

# **ROUNDTABLE ON SUSTAINABLE PALM OIL**

## **NEW PLANTING PROCEDURES**

### **SUMMARY REPORT**

#### **PLANNING AND MANAGEMENT OF SOCIO AND ENVIRONMENTAL IMPACTS AND HIGH CONSERVATION VALUES**

**ADM - BRAZIL**

**STATE OF PARÁ - BRAZIL**

**Version 3**

**December, 2014**

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## SUMMARY REPORT FOR PLANNING AND MANAGEMENT OF SOCIO AND ENVIRONMENTAL IMPACTS AND HCV

### 1. EXECUTIVE SUMMARY

This report presents the executive summary of the final results of the **Social and Environmental Impact Assessment and High Conservation values of the Oil Palm** Production project in the Northeast of Pará – Brazil, carried out by the company *Orbis-Exceller Soluções Ambientais* for the Archer Daniels Midland Company (ADM - Brazil).

In 2012, ADM began to implement their plans for the production of palm oil. These plans are to plant 7,600 ha of palm oil, with 5,600 ha in business partnerships and 2,000 ha of production in partnership with smallholders (family producers).

In the business partnerships, ADM signs a contract with the landowner. ADM is responsible for land preparation, planting and all agricultural activities. The amount paid to each landowner depends on the details of the contract agreed by both parties in each individual case.

In the case of smallholder production (family producers), partnerships take the form of a contract whereby smallholders produce palm oil and provide an exclusive supply of Fresh Fruit Bunches, with support from ADM and financial backing from PRONAF Eco Palm. The contracts are signed between the Company, the Smallholder and Rural Unions, with the support and validation of Producers Associations. PRONAF Eco Palm is a line of credit specific to Palm Oil and family producers, designed by the Brazilian Federal Government.

The smallholder undertakes to carry out the planting, maintenance and harvesting of palm oil, according to the technical recommendations provided by the company. The smallholder also undertakes to sell all the production to the company. In turn, the company provides the technical assistance necessary for the proper management of the plantation and guarantees the purchase of the entire production. The company also provides inputs, tools and PPE, which are included in the budget. In other words, they are provided by the company, but are paid for by the producer, since they are included in the cost of financing the project. The output price is set by a mechanism established in the contract, according to which the value of a ton of Fresh Fruit Bunches (FFB) is calculated as a percentage of the value of a ton of crude palm oil on the international market (CIF Rotterdam).

The project is located in the northeast of Pará/Brazil. The region is one of the oldest areas of occupation of the Brazilian Amazon and has an essentially agricultural character, composed of large, medium and small farms.

The study consisted of four steps. Step 1 involved the assessment of High Conservation Value (HCV), confirmation of the existence of free, prior and informed consent and the provision of advice on the preparation of the plantation area. This step was carried out in 2013 for ADM's new planting in that year. Step 2 involved an assessment of the social and environmental impacts of the project, at the local and landscape scales, also including the evaluation of High Conservation Value (HCV) at the landscape scale. Step 3 included analyses of the areas of new plantings to be undertaken in 2014, referring to the assessment of the High Conservation Value (HCV) and confirmation of the existence of free, prior and informed consent, and the provision of advice on the preparation of plantation areas. Step 4 involved mapping of smallholdings areas, new consultation to assessment of HCV and calculation of HCV areas on smallholdings (family farms).

The Social and Environmental Impacts Assessment, including HCV assessment, analysed the primary and secondary information obtained in the region of the project. The full version is divided as follows: part I - Introduction, Characterization, and Description of the Enterprise and the Social and Environmental impacts of palm oil production; part II - The Physical Environment, with analyses of geomorphology, soil and water resources; part III – The Biotic Environment, with assessments of vegetation and fauna (birds and mammals); part IV - Land Cover and deforestation, with analyses of the deforestation of areas for planting after November 2005; V - Socioeconomics, with analyses of the socioeconomic data about the region and consultations with public and private stakeholders and smallholders (family producers); VI - Integrated Analysis, with assessments of criteria 5, 6 and 7 of RSPO, (integrated assessment of Social and Environmental Impacts, Mitigation Measures and Socio and Environmental Programs.)

At this stage, the baseline of the project has been established, by measuring the initial conditions that can be monitored over the project activities. The social and environmental impacts are both direct (observable at present development of the activity) and indirect (presumable from the characteristics of the activities).

The social and environmental impacts are positive and negative. The mitigation and compensation measures seek to decrease, mitigate or compensate for the adverse environmental and social impacts, while other programs and measures aim to maximize the positive impacts.

The social and environmental fragility of the region, due to low levels of human development and infrastructure, the greatest environmental degradation of this region by agro-livestock activity, and the ecological importance of Endemism Center of Belém, means that any economic activity has a heightened social environmental responsibility.

### **1.1 Primary Forests**

Originally, the region was covered by upland dense ombrophilous forest and alluvial dense ombrophilous forest (forests of floodplain and flooded areas). However, over the last 150 years, through the process of occupation, the original vegetation has been converted into agricultural areas - mainly cattle grazing and secondary forests in various stages of secondary succession and shrubland. Few fragments of forest remain, principally along the rivers and streams (forests of floodplain and flooded areas), and almost no area of primary forest.

The intended areas for planting in the business partnerships properties and smallholders are covered by cattle grazing and shrubland, in a mosaic of vegetation in different successional stages, where typical individuals of mature forest are rarely found. This vegetation can vary from scattered mono-dominant individuals about a meter high, up to mono-dominant aggregates of about five to six meters in high density. Generally these remnants have no vertical stratification, and their regenerative processes are hampered due to the dominance of grasses - usually *Imperata brasiliensis* (Brazilian satintail), and also the high density of lianas (*Dillenia* sp.) and scandent grasses (*Cyperus* sp.). In the properties of business partnership, the most common land cover is cattle grazing, although some vegetation fragments forming a mosaic of vegetation height and structure occurred in all properties, according to the different land uses in the properties. Areas with high frequency of use generally have lower vegetation. Thus within the same property there are patches of higher or lower shrubland due to the spatial and temporal dynamics of land use.

At the landscape scale, there are fragments of secondary vegetation, linked with forest set aside (legal reserve areas) of the properties and riparian forest. These areas, although they have been sorely impacted by logging, have high importance for conservation.

## 1.2 Peat or Fragile Soils

In the areas intended for planting, no peat or fragile soils were identified. This assessment was carried out from maps of soils of the region (SEMA-PA), fieldwork and satellite images.

At the landscape scale, there are soils associated with wetlands of the major rivers (River Capim, River Guamá and River Irituia). These areas are outside those intended for planting. These wetlands were also classified as HCV 1, and no planting was planned for this type of environment. In areas already planted at the period of assessment, it was found that no organic soil areas were used for planting.

In the region sandy soils occur, associated with ancient riverbeds, known locally as grasslands or white sand plains. These soils provide conditions for a unique natural environment and were classified as HCV 3. Due to the very low fertility of these areas, planting should not be done at these locations. These types of soil were not found in the areas to be planted.

## 1.3 Lands of Local Communities

The region of the project is essentially used for agro-livestock, consisting of medium and large properties and smallholders.

The business model established by ADM, in which there is no land purchase, but partnerships through contracts with landowners and smallholders gives to the project the characteristic of low land conflicts. In the case of business partnerships, agreements are established only with properties that have documents that guarantee the legality of land ownership within the national Brazilian criteria (property deeds or proof of purchase and sale). In the case of partnerships with smallholders, the contracts also require confirmation of land ownership. In this case, the existence of property deeds, proof of purchase and sale, and the suitability statement of PRONAF (DAP) are verified. When there are no property deeds, the statement of peaceful ownership (DPMP) is obtained. The DPMP contains a statement from the smallholder that lives and works on his/her property, and the consent of three neighbours of the property stating that there are no conflicts of legal, customary or user rights. All three parties sign this document.

In addition, funders (banks) of productions of smallholders also inspect land ownership. Dossiers are sent to these institutions, ensuring greater certainty of land ownership.

Regionally, there are local communities known as Maroons, which essentially consist of smallholders, frequently as family farmers. Such communities were identified and mapped in this assessment.

There are two indigenous lands in the region (Maracaxi and Upper River Guama), located approximately 20 km from the areas for planting oil palm. Such areas will not be directly influenced by the activities. Nevertheless, the production on two properties (Ariramba and Alegria) could have an indirect impact on Indigenous Land of the Upper River Guama, by interfering with the water quality of rivers that cross these properties and form the River Guama. The River Guama is located on the border of the indigenous land Upper River Guama.

## 1.4 High Conservation Values Areas – HCV

High Conservation Values in different categories have been identified. Protected areas (Indigenous Lands) were classified as potential HCV 1. Potential HCV 1 was also assigned to the main fragments of forest in the region, where a total of 38 threatened or endangered species occurring or with potential to occur were recorded. The wetlands along the main rivers and

nesting places of birds were also classified as HCV 1. Grasslands or white sand plains environments (*campinaranas*) were categorized as HCV 3. HCV 4 was assigned to all riparian forests (Permanent Preservation Areas - PPA). The main rivers, which are important in the Amazon region for local people in terms of fishing, transportation, facilities, consumption and leisure, were classified as HCV 5. Potential HCV 6 was assigned to indications of occurrences of archaeological traces. Although archaeological sites have not been specifically identified, they have the potential to occur in the region.

The areas identified as HCVs are mainly located in the landscape scale. In the of business partnerships and smallholdings areas of planting, the areas to highlight are the fragments of forest that form the forest set aside (Legal Reserves) (classified as potential HCV 1) and the riparian forest (HCV 4). These areas are also protected by Brazilian law (Forest Code) and were not converted to plantation. The total of 2769.45 ha were identified as HCVs in the properties of business partnerships, corresponding to 1868.46 ha of HCV 1 and 900.98 ha of HCV 4. In smallholdings were mapped 2772.52 ha identified as HCVs, corresponding to 2032.48 ha of HCV 1 and 740.04 ha of HCV 4. Measures to maintain or increase these HCVs have been proposed and presented in a specific report, the main plans and procedures are the environmental regulation of the properties according to the Brazilian Forest Code of Legal Reserve (forest set asside) and Permanent Preservation Areas (riparian areas), with the potential to significantly increase of the High Conservation Value areas in the properties.

No HCVs replacements have been identified in the areas intended for palm oil plantation. In properties of business partnerships, the field surveys and historical analyzes of satellite images from 2006-2013 indicate replacement of secondary vegetation in small areas. The majority areas for planting occurred with replacement of cattle grazing. In smallholdings, the areas for planting were scrubland, already used for ancient agricultural areas, according to consultations with communities, field surveys and analysis of implementation process conducted by ADM.

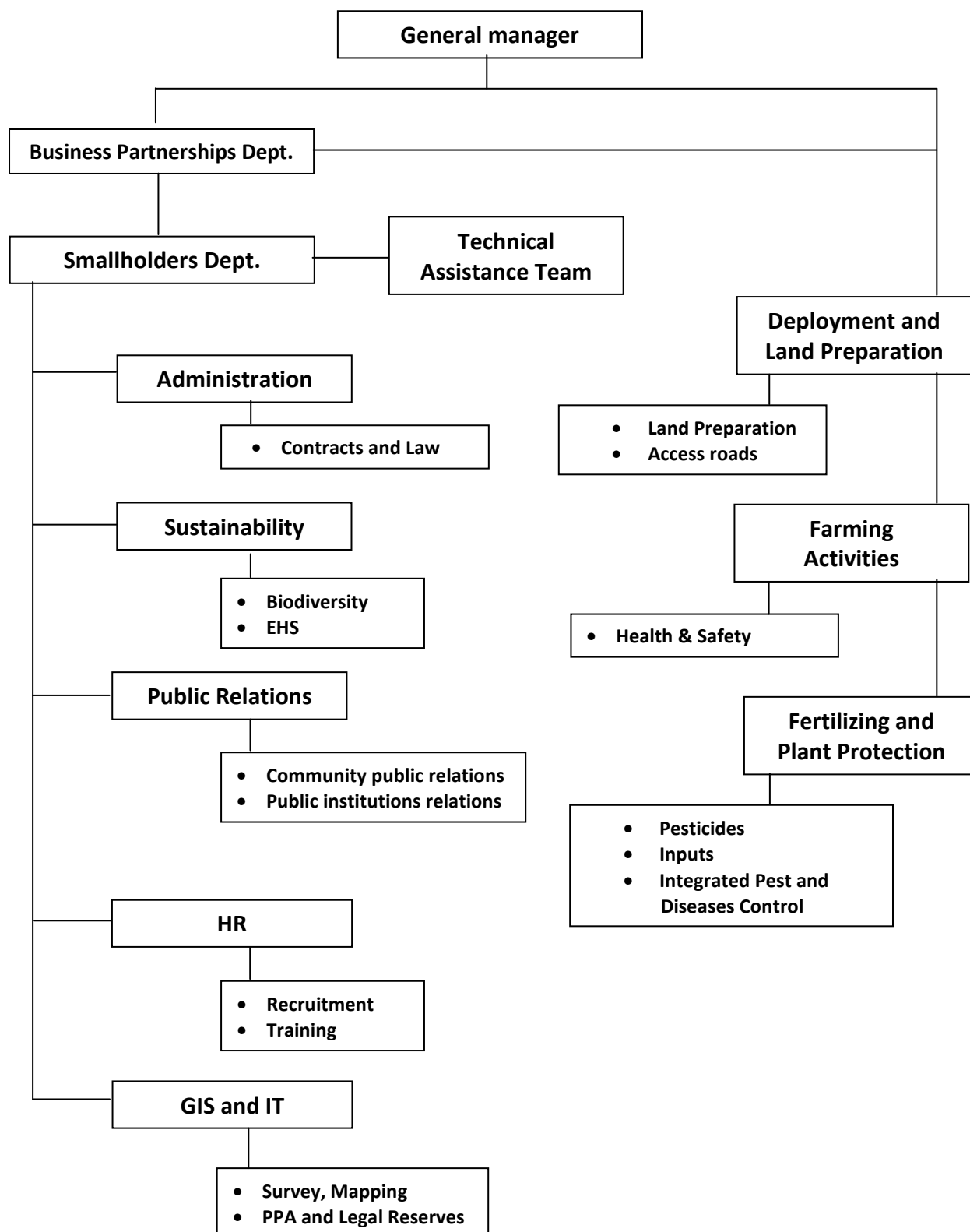
## 2. SCOPE OF THE PLANNING AND MANAGEMENT

### 2.1. Identification of Organization

<b>Name of the Company</b>	ADM do Brasil
<b>Address</b>	Rod. Pará, 127, Bairro Novo. São Domingos do Capim. PA. ZIP CODE – 68635-000
<b>National Register of Legal Entities - NRLE</b>	02.003.402/0092-02
<b>Person of Contact</b>	Diego Di Martino
<b>Phone</b>	91-34371610 e 11-51853500
<b>Email</b>	Rodrigo.Curvo@adm.com
<b>Legal Representative</b>	Diego Di Martino
<b>Status of Capital</b>	LTDA
<b>Status of land ownership</b>	business partnerships and smallholders partnerships
<b>Total Area</b>	7448,29 hectares
<b>Planted area in business partnerships</b>	5418,39 hectares
<b>Planted area in partnership with smallholders</b>	2029,9 hectares
<b>Study scope</b>	New development

## 2.2. Personnel involved in planning and implementation

Those involved in the planning and implementation will be: the general manager, the leaders of business partnerships and smallholder partnerships, the community & public relations department, and the environmental, health and safety department (EHS). The overall organisation is as shown below.



### 2.3. Stakeholders to be involved

Local communities who are or will be affected by the development of ADM Plantations as identified in the Social and Environmental Impact Assessment report will be involved, along with the relevant government departments (municipality departments, state and federal institutions), rural work unions and associations of smallholders will also be involved.

### 2.4. Reference Documents

#### 2.4.1 List of Reports

- I. Social and Environmental Impacts Study of the Palm Oil Production Project of ADM of Brazil. Northeast of Pará - Brazil. June 2013. Orbis Exceller Soluções Ambientais.
- II. Study of the Potential of Deployment of the Palm Oil Production Project of ADM of Brazil. Pará - Brazil. 2011. Vigna Brasil Projetos.
- III. Reports of the Progress of the Oil Palm Project of ADM of Brazil. Pará - Brazil. 2012. Eco Dendê.
- IV.

#### 2.4.2 List of Legal Documents

- Brazil, 1973. Established regulatory measures for rural labor. Federal Law No. 5.889, June 8, 1973.
- Brazil, 2006. Establishes guidelines for the formulation of the National Policy for Family Agriculture and Rural Family Production. Law Nº. 11.326, July 24, 2006.
- Brazil, 2011. Ministry of Labor. NR- 31: Safety and health in agricultural labor, livestock farming, forestry, silviculture and aquaculture. Ordinance Nº. 86, March 3, 2005. Revised with Ordinance MTE Nº. 2.546, December 14, 2011.
- Brazil, Forestry Code 12.651, most recent update: Law No. 12.727, October 17, 2012.
- Brazil, 2011. Instituted the Program to Support Environmental Conservation and the Program to Promote Rural Production. Law Nº. 12.512, October 14, 2011.
- Brazil, National Council on the Environment (Conselho Nacional de Meio Ambiente - CONAMA) Resolution Nº. 357, March 17, 2005.
- Brazil, National Council on the Environment (CONAMA). Resolution Nº. 398, April 3, 2008.
- Brazil. National Council on the Health. Ordinance Nº. 518, March 25, 2004.
- State Government of Pará. 2007. Ecological-Economic Macro-zoning in the state of Pará. Secretary of Science, Technology and Environmental Executive.
- Brazilian Agricultural Research Corporation (Embrapa). 2010. Agro-ecological zoning for palm oil in deforested areas of the legal Amazon- ZAE-Dendê.
- State Government of Pará. 2005. State Law No. 6745, May 6, 2005.
- Ministry of Agrarian Development (MDA). 2010. Program for Sustainable Palm Oil Production in Brazil.



- Ministry of the Environment (MMA). 2008. List of Endangered Brazilian Fauna. Normative Instruction No. 03/2003, Federal Official Gazette Nº. 101, Section 1, pgs. 88-97, May 28, 2003.
- Secretary of State and the Environment (SEMA). 2007. List of Threatened Flora and Fauna Species of the state of Pará. Available at: <http://www.sema.pa.gov.br>.

### **2.4.3 List of Property Documents**

#### ***Business Partnership Properties***

- Definitive proof of ownership.
- Proof of purchase and sale.
- Rural Environmental Registry (*Cadastro Ambiental Rural – CAR*) and Planting Authorization from SEMA/PA
- Proof of Payment of Rural Land Tax.
- Rural Environmental License (*Licença Ambiental Rural - LAR*).

#### ***Smallholders Properties***

- Definitive proof of ownership.
- Proof of purchase and sale.
- Statement of PRONAF acquirement (DAP).
- Statement of Peaceful Ownership (DPMP).
- Rural Environmental Registry (*Cadastro Ambiental Rural – CAR*)
- Surveillance report on *PRONAF Eco Dendê*.
- Environmental Commitment Term (ECT).
- Rural Environmental License (*Licença Ambiental Rural - LAR*).

### **2.4.4 List of Partnerships Documents Contracts**

#### ***Business Partnership Properties***

- Partnership contract between ADM and landowner.
- Environmental Commitment Term (ECT).

#### ***Smallholders Properties***

- Contract to support the Implementation of palm oil and exclusive supply of Fresh Fruit Bunches originating from smallholders.
- Bank Credit.

## 2.5 Location and Regional Description

The project of palm oil production in the North East of Pará by ADM covers areas in the municipalities of São Miguel do Guama, São Domingos do Capim, Irituia, Mão do Rio, Aurora do Pará, Concórdia do Pará, Santa Maria do Pará and Capitão Poço (figure 3.1).

The administrative office of ADM and the major activities related to smallholder partnerships are currently located in the city of São Domingos do Capim. The cities of São Miguel do Guama and Mão do Rio are the headquarters of the Business Partnership.

By the end of 2012, the planted areas consisted of 3 properties of business partnerships and 146 properties of smallholders. 5 business partnerships and 320 smallholders were involved in the 2013 planting cycle. In 2014, the ADM planted in 4 other business partnership properties.

The smallholdings range from 5 to 10 hectares. They are located in several rural communities in the municipalities of São Domingos do Capim, Irituia, Mão do Rio and Capitão Poço.

Figure 2.1 below shows the location map of the area of operation of the project.

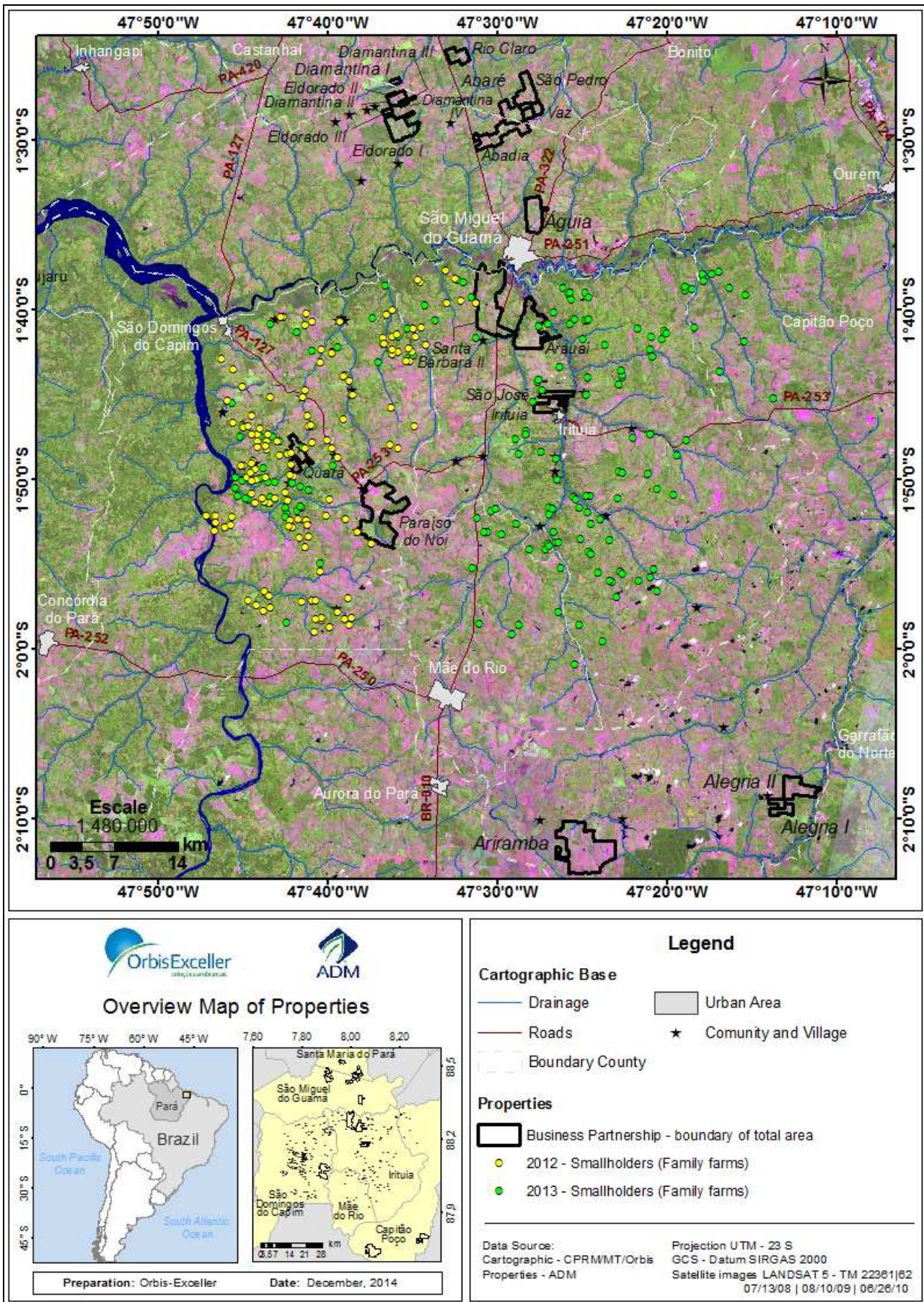


Figure 2.1 - location map of project's area.

## 2.6 Area of Planting and Timing-Plan for New Planting

Table 2.1 shows the business partnership properties, smallholders, total area, contracted area, planted/planting area, suitable planting area and planting timetable. Appendices 1 and 2 present the complete list of smallholders.

**Table 2.1 - List of properties and planting timetable.**

Properties	County	Total Area (ha)	Contracted area	Planted área (palm oil + roads) (ha)	Legal Permitted Area (Rural Environmental Registry)	Planting timetable
Farm Santa Bárbara II	Irituia	1926,78	600,00	405,44	912,8	2012
Farm São José	Irituia	194,98	165,00	37,32	72,8	2012
Farm Irituia	Irituia	408,52	200,00	127,66	190,74	2012
Farm Arauaí	Irituia	1222,1	600,00	335,00	505,69	2012
Farm Paraíso do Noi	São Domingos do Capim	1962,65	540,00	523,88	981,32	2013
Farm Rio Claro	Santa Maria do Pará	324,40	148,00	151,16	159,37	2013
Farm Alegria I	Capitão Poço	210,65	134,37	154,96	156,47	2014
Farm Alegria II	Capitão Poço	739,03	497,37	410,69	497,76	2014
Farm Ariramba	Capitão Poço	2166,02	1972,00	1948,39	2080,02	2013/2014
Farm Eldorado I	São Miguel do Guamá	654,68	326,00	366,32	327,34	2013
Farm Eldorado II	São Miguel do Guamá	25,44	25,00		23,38	2013
Farm Eldorado III	São Miguel do Guamá	51,94	49,00		46,38	2013
Farm Quara	São Domingos do Capim	275,05	137,00	134,17	140,49	2014
Farm Abaré	Santa Maria do Pará/ São Miguel do Guamá	456,17	174,00	145,50	350,92	2014
Farm Abadia	São Miguel do Guamá	717,58	119,00	117,27	559,26	2014
Farm Diamantina	São Miguel do Guamá	309,52	181,00	172,56	223,99	2014
Farm Águia	São Miguel do Guamá	639,05	317,56	293,98	321,45	2014
Farm São Pedro	Santa Maria do Pará	532,65	120,00	94,08	490,45	2014
Smallholders	São Domingos do Capim e Irituia	-	1102,00	1102,00	1102,00	2012
Smallholders	São Domingos do Capim, Irituia, Capitão Poço e Mãe do Rio	-	927,90	927,90	927,90	2013
<b>Total Busines Partnership</b>	-	<b>12.817,21</b>	<b>6305,30</b>	<b>5418,39</b>	<b>8040,62</b>	-
<b>Total Smallholders</b>	-	<b>15.267,00</b>	<b>2029,90</b>	<b>2029,90</b>	<b>2029,90</b>	-
<b>Total</b>	-	<b>28.084,21</b>	<b>8335,20</b>	<b>7448,29</b>	<b>1070,52</b>	-

The total areas refer to complete areas of properties, including used areas, legal reserves, permanent preservation areas (PPAs), roads and other uses. Contracted areas refer to areas (ha) negotiated with landlords in business partnerships. The suitable planting area (farmland) is the area suitable according to soil and slope, excluding the areas of Legal Reserve, PPAs and areas of HCV, it is the legal permitted areas indicated by Rural Environmental Registry. Planted areas refer to palm oil planted areas and roads. It is noteworthy that according to current Brazilian legislation (Forest Code Law 12,651, with last update by Law 12,727), the properties of business partnership must contain 50% of areas corresponding to the legal reserve. This area can be set aside on the property itself or elsewhere in the same biome, according to the environmental licensing system (obtaining Rural Environmental Registry - CAR and License of Rural Activity - LAR).

### **3. SUMMARY OF MANAGEMENT AND PLANNING**

#### **3.1 Summary of Planning and Programs for Social and Environmental Impacts**

The following management and mitigation measures are recommended for adoption and implementation, in order to address the significant potential social and environmental impacts and make the project socially acceptable and beneficial:

- Erosion control on access roads, service roads and planting.
- Avoid contamination of soil and water by residues of herbicides and inputs.
- Avoid the increase of dust near communities by transporting FFB.
- Environmental regulation of the properties (Legal Reserve and Permanent Preservation Areas).
- Monitoring and promotion of biodiversity.
- Protection of endangered species from illegal hunting, fishing and logging in the Legal Reserves.
- Control of immigration, population growth and male:female ratios.
- Health and safety.
- Ensuring adequate housing.
- Increasing the use of local public services (health, education, public safety).
- Measures to avoid the negative effects of possible economic damage to the business from climatic factors, pests and diseases.
- Measures to avoid smallholder dependence on income from palm oil production, including food security.
- Avoiding economic unsustainability of the project for smallholders.

**Table 3.1 – Mitigation Plans and Programs to Improve Potential Social & Environmental Significant Impacts.**

Social and Environmental Impacts	Source of Impacts	Plans and Programs for Mitigation or Maximization	Responsibility	Timeframe
Erosion on access roads and service roads, Permanent Preservation Areas (riparian areas) and slope	Land preparation and planting	<ul style="list-style-type: none"> <li>• Program of road maintenance and erosion control.</li> <li>• Program of recovery of degraded areas (PPA and Legal Reserve)</li> </ul>	ADM	Throughout project lifespan
Protection of soil erosion and leaching	Land preparation and planting	<ul style="list-style-type: none"> <li>• The development of palm oil plantations tends to protect the soil from erosion and leaching, compared to other temporary crops or cattle grazing.</li> <li>• Intensify the vegetation cover (kudzu) to maximize soil protection.</li> </ul>	ADM	Throughout project lifespan
Contamination by residues of herbicides and pesticides	Planting of smallholdings and business partnerships	<ul style="list-style-type: none"> <li>• Program to monitor and reduce residues of glyphosate + AMPA in soil.</li> <li>• Intensify the vegetation cover (kudzu) to decrease use of herbicides.</li> </ul>	ADM	Throughout project lifespan
Excessive use of inputs (fertilizer)	Planting of smallholdings and business partnerships	<ul style="list-style-type: none"> <li>• Program of soil sampling and precision agriculture, with the aim of using inputs efficiently.</li> <li>• Program of recycling nutrients.</li> </ul>	ADM	Throughout project lifespan
Entrainment of sediment to surface water resources	Land preparation and planting	<ul style="list-style-type: none"> <li>• Program of road maintenance and erosion control.</li> <li>• Intensify the vegetation cover (kudzu) to maximize soil protection.</li> <li>• Program of monitoring surface water quality.</li> </ul>	ADM	Throughout project lifespan
Organic pollution of surface and groundwater resources from facilities infrastructure	Land preparation and planting	<ul style="list-style-type: none"> <li>• Installation of septic tanks in the infrastructure facilities of the farms.</li> <li>• Program of monitoring surface water and groundwater quality.</li> </ul>	ADM	Throughout project lifespan
Contamination by herbicide residues in surface and groundwater water resources	Land preparation and planting	<ul style="list-style-type: none"> <li>• Application of herbicides in less rainy periods, in the morning, and away from water bodies and water sources.</li> <li>• Intensify the vegetation cover (kudzu) to decrease use of herbicides.</li> <li>• Program of monitoring surface water and groundwater quality.</li> </ul>	ADM	Throughout project lifespan
Decrease of entrainment of sediment to surface water resources with the establishment of plantations	Planting of smallholdings and business partnerships	<ul style="list-style-type: none"> <li>• The development of palm oil plantations tends to protect the soil from erosion and leaching, compared to other temporary crops or cattle grazing.</li> <li>• Intensify the vegetation cover (kudzu) to decrease use of herbicides.</li> </ul>	ADM	Throughout project lifespan

**Table 3.1 – Mitigation Plans and Programs to Improve Potential Social & Environmental Significant Impacts.**

Social and Environmental Impacts	Source of Impacts	Plans and Programs for Mitigation or Maximization	Responsibility	Timeframe
Increase vehicle traffic generating increase on sediment suspended in the air (dust) near rural communities	FFB Transport	<ul style="list-style-type: none"> <li>Identify locations of vehicle traffic near rural communities, and if there will be significant impact, evaluate alternative routes or use water spray near communities in dry periods.</li> </ul>	ADM	Throughout project lifespan
Increase of biodiversity, maintenance of rare, threatened and endemic species.	Environmental compliance and recovery of Legal Reserves (forest set aside) and Permanent Preservation Areas (riparian forest).	<ul style="list-style-type: none"> <li>Recovery program and protection of Legal Reserves and PPAs of farms, preventing illegal logging, hunting and fishing</li> <li>Environmental education program with employees, stakeholders and local schools.</li> <li>Program to monitoring wildlife, especially the endangered species present in fragments of the legal reserve of the farms.</li> </ul>	ADM	Throughout project lifespan
Set aside Legal Reserve Areas in distant areas of the properties and outside of Endemism Center of Belém	Environmental compliance of Legal Reserves (forest set aside)	<ul style="list-style-type: none"> <li>If the legal reserves are set aside in areas outside the properties, such reserves must be within the limits of Endemism Center of Belém.</li> <li>Program and protection and monitoring Legal Reserves that area set aside in areas outside the properties.</li> </ul>	ADM	Throughout project lifespan
Decrease of edge effects in fragments	Planting of smallholdings and business partnerships	<ul style="list-style-type: none"> <li>The planting of palm oil tends to create a barrier to the edge effect on forest fragments</li> </ul>	-	Throughout project lifespan
Replacement of secondary vegetation by palm oil plantations decreases local biodiversity	Planting of smallholdings and business partnerships	<ul style="list-style-type: none"> <li>Recovery and protection of Legal Reserves and PPAs of the farms tends to offset the negative impacts of the replacement of areas of secondary vegetation.</li> </ul>	ADM	Throughout project lifespan
Use of vegetation of Legal Reserve and PPA to produce poles and pickets for planting	Planting of smallholdings and business partnerships	<ul style="list-style-type: none"> <li>Use of poles and pickets from vegetated areas that will be replaced by plantations, or use of timber offcuts from the region.</li> </ul>	ADM	Plantation

**Table 3.1 – Mitigation Plans and Programs to Improve Potential Social & Environmental Significant Impacts.**

Social and Environmental Impacts	Source of Impacts	Plans and Programs for Mitigation or Maximization	Responsibility	Timeframe
Development of palm oil plantations should create environments for the movement of some faunal groups between forest fragments	Planting of smallholdings and business partnerships	<ul style="list-style-type: none"> <li>Program of monitoring species that use palm oil as a habitat or for migration to other fragments.</li> </ul>	ADM	Throughout project lifespan
Removal of logs in planted areas that could be used by nesting birds.	Land preparation and planting	<ul style="list-style-type: none"> <li>Retention of tree trunks in planted areas that do not pose risks to agriculture, providing specific locations for nesting of these species</li> </ul>	ADM	Land preparation
Bridges and crossings of service roads leading to the obstruction of downstream water bodies and changes in fish habitat	Land preparation and planting	<ul style="list-style-type: none"> <li>Construction of bridges and crossings of water bodies that do not interfere with the natural flow of water from water bodies.</li> </ul>	ADM	Throughout project lifespan
Creation of employment and income in the agro-industrial activities	All project activities	<ul style="list-style-type: none"> <li>Create policies prioritizing the employment of residents of local municipalities.</li> </ul>	ADM	Throughout project lifespan
Boosting the local economy and generating taxes	All project activities	<ul style="list-style-type: none"> <li>Support and encourage, the use of local companies, boosting the service sector of the municipalities, with a view to providing local services for the supply chain of palm oil sector, including:               <ul style="list-style-type: none"> <li>✓ Direct agricultural production activities (land preparation, planting, cultivation, harvesting);</li> <li>✓ Providing inputs (fertilizers and pesticides);</li> <li>✓ Production of seedlings;</li> <li>✓ Supply of agro-industrial equipment;</li> <li>✓ Providing transport services for FFB;</li> <li>✓ Hospitality;</li> <li>✓ Food supply;</li> <li>✓ Maintenance of vehicles;</li> <li>✓ Car rental;</li> <li>✓ IT and communications.</li> </ul> </li> </ul>	ADM	Throughout project lifespan
Migration and population growth	Planting of business partnerships	<ul style="list-style-type: none"> <li>Create policies prioritizing the employment of residents of local municipalities, avoiding mass migration.</li> </ul>	ADM	Throughout project lifespan



**Table 3.1 – Mitigation Plans and Programs to Improve Potential Social & Environmental Significant Impacts.**

Social and Environmental Impacts	Source of Impacts	Plans and Programs for Mitigation or Maximization	Responsibility	Timeframe
Demographic imbalance of men:women ratio.	Planting of business partnerships	<ul style="list-style-type: none"> <li>Create policies prioritizing the employment of female workers for administrative or less physically demanding agricultural activities (e.g. loose fruit collection, field supervision, administration).</li> </ul>	ADM	Throughout project lifespan
Local infrastructure improvement	All project activities	<ul style="list-style-type: none"> <li>Support local government institutions in improving local infrastructure, especially roads, health, education and electricity supply.</li> <li>Support and encourage local government in improving roads, especially those to the most remote villages.</li> </ul>	ADM and local governments	Throughout project lifespan
Inadequate housing conditions of migrant rural workers	All project activities	<ul style="list-style-type: none"> <li>Support and encourage local government in housing management and regulation. Discuss the implementation of low-cost housing programs, with funds from the <i>Minha Casa Minha Vida Rural</i>.</li> <li>Any accommodation constructed by ADM must comply with the standards required by NR 31.</li> <li>Employment contracts of subcontractors to include the monitoring of housing conditions of migrant workers.</li> </ul>	ADM e local governments	Throughout project lifespan
Rising prices of rural land	Planting of smallholdings and business partnerships	<ul style="list-style-type: none"> <li>Monitoring land values and avoidance of partnerships with properties with speculative values.</li> </ul>	ADM	Plantation
Land Regularization	Planting of smallholdings and business partnerships	<ul style="list-style-type: none"> <li>Prioritize partnerships with regularized properties and those with existing legal reserves.</li> <li>Support the land and environmental regularization of smallholdings.</li> </ul>	ADM	Hiring of new business partnerships. Throughout project lifespan
Increase in insecurity due to the generation of a number of rural low-income male workers	Planting of business partnerships	<ul style="list-style-type: none"> <li>Create policies prioritizing the employment of residents of local municipalities, avoiding mass migration.</li> <li>Create policy prioritizing the employment of female workers for administrative or less physically demanding agricultural activities (e.g. loose fruit collection, field supervision, administration).</li> </ul>	ADM	Throughout project lifespan

**Table 3.1 – Mitigation Plans and Programs to Improve Potential Social & Environmental Significant Impacts.**

Social and Environmental Impacts	Source of Impacts	Plans and Programs for Mitigation or Maximization	Responsibility	Timeframe
Possibility of accidents on the farm access roads	All project activities	<ul style="list-style-type: none"> <li>Provide defensive driving training to all employees.</li> <li>Deploy appropriate speed limit signage on access roads near local villages.</li> <li>Deploy speed bumps near villages that are most vulnerable to accidents.</li> </ul>	ADM and local governments	Throughout project lifespan
Increased demand for health services due to population growth	All project activities	<ul style="list-style-type: none"> <li>Support local governments in creating health services, especially in communities impacted by the company's and smallholders' activities.</li> </ul>	ADM and local governments	Throughout project lifespan
Professional training of employees	All project activities	<ul style="list-style-type: none"> <li>Provide periodic training to employees.</li> <li>Support employees in professional development, in partnership with UFPA, UFRA, and through the development of technical training courses</li> </ul>	ADM	Throughout project lifespan
Inadequate transport of field workers	Planting of business partnerships	<ul style="list-style-type: none"> <li>Perform field transport according to standards required by NR 31.</li> <li>Supervise the transportation of field workers carried out by subcontractors, through contractual requirements.</li> </ul>	ADM	Throughout project lifespan
Lack of Field Shelters	Planting of business partnerships	<ul style="list-style-type: none"> <li>Construct field shelters according to standards required by NR 31.</li> </ul>	ADM	Throughout project lifespan
Lack of regularity in the days of payment to employees of subcontractors	Planting of business partnerships	<ul style="list-style-type: none"> <li>Supervise the regularity of payment of employees of subcontractors, through contractual requirements.</li> </ul>	ADM	Beginning of planting
Lack of unionization of rural workers	All project activities	<ul style="list-style-type: none"> <li>Support the creation of local unions of farm workers, through contractual requirements.</li> </ul>	ADM	Throughout project lifespan
<ul style="list-style-type: none"> <li>Accidents at work</li> <li>Contamination of workers in the application of herbicides</li> </ul>	Planting of smallholdings and business partnerships	<ul style="list-style-type: none"> <li>Implement a program of health and safety including the provision of PPE and periodic training to employees, in compliance with Brazilian legislation.</li> </ul>	ADM	Throughout project lifespan

**Table 3.1 – Mitigation Plans and Programs to Improve Potential Social & Environmental Significant Impacts.**

Social and Environmental Impacts	Source of Impacts	Plans and Programs for Mitigation or Maximization	Responsibility	Timeframe
Research and development in culture of palm, minimizing the risk of possible serious damage in the activity caused by diseases, pests and climatic factors	Planting of smallholdings and business partnerships	<ul style="list-style-type: none"> <li>Make agreements with research institutions, mainly EMBRAPA, to support the development of GM variants of palm oil which are resistant to pests, diseases and drought.</li> </ul>	ADM research institutions (Embrapa, universities)	Throughout project lifespan
Potential damage to unidentified archaeological sites on smallholdings and business partnerships	Planting of smallholdings and business partnerships	<ul style="list-style-type: none"> <li>Perform detailed studies to identify potential archaeological sites in the properties.</li> </ul>	ADM	Throughout project lifespan
Dependence on income generated by the palm oil production.	Planting of smallholdings	<ul style="list-style-type: none"> <li>Support the diversification of production by smallholders (including other crops, livestock and forestry), in partnership with local governments, EMBRAPA and Emater.</li> <li>Carry out research into Agroforestry Systems in palm oil plantations.</li> </ul>	ADM Smallholders EMBRAPA e Emater	Throughout project lifespan
Decreased on food production, creating risks to food security	Planting of smallholdings	<ul style="list-style-type: none"> <li>Support studies of intercropping food crops with palm oil, minimizing pressure on food security, maximizing efficiency of production energy and inputs.</li> <li>Support the deployment of diversification of food crops in smallholdings. Excess output can be sold in partnership with local municipalities to supply school meals, as already happens with some smallholders in the region.</li> </ul>	ADM Smallholders EMBRAPA e Emater	Throughout project lifespan
Lack of association by smallholders or associations no strengthened	Planting of smallholdings	<ul style="list-style-type: none"> <li>Support association by smallholders, through contracts of partnerships linked to associations.</li> </ul>	ADM Smallholders	Throughout project lifespan
Negative effects of possible serious damage of activity caused by diseases, pests and climate in plantations	Planting	<ul style="list-style-type: none"> <li>Make agreements with research institutions, mainly EMBRAPA, to support the development of GM variants of palm oil which are resistant to pests, diseases and drought.</li> <li>Discuss with the MDA the inclusion of damage to palm oil plantations in the insurance policies of SEAF (Family Farming Insurance).</li> <li>Deploy integrated pest management program in smallholdings.</li> </ul>	<ul style="list-style-type: none"> <li>ADM, Embrapa Universities.</li> <li>MDA</li> </ul>	Throughout project lifespan

**Table 3.1 – Mitigation Plans and Programs to Improve Potential Social & Environmental Significant Impacts.**

Social and Environmental Impacts	Source of Impacts	Plans and Programs for Mitigation or Maximization	Responsibility	Timeframe
Negative income effects caused by excessive decrease in the price of palm oil to smallholders	Planting of smallholdings	<ul style="list-style-type: none"> <li>Discuss with the MDA the inclusion of a clause in SEAF insurance policies guaranteeing a minimum income, or reduction of debt, in the case of economic losses related to large reductions in the price of oil palm. Discuss the inclusion of such a clause in the partnership contract.</li> </ul>	ADM/MDA	Throughout project lifespan
Local infrastructure improvement	All project activities	<ul style="list-style-type: none"> <li>Implement a program, in partnership with smallholders associations and local governments, of training and coordination of these associations with the Federal and State Governments to raise funds for infrastructure projects, with a view to:               <ul style="list-style-type: none"> <li>✓ installing septic tanks and wells in rural properties;</li> <li>✓ road improvement;</li> <li>✓ building and improving middle and elementary schools and hiring teachers;</li> <li>✓ improving the school transport system;</li> <li>✓ constructing and improving of health posts;</li> <li>✓ improving the electricity distribution network using funds from the Rural Light Programme of the Federal Government.</li> </ul> </li> </ul>	ADM Smallholders associations Local Governments	Throughout project lifespan
Education and communication with smallholders	Planting of smallholdings	<ul style="list-style-type: none"> <li>Implement a communication program, focusing on:               <ul style="list-style-type: none"> <li>✓ periodic reporting of contractual conditions.</li> <li>✓ financial education, including effects of fluctuations in palm oil prices and yields;</li> <li>✓ environmental education, including the importance of environmental sanitation and construction of septic tanks and wells in the properties.</li> <li>✓ safety, including the risks of palm oil cultivation (thorns, cuts).</li> <li>✓ emergency communication and medical care in the case of accidents in the plantations.</li> </ul> </li> </ul>	ADM	Throughout project lifespan

**Table 3.1 – Mitigation Plans and Programs to Improve Potential Social & Environmental Significant Impacts.**

Social and Environmental Impacts	Source of Impacts	Plans and Programs for Mitigation or Maximization	Responsibility	Timeframe
Accidents or contamination by smallholders chemical use	Planting of smallholdings	<ul style="list-style-type: none"> <li>Support and encourage manual weeding of palm oil, avoiding the use of herbicides.</li> <li>Immediately, implement a program of training and supervision of glyphosate application, ensuring that it is applied only to weeds.</li> <li>Ensure proper use of PPE, and proper disposal of pesticide containers.</li> </ul>	ADM	Immediately and Throughout project lifespan
Technical assistance and research used in other food crops	Planting of smallholdings	<ul style="list-style-type: none"> <li>Provide genetic material resistant to cassava root rot now available from Embrapa, in partnership with the Producers Associations, Municipalities and Emater.</li> </ul>	ADM Smallholders Associations Embrapa and Emater.	Throughout project lifespan
FFB delivery points, defined in contract, distant from smallholdings.	Planting of smallholdings	<ul style="list-style-type: none"> <li>Amend contracts, stating that FFB delivery points will be located at a maximum distance of 2 km from each smallholder.</li> <li>Support the creation of associations of smallholders, for the acquisition of vehicles for shared transport of FFB.</li> <li>Conduct economic assessment evaluating the costs of delivery of FFB by smallholders.</li> </ul>	ADM	Immediately and Throughout project lifespan
High cost of inputs, decreasing incomes from smallholders production	Planting of smallholdings	<ul style="list-style-type: none"> <li>Conduct an agronomic study to evaluate nutrient recycling, possibly involving the return of empty bunches to smallholders for use as an organic fertilizer in order to reduce the use of inputs.</li> <li>Consider other strategies for organic fertilization.</li> </ul>	ADM	Throughout project lifespan
Hiring labor without regulation and decreased income from production due to the cost of labor	Planting of smallholdings	<ul style="list-style-type: none"> <li>Encourage creation of smallholder associations to achieve the regulation of labor in accordance with federal labor legislation.</li> <li>Conduct an economic study into the costs to smallholders of hired labor.</li> </ul>	ADM	Throughout project lifespan

**Table 3.1 – Mitigation Plans and Programs to Improve Potential Social & Environmental Significant Impacts.**

Social and Environmental Impacts	Source of Impacts	Plans and Programs for Mitigation or Maximization	Responsibility	Timeframe
Environmental regulation of properties	Planting of smallholdings	<ul style="list-style-type: none"> <li>Implementing the Rural Environmental Registry with engagement of smallholders, defining the areas of Legal Reserves and Permanent Preservation Areas, the possible uses of these areas and protection measures and management of LR and PPA in smallholdings.</li> </ul>	ADM/Smallholders	Nest Year
Use of fire in the preparation of cassava planting areas	Other smallholders crops	<ul style="list-style-type: none"> <li>Strengthening of smallholders associations for the acquisition of machines that can be used in the preparation of cassava crops.</li> </ul>	ADM/Smallholders	Following Years

### **3.1 Summary of Planning and Programs for HCV**

In order to achieve the RSPO certification requirements, particularly those related to procedures for new plantings, it is vital that ADM implement the recommendations of the SEIA and HCV report. To ensure that operations follow the recommendations, ADM shall designate a person responsible for monitoring the implementation of measures for the protection and maintenance of HCV, especially concerning the delimitation, protection and recovery of Legal Reserves and Permanent Preservation Areas (riparian forest). This person will be given the authority, time and resources to train staff properly, prepare robust Standard Operating Procedures (SOPs) including recommendations contained in the detailed SEIA/HCV report, in order to ensure effective maintenance and enhancement of the identified HCVs.

The following is a summary of the HCV management actions, especially those related to HCVs present in properties of business partnership and smallholders under cultivation.

**Table 3.1 – Summary of HCV Management Plans.**

HCV	Management Objective	Spatial Presence	Management Plan
HCV 1	Maintain, protect and increase forest areas present in Legal Reserves of business partnerships and smallholdings that contain or are likely to contain rare, threatened, endangered and endemic species.	<p>Vegetation fragments assessed showed rare, endangered or threatened species</p> <p>According to current Brazilian legislation (Forest Code Law 12,651, with last update by Law 12,727), and Ecological Economic Zoning the properties of business partnership must contain 50% of areas corresponding to the legal reserve. This area can be set aside on the property itself or elsewhere in the same biome, according to the environmental licensing system (obtaining Rural Environmental Registry - CAR and License of Rural Activity - LAR).</p>	<p>Ensure compliance with the Forestry Code requirements of maintaining 50% Legal Reserve and all Permanent Preservation Areas (PPA) as:</p> <p>I – Water bodies must have a minimum green belt of:</p> <ul style="list-style-type: none"> <li>• 30 meters for rivers 10 meters wide;</li> <li>• 50 meters for rivers from 10 to 50 meters wide;</li> <li>• 100 meters for rivers from 50 to 200 meters wide;</li> <li>• 200 meters for rivers from 200 to 600 meters wide and;</li> <li>• 500 meters for rivers over 600 meters wide.</li> </ul> <p>II - areas around natural lakes and or ponds must have a minimum width of:</p> <ul style="list-style-type: none"> <li>• 100 meters, in rural areas, except for those with less than 20 hectares of surface area, where greenbelts can be reduced to 50 meters ;</li> <li>• 30 meters, for lakes and ponds in urban areas;</li> </ul> <p>III – in areas surrounding man-made reservoirs resulting in damming of waterways, the greenbelt is defined by the environmental permit for the activity;</p> <p>IV – In natural or artificial accumulations of water with a surface area of less than one hectare, green belt requirements are waived, according to sections II and III of the clause, but the suppression of native vegetation is prohibited, unless authorized by the environmental agency of the National Environmental System (Sisnama).</p> <p>Ensure that employees responsible for land management understand and comply with legal requirements of PPAs.</p> <p>If the legal reserves are set aside in areas outside the properties, such reserves must be within the limits of Endemism Center of Belem.</p> <p>Create a plan for restoration of PPAs and Legal Reserves in degraded areas or areas dominated by pasture. Do not remove protected or endangered species (e.g .Brazil nut) from planting areas.</p> <p>Create a program for protection of Legal Reserves and PPAs, avoiding illegal logging, hunting and fishing. Surveillance of property borders</p>



**Table 3.1 – Summary of HCV Management Plans.**

HCV	Management Objective	Spatial Presence	Management Plan
			<p>should be carried out. Include a guarantee of non-intervention in the areas of Legal Reserve in business partnerships contracts.</p> <p>Environmental Education Program for employees informing them of the importance of the protection of fauna and flora and to prevent hunting on properties.</p> <p>Program of monitoring wildlife, especially the endangered species present in fragments of legal reserve on farms.</p> <p>Retention of tree trunks in planted areas that do not pose risks to agriculture, providing specific locations for nesting of threatened bird species (parrots).</p> <p>Implementing the Rural Environmental Registry with engagement of smallholders, defining the areas of Legal Reserves and Permanent Preservation Areas, the possible uses of these areas and protection measures and management of LR and PPA in smallholdings.</p> <p>Signaling measures to avoid ilegal poaching and hunting and environmental education programs in the communities of smallholders.</p> <p>Strengthening of smallholders associations for the acquisition of machines that can be used in the preparation of cassava crops.</p>
HCV 1	Maintain and protect the wetlands along the main rivers	On the landscape. Wetland margins of major rivers	Do not perform planting in these areas.
HCV 3	Maintain and protect areas of natural grasslands or sandy plains	On the landscape	Do not perform planting in these areas.
HCV 4	Maintain, protect and enhance areas of PPA in the properties of	All PPAs in the properties of business partnerships and smallholders, as defined in the	As for HCV 1 in PPAs.

**Table 3.1 – Summary of HCV Management Plans.**

HCV	Management Objective	Spatial Presence	Management Plan
	business partnerships and smallholders.	Brazilian Forest Code.	
HCV 4	Maintain, protect and enhance areas of PPA and steep slopes in the properties of business partnerships and smallholders.	All PPAs in the properties of business partnerships and smallholders, as defined in the Brazilian Forest Code.  Areas of steep slopes were identified on the farm Santa Barbara II.	As for HCV 1 in PPAs.  Areas of steep slope on the farm Santa Barbara II which were not planted should be incorporated into the Legal Reserve of the property, and the vegetation recovery program should be applied, where appropriate.  Identify areas of steep slope in new planting areas and do not plant in these areas.
AVC 5	Maintain and protect important tree food species (Brazil nut, <i>bacuri</i> , <i>piquiá</i> ) in smallholdings.	In general these species are located outside the areas intended for planting, but may be present in them.	Performing land preparation together with family producers, and retaining such species during land preparation.  Support through smallholders associations construction of septic tanks in the properties.  Support through smallholders associations collection and proper disposal of solid waste and garbage.  Support through smallholders associations, composting of organic waste.
AVC 5	Protect and maintain the quality of local water resources	The drainage network is intense and is distributed throughout the project area	Monitor and control water quality and erosion as proposed in the programs to improve social and environmental impacts.
AVC 6	Protect possible archaeological sites on smallholdings and business partnerships	Potential presence along rivers and within communities of smallholders.	Perform a detailed study to identify potential archaeological sites in the properties already in production and prior to conversion of new areas.

#### 4. INTERNAL RESPONSIBILITY

**Acknowledgement of internal responsibility by ADM of Brasil**

I the undersigned, being the legal representative of the inspected company, agree with the contents of this report



**Name: Diego Di Martino**

**Title: Business manager**