result of project activities;
3. To contribute to the maintenance of regional biodiversity through the preservation and conservation of the forest;
4. Contribute to improve educational processes and attention to regional health;
5. Promote the inclusion and women’s empowerment in the project area communities.

1.3 Project location

Location

The Amazon Rio Project is located in the southern region of the state of Amazonas in the municipality of Manicore (Figure 01). The waterway and air constitute arrival means to the city, with approximate distance of 333 km by air and 427 km by river is the starting point for the city of Manaus, the state capital. The Project areas are near the Madeira River and between the Sustainable Development Reserves (RDS) Rio Madeira and Rio Amapá (Figure 02).

Figure 01 - Location of the Municipality of Manicoré - AM
Figure 02 - Location areas I, II, III and IV of the Amazon Rio Project

Figure 03 - Project Zone and communities of the project.
Specifically in the Amazon Rio area the dense Primary Tropical Ombrophylous Lowland Forest and open Primary Tropical Ombrophylous Lowland Forest with palm trees (79%), Dense Primary Tropical Ombrophylous Alluvial Forest (11%), Open Primary Tropical Ambrophylous Alluvial Forest with palm trees (8%), Pioneer Formations with fluvial and/or lacustrine influence - herbaceous and shrubby vegetation with palm trees (1%) (Annex 5).

According to IBGE’s soil database (2000), the Manicoré region is formed mainly of Latosols and Argisols. Also soils such as Gleysols, Spodosols, Alluvial soils, Neosols, Planosols, Plinthosols and Nitosols can be found. The Brazilian Soil Classification System, produced from surveys by the Brazilian Agricultural Research company (EMBRAPA), between 2001 and 2006, corroborates the classification information for that region.

Alluvial soils are very common in this region. These soils are found mainly on the banks of the Madeira River. The fertility levels are dystrophic and located on flat terrain. Agricultural and livestock activities are almost always practiced along the main alluvial stretches of the region. The most fertile soils that occur on the floodplains (várzea) are widely cultivated for temporary crops such as beans, rice, watermelon and cassava.

Climate and hydrography

The climate in the region of the Madeira River is humid equatorial (IBGE, 2011), with an average temperature of 27°C, relative humidity ranging between 85 and 90% and annual rainfall between 2,200 to 2,800 mm/year (RADAMBRASIL, 1974). Studies from the Amapá Rio RDS area indicate that between the months of January and March rainfall intensity is greater, with monthly rainfall between 300 and 350 mm, while the driest months are July and August, with monthly averages around 50 mm.

Geographically, the Amazon region is defined by watersheds formed by the rivers, which flow into the Amazon Rio and its mouth, along the entire East coast of Brazil (RIBEIRO et al., 1999). The city of Manicoré is influenced mainly by the Madeira and Manicoré rivers which are, respectively, white and black water rivers and contribute to the local climatic conditions, combined with the characteristics of the vegetation that includes forests, meadows, savanna (cerrado) and floodplains (várzeas).

Economic context of land use

Southern Amazonas is an important region strategically to prevent advances in deforestation in the Amazon. However, in recent years, the region has been suffering successive deforestation events from expanded farming activities, contributing to the so-called "arc of deforestation" toward the
state of Amazonas. Historically, the "arc of deforestation" has advanced with the expansion of agriculture in the states of Pará, Mato Grosso, Rondônia, Tocantins and Maranhão. In recent years, pressures on forests have increased with the globalization of markets for meat and soybeans in the Amazon and international development policies for the region (IDESAM, 2011).

1.4 Project Proponent (G4)

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<tr>
<td>Role in the Project</td>
<td>Update of the Amazon Rio REDD+ IFM Project Description (PD) (V2.0) and coordination of certification process</td>
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<td>Contact Person</td>
<td>João Batista Tezza Neto</td>
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<tr>
<td>Title</td>
<td>Director</td>
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</tr>
<tr>
<td>Email</td>
<td><a href="mailto:tezza.net@originaltrade.net">tezza.net@originaltrade.net</a></td>
</tr>
</tbody>
</table>
1.1 Project Start Date

The project began on August 17, 2012, when the board and EBCF shareholders formally approved the company’s Business Plan (Annex 27), which set out the objectives of conserving forests through the REDD+, provision of services and sustainable use of forest resources excluded logging activities.

1.2 Project Crediting Period

The first crediting period of the project is 37 years, beginning on August 17, 2012 and ending on 17 August 2049. This period is equivalent to the remaining 12 years of the first authorized management plan (25 years from 1998) added to another 25 years in respect of a new forest management plan that was intended, as the common practice of forestry in Brazil. The logging activities could continue beyond 37 years, aiming 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-IFM)
2.2 Project Financing

The carbon project integrates a broad vision of territorial management as part of the Management Plan of the Amazon Rio Private Reservation I. Accordingly, it stipulates that all actions necessary to implement this Plan should be enabled from resources obtained by payments for environmental services, such as carbon credits and CRAs.

The idea is for the plan to serve as a management tool to provide technical and political support to negotiations with support institutions to receive investments that can make projects and programs viable. The expected revenues in the short and medium term to implement the Management Plan will mostly come from payments for environmental services such as negotiated carbon credits and CRAs, in addition to projects that generate long-term income exclusively for the communities, such as: ecotourism, scientific research and harvest of non-timber forest products.

In this context, the main difference between a permanent protection private reserve (e.g. RPPN) and a private sustainable development reserve (e.g RPDS) is that the long-term financial viability of sustainable reserves usage comes from the marketing of non-timber forest products with high added value and other sustainable businesses in compensation for environmental services. This flow of resources is expected to occur during and after the implementation period. The proposal is that with external support and through their political representatives, local communities will be able to establish partnerships and contracts with companies, cooperatives and industries interested in supporting social and environmental initiatives in the project areas.

These items are briefly listed below with their respective values regarding the implementation and execution of the project, part of which will be initially financed by the contribution of the partners, as mentioned above.

Table 01 - Project implementation and operational costs

<table>
<thead>
<tr>
<th>Component</th>
<th>Value (R$)</th>
<th>Share (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Operating expenses</td>
<td>R$ 1,561,904</td>
<td>3.61%</td>
</tr>
<tr>
<td>Administrative expenses</td>
<td>R$ 24,069,915</td>
<td>55.68%</td>
</tr>
<tr>
<td>Costs of VCS + CCB certification</td>
<td>R$ 456,670</td>
<td>1.06%</td>
</tr>
</tbody>
</table>

---

3 Annex 16
Monitoring & Implementation Report

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring</td>
<td>R$ 2,820,000</td>
</tr>
<tr>
<td>Social program related expenses</td>
<td>R$ 6,050,000</td>
</tr>
<tr>
<td>Carbon trading</td>
<td>R$ 1,188,536</td>
</tr>
<tr>
<td>Taxes on income</td>
<td>R$ 1,680,219</td>
</tr>
<tr>
<td>Taxes on profit</td>
<td>R$ 5,008,435</td>
</tr>
<tr>
<td>Interest 10% return on investment of shareholders</td>
<td>R$ 396,300</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>R$ 43,231,980</td>
</tr>
</tbody>
</table>

### 2.3 Employment Opportunities and Worker Safety

Despite the considerable local knowledge of the region's ecosystems and environments, technology is lacking, related to the value added to products and environmental conservation projects. Besides these difficulties, public service agents frequently indicate the use of techniques and management practices that require high external inputs and major investments. To overcome these limitations the project intends to promote specific and culturally relevant trainings that include workshops, meetings, courses and extended technical assistance to improve the knowledge and skills of community leaders, residents and employees of the project. To complement such trainings, we intend to install diversified agroforestry systems, to restore and reuse degraded areas, to encourage handicrafts and tourism, and to improving the management of non-timber forest products, with emphasis on Brazil nuts, andiroba, copaiba and Acai. As a result management practices are expected to improve in the long-term, as well as and the fostering of local culture, combining technical and scientific knowledge with traditional knowledge.

### 2.4 Stakeholders (G3)

**Consultation prior to the beginning of the project**

The populations involved in the carbon project are direct users of forest resources that are present in the Amazon Rio I, II, III & IV areas for the practice of plant and animal extraction. Initially they were indicated by the Council of Agro-Extrativist Associations of Democracia (Conselho das Associações Agroextrativistas de Democracia - CAAD), which gathers associations of residents from ten communities located near the Amazon Rio I Reserve. Following this indication, the EBCF hired the services of the consulting company CO2X Conservação de Florestas Ltda to perform a
series of workshops and meetings to prepare the Amazon Rio I Management Plan (Annex 9) and to develop the Amazon Rio REDD+ IFM project. In these meetings different forms and spaces of participation of the people and government and non-governmental institutions were discussed to support the development and implementation of the Management Plan, culminating in the creation of an Advisory Council. In these events, conservation and fundraising strategies were presented to the community, among them the marketing of avoided emissions resulting from the suspension of timber management activities. The conduct of the Free, Prior and Informed Consent (FPIC) process was done in the communities surrounding the Amazon Rio I, II, III and IV areas during three workshops in 2013, which had a very inclusive and participatory nature. This document, as well as the minutes of the workshops, participatory mapping, Sustainability Matrix, questionnaires and presentations in PPT slides are available in Annex 10.4

**Identification of stakeholders**

There are 15 communities that will benefit from the activities of the project and twelve of them (Urucury, Água Azul, Vista Alegre, Boa Esperança, Santa Eva, Santa Maria, Pandegal, Democracia, Jatuarana, Terra Preta do Ramal, Kamayuá and São José do Miriti) are located in the region surrounding Amazon Rio areas I and III and in the Rio Amapá Reserve on the Madeira River and its tributaries. One of the communities is formed by residents that integrate the Agroextractivist Association São João e Ponta Grossa, which is located in the surroundings of the Amazon Rio IV area. Two communities, Terra Preta do Rio Manicoré and Mocambo, are located in the region surrounding the Amazon Rio II on the bank of the Manicoré River. (Figure 03).

Figure 04 - Location of the communities surrounding the Amazon Rio areas I, II, III and IV.

---

4 This topic is thoroughly discussed in Section 3.7 of this document.
Except for Terra Preta do Rio Manicoré, Mocambo, and São José do Miriti, all of the communities utilize the Rio Amapá RDS area, either on a sporadic or seasonal basis, to meet their food needs (collecting various fruits, fishing and hunting); for household and medicinal use (bark, leaves and plant parts considered by medical practices and traditional knowledge); and primarily for the sale of various non-timber products, especially the harvesting of Brazil nut, açai and copaíba oil. However, the trails, roads and paths that provide access to the Amapá Rio RDS and Amazon Rio areas are in a poor state of repair, which hinders extraction practices, especially the production of Brazil nuts.

In addition to the 15 communities surrounding the Amazon Rio areas, government organizations directly involved with environmental issues in the region, such as SDS, the National Indian Foundation (Fundação Nacional do Índio - FUNAI), City Hall and the City Council of Manicoré, the Secretary of Environment and Sustainable Development of Manicoré, ICMBio and non-governmental organizations, such as FAS, IEB, CAAD, CNS, UFAM, UEA were identified and contacted to participate in the entire process of preparation of the Management Plan.

**Stakeholder meetings**

To present and discuss the project in detail with representatives of 15 communities surrounding the project area and support institutions three workshops in different locations were conducted. The subjects were presented in straightforward language, in a culturally appropriate way so that community representatives could understand relatively complex and unusual concepts such as climate change, greenhouse effect and payments for environmental services.

The importance of forests for the mitigation and adaptation to climate change was emphasized to convey the main objectives of the project to community representatives, and in particular their role in: (i) absorbing carbon dioxide and release oxygen; (ii) helping control climate processes on a regional scale; (iii) regulating the flow of rivers and erosion control; and (iv) providing shelter and food for most animals and plants on the planet. The fact that 20% of global greenhouse gas emissions come from the destruction of forests and in Brazil 70% of emissions come from deforestation was also mentioned.

During the workshops participants learned that steps can be taken to reduce the emissions of greenhouse gases by investing in renewable energy sources such as solar energy, wind energy, hydroelectric power plants, electric cars and other more efficient ones. Another option that mitigates climate change was also highlighted that relates to the Amazon: forest conservation and the restoration of degraded areas through reforestation, management of agricultural land, and establishment of agroforestry systems.
After concepts were discussed it was explained to those present that the proposed project to be carried out in the RPDS Amazon Rio I, recently approved at the time, and in the creation process in the other Reserves has essentially one goal: to financially reward those who preserve and protect a forest threatened with deforestation and degradation. The project aims: (i) raise funds for the implementation of the Management Plan programs and (ii) conserve forests and the associated biodiversity. It was also mentioned that the project is part of a new vision of the business strategy, since a logging plan was operational until 2010, associated with the emissions of greenhouse gases. In 2010 the practice was suspended by the owner, who began investing in the creation of a project focused on conservation and payment for environmental services, with emphasis on the voluntary carbon market.

**Implementation schedule**

Table 2 - Implementation schedule and next activities.

<table>
<thead>
<tr>
<th>Ano</th>
<th>Atividade</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>EBCF performs the symbolic protocol creation of the first RPDs during the seminar results and perspective of the State of Amazonas Conservation Units held by the SDS.</td>
</tr>
<tr>
<td>2011</td>
<td>EBCF submits the formal protocol to CEUC.</td>
</tr>
<tr>
<td>2011</td>
<td>Meeting presentation EBCF for communities near the Amazon River I, II, III and IV.</td>
</tr>
<tr>
<td>2011</td>
<td>EBCF attended the informal invitation made by the management of RDS Rio Amapá and representative CEUC - Silvia Elena, the training workshop and delivery portfolios ENVIRONMENTAL VOLUNTEERS AGENTS held in the Boa Esperança community.</td>
</tr>
<tr>
<td>2011</td>
<td>EBCF participated in the event organized by the CAAD which had the agenda: General Assembly, accountability of CAAD year 2009/2010, RDS Management Plan Amapá Rio, Bolsa Floresta, Municipal Management, IDAM contribution, contribution Covema, IEB's contribution and delivery of equipment for processing of acai, held on 24/03/2011 in the community of</td>
</tr>
<tr>
<td>Year</td>
<td>Event</td>
</tr>
<tr>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td>2011</td>
<td>Inspection of CEUC on farms for approval on RPDs.</td>
</tr>
<tr>
<td>2011</td>
<td>The board of EBCF makes his 1st visit the communities and farms.</td>
</tr>
<tr>
<td>2011</td>
<td>EBCF in partnership with the Municipal Government of Manipur, perform the recovery local road (approximately 20KM) linking Democracia community, Jatuarana communities, Terra Preta Community, Santa Eva and Vista Alegre.</td>
</tr>
<tr>
<td>2012</td>
<td>Visit of the president and directors of EBCF the communities surrounding the reserves, together with the president of PATA C Marcelo Marder and Andre Albuquerque president for socioeconomic communities report presentation.</td>
</tr>
<tr>
<td>2012</td>
<td>Business Plan Project approval and EBCF shareholders agreement, authorizing the start of the REDD project.</td>
</tr>
<tr>
<td>2013</td>
<td>Workshop I - Diagnosis for the development of areas of the Amazon River Management Plan I, II, III &amp; IV.</td>
</tr>
<tr>
<td>2013</td>
<td>Visit communities to complement the workshop I for interviews with the locals.</td>
</tr>
<tr>
<td>2013</td>
<td>Meeting in CEUC after the second workshop to update the work with the communities and the progress of the approval of the areas.</td>
</tr>
<tr>
<td>2013</td>
<td>Technical meeting with the team CO2X, Renascer and Human Development EBCF in Curitiba for the review and evaluation of the first part of the Management Plan (diagnosis); Definition of programs and subprograms of the Plan; identification of key issues, potential threats and opportunities with the creation of RPDSs; definition of vision and action strategy.</td>
</tr>
<tr>
<td>Year</td>
<td>Event Description</td>
</tr>
<tr>
<td>------</td>
<td>------------------</td>
</tr>
<tr>
<td>2013</td>
<td>The Secretary of State for the Environment (SDS) officiated at the World Environment Day, the first Private Reserve Sustainable Development (RPDs) of the Amazon with the signing of the decree no. 86.</td>
</tr>
<tr>
<td>2013</td>
<td>Workshop II - presentation of the carbon project as one of the fundraising programs for the implementation of the Management Plan.</td>
</tr>
<tr>
<td>2013</td>
<td>Field work with communities and farms for mapping biodiversity and hunting and fishing grounds.</td>
</tr>
<tr>
<td>2013</td>
<td>The EBCF performs a complete socioeconomic census in the surrounding communities of RPDs.</td>
</tr>
<tr>
<td>2013</td>
<td>Meeting with CEUC for delivery and presentation of the draft of RPDs Amazon River Management Plan I.</td>
</tr>
<tr>
<td>2013</td>
<td>Supplementary Meeting to communities who could not attend the Workshop II &amp; III Workshop Creation of the Advisory Council for RPDs Amazon River I.</td>
</tr>
<tr>
<td>2013</td>
<td>The EBCF performs social and economic Census in Kamayuá community.</td>
</tr>
<tr>
<td>2015</td>
<td>Realization of field activities for &quot;Biomass Inventory Estimation&quot;.</td>
</tr>
<tr>
<td>2016</td>
<td>Vitor Belfort visit and launch of income-generating initiatives.</td>
</tr>
<tr>
<td>2016</td>
<td>Distribution of medical kits for community health workers and launching the Health Program in the Amazon.</td>
</tr>
<tr>
<td>2016</td>
<td>Deforestation Report.</td>
</tr>
<tr>
<td>2016</td>
<td>PD Review and preparation of the monitoring report.</td>
</tr>
</tbody>
</table>
2016 | REDD + Project Certification (VCS and CCV).
---|---
2016 | Project planning for structuring the supply chain of vegetable oils certificates.
2017 | Fundraising from the REDD project.
2017 | Ecotourism Project Design.
2017 | Workshop Achievement “Participatory Planning Project REDD + activity EBCF”.
2017 | ProBUC Deployment.
2018 | Implementation of Voluntary Environmental Agent program.

2.5 Respect for Rights and no Involuntary Relocation

In the three workshops explaining the Carbon project to 15 communities, the eight REDD+ principles and the social and environmental safeguards were presented. Those safeguards were previously established in a series of meetings throughout the Amazon between 2009 and 2010, and included several Civil Society Organizations.

It was emphasized in the workshops that compliance with these principles and safeguards under REDD+ projects, such as the Amazon Rio carbon project, contributes to improving local governance, transparency of information, public participation in decision-making, coordination of actions among different actors and respect and recognition of the rights of indigenous peoples and traditional populations.

**Free, Prior and Informed Consent (FPIC)**

During the project workshops the concept of "Free, Prior and Informed Consent" was presented to the participants, as well as the importance of social and environmental safeguards to ensure the rights of communities in designing and developing the REDD+ project, explained in the eight principles. The participants were asked whether they were in agreement and if there were other
principles or rights that should be included. Some community individuals expressed their agreement to the safeguards. All participants at the three workshops raised their hands in support of REDD+ project. The consent was unanimous.

A separate document describing the whole process of the "Free, Prior and Informed Consent" has been prepared and is available in Annex 10.

Figure 05 - Workshop I: Free, Prior and Informed Consent for the development of the REDD+ project by the community leaders of Democracia, Água Azul, São José do Miriti, Vista Alegre, Jatuarana, Terra Preta do Ramal, Pandegal, Santa Maria, Santa Eva and Terra Preta do Rio Mancoré.

Figure 06 - Workshop II: Free, Prior and Informed Consent for the development of the REDD+ project by the community leaders of Urucury, Mocambo, Boa Esperança and São João & Ponta Grossa.
3 APPLICATION OF METHODOLOGY

3.1 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

Figure 07 - Workshop III: Free, Prior and Informed Consent for the development of the REDD+ project by the Kamayuá indigenous community
3.2 Methodology Deviations

Whereas the VM0011 was developed in a context of homogeneous forests of temperate regions, some methodological adjustments were made related to the direct survey biomass in the field, since the project areas are comprised of very heterogeneous areas of rainforest including dryland and floodplains. Any technical documentation related to these methodological adjustments and their justifications appear in Annex 23 (Forest Inventory 2016) prepared by the consulting firm HDOM.

3.3 Project Boundary

The total area of the property is 20,387 ha and a buffer zone was established around each of the four areas in order to include communities that use the resources within their boundaries (Figure 7a). Project activity areas (for purposes of calculating the emissions reductions called the project area or PA) are only those for which logging is permitted, a total of 19,800 ha (Figure 7b), excluding the Permanent Preservation Areas (APPs) and bodies of water. A logging plan has been approved for this area for selective logging (Annexes 1, 2, 3, 4, 6 and 7).

Figure 08 - Project Boundaries. a) Direct Project interference limits. b) Total Project Area (G1, Indicator 7).

---

5 Ref.: section 2.2 of VM0011
Stratification of the project area

For purposes of inventorying local carbon stocks and project management, the project area was stratified into 3 groups of different forest types, as indicated by the VM0011, according to the vegetation map SIPAM/RADAM (DPI, 2002). The forest types present in the area are rain forest types, divided into 3 categories as follows:

- Dense Primary Tropical Ombrophylous Alluvial Forest
- Dense Primary Tropical Ombrophylous Lowland Forest
- Pioneer Formations

Figure 09 - Project Area forest types

Leakage areas

There is no direct leakage resulting from planned project activities, since there will be neither displacement of management activities to other areas after the cessation of the activities within the project area, nor market leakages. The project Management Plan includes the monitoring of
possible unanticipated leakages around the project area, as well as the need to report to the competent authorities whenever logging activities are identified in these areas. For more information on leakage, see chapters 5.2 and 5.5 of this document.

Temporal boundaries

Crediting period of the project

The first crediting period of the project is 37 years, beginning on August 17, 2012 and ending on August 2049. This period is equivalent to the remaining 12 years of the first authorized management plan (25 years from 1998) added to another 25 years in respect of a new forest management plan that was intended, as the common practice of forestry in Brazil. The logging activities could continue beyond 37 years, aiming for a second crediting period.

Monitoring and Reporting Period

a) Monitoring of Baseline Emissions

The monitoring of Baseline Emissions must demonstrate that the protected forest area is in accordance with the one specified in the PD. The project limit will be monitored before each verification throughout the crediting period through new inventory information and remote sensing and GIS, as applicable. Thus, the project will be able to update the baseline calculations based on the actual remaining forest area (in case of loss of forest cover by disasters, for example) and that would be subject to forest management under a “without project” scenario.

b) Monitoring of Project Emissions

Project emissions will be monitored annually and compiled in every monitoring report that will detail in particular the:

- Monitoring of possible illegal harvesting of timber;
- Monitoring of areas subject to natural disturbances;
- Monitoring and quantification of emissions related to air and land travel related to project activities.

c) Monitoring of Leakage

Since there will be no leakages according to the VM0011 and AFOLU Requirements, no leakage monitoring will be necessary. However, to be conservative the project intends to monitor any disturbances that might affect the carbon reservoirs. Once some disturbance is registered, the project will report the incident to the relevant authorities and make the necessary adjustments to
the baseline. For more details about the monitoring of leakages, see chapters 5.2 and 5.5 of this document.

**Carbon stocks**

The biomass reservoirs considered by the project are related to above-ground and underground biomass.

**Sources and sinks of GHGs**

Table 02 below describes the emission sources and sinks of greenhouse gases associated with the baseline activities and with the project.

Table 03 - Greenhouse gas emissions sources and sinks associated with baseline and project activities

<table>
<thead>
<tr>
<th>Source</th>
<th>Gas</th>
<th>Included?</th>
<th>Justification/Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biomass</td>
<td>CO₂</td>
<td>Yes</td>
<td>Main source of project emissions, through forest degradation, harvested and commercialised wood products, deadwood and forest regrowth</td>
</tr>
<tr>
<td>CH₄</td>
<td>No</td>
<td></td>
<td>Conservatively excluded</td>
</tr>
<tr>
<td>N₂O</td>
<td>No</td>
<td></td>
<td>Conservatively excluded</td>
</tr>
<tr>
<td>Other</td>
<td>No</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>Fossil Fuel consumption</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO₂</td>
<td>Yes</td>
<td></td>
<td>Main source, through fossil fuel use in machinery and transportation of timber</td>
</tr>
<tr>
<td>CH₄</td>
<td>Yes</td>
<td></td>
<td>Conservatively included</td>
</tr>
<tr>
<td>N₂O</td>
<td>Yes</td>
<td></td>
<td>Conservatively included</td>
</tr>
<tr>
<td>Other</td>
<td>No</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>Electricity consumption</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO₂</td>
<td>Yes</td>
<td></td>
<td>Main source</td>
</tr>
<tr>
<td>CH₄</td>
<td>No</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>N₂O</td>
<td>No</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>No</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>Project</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biomass</td>
<td>CO₂</td>
<td>Yes</td>
<td>Main source, through unexpected natural disturbances, such as forest fires, etc.</td>
</tr>
<tr>
<td>CH₄</td>
<td>Yes</td>
<td></td>
<td>Included but subject to significance</td>
</tr>
<tr>
<td>N₂O</td>
<td>Yes</td>
<td></td>
<td>Included but subject to significance</td>
</tr>
</tbody>
</table>
### 3.4 Baseline Scenario

The choice between alternative baseline scenarios was taken together with the analysis of additionality using the latest version of the VCS Tool for the demonstration and assessment of additionality in "Agriculture, Forestry and Other Land Use" VCS projects in this case, VT0001\(^6,7\) (VCS, 2012a). All possible scenarios as well as the analysis of methodology barriers (steps 2.1.1 and 2.1.2 of the VM0011) are present in the chapter below. In this sense, to avoid redundancy of information, refer to additionality analysis to find the steps 2.1.1 and 2.1.2 of the VM0011.

The baseline scenario for the project identified as the most likely to occur was selective logging\(^8\) (continuation of Business As Usual - BAU). The reference scenario assumes 37 years of selective logging, according to the 25 year logging plan, approved in August 1998 (Annex 6 - document: “Vald.II T01 POA 1998”) that in the absence of project activities would be renewed in 2024 for another 25 years until 2049.

Under this scenario, the full implementation of the timber logging plan occurs and which has already resulted in the degradation of 4347.69 ha (see table below). The area would be harvested selectively for timber sold in lumber markets. Below is a summary of harvest areas between 1999 and 2010, showing the managed plots and the dates on which the harvests were authorized.

---

\(^{6}\) Tool for the demonstration and assessment of an additional to the VCS project activities in Agriculture, Forestry and Other Uses [AFOLU] (V 3.0)

\(^{7}\) Adapted from “Tool for the Demonstration and Assessment of Additionality in A/R CDM project Activities” (V.02)

\(^{8}\) Additional information about choosing the baseline are presented in section 4.6 (steps 1 and 2)
Table 04 - Summary of areas managed since 1999

<table>
<thead>
<tr>
<th>Date</th>
<th>Managed/ logged area (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>586.69 (Plot 1)</td>
</tr>
<tr>
<td>2000</td>
<td>688 (Plot 2)</td>
</tr>
<tr>
<td>2001 – 2002</td>
<td>831.5 (Plot 3)</td>
</tr>
<tr>
<td>2003 – 2004</td>
<td>750 (Plots 3 and 4)</td>
</tr>
<tr>
<td>2005 – 2007</td>
<td>1,082 (Plot 5)</td>
</tr>
<tr>
<td>2008 – 2009</td>
<td>490.50 (Plots 5 and 6)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>4,347.69</td>
</tr>
</tbody>
</table>

3.5 Additionality

The additionality analysis of the Amazon Rio project REDD+ IFM was conducted with the latest version of the VCS Tool for the demonstration and assessment of additionality in Agriculture, Forestry and Other Land Use VCS projects, the VT0001,67 (VCS, 2012a).

To generate the reductions in GHG emissions for the project, the planned baseline activities (sustainable forest management) were terminated by the project proponent, and supplanted by environmental conservation activities. In this sense, the project will be managed by EBCF, with the goal of creating a fund for administrative and accounting management, especially to promote environmental management and monitoring activities of carbon pools within the project area.

Alternative activities planned in the project are the provisioning and valuation of environmental services, via carbon credits (VCUs) in conjunction with the sale of Environmental Reserve Quotas (CRAs).

4 Monitoring and Parameters of Data

4.1 Monitoring Plan Description

Due to its innovative, comprehensive and integrative character, the project needs to be monitored regularly so that its actions, activities and impacts can be constantly measured and evaluated. To meet this requirement, the monitoring process must meet three main objectives:
i. To serve as an internal management project tool;

ii. To collaborate as an instrument of collective learning from the communities and social groups directly involved;

iii. To work as a means of communicating results and impacts to interested institutions and society in general. Furthermore, it is important to consider that monitoring, if successful, will transcend the managerial aspects of the project and strengthening the plan.

To facilitate the monitoring process, instead of having a reference line (to compare interventions before and after), the first year of monitoring will serve as the starting point, whose information will be regularly and systematically compared throughout the project.

Next, the initial plans for monitoring benefits to the climate, community and biodiversity are described, wherein the community is committed to participatory precept and to the technical and scientific rigor, which is capable of following the possible negative and positive impacts on environmental and social aspects in the project area and its surroundings.

**Monitoring of Climate Impacts**

The Monitoring Plan (MP) aims to provide security in the periodic estimates of reduction in emissions, especially in monitoring changes in carbon stock. Therefore emissions from the implementation of the project, ex post estimates of the activities and emissions from any leakages and isolated disturbances (e.g., blowdown, fires, pests and diseases, among others) can be calculated.

The construction of the PM of the climate benefits made in full compliance with the methodological framework provided by VM0011 – IFM LPF (VCS 2011) and CCBA (2008), which consists of four specific actions to be monitored:

i. Implementation and execution of the project;

ii. Dynamics and stock of the forest biomass;

iii. Deforestation and forest degradation;

iv. Periodic reviews of *ex post* emissions.

**Remote monitoring and surveillance of the project area**

Measurement of alterations and biomass loss quantification present in the PA using land use change detection is critical to make accurate estimates of GHG emissions that account for forest biomass increases and losses.
Thus, the use of remote sensing by satellite images of medium spatial resolution can be applied readily in the PA and surroundings in order to monitor land use dynamics over time, particularly to identify risks and threats to forested areas. *In situ* verification will complement landscape analysis in a GIS environment with the aim of quantifying, spatializing and identifying conversion of forest areas into other land uses, environmental degradation and other possible changes that may occur during the term of the project.

As a complementary monitoring source, the project will rely on the database and information provided by Monitoring Program of the Brazilian Amazon Forest by Satellite \(^9,10\) (Prodes Digital), conducted by the National Institute for Space Research (Instituto Nacional de Pesquisas Espaciais - INPE), according to the Plan for Prevention and Control of Deforestation in the Amazon \(^11,12\) (PPCDAm) under the National Policy on Prevention and Control of Deforestation. Such information is available online in\(^13\) digital vector files for the public in general.

Other tools will provide complementary information to the monitoring, such as indicators of forest degradation and hotspots (fires and wildfires) obtained from DETER \(^14\), SAD \(^15\), and PROARCO \(^16\). Information is available online for free in vector format. These results will be systematically related to field data for validating or disproving the occurred event, so that the focuses of deforestation and degradation can be identified, remediated, reported, and consequently avoided as much as possible.

A surveillance system that allows permanent territorial monitoring and inhibits the entry of intruders through entry points in the PA will also be deployed to control the transport flow. In addition, one must investigate and identify risks and threats, e.g., mapping hotspots and areas vulnerable to fire, to illegal logging, to hunting and poaching, and to invasions by third parties, among others.

At first, we estimate an effective demand for structuring the electronic monitoring system, which includes the hiring of skilled professionals, field equipment, electronic equipment (digital cameras, GPS, desktops and notebooks, smartphones, printers, geoprocessing software and GIS, among others), vehicles and/or motorcycles, motorized boats for transportation and moving around and the collection of high resolution satellite images. Empowerment and training of all involved staff

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\(^9\) [http://www.obt.inpe.br/prodesdigital/metodologia.html](http://www.obt.inpe.br/prodesdigital/metodologia.html)

\(^10\) [http://www.obt.inpe.br/prodes/metodologia.pdf](http://www.obt.inpe.br/prodes/metodologia.pdf)

\(^11\) [http://www.mma.gov.br/florestas/controle-e-preven%C3%A7%C3%A3o-do-desmatamento](http://www.mma.gov.br/florestas/controle-e-preven%C3%A7%C3%A3o-do-desmatamento)

\(^12\) [http://www.mma.gov.br/images/arquivo/80120/PPCDAm_FINAL_PPCDAM.PDF](http://www.mma.gov.br/images/arquivo/80120/PPCDAm_FINAL_PPCDAM.PDF)

\(^13\) [http://www.obt.inpe.br/prodes/index.html](http://www.obt.inpe.br/prodes/index.html)

\(^14\) [http://www.obt.inpe.br/deter/dados/](http://www.obt.inpe.br/deter/dados/)


\(^16\) [http://www.dpi.inpe.br/proarco/bdqueimadas/](http://www.dpi.inpe.br/proarco/bdqueimadas/)
and the surrounding communities will be necessary to make the system effective\textsuperscript{17}, and a constant stream of information directed to regional actors, and other stakeholders.

Strategic monitoring and access points to RPDS roads will also provide support to other MPs, including social and biodiversity conservation aspects, especially in the logistic support of planned field activities.

**Procedures for determining the permanent sample plots (PSPs) and measurement**

The calculation of the stock and increase in forest biomass will be subsidized through the installation of PSPs in the PA and its temporal monitoring through the Continuous Forest Inventory (CFI). The methodology proposed by VCS (2011) suggests the use of permanent and/or temporary plots, however, it confirms the efficiency and accuracy of sample plots.

In order to demonstrate the procedural and statistical rigor used, all the sampling procedures, the PA forest stratification, sampling design, calculation of sampling intensity, and other parameters measured in PSPs to monitor biomass balance due to ingress/mortality of individuals, growth in DBH and height will be presented in detail in the Annex (Annex 23 - Forest Inventory 2016).

To promote reliable forest biomass estimates, standard operating procedures (SOPs) (Section 8.2) will be used by the team executing the CFI.

**Monitoring frequency**

The monitoring frequency parameters measured in the PSPs will be no greater than 5 years from the first measurement. Other relevant parameters to monitoring the PSPs, like the change in land use in the PA and surrounding areas such as deforestation, forest degradation, fire sources and natural disturbances will be regularly monitored as a project routine operation, organized and archived annually.

4.1.1 **Monitoring Impacts to Biodiversity**

Since animal inventories have not been conducted in Amazon Rio project areas (for this project biological information for the Rio Amapá RDS management plan were used), a biodiversity monitoring system that will follow the RAPELD methodology (Rapid surveys of various taxonomic groups (RAP) for long-term ecological studies) (MAGNUSSON et al, 2005).

The RAPELD method contributes to long-term research using rapid inventory assessments, biotic complementarity, and land use planning in the Amazon. This method increases adequate sampling

\textsuperscript{17}Linking community monitoring to national Measurement, Reporting and Verification for REDD+.
probability of biologically diverse communities, which require large areas and at the same time minimize variation of abiotic factors that affect these communities with smaller areas sampling.

Evaluation and selection of indicators will be conducted in accordance with the ProBUC model, however, applicable to local reality, results will be updated biennially from the first survey. Biodiversity indicators are being designed and planned, as suggested in the Social and Environmental Monitoring System of Protected Areas in the Brazilian Amazon (Sistema de Monitoramento Socioambiental das Unidades de Conservação da Amazônia Brasileira)\textsuperscript{18,19} and Methodology for Rapid Assessment and Prioritization of Protected Areas Management\textsuperscript{20} (Metodologia para Avaliação Rápida e Priorização do Manejo de Unidades de Conservação - RAPPAM) in line with the experiences gained and disseminated by CEUC and ICMBIO previously described.

The empowerment, accountability and shared management of biodiversity conservation is the main focus of the methodological model adopted. These actions create high expectations for environmental management of the area, as the biodiversity monitoring will be conducted by the community members themselves along with the project proponent, promoting a local multiplier effect. It is worth mentioning that strict compliance with these procedures is in within EBCF’s interest since it considers them to be key to the success of the project.

The project begins with the premise that any negative impact on biodiversity in the project area and its surroundings will not occur. In the opposite sense, the project aims to generate and provide greater understanding of the territory, subsidizing proposals for the conservation and sustainable use through adoption of good management practices of natural resources as well as its replication in other locations.

4.1.2 Monitoring Social Impacts

The monitoring of social aspects include both the collection of numerical data, such as quantity, volume, weight (quantitative indicators), as well as information expressing opinions and experiences (qualitative indicators), remembering that such measures are compatible and interchangeable. Data collection should be systematic and have a pre-established rate and, most likely, a single indicator will require several data collection instruments such as plans, field records, reports etc.

Social information will be monitored through the use of participatory methodologies. In this sense, the preparation process of the Amazon Rio I RPDS Management Plan was a first step. For the
socioeconomic characteristics of communities, several community meetings, land use mapping workshops, and interviews with focus groups were held, in addition to field visits (Annex 10). The main activities of the project were presented and discussed in these events, emphasizing the importance and timeliness of local valuation of environmental services, as well as strategies for raising funds to implement other projects and improvements in social well-being of communities around the PA.

5 MEASUREMENT OF GHG EMISSIONS REDUCTIONS AND REMOVALS (CLIMATE)

5.1 Emissions Baseline

EBCF did not carry out any wood related exploration activity in the areas since the beginning of the REDD+ project. Thus, it is confirmed estimated emission reductions for the project as 86,788.33 t CO2.eq t / year.

5.2 Project emissions

Project emissions were primarily those related to the running of offices and necessary travels for studies, meetings, presentations, workshops and other activities. Table 10 presents a summary of emissions based on data from Annex 21 of this report.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Energy (KWh)</th>
<th>Energy (t CO2eq)</th>
<th>Travels (Km)</th>
<th>Travels (t CO2.eq)</th>
<th>Total (t CO2.eq)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td></td>
<td>678</td>
<td>0.24</td>
<td>0.24</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td>104.010</td>
<td>23,60</td>
<td>23,60</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>1.149</td>
<td>0.08</td>
<td>55.724</td>
<td>15,73</td>
<td>15,81</td>
</tr>
<tr>
<td>2013</td>
<td>2.756</td>
<td>0.28</td>
<td>236.749</td>
<td>54,29</td>
<td>54,57</td>
</tr>
<tr>
<td>2014</td>
<td>2.498</td>
<td>0.25</td>
<td>15.789</td>
<td>4,59</td>
<td>4,84</td>
</tr>
<tr>
<td>2015</td>
<td>2.231</td>
<td>0.23</td>
<td>27.340</td>
<td>5,97</td>
<td>6,20</td>
</tr>
<tr>
<td>2016</td>
<td>1.015</td>
<td>0.10</td>
<td></td>
<td>0.10</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.93</td>
<td>440.290</td>
<td>104,43</td>
<td>105,36</td>
</tr>
</tbody>
</table>

5.3 Leakage

Not applicable according to presentation made on the REDD+ IFM document.
5.4 Summary of GHG Emission Reductions And Removals

EBCF REDD+ project shows emissions reduction of 343,975.63 tCO2e as the balance in the period of 2011-2015. Table 06 shows the overview of the dynamics of reductions and project emissions up to 2048. By the year 2015 the emissions data is posted as seen in reports and from 2016 data are projects as previous average and should be adjusted as a result of future reports.

Table 06 - Summary of ex ante estimates

<table>
<thead>
<tr>
<th>Year</th>
<th>Estimated reductions from baseline(^{21}) (tCO(_2)e)</th>
<th>Project Estimated emissions (^{22}) (tCO(_2)e)</th>
<th>Unplanned estimate Emissions (^{23}) (tCO(_2)e)</th>
<th>Net GHG Estimated emissions Reduction (tCO(_2)e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>86,755.00</td>
<td>15.81</td>
<td>0</td>
<td>86,739.19</td>
</tr>
<tr>
<td>2013</td>
<td>86,755.00</td>
<td>54.57</td>
<td>0</td>
<td>86,700.43</td>
</tr>
<tr>
<td>2014</td>
<td>86,755.00</td>
<td>4.84</td>
<td>2,962.96</td>
<td>83,787.20</td>
</tr>
<tr>
<td>2015</td>
<td>86,755.00</td>
<td>6.20</td>
<td>0</td>
<td>86,748.80</td>
</tr>
<tr>
<td>2016</td>
<td>86,755.00</td>
<td>21.00</td>
<td>0</td>
<td>86,734.00</td>
</tr>
<tr>
<td>2017</td>
<td>86,755.00</td>
<td>21.00</td>
<td>0</td>
<td>86,734.00</td>
</tr>
<tr>
<td>2018</td>
<td>86,755.00</td>
<td>21.00</td>
<td>0</td>
<td>86,734.00</td>
</tr>
<tr>
<td>2019</td>
<td>86,755.00</td>
<td>21.00</td>
<td>0</td>
<td>86,734.00</td>
</tr>
<tr>
<td>2020</td>
<td>86,755.00</td>
<td>21.00</td>
<td>0</td>
<td>86,734.00</td>
</tr>
<tr>
<td>2030</td>
<td>86,755.00</td>
<td>21.00</td>
<td>0</td>
<td>86,734.00</td>
</tr>
<tr>
<td>2048</td>
<td>86,755.00</td>
<td>21.00</td>
<td>0</td>
<td>86,734.00</td>
</tr>
<tr>
<td>Total</td>
<td>3,123,180</td>
<td>252.03</td>
<td>2,962.96</td>
<td>3,119,989</td>
</tr>
</tbody>
</table>

5.5 Climate Change Adaptation Benefits (GL1)

There is a relatively widespread understanding in the scientific community that balanced ecosystems have greater ecological and social resilience and adaptability to climate change,

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\(^{21}\) See annex 18  
\(^{22}\) See annex 21  
\(^{23}\) See annex 24- HDOM (Study on deforestation and heat spots for EBCF REDD+ Project technical report)
whether through protection of water bodies and regulation of river flows during peak flood and drought, or through the regular supply of environmental services, products and services.

Thus, once the project is designed to conserve an area of native forest, which in the absence of the project scenario would remain subject to the pressure of timber management (baseline) and consequent degradation resulting from such activities, it is understood that the mere protection of these areas alone would offer communities and the ecosystem itself better adaptability compared to the baseline scenario.

Moreover, the project has an Activity Management Plan (Annex 9), which details, among other initiatives, the promotion of the sustainable use of ecosystem resources through direct support in some activities related to income generation and conservation, along with community training. It is believed that, in addition to ensuring a more balanced (and therefore more resilient) environment, the project will expand the options for generating income among the communities, making them more resilient and preparing them to face the greater and already perceived challenges posed by climate change.

6 COMMUNITY

6.1 Positive Impacts for Communities (CM1)

EBCF’s REDD+ project was first presented to the riverine communities in 2011. By then, communities were informed about the cessation of all timber exploration activities due to the REDD+ project and discussions were held regarding biodiversity conservation and the sustainable use of forest products and services, as well the social development of the surrounding communities. Briefly the positive impacts along the communities were:

1. Project area zoning and its surroundings
2. Contribution to building local capacity
3. Contribution to developing sustainable business in the region
4. Contribution to social and environmental diagnosis

**Knowing to manage**

To evaluate the progress of these initiatives throughout the development of the project, we used the methodology of the Sustainability Matrix developed by the Secretariat of Environment and
Sustainable Development of Amazonas State. This tool was applied in 15 communities, taking into account local socio-economic aspects that underlie the development of 20 parameters considered of great importance to community development, described by specific indicators. As a visual tool, the Sustainability Matrix is quite suitable for traditional populations, such as the riverside and indigenous communities surrounding the Reserve Amazon River l and other areas of the Project. Additionally, the Matrix provides interesting spaces for discussion, since its construction is done collectively. Through the Sustainability Matrix it was possible to identify, along with the communities, projects, activities and implementation strategies. Budgets and monitoring and evaluation of these projects will be detailed later, through the Annual Operational Plans to be developed and followed up in the due course. Four programs and nine subprograms were defined for management and community development (Annex 9).

6.2 Negative Impacts (CM2)

No negative impacts have been recorded or identified as a result of the project with stakeholders.

7 BIODIVERSITY

7.1 Positive Impacts for Biodiversity (B1)

The benefits for biodiversity are in reducing deforestation and degradation (selective logging) in the project area. According to satellite images analysis in the project areas and their surroundings, it was observed that until 2010, 300 hectares were deforested. After the implementation of the project, community awareness on the importance of preservation and conservation of forests have encouraged "no deforestation / degradation," and a significant reduction in deforestation was identified (see graph below). This was due to the good understanding of the project's conservation objectives, and by the involvement and support of the surrounding communities.
The consequences of deforestation and degradation on biodiversity are well known. Thus, the fact of not being identified changes (natural or anthropogenic) in forest areas, shows there was no loss of biodiversity, no reduction in floristic diversity, no impact on the dynamics of fauna and flora, and no loss of evolutionary genetic information.

### 7.2 Negative Impacts on Biodiversity (B2)

There are no negative impacts on biodiversity as a result of the project.

### 7.3 Exceptional Benefits for Biodiversity (GL3)

The description of "exceptional" benefits for biodiversity will only be possible after the re-measurement of permanent plots. (FLORA).

### 8 ADICIONAL INFORMATION

All activities and the consequent reduction in deforestation and degradation in and around the project areas were maintained and funded without resources of carbon credits. We understand that with the advance of REDD+ project, EBCF will have much better conditions to implement positive actions in partnership with communities.
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