RSPO New Planting Procedure

Assessment Summaries and Management Plans

Agrocaribe S. A., Guatemala.

Content

1 Company Information

Agrofrancia is one company form Agrocaribe Group which has been registered as RPSO member since 2008, committed to develop a sustainable palm oil management system. Agrofrancia to compliance with the principles and criteria of RSPO has done procedure for the new plantations with the studies of:

Social Environment Impact Assessment (SEIA), High Conservation Value (HCV), Identification and Social Impact Assessment (SIA), Land Use Change Analysis (LUCA) and High Carbon Stock and Green House Gases evaluation (HCS & GHG).

Agrofrancia is located in Km 243 Atlantic Route, La Francia farm, Buena Vista village, Guatemala. Agrofrancia is geographically situated at 15°28'9.31"N 88°48'30.69"O with an altitude between 44 meters above sea level. Agrofrancia and Producers associated are owners of 861.59 hectares designed for the new plantations according the numbers of the land titles submitted. According to the soil suitability study the project is classified as "Totally Suitable", the areas do not show limitations for their development.

The High Conservation Value Area (HCV) Assessment of Agrofrancia was done by Bioterra team in December 2015. The HCV assessment result showed that there is no primary forest and peat soil in the new plantation location, however in El Rosario farms the study shows an HCV. The HCV1 of Rosario Farm is because there are connected with the Sarstún River, which is an area that contains a high biodiversity and also shares boundaries with a large portion of forests in southern Belize in what is known as the Sarstoon Temash National Park. The HCV 5 village peoples have identified a water spring which is located in the northern boundary as an alternative source of water for them, for this, the spring has been identified as an HCV 5. On the other hand, it is important to mention the Ciénaga River which is located in the range of direct influence of farm El Rosario. Fishing is still carried out in this river, and it is considered an activity of great importance for the communities in the area, for some families it is subsistence fishing so in these cases it is considered a crucial resource. Because of this information, this river is considered as an HCV5. The El Rosario, Santa Sofia and Las Mercedes farm will not be considered in this NPP project because the producer not compliance with some internal procedures to signs the contract.

The results of Social Impact Assessments (SIA) has shown that developments of palm oil plantation have potential and significant impacts for the communities, some of the positive impacts or benefits generated towards the surrounding communities are employment and business opportunities, better accessibility and the development of village infrastructures. While the negative impacts generated are such as increased pollution as a result of the use of chemicals, fertilizers and soil surface erosion, increased dust.

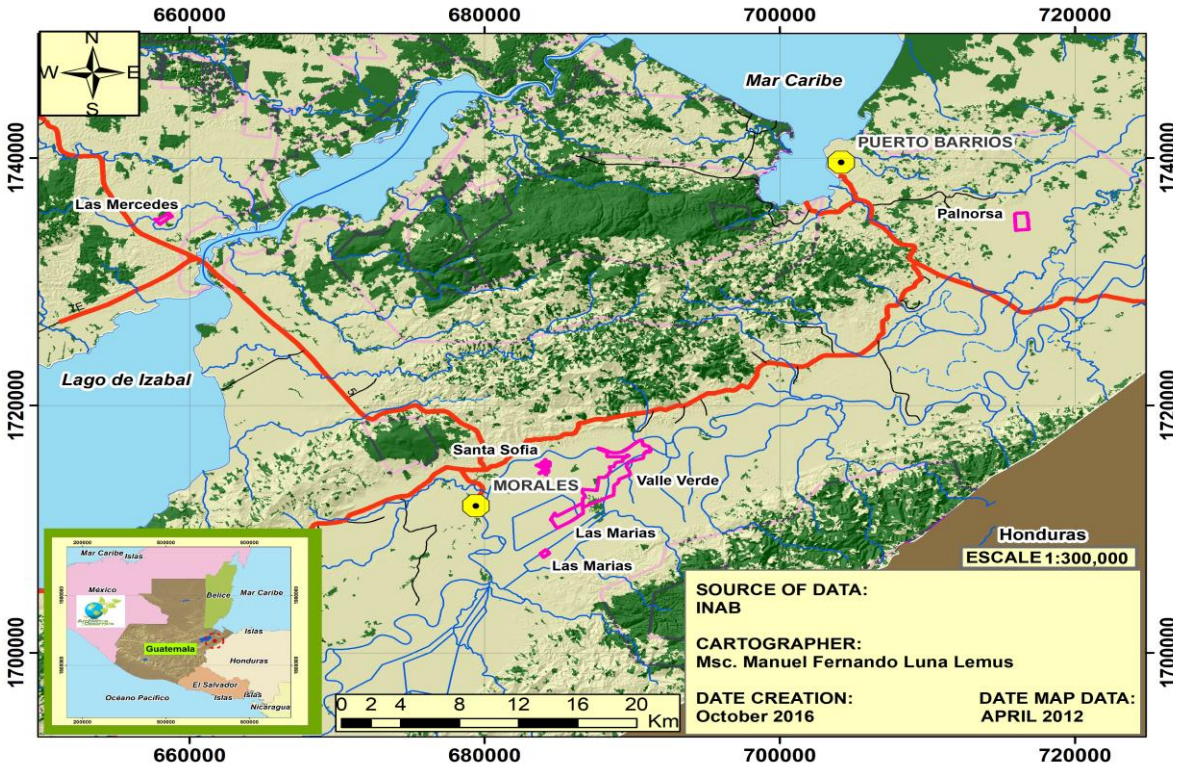
The land was identified through a free, prior, informed consent (FPIC) customary right consultation process with involving represents people of each community.

1.1 Area of New Planting and Development Plan

The project is located in the municipalities of Morales and Puerto Barrios, in the department of Izabal with GPS coordinates N 15°28'9.31" E 88°48'30.69".

The scope of the NPP area, includes 3 farms covering a total area of 861.59 ha. General way as any company incorporated in Guatemala, must be met to obtain a Business License and Patent Company, before the entity: General Registry of Intellectual Property and must obtain authorization from the Superintendence of Tax Administration (SAT), established in Guatemala by The Commercial Code, Articles: 2, 3, 336 and 337, and the Tax Code of Guatemala, Article No 112.

imagen 1 Location Map of the Farms



1.2 Land ownership details such land title etc.

Location of New Plantation(s) or Estate(s) to be included in the Assesment									
Name of estate / association	Location	GPS reference		Area a sembrar (Ha)	Infraestr ucturar (Ha)	Área total (Ha)	Document No.		
	Address	Longitude	Latitude				Finca	Folio	Libro
Valle Verde	Morales Izabal, Guatemala	**88º44'51.02''O**	**15º29'12.94''N**	538,96	160,81	699,77	148	148	50
							362	85	47
							364	87	47
							365	88	47
							1628	148	16
							1818	85	17
							2017	56	20
							2412	212	21
							2718	32	24
							3942	116	32
							4078	95	30
							Right of possession		
Las Marías	Morales Izabal, Guatemala	**88º46'19.05''O**	**15º27'55.38''N**	212,46	0,48	212,94	2474	34	22
Palnorsa	Puerto Barrios Izabal, Guatemala	**88º28'54.78''O**	**15º40'52.30''N**	108,88	7,82	116,7	2200	239	20

Areas and time plan for new plantings

State	*Planting Unit*	*April 2018*	*October 2018*	*General Total (Ha)*	*Area*
Associate Palm Producers of Izabal (PAPI)	*Las Marias*	*193.96*	*18.5*	*212.46*	*Morales*
	Palnorsa	*49.54*	*60.63*	*116.7*	*Puerto Barrios*
	Subtotal	*243.50*	*79.13*	*329.16*	
Agrofrancia (own)	*Valle Verde*	*334.7*	*204.26*	*532.43*	*Morales*
		578.20	*283.39*	***861.59***	

2 Assessment Process and Methods

2.1 HCV ASSESSMENT

The development of this report was conducted following a series of methodological procedures that allow obtaining data that fit in the most reliable way to the existing reality.

The methodological process included the implementation of a rapid ecological assessment (REA), which is a systematic and coordinated methodology, that quickly helps to have access to the necessary information for the decision-making related to the conservation of biodiversity (Sayre *et al*., 2000). It is used in addition to quickly determine the structure of the landscape, community and habitat and integrate multiple levels of information, where the one that stands out most is field work, focused on groups of living organisms that allow obtaining some knowledge of the biological diversity of the area (Sobrevilla & Bath, 1992). Precisely, in order to know the diversity of the sampling area, a process for data collection was followed, based on the main groups of flora and fauna (mammals, reptiles and birds).

There was the technical support of Biologist José Luis López L., and of companies Arquitectura y Diseño S.A. (Arkinsa), and Ambiente y Desarrollo S.A., who have been the counterparty to this project in Guatemala. Besides collecting all the environmental information, the consulting firm BIO TERRA also conducted a field visit to the farms, with the objective to check the data from a random sampling and give feedback to the data obtained. It was also a process of consultation and information collecting in communities and with key social actors, to determine the existing local perception on the Project, and on the study area, together with the existing information.

This process of consultations and interviews was carried out in two different processes by a professional team with experience in the social field. Structured and semi-structured interviews and some meetings were mainly used in this process. The process was carried out between August 11 and 17, 2014 for the farms Valle Verde, Las Marias and Santa Sofia, and between November 25 and 28, 2015 for El Rosario, Las Mercedes and Palnorsa.

A qualitative analysis was performed for the incorporation of the results of this whole process. In addition, a bibliographic review of the existing information on the area under study was carried out, both at the level of formal scientific studies, as through the informal consultation to gather local knowledge, which would enrich the information obtained directly through the research process in the field.

HCV ASSESSORS.

NAME	DEGREE	INSTITUTION	POSITION	EXPERTISE
MSC. MARISOL ZUMBADO B.	ALS14004MZ	Bio Terra Consultores Ambientales	Leading Adviser	Professional in Biological Sciences with emphasis on sustainable development ecology; Master in Audits and Environmental Management with a specialty in management and conservation of natural areas and marine pollution. Specialist in Studies and Environmental Management Plans. Extensive experience in HCV studies with more than 20 studies carried out in Central America and Mexico.
MSC. DARIÉN ZÚÑIGA L.	ALS14005DZ	Bio Terra Consultores Ambientales	Biologist	Biologist with emphasis on sustainable development ecology; Masters in Auditing and Environmental Management with a specialty in integrated water management and contaminated soil recovery. Expertise in taxonomy of flora and fauna. Ample trajectory in ecological assessments, and in water body analysis through biological indicators. Participation in more than 20 HCV studies throughout Central America and Mexico.
LICENCIADO JONATHAN ARIAS GARRO	NA	Bio Terra Consultores Ambientales	Geographer - GIS	Geographical Sciences with a specialty on land use. Knowledge on Engineering and Environmental Technology Management and Environmental Audits. . Experience on Urban Ecology and Biological Interurban Corridors. Wide performance in developing thematic mapping and spatial analysis.
MSC. CYNTHIA ROSALES CALVO	NA	Bio Terra Consultores Ambientales	Sociologist	Masters in housing and social facilities. Specialist in the performance, organization and implementation of participatory processes for the preparation of several studies.

PHD ROSA BUSTILLOS L.	NA	Bio Terra Consultores Ambientales	Environmental Law	PhD in Environmental Law. More than 30 years of professional practice. Director of the Caribbean Talamanca Biological Corridor for 20 years, consultant to the National Forestry Financing Fund (FONAFIFO) for 10 years, and environmental consultant in projects for the conservation and management of natural resources.

Chronological Process

TABLE 8. SUMMARY OF THE CHRONOLOGICAL PROCESS

SCHEDULE OF ACTIVITIES
FEBRUARY 2014
The first contact between Agrofrancia and BIO TERRA took place, and negotiations to carry out the first phase of the HCV Assessment of their farms begin. Agrofrancia sends the first information of their plantations and operations. Bio Terra gives the Company the contact of the biologist who would be the professional counterparty in Guatemala.
MARCH, 2014
Signature of the contract between Bio Terra and the Company.
APRIL, 2014
BIO TERRA provides the guidelines for the work required for the development of the Rapid Ecological Assessment (REA) that must be carried out by the consultant in Guatemala, to be hired by Agrofrancia.
MAY, 2014
The scope that the HCV Assessment will have, is agreed upon with the Company.
JUNE, 2014
Bio Terra carries out an analysis of the location of the project at the regional and local level.
JULY, 2014
BIO TERRA begins coordinating the field work. BIO TERRA begins selecting the control points to be corroborated in Agrofrancia's farms, during the field work. An existing information bibliographic review of the area is carried out.
AUGUST, 2014.
BIO TERRA carries out the field work from August 11 to 17. BIO TERRA makes a general recognition of the area under study. Review of the company's documents. Meetings with social actors. The Company sends BIO TERRA the first REA, together with the Environmental Impact Studies. The first phase of the HCV Assessment begins. The maps of the first phase of the HCV Assessment are begun.

SEPTEMBER, 2014
The Company sends the Social Study to BIO TERRA, the Soil Study and the Satellite Study of the first phase of the present HCV assessment. BIO TERRA performs a review of the information provided by the Company. The first phase of the HCV Assessment continues. The first phase of the map preparations of the HCV Assessment continues.
OCTOBER, 2014
The first phase of the HCV Assessment is finished. The drafts of the maps of the first phase of the HCV Assessment are finished.
NOVEMBER, 2014
Doubts are evacuated and the last exchange of information between the Company and BIO TERRA is carried out to finish the first stage of the present assessment.
The last details of the HCV maps are refined. The last details of the HCV Assessment are refined. The first phase of the HCV Assessment is handed in.
OCTOBER, 2015
The HCV Assessment process is retaken, to start the second stage. The relevant information is requested from the Company. The company starts by sending the requested information.
NOVEMBER, 2015
Additional information is requested from the Company. The Company starts by sending the requested information. Field work is coordinated and also coordinated with the social actors. Field work is carried out between November 25 and 28. The second phase of the HCV Assessment maps begins. The second phase of the HCV Assessment begins.
DECEMBER 2015
The Company sends the requested information. The second phase of the HCV Assessment maps begins. The second phase of the HCV Assessment begins.
JANUARY, 2016
The last details of the maps of the second phase of the HCV Assessment are refined. The last details of the second phase of the HCV Assessment are refined. The maps of the second stage of the HCV assessment are finished. The second phase of the HCV Assessment is finished. The second phase of the HCV Assessment is handed in.

Source: HCV Agrocaribe Bioterra 2015. Page 33-35

TABLE 6. METHODOLOGY FOR HCV IDENTIFICATION

HIGH CONSERVATION VALUES	METHODOLOGICAL PROCESS
HCV1: Diversity of species	GIS Information • Analysis of satellite and aerial imagery. • ASP maps, land use maps, etc. Secondary Information • ASP Management plan review • NGOs list.
-HCV2: Ecosystems and mosaics at the landscape level.	Review of listed species on national and international agreements • CITES. • IUCN. • Guatemalan legislation. • Others. Rapid Ecological Assessment (REA)
-HCV3: Rare, threatened or endangered ecosystems or habitats	Collecting field information / field sampling • Daytime terrestrial fauna • Daytime flying fauna • Flora Consultation of the social actors through focus groups and individual interviews
-HCV4: Ecosystem Services	GIS Information • Soil and vegetation maps. • Hydrological and soil maps. • Cartographic sheets.
-HCV5: Community needs	Satellite and aerial imagery analysis. Government databases analysis. Consultation of the social actors through focus groups and individual interviews
-HCV6: Cultural Values	UNESCO

2.2 Social and Environment Impact Assessment (SEIA).

The SEIA assessment was designed and implemented in the project support frame work for the palm sector. For the implementation of the RSPO Principies 6 & 7, conducted by CENTRARSE- WWF and Solidaridad. SEIA was conducted between March 2015 and January 2016.

To achieve the SEIA's objective, the methodology used consisted of:

i. Presentation of the outline of the ESIA implementation plan

CentraRSE submitted a proposal for the SEIA implementation plan based on 3 sub-processes, these were:

- Recognition of the area of influence and the company's main activities.
- Interviews with officials of the main activities carried out by the company.
- P&C (Principles and Criteria) of the RSPO Analysis Requirements in the framework of Principles 6 and 7.

ii. Definition of a basic conceptual framework

iii. Documentary Review

iv. Support for focus group meetings

v. Proposal of measures

A perception and impact concept were used adjusted to the reality of the geo economic oil palm activity. Thus, the concept of perception on which the present consultation report understanding perception as "the result of a social-historical situation, that has a spatial and temporal location, in addition it depends on the changing circumstances and acquisition of innovative experiences that incorporate other elements to the previous perceptual structures, modifying and adapting them to the conditions in which the person develops. Several ideological and cultural references that reproduce and explain reality come into play and are applied to different daily experience. To get the perception of the stakeholders of the palm oil cultivation and processing regarding the social impacts created by this activity in the communities located in Agrocaribe's area of influence, new plantations and processing mills, they were supported with community group meetings from different localities. The "focus group" technique was suggested among others for the following reasons: (i) it is a technique that does not exclude those participants who have limitations in reading and/or writing; ii) it is a living and dynamic process, which comes from the participation of each of the selected people; (iii) provides sufficient flexibility to explore issues not foreseen beforehand; iv) has higher credibility than other techniques, due to the

strategy and findings easily understood by the participants; v) has the potential to give fast results; vi) it is a technique that begins with open answer questions and from there other questions are introduced to guide the conversation towards the study's objectives.

FPIC Process

During the Social Impact Study, Agroaceite carried out the Prior Informed and Free Consent Process having as active participation the main representatives of the neighboring communities to whom the project was made known before the development of palm oil; In order that the plantations do not adversely affect the area and have the consent of the communities.

Figure 7. Record of Training Attendance in some issues: HCV, PNP, Customary Law, FPIC.

Source: EISA Agrofrancia Solidaridad Page 79-82

2.3 Soil Assessment.

The study conducted by Ambiente y Desarrollo Consultores, S. A. Guatemala on November 2016. Study methodology consists in the application of a multi-criteria evaluation to define the suitability of the areas for oil palm cultivation. The development of the suitability model is based on the use of the multi-criteria assessment methodology (MAM), which consists in allocating and weighting different variables that are influenced by multiple objectives and criteria. In the present case parameters have been selected related to soil, topography and climate, as well as environmental and social aspects, to rate the importance and potential represented by each

variable or particular item, within the given set that all parameters contribute to, in a specific way.

The Logic Scoring of Preferences (LSP) method proposed by Dujmovic (2007) cited by Soniet al, 2010, is based on the logic of continuous preference, consequently the methodology is translated into aggregation blocks, this conformation of continuous disaggregation within each block to ensure that all factors or characteristics can be measured directly. It is made up of a tree of features and sub-factors each one with several levels of aggregation, which gives as a result a number of factors of higher level as they climb the diagram on the right through higher-level characteristics.

Soil Suitability Assessors

Team of professionals of Ambiente y Desarrollo Consultores, S.A. that participated in preparing the study.

Wilfredo Díaz Lima
Agricultural Engineer
Master's degree in Renewable Natural Resources, specializing in Integrated Watershed Management.

Manuel Fernando Luna Lemus
Agricultural Engineer
Master's Degree in Environmental Studies
Masters in Integrated Water Resources Management,
Specialist in Geoprocessing and Remote Sensing.

Gabriel García Ramos
Civil Engineer
Master's Degree in Sanitary Engineering
Specialist on Geographic Information System (GIS)

2.4 Land Use Change Analysis (LUCA)

The land use change study was developed by Ambiente y Desarrollo Consultores, S. A., a company that works in the fields of environmental management, natural resources and water, including the application of remote sensing and geographic information systems for the management of natural resources and the environment. The assessment was conducted on December 2017 and methodology to be followed for the development of the land use change analysis study, complies with the guidelines established by the RSPO. The work team was led by

engineer Manuel Fernando Luna Lemus, who has more than 10 years of experience in the application of satellite imagery analysis, land use and forest dynamics studies and Application of Geospatial Analysis for environmental and natural resources management. He has been a professor of the Introduction to Cartography and Geographic Information Systems class, in the masters of Geomatics of the Graduate School of the Faculty of Engineering of the University of San Carlos of Guatemala since 2015.

The methodology to be followed for the development of the land use change analysis study, complies with the guidelines established by the RSPO. LANDSAT satellite operated by the National Aeronautics and Space Administration – NASA and administered by the United States Geological Survey - USGS2 data were used and obtained through the Global Visualization Viewer - GLOVIS3. (LANDSAT images have a resolution of 30 meters per pixel).

Selected LandSar Images are:

SATELITE	IMAGE	DATE	CATEGORY
L7	LE70190492005349EDC00	Dec. 15, 2005	Main
L7	LE70190492005237EDC00	Aug. 25, 2005	Filling
L7	LE70190492006016ASN01	Jan. 16, 2006	Filling
L7	LE70190492007339ASN00	Dec. 5, 2007	Main
L7	LE70190492007291EDC00	Oct. 18, 2007	Filling
L5	LT50190492009336CHM01	Dec. 2, 2009	Main
L8	LC80190492014094LGN00	April 4, 2014	Main

For the present case a methodology based on multiple images was used, where the gaps of a main image are reconstructed using other images that contain valid information from the corresponding area. *The Frame and Fill4 software created by NASA's Richard Irish, was used, which selects the valid data of the filling images and places it in the gaps of the main image.* From this, the previous table details what images were used as the main ones and what images were used as filling.

2.5 High Carbon Stock and GHG Assessment.

This study responds to the requirements established by the Roundtable on Sustainable Palm Oil (RSPO) for the establishment of new palm oil plantations (E. guineensis) using a tool by the RSPO New Development GHG Calculator to comply with Criterion 7.8 (RSPO, 2014) and 7.3 (RSPO 2015).

A carbon stocks and greenhouse gas (GHG) emissions evaluation is done before developing a project for the extension of new palm oil plantations (E. guineensis) in an area of 1,102.21 ha in the municipalities of Morales, Livingston and Puerto Barrios, in the department of Puerto Barrios.

The methodology followed for the present evaluation starts with the guidelines defined by the RSPO for estimates of carbon stocks and greenhouse gas emissions calculations for the development of new plantations (Version 2.0). For the tC capture and GHG emissions in tCO2e calculations, the default values that are used in the PalmGHG were taken as reference. Version 2.0 is used since at the moment of GHG assessment is conducted, Version 3 is not yet finalised by RSPO.

The results of the study indicate that the areas that are proposed for the development of the project are of low value carbon content for their conservation, but on the contrary the development of new plantations will allow to raise the levels of carbon fixation and its equivalent in tCO2e.

The establishment of new oil palm (E. guineensis) plantations allows increasing tC fixation in biomass and its equivalent in tCO2e, since palm oil has the ability to fix carbon. The balance between “having or not having” a project represented an emissions reduction of -181494.69 tCO2e.

The Emissions Reduction Plan gives guidelines for the implementation of measures aimed at improving the efficiency of certain production processes or identify inputs that can be incorporated with less contaminant effects to the environment.

Agriculture is an important source of GHG, as it contributes directly to 14% of global total emissions. When combined with changes related to land use, including deforestation, the contribution of agriculture means more than a third of the total GHG emissions. Overall, agricultural production (crop and livestock) is responsible for most of the emissions of methane (livestock, rice paddies and wetlands) and nitrous oxide (application of fertilizers). The mitigation technique’s potential in the industry is high, and 74% of this is found in developing countries (FAO, 2011).

Given the previous condition, new projects that raise developments of oil palm plantations incurred from January 1st, 2010, must comply with RSPO’s (RSPO 2015) New Plantations Procedures (NPP). This is done with the purpose of not contributing to the change of land use in areas with high carbon conservation values within the proposed areas.

In this context, the term "new oil palm developments" refers to land that is planned or has been proposed for oil palm plantations and associated developments. The NPP must be implemented before the producers begin preparing the ground, or any development associated (RSPO, 2015).

The methodology followed for the present evaluation starts with the guidelines defined by the RSPO for carbon stocks and greenhouse gas emissions calculations for the development of new plantations. For the tC and GHG emissions in tCO2e capture calculations, the default values that are used in the PalmGHG were taken as reference.

The values for the estimation of carbon stocks based on an analysis of current land use and the values for the estimation of CO2 emissions is obtained from the agricultural management plan of the new plantations, in particular the crop's fertilization and nutrition plan and the use of fuels for the field work (logistics for moving staff, vehicles for cultivation and transfer of inputs for the field's productive process).

For the projections for the tC fixation and its equivalent in tCO2e, from developing new plantations, the default values set in the PalmGHG for a vigorous growth plantation are assumed.

Also, the first step is to measure and identify the sources of greenhouse gases emission when the intention is to carry out a plan for the reduction of GHG emissions (Cepal, 2014).

The steps followed for conducting the study were the following:

i. Current land use analysis.
ii. Identifying the carbon stocks and CO2 emissions.
iii. Estimating the carbon stocks according to the current land use.

Name	Vocational Training	Work experience
Cesar Augusto Sandoval García	Doctor in Sociology and Politics, with emphasis on Forest Governance. MA in Development Projects. Graduate Studies in Environmental Economics. Agricultural Engineer	Has over 25 years experience in managing natural resources, having held senior positions in the forest service and the National Council of Protected Areas. Researcher of Universidad Rafael Landívar (URL). He has participated in carbon studies of farm with Ambiente y Desarrollo Consultores, S. A. and national studies with the Rafael Landivar University, URL.
Manuel Fernando Luna Lemus	MSc Environmental Management. MSc Integrate Water Management Agronomist GIS and remote sensing Specialist	Has over 10 years of experience in the implementation of spatial analysis, land use studies, forest dynamics and application of Geospatial Analysis for environmental management and the management of natural resources. Experience in high conservation value studies. University graduate professor teaching the course of Introduction to GIS and cartography. He has conducted studies linked with carbon for the Clean Development Mechanism, (CDM), and carbon measurements in different land uses.
Anna Marlenne Zeissig Davila	PhD in Local Environmental Management Agricultural Engineer	Experience in the public and private sector in the management of of natural resources Has participated in the development of carbon measurement studies in farms in Ambiente y Desarrollo Consultores, S. A.

Team of professionals of Ambiente y Desarrollo Consultores, S. A., which participated in the elaboration of the

present carbon stocks and greenhouse gases evaluation.

3. Summary of findings

3.1 Social and Environment Impact Assessment (SEIA).

Once the data from the sessions were tabulated, CentraRSE established an internal exercise information analysis to describe the main processes to suggest to enhance the positive impacts identified, mitigate negative and set some internal conditions for the sustainability of the processes implementation.

In general relationship of the presence of the company with improved access to education, health is identified (though both of low quality) its intervention is relativized in improving infrastructure (roads), the stimulus is recognized the economy, its effect is relativized on the role of women and their presence is associated with deterioration of the environment (though there are opinions that helps to preserve). The conditions in the area of influence seem to indicate that there is plenty of opportunity to have a positive approach but is key determining projection strategies, to have sustainable positive business results.

Positive aspects of the SEIA

RSPO Criteria	POSITIVE ASPECT
6.4	Create income for contractors and local staff
6.5, 6.8	Creation of formal, stable employment, provide transportation for workers, staff training Stimulate culture of paying to be efficient
6.11	Support in building services Works Construction Road maintenance
6.8	Opportunity to continue studying and continue to grow because they have income
6.9	Provides work for some women
7.1	Create new employment opportunities.

Negative aspects SEIA

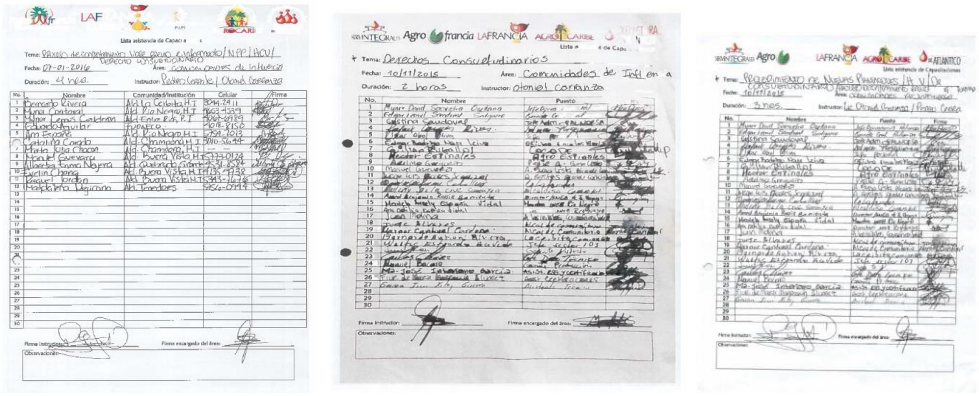
RSPO Criteria	NEGATIVE ASPECT
6.2	Lack of communication with communities They don't allow fishing or hunting
6.3	There are expectations of support May improve payment systems
6.5, 6.6, 6.8, 6.9, 6.13	Expand work to other people More work opportunity Prefer local staff
6.13	Air pollution River pollution Using too much water

Source: EISA Agrofrancia Solidaridad Page 38-39

The Environmental Social Impact Assessment (SEIA) from Agrocaribe, Agrofrancia, Producers Association, POM del Atlántico, POM La Francia and new plantations was designed and implemented in the project support framework for the palm sector for the implementation of the RSPO Principies 6 & 7, sponsored by CENTRARSE-WWF-Solidaridad. To get the perception of the stakeholders of the palm oil cultivation and processing regarding the social impacts created by this activity in the communities located in Agrocaribe's area of influence, new plantations and processing mills, they were supported with community group meetings from different localities. The "focus group" technique was suggested among others for the following reasons: (i) it is a technique that does not exclude those participants who have limitations in reading and/or writing; ii) it is a living and dynamic process, which comes from the participation of each of the selected people; (iii) provides sufficient flexibility to explore issues not foreseen beforehand; iv) has higher credibility than other techniques, due to the strategy and findings easily understood by the participants; v) has the potential to give fast results; vi) it is a technique that begins with open answer questions and from there other questions are introduced to guide the conversation towards the study's objectives.

Points of view and spontaneous expressions of the people attending each one of the meetings were heard and documented, seeking to integrate each and every one of the interventions in the considerations toward the communities.

According to the impact assessment carried out, the successful actions or positive impacts and the actions to be improved or negative impacts were identified.

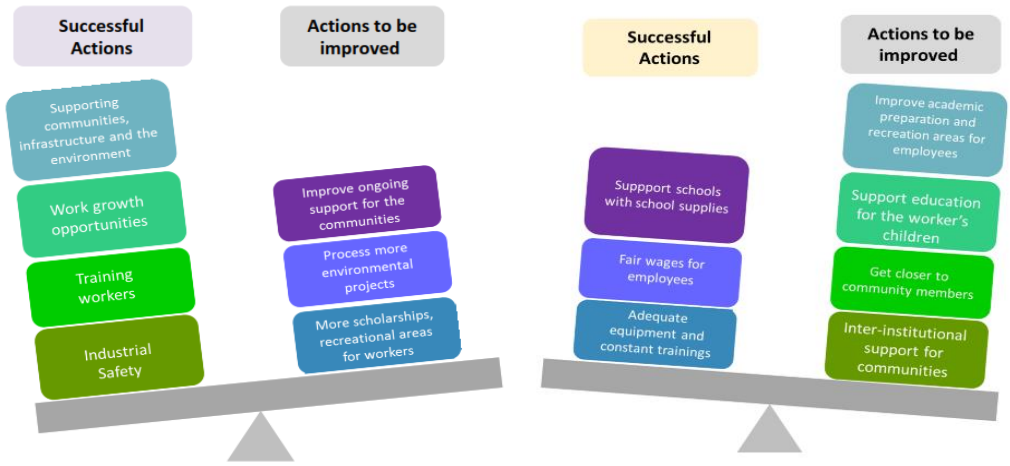


Evidences of meeeting process with Stakeholders and Local Communities

In the period between March 2015 and January 2016, a whole series of activities related to compliance with the RSPO Standard's Criteria 6.1 and 7.1 were developed to identify the stakeholder's perception of the cultivation, processing and new plantations areas of palm oil regarding the social and environmental impacts created by this activity, to develop and implement an action plan in a participatory way that will contribute to local development and mitigate negative impacts and to have the free, prior and informed consent of the communities on the new plantations.

Aspects of environmental changes: In general, the presence of the company has been identified and acknowledged related to improvements in access to education, health (though both with low quality), its intervention in the improvement of infrastructure (roads), the stimulus to the economy, its effect on the woman's role and its presence is linked with the deterioration of the environment (even though there are opinions that they help to preserve it). The conditions found in the area of influence seem to indicate that there is plenty of opportunity for a positive approach, but determining projection strategies is key to have positive sustainable business

results. Regarding Values: The authorities in each space (the parents at home; in the community, authorities or teachers in the community; the superiors at work) as the principal reference points for transmitting values.



Results of the SEIA

Validation Process. Several rounds were developed of meetings with the stakeholders that had participated in the sessions for the identification of impacts was carried out. A specific consultation process for the validation of the proposed mitigation plan obtained from the

interventions of all the parties involved was designed and submitted for feedback, to be ratified by mutual agreement and validate the ideas, decisions and actions stipulated

Meetings for plan validation and receiving comments

Issues That Have Potential for Their Approach.

The conditions identified in the socioeconomic baseline of AGROCARIBE's area of influence allow us to deduce some important elements to consider potential impacts (positive and negative) that under the RSPO standard perspective can be illustrated in the following table:

No.	DESCRIPTION	POTENTIAL POSITIVE SCENARIO	POTENTIAL NEGATIVE SCENARIO
6.2	Establish a communication plan	The local culture and background which make the population be familiar with agribusiness provide a good platform for the communication and language strategies.	Education levels will require specific efforts and limitations to understand the content. There are confusing messages from third parties on the implications of the agro-industry, mainly on socioenvironmental aspects.
6.3	Establish a system of complaints and claims	Community organization allows a good communication launch.	Levels of education and health can cause the company to handle complaints that are not relevant or directly related to its operations.
6.4	Any compensation negotiation through a documented system	The historic social conditions facilitate communication around negotiations.	The property models are not formal and the negotiating mechanisms can undermine transparency. There is competition for negotiation with other companies.
6.5	Remunerations comply with legal standards	The minimum conditions required for wages are very clear, there is a very positive perspective on employment.	The lack of education and cultural factors can give rise to internal conflict.
6.6	The employer respects the right of freedom of association	There is a community organization culture. There is a degree of awareness of the association.	The cultural forms of organization are not productively efficient and can give rise to internal conflict. There are messages from third parties that create confusion on this topic.
6.7	Children are not employed nor exploited	There is greater consideration towards their academic training.	Cultural and socio-economic conditions are not set and criteria is not strengthened for the protection of childhood.

6.8	Any type of discrimination is prohibited	There is quite a horizontal and homogenous culture and social structure, it provides broad participation, less tension by gender or transgender aspects.	The pressure by work demand can give rise to discrimination mechanisms.
6.9	There is no harassment and reproductive rights are	There are high values for the individual's dignity.	Because of education levels and cultural conditions, specific conditions for women are placed at risk.
6.10	Fair bargaining with small landowners and local businesses	The local population with economic activities has been easily identified and it has a fairly well developed business culture.	There is a different cultural appreciation on solidarity and fairness of negotiations with potential conflicts.
6.11	Contribution to local development.	The contributions of the company significantly affect changes in local development, especially at the micro level.	The demand for resources exceeds the company's technical and financial capabilities. The weakness of the State generates pressure on the company to replace it.
6.12	There is no forced labor or trafficking in	The structure of the population allows identifying the origin of the inhabitants.	Internal migration by pressure due to exhaustion of production resources
	people	It doesn't require migrant or temporary workers.	May result in trafficking and forced labor.
6.13	Growers and processors respect human rights	Social cohesion is growing with a trend on human aspects.	The levels of education and economic conditions can lead to using abusive practices to treat the staff.

3.2 HCV assessment

The assessment of the 6 farms or planting units, was carried out in two different time periods. In the case of farms Valle Verde, Las Marias and Santa Sofia the process was carried out between February and November 2014, and for Palnorsa, Las Mercedes and El Rosario, the process was carried out between November 2015 and January 2016. This is considered as an added value, because there was more time for the analysis and evaluation of each planting unit.

Agrofrancia, currently covers 9 farms known as: San Juan, San Lucas, San Marcos, La Francia, Esmeralda, Yalu, San Mateo, Valle Verde I and Valle Verde II. These farms cover a total of 4797.73 ha, of which an area of 67.5 ha corresponds to a reserve area located inside farm La Francia of these farms, 74% is intended for crop development, and the rest of the area is occupied by La Reserva, the processing mill, transportation routes, and location of residential complexes.

The farms analyzed in 2014, have the special feature of being located in areas whose development and use exploitation began during the 1920's with the establishment of the great American banana companies, which affected several of the HCV results. The evaluation found out that in these three farms (Valle Verde, Las Marias and Santa Sofia) there is no presence of any HCVs for reasons that will be justified later. The same scenario is true for Palnorsa, where there were no associated HCVs identified.

In the case of the remaining farms El Rosario and Las Mercedes, because they are farms that in terms of landscapes are located and surrounded by several protected areas and significant natural resources, different results were obtained. As a general result, the presence of HCV1 and HCV5 was confirmed in farm El Rosario, and its areas of direct influence, as well as the presence of HCV1 in the direct influence area of Las Mercedes. **Thus, these 2 farms (Las Mercedes and El Rosario will not be included for this NPP assessment which is involved 445.36 Ha of potential HCV area.**

The present study identifies areas with conservation values, which can serve as a tool for decision-making at the level of municipalities and community environmental organizations, to define guidelines for the management and conservation of watersheds, oriented to interconnection proposals of similar zones for the promotion of biological corridors. They will also be used to define territorial zoning and local land use, for the allocation of government land and boosting future development areas. However, despite this, it is important to make clear, that this product should not be taken in a binding manner by national institutions or non-governmental organizations - NGOs, since the guidelines followed to get the results are based on international norms and standards, so that some of the principles may not match the national legislation.

This process was carried out in two stages, in a first visit that was carried out in August 2014, the approach was carried out by BIO TERRA professionals Darien Zúñiga and Jonathan Arias for the area where farms Valle Verde, Las Marias and Santa Sofia are located, and in a second visit

in November 2015 the professionals in charge were Darien Zúñiga and Cynthia Rosales, when they covered the area of farms El Rosario, Las Mercedes and Palnorsa. The public consultation was carried out with the objective, not only to know the perception of local communities and institutions with regard to the project, but also to analyze more thoroughly the area under study and be able to be more assertive in confirming or ruling out the existence of each HCV. The professionals interviewed a wide variety of people, among which stood out community members of the area of influence, community mayors, religious pastor, officials from the Ministry of Agriculture, Livestock and Food (MAGA), members of the Foundation for Eco-development and Conservation (FUNDAECO), and of the Education Commission.

In the case of actual work with experts, there were support studies made specifically for the study area, such as the rapid ecological assessments (REA), the Social Study, the Environmental Diagnoses, the Study of Soils, the study for detecting changes in land cover/land use, etc. Besides digital available information of the following institutions, plans and/or state policies was also consulted:

- National Institute of Seismology, Volcanology, Meteorology and Hydrology (INSIVUMEH)
- Ministry of Agriculture, Livestock and Food (MAGA).
- Foundation for Eco-Development and Conservation (FUNDAECO)
- National Forestry Institute (INAB)
- Ministry of Environment and Natural Resources (MARN for its initials in Spanish)
- National Council of Protected Areas (CONAP)
- Institute of Agriculture, Natural Resources and the Environment (IARNA)
- National Plan for Disaster Risk Reduction (CONRED)
- Secretariat for Planning and Programming of the President's Office (SEGEPLAN)
- Master Plan for Risk (PLAMAR)
- National Water Policy

The consultation processes are carried out through interviews and focus groups. For the incorporation of the results of this whole process, a qualitative analysis was performed.

Below are the templates of the questions used in the work with the social actors:

TOPIC I. PROTECTED WILDLIFE AREAS
Q1. Are there any protected areas in the region?
Q2. What do you believe is the main threat for them?
Q3. Is there proper monitoring from the managers of the protected wildlife areas PWA?
Q4. Do they have management plans?
Q5. Are lands being invaded in the PWA?
TOPIC II. LAND OWNERSHIP AND LAND USE
Q1 Do you know if there are any land ownership conflicts in the area?
Q2 Could you indicate predominant land use in the area?
Q3 What human activity do you consider has the highest environmental impact in the area?
Q4 Is deforestation a recurrent topic in the area?
Q5 At your criteria, what are the most vulnerable ecosystems in the area?
TOPIC III. ECOSYSTEMS
Q1. Do you know if there are still primary forests in the area?
Q2. Are there still any considerable large ecosystems (forests, wetlands-etc?) in the area?
Q3. Is there any rare or threatened ecosystem (wetlands, etc.) in the area?
Q4. According to your criterion, are there any ecosystems or areas considered as high conservation value areas?
TOPIC IV. ECO-SYSTEM SERVICES
Q1. Do you think there is any direct dependence of the population on some natural resource?
Q2. Do you know if there is any fundamental eco-system service for any community?
TOPIC V. SPECIES OF FLORA AND FAUNA
Q1. Do you know if the area has any rare, threatened, endangered, or emblematic species?
Q2. Do you consider that hunting is a recurrent topic in the area?
Q3. What species have greater pressure?
Q4. What do you believe is the main threat for the species?

High Conservation Values 4	
1	Do rivers in the area show risk of floods?
2	What are the main rivers causing more floods and what communities are more affected?
3	Are there strong slopes in the area capable of causing mudslides or landslides? Where?
4	What are the communities that have the greatest risk of being affected by landslides or mudslides?
5	Are there important aquifer recharge areas for the water supply of the communities or indigenous groups in the area? Where are they located?
6	What do you consider are the main threats on the water sources?
High Conservation Values 5	
1	Are there any activities related to hunting (subsistence or poaching) in the area?
2	Is hunting a fundamental aspect for feeding the communities or families?
3	Is there any type of fishing in the rivers (subsistence or commercial)?
4	Is fishing fundamental or indispensable for feeding the communities?
5	Do the communities have an aqueduct for their water supply?
6	Where do the families mostly get their food?
7	Do the communities use firewood to cook their food?
8	Where does the firewood come from?
High Conservation Values 6	
1	Is there any archaeological site of relevant importance for communities or indigenous groups in the area?
2	Are there any indigenous communities established properly in the area?
3	Are there any sacred sites for communities or indigenous groups, such as caves, natural sites or similar in the area?
4	Are there any historical sites that include temples or ruins of historic character in the area?

HCV 1, 2 and 3 analysis from the work with the social actors:

In regard to these HCV, there was evidence that the area in which the farms under study are, belong to an area that has been overexploited for decades, mainly by agricultural activities, being subject to continuous land use change, which has eliminated nearly all of the natural ecosystems, leaving only some small isolated patches of vegetation. According to this, the presence of HCVs on farms Valle Verde, Santa Sofia, Las Marias and Palnorsa has been ruled out.

HCV 4, 5 and 3 analysis from the work with the social actors:

The following table summarizes the results obtained in relation to this analysis:

HIGH CONSERVATION VALUES- HCV4		
QUESTIONS	**SUMMARY OF RESULTS**	**COMMENTS**
Do rivers in the area show flood risks?	One hundred percent of the persons interviewed claim that the rivers near their communities are at risk of flooding their communities.	It is repeated that the study area is an alluvial plain prone to this type of phenomena. In addition, no critical ecosystem for mitigating floods has been identified.
What are the main rivers that cause more floods and what communities are more affected?	The persons interviewed mentioned different rivers with flood risks such as: Motagua River, Quebrada Americana, Rio Negro and Las Animas River, etc. In regard to the aforementioned communities the most affected are: Sector 3 and 4, Suiche Playitas Morales, And village Las Animas.	Seventy per cent of the persons interviewed agree that in the area there are dykes or banks that mitigate flooding.
Are there strong slopes in the area capable of causing mudslides or landslides?	Seventy per cent of the persons interviewed considered that there is no risk of mudslides or landslides in the area.	Despite the fact that most of the people believe that there is no such risk, 30% consider that in the area of Quebrada Grande, Cerritos, Las Animas and La Ceibita, there is such a
Is fishing fundamental for feeding the communities?	One hundred percent of the people interviewed claimed that fishing is not fundamental for feeding families.	
Do the communities have an aqueduct for their water supply?	One hundred percent of people interviewed belonging to different communities, stated that they do have aqueduct systems.	However, 50 per cent of the persons interviewed get water from wells, and the remaining 50% from rivers.
Where do the families mostly get their food?	One hundred percent of the people interviewed, mentioned that most of the food in their communities comes from stores.	
Do the communities use firewood to cook their food?	One hundred percent of those interviewed said that firewood is the fundamental basis for cooking food.	

		risk. However, no fundamental ecosystem for the mitigation of this type of phenomena was mentioned.
Are there any important aquifer recharge areas for the water supply of the communities or indigenous groups in the area?	One hundred percent of the people say that in the area there are springs or areas for aquifer recharge. Mainly in the Finca Quebradas, Quebrada Blanca, La Presa, and Finca Las Animas.	Seventy percent of these people consider that these areas are adequately protected.
What are the main threats on the water sources?	Deforestation, advance of the farming and cattle raising frontier.	
HIGH CONSERVATION VALUES- HCV5		
Are there any activities related to hunting (subsistence or poaching) in the area?	Seventy per cent of the people interviewed considered that poaching is still practiced in the area.	Poaching, is mainly due to a cultural issue, and today it is not a subsistence practice, because the areas that are currently home to large populations of wild animals are scarce.
Is hunting fundamental for feeding the communities?	One hundred percent of the people interviewed, responded that hunting is not a fundamental aspect for feeding people who are members of the communities.	
Is there any type of fishing in the rivers (subsistence or commercial)?	Seventy per cent of the persons interviewed considered that in the area, fishing is practiced, both for household consumption and for selling.	

HCV RESULTS

Regional geological aspects

Valle Verde **Las Marías** **Santa Sofia**	The project area is located in a sedimentary environment, on recent alluvial deposits (**Qa**), material deposited on the active Motagua River's and Las Animas river bed. These deposits are represented by a nearly flat topography along the south-eastern embankment of the Motagua River. The area is composed mainly of siliceous sands, resulting from the erosion of the formations located on the course of the flows that drain the area. Although they do not appear locally, some literature suggests the presence of volcanic ash altered in association with clays.
El Rosario **Las Mercedes**	The stratigraphy of the area determines the existence of two geological formations which extend from the Cretaceous to the upper Tertiary. The rocks are meteorized, causing reddish colored to yellowish brown floors, they are sedimentary rocks formed by unconsolidated sediments of clay and sand with a percentage of carbonates belonging to the Herrerian Formation.
Palnorsa	The stratigraphy of the area, determines the existence of a geological formation that extends from the Quaternary, and is defined by the alluvial deposits of the Quaternary. This category is located along and parallel to the Motagua River. The flood matrix is tubacious, coffee-colored to beige, with gravel, sand and mud, and fragments of quartz, feldspar, volcanic and metamorphic rocks, 5 to 40 cm in size. The boulders have round shapes that show that they have been worked over by river flows. The age of this unit is of the recent Quaternary Period.

HCV	Description	Farms	Present	Beginning Caution	Absent	Observations
1	*Concentrations of biological diversity, which contain endemic or rare, threatened species, and that are of significant importance at the regional, national, or world level.*	Valle Verde Las Marías Santa Sofia Palnorsa				Despite the fact that in these farms there are species that can be cataloged in a national or international conservation list, the evaluation found that the ecosystems present in these farms do not have the necessary conditions to sustain concentrations of significant important biodiversity at the global, regional or national level.
		El Rosario				Farm El Rosario, is physically connected to the north with the area of multiple uses of the Sarstún River, which is an area that contains a high biodiversity and also shares boundaries with a large portion of forests in southern Belize in what is known as the Sarstoon Temash National Park. According to this and the results obtained from the REA in regard to the presence of RAP species and endemic species, it was determined that this farm has HCV1, for hosting concentrations of biodiversity of significant importance to the regional level, which is even more relevant because it is connected to a protected area. If these forests remnants in farm El Rosario were eliminated, the range of action of the species that are present in the area would be reduced.
		Las Mercedes				In the case of Las Mercedes, it is connected with the Río Dulce National Park, which is an important habitat for the manatee and crocodiles and the concentrations of these species in this National Park are considered HCV1. In addition, in this case there will be a direct influence because this property is adjacent to the Seja River which runs into this National Park, so that any activity that is carried out in this farm could have an impact on this Park.

HCV	Description	Farms	Present	Beginning Caution	Absent	Observations
2	*Mosaic of ecosystems and large size ecosystems at the landscape-scale and important on a global, regional or national scale, which have viable populations of the vast majority of the species present in a natural way under natural patterns of distribution and abundance.*	Valle Verde				None of the farms or their direct influence areas, has areas or ecosystems that may be designated in this HCV. Intensive land use in the area over many decades, has undermined or fragmented most of the large size ecosystems of significant importance that can have viable populations of the vast majority of the species present there, this is the reason for ruling out the existence of any HCV2 in the farms or in their areas of direct influence.
		Las Marías				
		Santa Sofia				
		Palnorsa				
		El Rosario				
		Las Mercedes				
3	*Rare, threatened or endangered ecosystems, habitats or shelters.*	Valle Verde				In the same way that happened with the HCV above, the intensive use the land has suffered along the years of anthropogenic activities, has resulted in the absence of any ecosystem in the farms under study or their areas of direct influence that can be considered as rare or threatened.
		Las Marías				
		Santa Sofia				
		Palnorsa				
		El Rosario				
		Las Mercedes				
4	*Basic services of an ecosystem in critical situations, such as the protection of water collection areas and control of soil erosion and vulnerable slopes.*	Valle Verde				It has not been considered that the ecosystems give basic services during critical situations in the interest zone. This area does not have recurring fires, therefore no ecosystems have been identified to control this type of phenomena. The issue of flooding is common in these plains, however, it cannot be claimed that one of the remaining ecosystems mitigates this type of phenomena, since overflows are scattered and not always at the same time. In relation to mudslides, the area of interest is quite
		Las Marías				
		Santa Sofia				
		Palnorsa				
HCV	Description	Farms	Present	Beginning Caution	Absent	Observations
		El Rosario				flat, so that it is not an area prone to this type of phenomena. In regard to water collection areas, no critical site for its protection has been identified, at least not in the farms or in their areas of direct influence.
		Las Mercedes				
5	*Sites and vital resources to meet the basic needs of local communities, indigenous groups (for their livelihoods, health, nutrition, water, etc.), identified through dialog with those communities or indigenous people.*	Valle Verde				No direct dependency on some natural resource present on farms or in the immediate vicinity of the communities could be determined. Fishing and hunting are not considered fundamental practices to supply protein to the people's diet. Firewood continues to be used as a means of cooking, but it is collected through a wide variety of means, that is, no essential ecosystem for the removal of firewood has been identified. As for building material and medicines in the area, nobody depends on the forest anymore, because these products can be easily purchased in the area's urban centers.
		Las Marías				
		Santa Sofia				
		Palnorsa				
		Las Mercedes				
		El Rosario				In the case of farm El Rosario, it is pointed out that the communities in this area get their water mainly from the Sierra Santa Cruz, however, the supply system is poor because the aqueduct is rudimentary and due to the lack of economic resources, it does not receive the maintenance necessary to stay in optimal conditions. According to this, this resource is not often 100% available, so that the people require alternative sources to provide water. In farm El Rosario, people have identified a water spring which is located in the northern boundary as an alternative source of water for them, for this, the spring has been identified as an HCV5. On the other hand, it is important to mention the Ciénaga River which is located in the range of direct influence of farm El Rosario. Fishing is still carried out in this river, and it is considered an activity of great importance for the

HCV	Description	Farms	Present	Beginning Caution	Absent	Observations
						communities in the area, for some families it is subsistence fishing so in these cases it is considered a crucial resource. Because of this information, this river is considered as an HCV5. Several bodies of water that finally empty into the Ciénaga River flow through farm El Rosario , so that the Company must guarantee to have no impact on these bodies of water, to ensure maintenance of this HCV5.
6	*Significant sites, resources, habitats and landscapes for cultural, historical or archaeological reasons at the global or national scale, or of cultural, ecological, economic, or religious or sacred importance critical for the traditional culture of local communities or indigenous people.*	Valle Verde Las Marías Santa Sofia Palnorsa El Rosario Las Mercedes				The existence of ruins, temples, or archeological sites of cultural importance of national or international nature has been ruled out in the area of interest. Nor are there in the area any world heritage sites according to UNESCO, or natural or cultural heritage sites. Because of this, no resources, habitats, or landscapes, of historic, archaeological or cultural importance at the national or global scale that can be considered as an HCV6 have been identified in the area.

Regional Aspects

Topography: The region is characterized by its relatively flat topography that originated from river sediment, and young soils subject to occasional and temporary flooding.

Climate: Izabal has a warm climate with average temperatures between 26 and 27°C, maximum temperatures between 32 and 35 °C and minimum between 17 and 20 °C. The average annual rainfall range is 2600 to 3400 mm.

Forest cover and land use: The study area is predominantly agricultural, in which prior to oil palm plantations, there were mostly banana, plantain, rice, and watermelon plantations and livestock areas.

TABLE 16. SUMMARY OF THE PUBLIC CONSULTATION CONDUCTED FOR FARMS EL ROSARIO, LAS MERCEDES AND PALNORSA

Group of Interest	Name*	Title / Role	Organization / Social Group / Community leader	Concerns and recommendations	Response of the consultant team
Communities	Esteban Aguilar	Supervisor	El Rosario Community	• There is a road that goes through El Rosario which is being used, they are concerned that they are going to ban using that road. • There is a water source in EL Rosario that is used as an alternative source of water. • The Ciénaga community has problems with the road because trucks that go loaded with palm and livestock are causing it to sink and the road is being lost. • They are concerned about the ban on fishing in areas close to the plantation. • They are concerned that they will not be allowed to pick up firewood. **RECOMMENDATIONS**	In relation to the farm El Rosario, it is recommended to analyze the possibility and seek mechanisms, in a participatory way (Company Agrofrancia and community), to look for access to the spring located in the farm and to the road that goes through the farm used as a pass, an ongoing negotiation and communication strategy to reach joint agreements is recommended. The water bodies shall be protected so as not to affect the fishing that goes on in the Ciénaga River. To seek mechanisms and generate strategic partnerships, as appropriate, to analyze the
	Pedro Navarro	Caporal			
	Juan Jiménez	Caporal			
	José Vargas	Person Responsible			
	Asdrúbal Madrigal	Mayor of the Commissioner	Community El Florido		
	Elías Barquero	Person in charge of the office	Sejá Village Community		
	Warner Gutiérrez	Mayor of the Commissioner			
	Tomas Herrera	Vocal	Community of Santa Maria de Guadalupe		
	Eduardo Rivas	Treasurer			
	Steven Vega	Secretary			
	Allan Porras	Secretary	Community El Porvenir		
	Andrés Murillo	Vocal	San Antonio Sejá Community		
	Jessica Morera	Secretary	Ciénaga Community		
	Walter Peraza	President			

				• Improve communication between communities and the company Agrofrancia. • Generate partnerships for road maintenance. • Create places to get information about the company.	possibilities to pick up excessive firewood in the farms. Both parties are encouraged to promote compliance with the recommendations provided.
Community	Fernando Picado	Administrator	Community Piteros Uno	• There are two rivers: the San Francisco and El Pitero, where there is still fishing and washing is carried out. • They have problems with river flooding, rivers always overflow and affect livestock and the town access because the street become flooded. • They are concerned about the ban on fishing in areas close to the plantation. • There is lack of knowledge of the oil palm cultivation processes. • They are concerned about the chemicals that are used for the palm. • The palm helps channel water from river overflows.	It is clarified that the project will not affect the rivers San Francisco and El Pitero. On the issue of floods, it is clarified that this is a recurrent phenomenon because of the area's topography where the company has no control. The Company does not have the power to ban fishing in nearby rivers. Both parties are encouraged to promote compliance with the recommendations provided.
Private Company	Carla Ríos	Administration Head	Palnorsa farm		
	Roy Carvajal	Coordinator Manager			

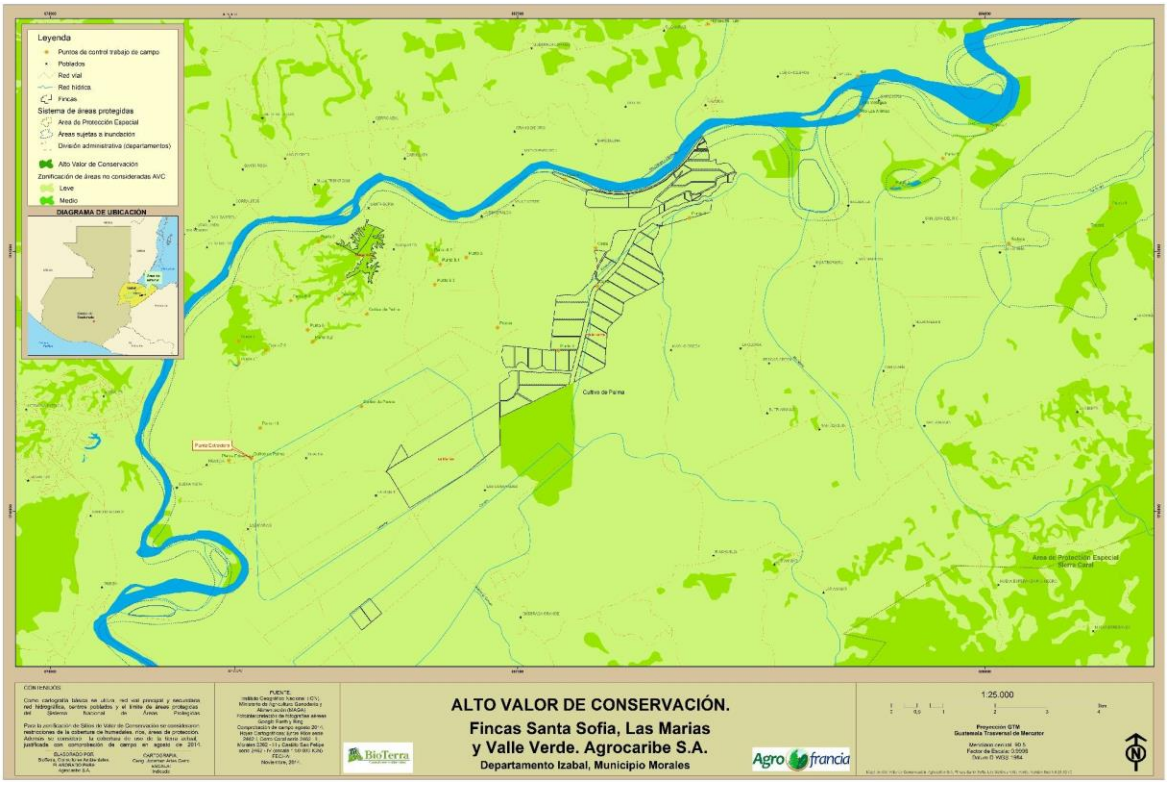
				RECOMMENDATIONS • Better communication. • Training. • That palm companies leave biological corridors for the conservation of the species. • Implementation of a suggestion box • Generate partnerships for road maintenance. • Create places to get information about the company.	
State Institutions	Patricio Viales	Technician	Ministry of Health	• There are problems of drinking water in some rivers and some people still draw water from these rivers. • There are no biological corridors to preserve the species. **RECOMMENDATIONS** • Generate a partnership to care for Sierra Santa Cruz. • Create partnerships to care for protected animals and areas. • Generate exchange of experiences.	It is clarified that the company must abide by management measures so as not to affect the water bodies in their areas of influence. The company must respect the water bodies associated to their farms, and therefore the vegetation associated with them will be kept, which will promote the establishment of biological corridors. Both parties are encouraged to promote compliance with the recommendations provided.
NGOs	Willian Sánchez	Coordinator	FUNDAECO		


Pictures: Interview and survey implementation to social actors. Meeting with independent producers, government officials, communities and NGOs.

TABLE 13. SOCIAL ACTORS CONSULTED

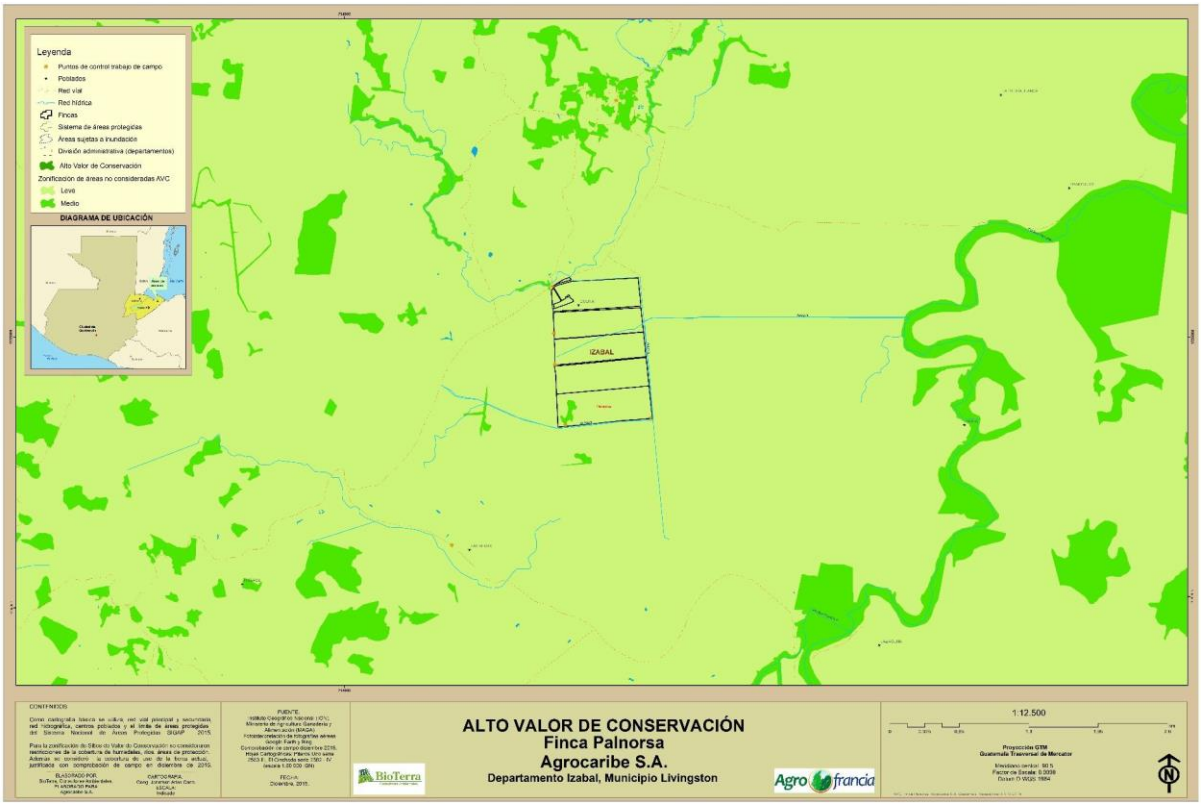
Name	Community leader / institution official	Locality
Hector de Jesús González	MAGA Coordinator	Morales, Izabal
Victor Sancé	FUNDAECO	Morales, Izabal
Manuel Guevara	Community Mayor	Buena Vista
Maynor Cantoral	Community Mayor	Río Negro
Ismael Rodríguez	Neighbor	Río Negro
Santiago Martínez	Pastor	Río Negro
Adelso Pérez	Neighbor	Río Negro
Floridalma Najera	Community Vocal	Quebrada Grande
Selusta Najera	Treasurer	Quebrada Grande
Marlin Martínez	Community Mayor	Quebrada Grande
Marleny De La Cruz	Community Mayor	Las Ánimas
Bernardo Rivera	Education Commission	La Ceibita

HCV Assessment Map of Farms Valle Verde, Santa Sofía And Las Marías



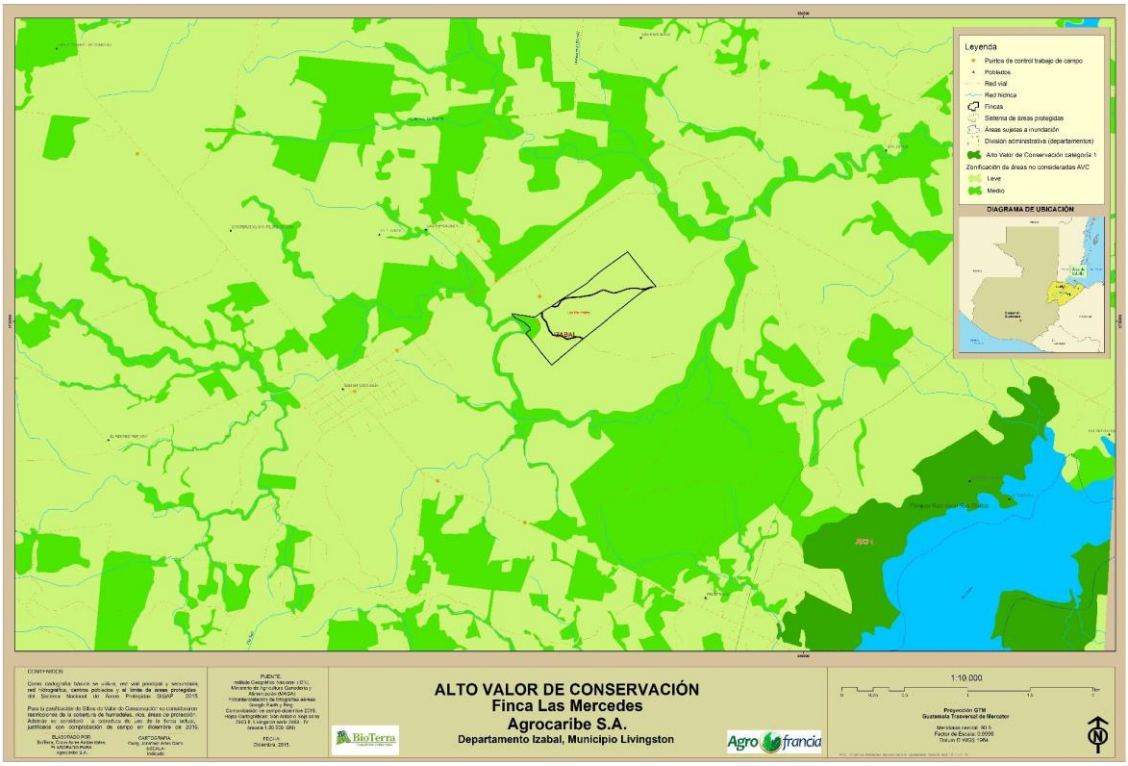
Leyenda	Legends
Puntos de control trabajo de campo	Control points field work
Poblados	Towns
Red vial	Road network
Red hídrica	Water network
Fincas	Farms
Sistema de áreas protegidas	System of protected areas
Área de protección especial	Special protection area
Áreas sujetas a inundación	Areas subject to flood
División administrativa (departamentos)	Administrative division (departments)
Alto Valor de Conservación	High Conservation Value
Zonificación de áreas no consideradas AVC	Zoning of areas not considered HCV
Leve	Mild
Medio	Medium

HCV Palnorsa Assessment Map



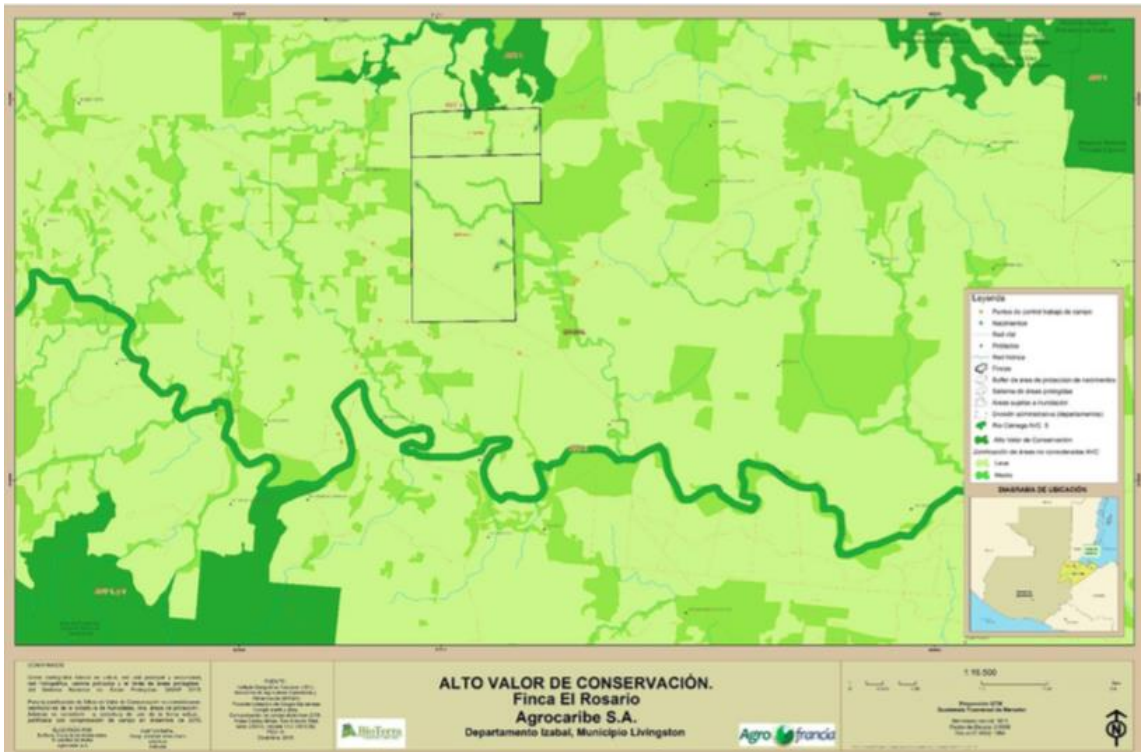
Leyenda	Legends
Puntos de control trabajo de campo	Control points field work
Poblados	Towns
Red vial	Road network
Red hídrica	Water network
Fincas	Farms
Sistema de áreas protegidas	System of protected areas
Áreas sujetas a inundación	Areas subject to flood
División administrativa (departamentos)	Administrative division (departments)
Alto Valor de Conservación	High Conservation Value
Zonificación de áreas no consideradas AVC	Zoning of areas not considered AVC
Leve	Mild
Medio	Medium

HCV Las Mercedes Assessment Map



Leyenda	Legends
Puntos de control trabajo de campo	Control points field work
Poblados	Towns
Red vial	Road network
Red hídrica	Water network
Fincas	Farms
Sistema de áreas protegidas	System of protected areas
Áreas sujetas a inundación	Areas subject to flood
División administrativa (departamentos)	Administrative division (departments)
Alto Valor de Conservación	High Conservation Value
Zonificación de áreas no consideradas AVC	Zoning of areas not considered AVC
Leve	Mild
Medio	Medium

HCV El Rosario Assessment Map



Leyenda	Legends
Puntos de control trabajo de campo	Control points field work
Poblados	Towns
Red vial	Road network
Red hídrica	Water network
Fincas	Farms
Sistema de áreas protegidas	System of protected areas
Áreas sujetas a inundación	Areas subject to flood
División administrativa (departamentos)	Administrative division (departments)
Alto Valor de Conservación	High Conservation Value
Zonificación de áreas no consideradas AVC	Zoning of areas not considered AVC
Leve	Mild
Medio	Medium

3.3 Soil and topography

According to the analysis based on the proposed model, the conclusion is that the project is classified as "Totally Suitable", a small area corresponds to moderately suitable, therefore, the areas do not show limitations for their development. The areas proposed for planting will not have limitations for their development because of steeper slopes or presence of peat bogs. The farms do not have limitations for their development according to national law, because the agricultural areas are being changed to oil palm cultivation.

The combination of the soil and climatic condition factors shows a high suitability for the development of oil palm cultivation in the area. No limitations have been identified; The combination of climate variables analyzed show very suitable conditions for the crop's development; The project is developed in an agricultural zone where agricultural activity prevail. It can be seen that the physical characteristics of the soil have a high weight for the crop's development because they do not show any limitations; The project is located outside of the protected areas; The areas where the project will be established is a valley, therefore the dominant slopes are less than 5%, and in some defined areas the slopes have values between 15 and 30%. Nowhere do slopes exceed 30% (approximately 16.5 degrees). All planting areas are within categories that according to the land use capacity can be used for agriculture. They are under the options of Agriculture with Improvements and Agriculture with Limitations. The first improvements, in general in the area have to do with the need for drainage for evacuating rain surplus.

3.4 Land Use Change Analysis (LUCA)

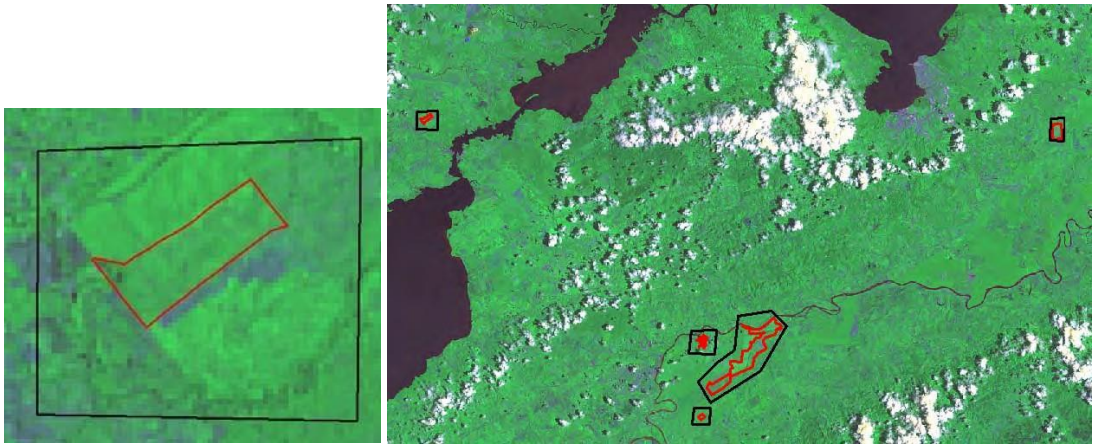
Agrocaribe S.A. is a business group made up of 2 palm oil mills Beneficio del Atlántico and Beneficio La Francia, and their supply bases Agrocaribe, Agrofrancia and the Izabal Producers Association (PAPI for its initials in Spanish). This study corresponds to the study of new plantations NPP, which covers a total area of 1,102.21 hectares. The project includes four farms from the Associated Producers and one Agrocaribe's own farm. The planting areas are located in an agricultural landscape where pastures and other agricultural land uses prevail. Predominant slopes are not greater than 5% and in general the zone has a proper rainfall distribution throughout the year with rainfall of 3,000 millimeters per year.

Selection of satellite images. The criteria for image selection were: to have the least amount of clouds or no clouds at all, no more than 6 months before or after the requested date. For filling images on Landsat 7 SLC-off, no more than twelve months before or after the date of the main image.
The Landsat 7 satellite images from 2003 on have a flaw from the instrument that corrects the scanned lines, known as Scan Line Corrector (SLC-off), which has been turned off since May 2003

SLC-off filling images. For the correction of problems in the Landsat 7 images, there are various techniques on which several methodologies have been designed. For the present case a methodology based on multiple images was used, where the gaps of a main image are reconstructed using other images that contain valid information from the corresponding area. *The Frame and Fill4 software created by NASA's Richard Irish, was used, which selects the valid data of the filling images and places it in the gaps of the main image.* From this, the previous table details what images were used as the main ones and what images were used as filling.

Slice of areas to be worked.

Once the filling process of missing data in the SLC-off images is finished, and the band composition made, the area of interest was cut in order to reduce the range of the color histogram and achieve a better separation of classes in the unsupervised classification. For cutting, polygons limiting the different crop growing areas were used with an average buffer zone of about 300 meters.



Supervised classification.

Unsupervised classifications are those in which the classifier algorithm does not need more information than the scene to classify and some parameters that limit the number of classes. These classification mechanisms based their effects in the search for classes with enough spectral separation to be able to make a difference between some uses and others.

Unsupervised classification (ISODATA) of the image slices, was carried out using the ERDAS IMAGINE software, the process consists of grouping pixels with similar characteristics in terms of color, so that the parameters indicated to the software resulted in the separation between 50 and 60 meta classes, achieving a satisfactory result, in regard to land use separation.

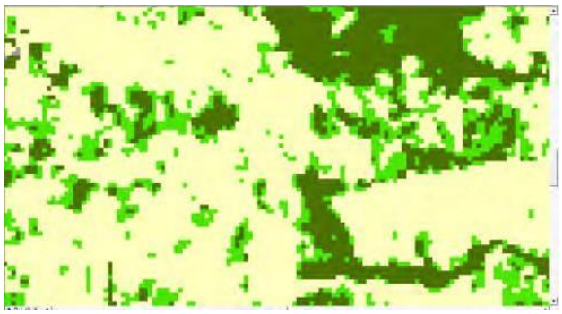
Meta classes were:
Coefficient 1.0: Structurally complex forests (including primary forest) forest in regeneration, selectively logged with elements of high forest canopy.
Coefficient 0.7: Naturally degraded **forests** but ecologically functional*.* Includes other degraded forests, secondary forests with low forest canopy dominated by pioneer species, but still functional, previous forest logged down heavily and/or repeatedly or a burnt and regenerated forest.
Coefficient 0.4: Agroforesty of multiple species. (For example shade-grown coffee, shade-grown cardamom or cacao, not identified in the areas analyzed).
Coefficient 0: Tree monoculture and non-forest plantations; other lands under permanent cultivation, developed or open degraded land

Reclassification

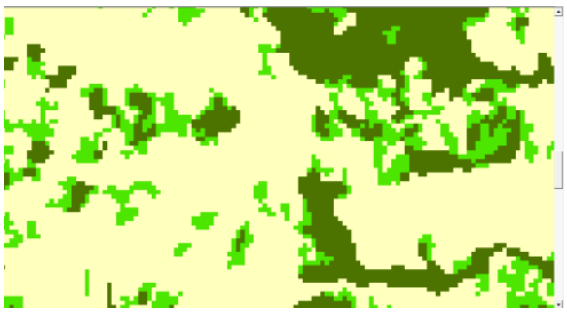
For each of the classes after the visual analysis already performed with one of the defined meta classes, a reclassification of the objective meta classes was carried out. By applying the Erdas reclassification process

Manual Editions.
The unsupervised classification process (Isodata) separates the different shades in Landsat images quite well, there are some uses that "are confused, mainly those associated with shadows with water, or clouds with areas of naked soils" among others. So it is necessary to make manual editions to these classes, locating them manually in the correct class.
This process requires experience in visualizing different land use in the area and the tones associated to them, otherwise you run the error of mixing up different categories. At this point it was necessary to constantly check land use in different sources of information such as Google Earth visualizations, orthophotograph verification available since 2006 and the land use map (GIMBOT, 2014).

Classification Simplification.
The classification has been developed at the level of Landsat pixels (30m x 30m) i.e. 900 m_2, which, having generated the processes above, an effect called "salt and pepper" occurs which are loose pixels within large use blocks.
To simplify the map, a minimum mapping area of 0.6 hectares was used, for which the "clump" and "eliminate" ERDAS IMAGINE tools were used, a set of pixels larger than 0.5 hectares can be achieved with them, cleaning the "salt and pepper" effect, as shown in the following figure.



Salt and pepper effect



Clean image

Land Use Results for the years analyzed

2005

Farm	Agroforestry Systems - 0.40	Agriculture - 0	Primary Forest - 1	Secundary Forest - 0.7	Total
Valle Verde	0.00	699.77	0.00	0.00	699.77
Las Marias	0.00	211.44	0.00	1.50	212.95
Las Mercedes	0.00	34.02	0.00	2.75	36.77
Palnorsa	0.00	115.35	0.00	1.35	116.70
Total	0.00	1060.58	0.00	5.61	1066.19

2007

Farm	Agroforestry Systems - 0.40	Agriculture - 0	Primary Forest - 1	Secundary Forest - 0.7	Total
Valle Verde	0.00	699.77	0.00	0.00	699.77
Las Marias	0.00	211.44	0.00	1.50	212.95
Las Mercedes	0.00	34.02	0.00	2.75	36.77
Palnorsa	0.00	115.35	0.00	1.35	116.70
Total general	0.00	1060.58	0.00	5.61	1066.19

2009

Farm	Agroforestry Systems - 0.40	Agriculture - 0	Primary Forest - 1	Secundary Forest - 0.7	Total
Valle Verde	0.00	699.77	0.00	0.00	699.77
Las Marias	0.00	211.44	0.00	1.50	212.95
Las Mercedes	0.00	34.02	0.00	2.75	36.77
Palnorsa	0.00	115.35	0.00	1.36	116.70
Total general	0.00	1060.58	0.00	5.61	1066.19

2014

Farm	Agroforestry Systems - 0.40	Agriculture - 0	Primary Forest - 1	Secundary Forest - 0.7	Total
Valle Verde	0.00	699.77	0.00	0.00	699.77
Las Marias	0.00	211.44	0.00	1.50	212.95
Las Mercedes	0.00	34.02	0.00	2.75	36.77

Palnorsa	0.00	115.35	0.00	1.36	116.70
Total general	0.00	1060.58	0.00	5.61	1066.19

2016

Farm	Agroforestry Systems - 0.40	Agriculture - 0	Primary Forest - 1	Secundary Forest - 0.7	Total
Valle Verde	0.00	699.77	0.00	0.00	699.77
Las Marias	0.00	211.44	0.00	1.50	212.95
Las Mercedes	0.00	34.02	0.00	2.75	36.77
Palnorsa	0.00	115.35	0.00	1.36	116.70
Total general	0.00	1060.58	0.00	5.61	1066.19

Land use Change

2005 - 2007			
	0	0.7	total
Forest Plantation-Forest Plantation	34.02		34.02
open land-open land	0.93		0.93
open land-Pasture with trees	9.54		9.54
Others temporary crops-Others temporary crops	3.71		3.71
Others temporary crops-Pasture with shrubs	0.46		0.46
Others temporary crops-Pasture with trees	0.18		0.18
Pasture with shrubs-Others temporary crops	0.97		0.97
Pasture with shrubs-Pasture with shrubs	36.34		36.34
Pasture with shrubs-Pasture with trees	0.04		0.04
Pasture with trees-Pasture with trees	104.14		104.14
Pasture with trees-River	0.01		0.01
Pure Pasture-Pasture with shrubs	0.03		0.03
Pure Pasture-Pasture with trees	862.94		862.94
Pure Pasture-River	0.07		0.07
River-Pasture with trees	0.03		0.03
River-River	6.94		6.94
Secondary forest-Pasture with trees		0.00	0.00
Secondary forest-Secondary forest		5.61	5.61
Yard and buildings-Yard and buildings	0.24		0.24
Grand Total	1060.58	5.61	1066.19

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2007-2009			
	0	0.7	Total
Forest Plantation - Forest Plantation	34.02		34.02
open land - Pure Pasture	0.93		0.93
Others temporary crops - Others temporary crops	3.23		3.23
Others temporary crops - Pure Pasture	1.45		1.45
Pasture with shrubs - Others temporary crops	0.26		0.26
Pasture with shrubs - Pasture with shrubs	32.31		32.31
Pasture with shrubs - Pasture with trees	0.27		0.27
Pasture with shrubs - Pure Pasture	4.00		4.00
Pasture with trees - Pasture with shrubs	0.01		0.01
Pasture with trees - Pasture with trees	85.66		85.66

Pasture with trees - Pure Pasture	891.15		891.15
Pasture with trees - River	0.05		0.05
Pasture with trees - Secondary forest	0.00		0.00
River - Pasture with trees	0.00		0.00
River - Pure Pasture	0.03		0.03
River - River	6.98		6.98
Secondary forest - Pure Pasture		0.00	0.00
Secondary forest - Secondary forest		5.61	5.61
Yard and buildings - Yard and buildings	0.24		0.24
Grand Total	1060.58	5.61	1066.19

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2009 - 2014			
	0	0.7	Total
Forest Plantation - Forest Plantation	34.02		34.02
Others temporary crops - Pure Pasture	3.49		3.49
Pasture with shrubs - Pasture with shrubs	25.51		25.51
Pasture with shrubs - Pure Pasture	6.80		6.80
Pasture with trees - Pasture with shrubs	58.28		58.28
Pasture with trees - Pure Pasture	27.56		27.56
Pasture with trees - River	0.09		0.09
Pure Pasture - Pasture with shrubs	0.09		0.09
Pure Pasture - Pure Pasture	880.80		880.80
Pure Pasture - River	16.68		16.68
Pure Pasture - Secondary forest	0.00		0.00
River - Pasture with shrubs	0.37		0.37
River - Pure Pasture	0.36		0.36
River - River	6.29		6.29
Secondary forest - Secondary forest		5.61	5.61
Yard and buildings - Yard and buildings	0.24		0.24
Grand Total	1060.58	5.61	1066.19

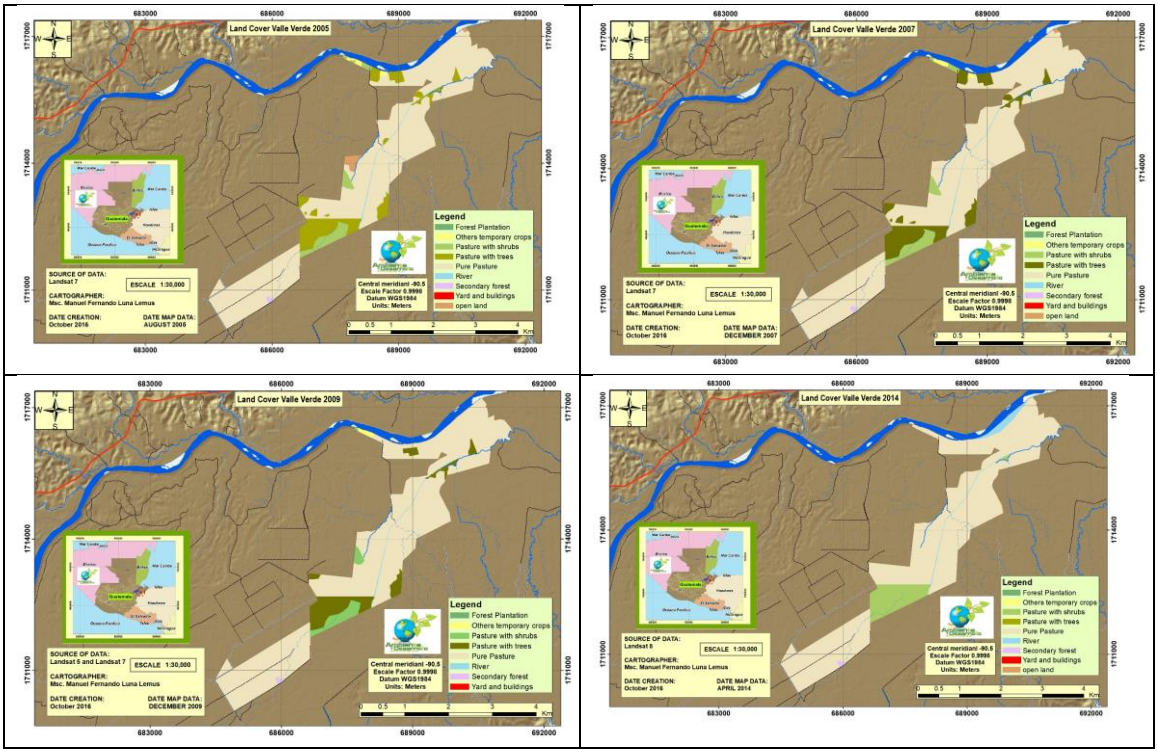
2014 - 2016			
	0	0.7	Total
Forest Plantation - Forest Plantation	34.02		34.02
Pasture with shrubs - Pasture with shrubs	23.50		23.50
Pasture with shrubs - Pure Pasture	60.72		60.72
Pasture with shrubs - River	0.03		0.03
Pure Pasture - Pasture with shrubs	43.06		43.06
Pure Pasture - Pure Pasture	873.88		873.88
Pure Pasture - River	2.08		2.08
River - Pasture with shrubs	0.39		0.39
River - Pure Pasture	2.35		2.35
River - River	20.32		20.32
Secondary forest - Secondary forest		5.61	5.61

Yard and buildings - Yard and buildings	0.24		0.24
Total general	1060.58	5.61	1066.19

Summary of the area to compensate. In the analyzed area was not identified primary forest and neither in the high values of conservation study were not identified places with high values of conservation therefore **DO NOT EXIST COMPENSATION.** The project do not has to compensate any area, because it is stablished in areas with agricultural use

Changes	2005 - 2007			2007 - 2009			2009 - 2014			2014 - 2016		
	Factor	Ha	Comp	Factor	Ha	Comp	Factor	Ha	Comp	Factor	Ha	Comp
Primary Forest - Agriculture	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Secondary forest - Agriculture	0.70	0.00	0.00	0.70	0.00	0.00	0.70	0.00	0.00	0.70	0.00	0.00
Agroforestry Systems - Agriculture	0.40	0.00	0.00	0.40	0.00	0.00	0.40	0.00	0.00	0.40	0.00	0.00
Mono crop. Other - Agriculture	0.00	1060.58	0.00	0.00	1060.58	0.00	0.00	1060.58	0.00	0.00	1060.58	0.00

Figura 1 Valle Verde Land Coverages



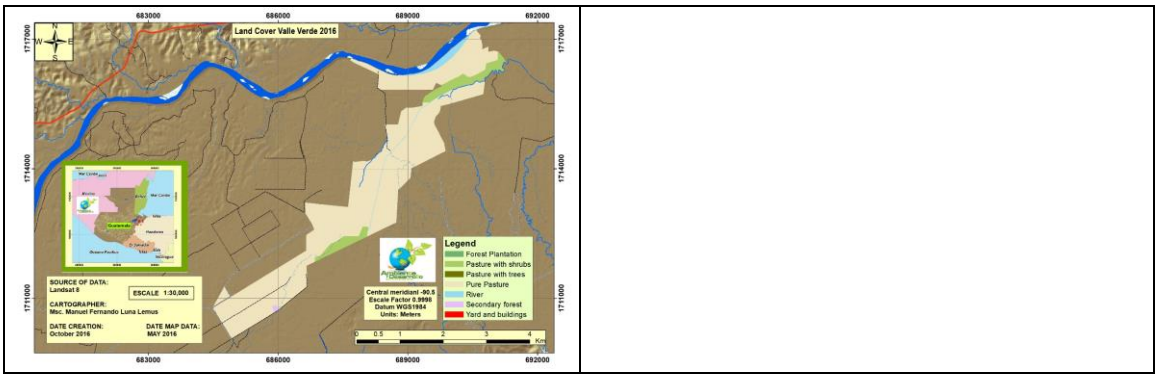
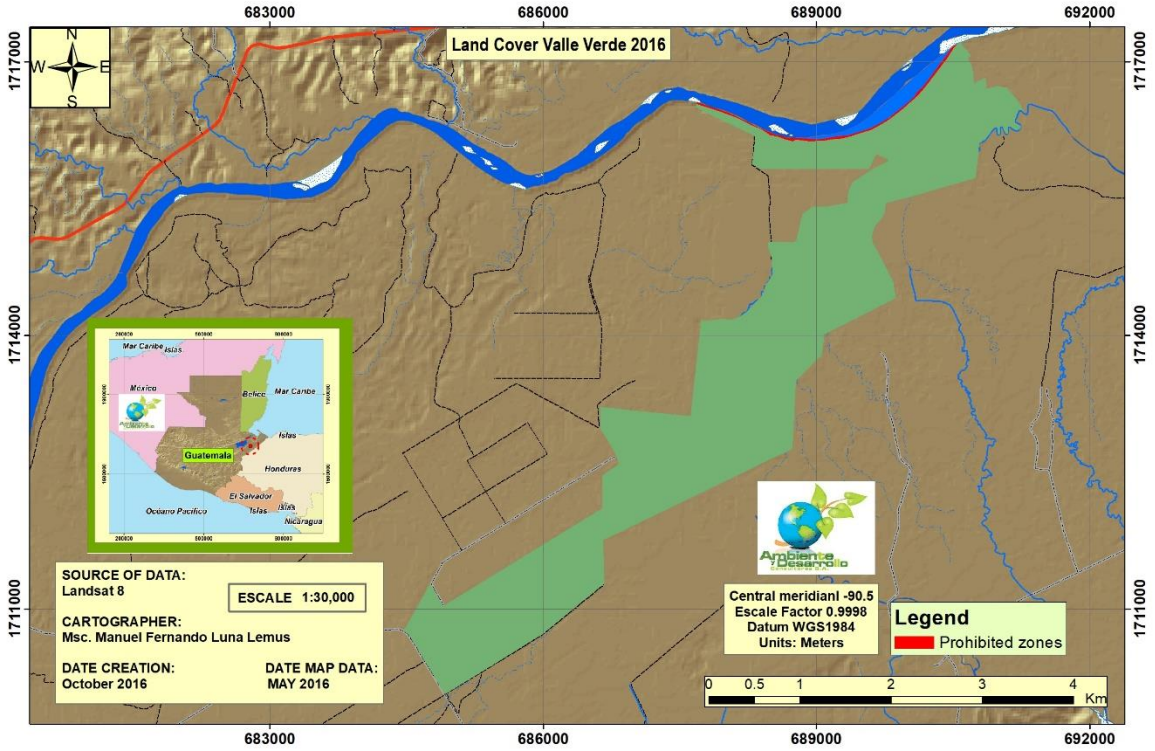


Figura 2. Las Marías Land Coverages

Figura 3 Palnorsa Land Coverages

Figura 4 Vall Verde Land Coverages

Figura 5. Prohibited Zones



3.4.1 FPIC process

General Property Requisite in Guatemala. The project can be applicable to two different requisites the General Registration of the Central one in the City of Guatemala and the Registry of Property in the department of Izabal

Cadastral Information Registry (CIR) Establishes, maintains and updates the national cadaster to constitute a public registry that is oriented to the juridical safety of land tenure and land use. This registry operates under the coordination of the General Property Registry.

Political Constitution of the Republic of Guatemala Article 39: Private Property

Guaranties that private property is a right of that people have. Any person can freely dispose of their assets according to the law.

Article 67: Protection to indigenous land and cooperatives Indigenous community land and/or other form of agricultural collective tenure like popular housing or family heritage with have protection from the State.

Agreement 169 of ILT. All indigenous communities must be consult before the acceptance of any hydroelectric or mining license to consult for laws or norms inside their territory. Guatemala ratified the agreement in July

5th of 1996 to recognize the indigenous land tenure.

Civil Code. According to this code, private property assets that belong to individuals should have a legal title.

Location of the Company

Agrofrancia and Agrocaribe are located in Guatemala's northeast area, between the municipalities of Puerto Barrios and Morales. Its area of influence includes the processing mills Beneficio del Atlántico and La Francia, Producers Association and new plantations. The first is located 273.5 kilometers from the capital city in the municipality of Puerto Barrios and the second is in km 243 of the municipality of Morales, in the department of Izabal.

Company	Communities	Municipality	Department
Agrocaribe	Campamento Tenedores	Morales	Izabal
Agrocaribe	Tenedores Estación	Morales	Izabal
Agrocaribe and processing mill	Champona Línea	Morales	Izabal
Agrocaribe and processing mill	Champona Inta	Morales	Izabal
Agrocaribe	Quetzalito	Pto. Barrios	Izabal
Agrocaribe	Processing mill Entre Ríos	Pto. Barrios	Izabal
Agrocaribe	Entre Ríos Barrio Placa 1	Pto. Barrios	Izabal
Agrocaribe	Barrio el Quilombo	Pto. Barrios	Izabal
Agrocaribe	Las Vegas	Pto. Barrios	Izabal
Agrocaribe	Media Luna	Pto. Barrios	Izabal
Agrocaribe	Peñitas	Morales	Izabal
Agrocaribe	La Esperanza Peñitas	Morales	Izabal
Agrocaribe	Las Nubes	Morales	Izabal
Agrocaribe	La Laguna	Pto. Barrios	Izabal
Agrocaribe	Switche III	Pto. Barrios	Izabal
Agrocaribe	Sinaí	Pto. Barrios	Izabal
Agrocaribe, PAPI	Piteros	Morales	Izabal
Agrofrancia, PAPI, processing mill Beneficio La Francia	Buena Vista	Morales	Izabal
Agrofrancia	Cayuga	Morales	Izabal
Agrofrancia	El Riachuelo	Morales	Izabal
Agrofrancia	La Ceibita	Morales	Izabal
Agrofrancia	La Ceiba	Morales	Izabal
Agrofrancia	El Quinto	Morales	Izabal
Agrofrancia	Las Ánimas	Morales	Izabal
Agrofrancia	San Joaquín	Morales	Izabal
Agrofrancia	Barrio El Remolino	Morales	Izabal
Agrofrancia	Río Negro	Morales	Izabal
Agrofrancia, PAPI	Quebrada Grande Los Cerritos	Morales	Izabal

Source: Agrocaribe, 2015

The participatory mapping was the Methodology used to do the FPIC, to determine the extent of communities.

Mr. Otoniel Carranza (Human Resources Manager of Agrocaribe) was developed the FPIC, the main proposals incorporated into the plans:

- Participants agreed that they did not displace communities in operations and new plantations.
- Participants agreed with the presentation of customary rights.
- The participants indicated that they agree with the ideas proposed if they are monitored.

- Participants commented that the ideas raised were excellent; this will improve the relationship with the company. And to be respectful of the representation of different actors.
- Continuing with the relationship and communication to strengthen relations is of the utmost importance.
- The participants indicated that they expect to continue having the support of the company.

FIGURE 9. Record of meeting attendance in HCV, NPP, Customary Law, FPIC.

SERVINTEGRALES Agro francia LAFRANCIA AGROCARIBE EXTRACTORA DEL ATLANTICO

Lista asistencia de Capacitaciones

Tema: PROCEDIMIENTO DE NUEVAS PLANTACIONES / HCV / DERECHO CONSUETUDINARIO / PROCESO DE CONSENTIMIENTO PREVIO, LIBRE, INFORMADO

Fecha: 10/11/2015

Área: COMUNIDADES DE INFLUENCIA

Duración: 3 hrs.

Instructor: Lic. Otoniel Guerra / Pedro Cerezo

No.	Nombre	Puesto	Firma
1	Mynor David Saavedra Orellana	Jefe Operaciones Palmasa	
2	Edgar Leonel Sandoval Salguero	Gerente Gral. Palmasa	
3	Cristina Sandoval	Jefe Adm. PALMORSA	
4	Rafael Vargas Rivas	Adm. Personal	
5	Oscar Abel Oliva	Jefe Personal	
6	Edgar Rodrigo Nava Leiva	Oficina Finca los Mangales	
7	Guillian Rubalba	COCODE	
8	Hector Espinales	Agro Espinales	
9	Adelmo Gregorio	Pastor A. Buena Vista	
10	Manuel Guevara	A. Buena Vista Alcalde Comunitario	
11	Jorge Luis Flores Sandoval	A. Pastores Alcalde Comunitario	
12	Domingo Caballero	Colaborador	
13	Andrea De la Cruz Samayoa	Alcaldesa Comunitaria	
14	Arnol Benjamin Rosis Barrientos	Director [illegible]	
15	Mariela Aracely España Vidal	Maestra INEB Río Negro	
16	Amadilia España Vidal	Directora EORM Río Negro	
17	Juan Maira	A. Los Cabitos, Comunitario	
18	Jorge Alvarez	Alcalde comunitario	
19	Nery Cantoral Cardona	Alcalde Comunitario	
20	Bernardo Antonio Rivera	La Ceibita comunidad	
21	Walter Estuardo Acevedo	Jefe sector 103	
22	Juan Ron	Gerente Distrito	
23	Carlos Chávez	Jefe Depto Técnico	
24	Manuel Bacaro	Gerente Producción	
25	Ma. José Interiano García	Asist. RSG y certificación	
26	Flor de María Marroquín Alvarez	Asist. Certificaciones	
27	Gerson Juan Kiloj Guerra	Auxiliar Técnico	
28			
29			
30			

Firma Instructor:

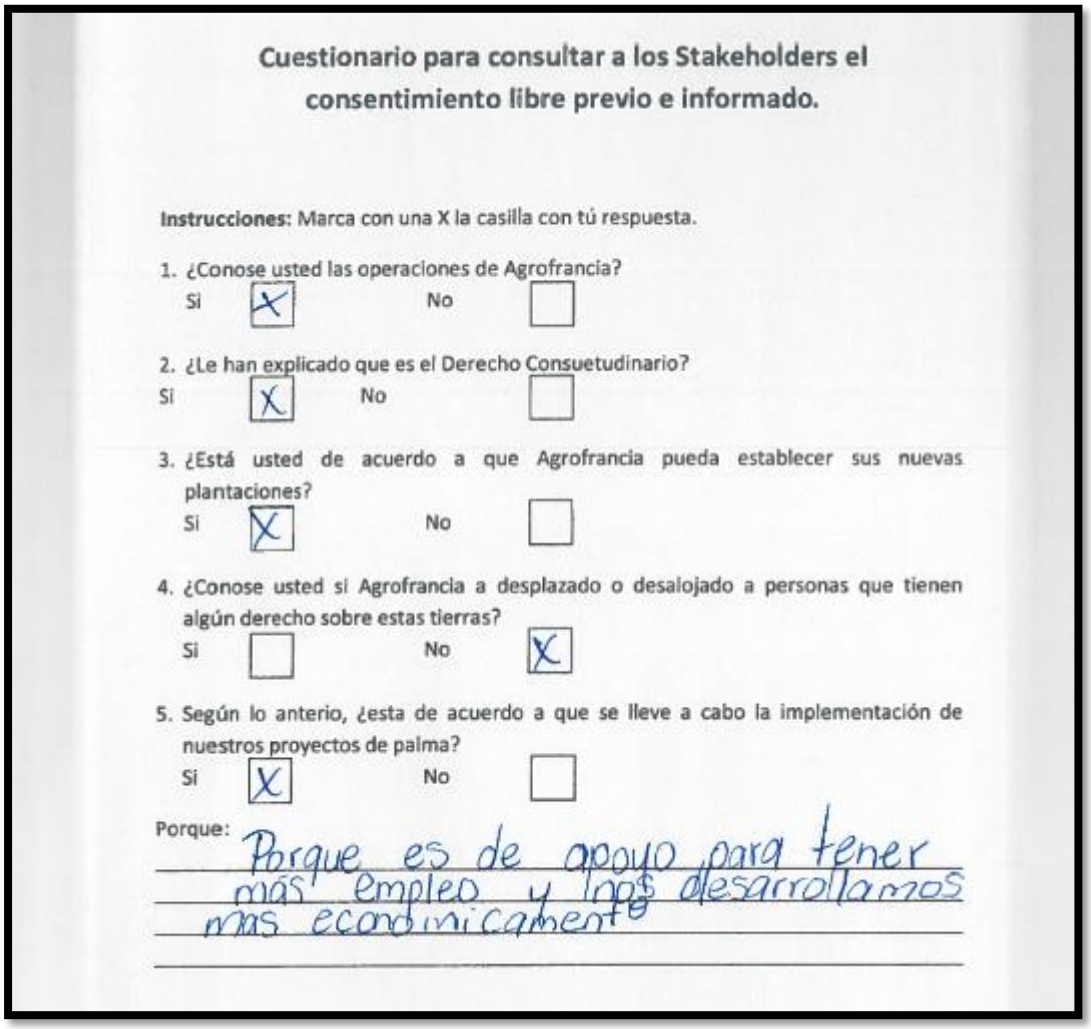
Firma encargado del área:

Observaciones:

Source: Agrocaribe EISA

Free, Prior and Informed Consent (FPIC). Since there is no prior subsistence method or informal right for indigenous people or communities in the areas of the new plantings (all according to the HCVA and SIS), there is no need to develop an obligatory FPIC for the plantations. Nevertheless, it is important to mention that the FPIC can be considered with the sustainability aspect of new developments, thus the free, prior and informed consent will be developed.

Land Tenure. The land tenure aspect of the projects runs within the compliance that has already been established with the legal normative applicable for the area and RSPO requisites. Each estate possesses a lease agreement for the land and has been signed up to have an estate number, folio and book in the property registry to validate the new plantings in the area. One of the purposes of signing up the different land extensions is to assure no nearby community will be affected by the proposed project.



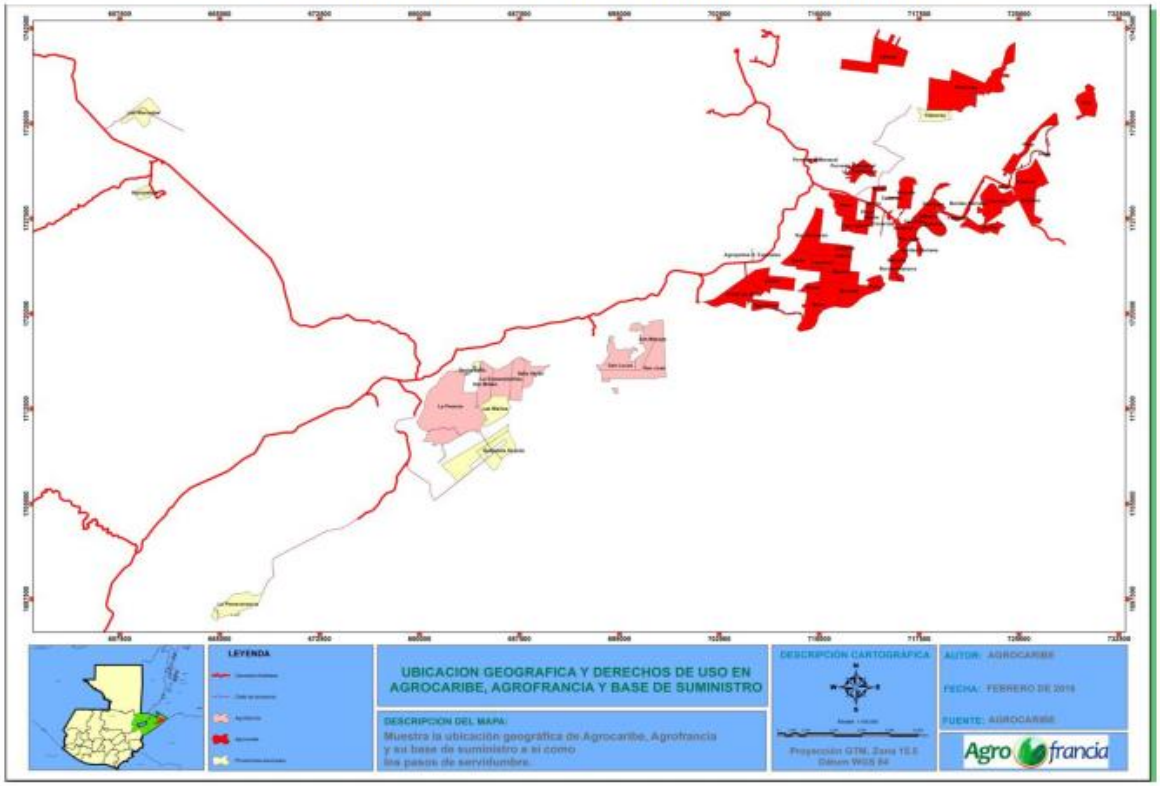
Cuestionario para consultar a los Stakeholders el consentimiento libre previo e informado.

Instrucciones: Marca con una X la casilla con tú respuesta.

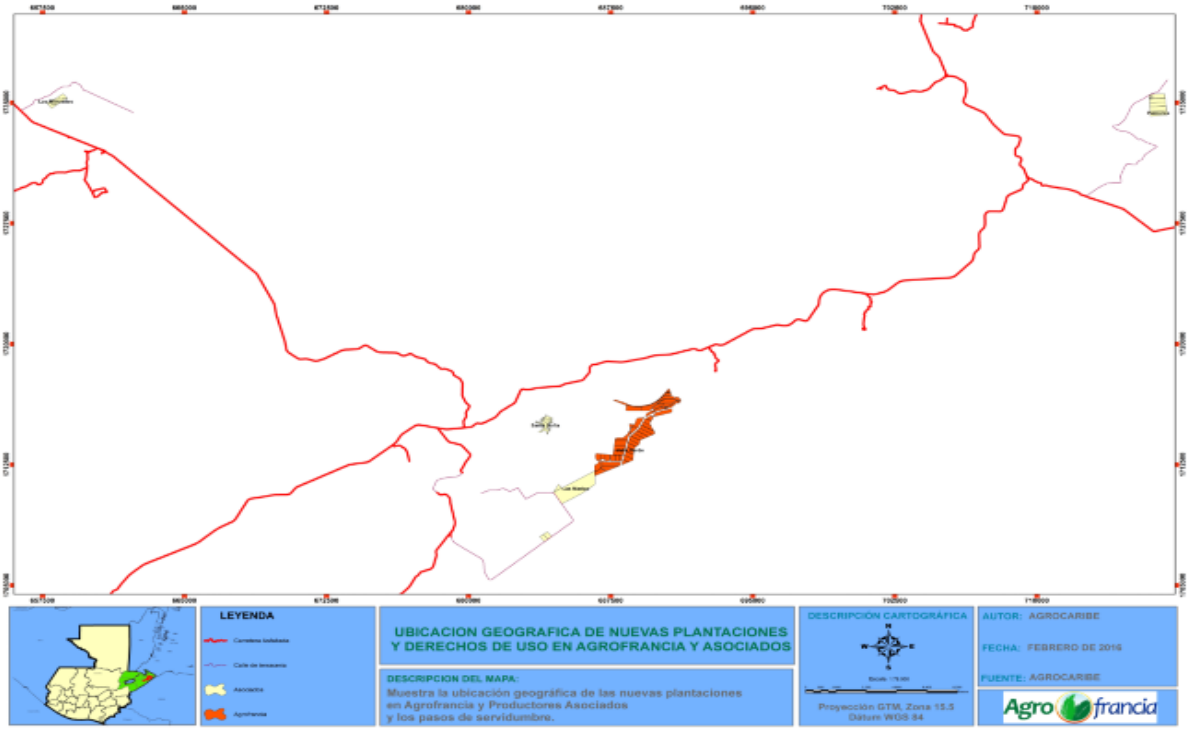
1. ¿Conose usted las operaciones de Agrofrancia?
   Si [X] No [ ]
2. ¿Le han explicado que es el Derecho Consuetudinario?
   Si [X] No [ ]
3. ¿Está usted de acuerdo a que Agrofrancia pueda establecer sus nuevas plantaciones?
   Si [X] No [ ]
4. ¿Conose usted si Agrofrancia a desplazado o desalojado a personas que tienen algún derecho sobre estas tierras?
   Si [ ] No [X]
5. Según lo anterio, ¿esta de acuerdo a que se lleve a cabo la implementación de nuestros proyectos de palma?
   Si [X] No [ ]

Porque: Porque es de apoyo para tener más empleo y nos desarrollamos mas economicamente

Map of use rights Agrocaribe, Agrofrancia and supply base.



Map of use right of New plantations Agrofrancia.



3.4.2 Social Impact Assessment

3.4.3 Soil Suitability Study

Land use capacity. Table 1 shows the land use capacity map of the National Forest Institute - INAB showing 7 categories of capacity of use, Chart 1 shows categories and their corresponding score, based on the capacity of the land for the development of the oil palm cultivation, in the context of the principles crop sustainability in time and space.

Table 1. Score assigned to the categories of use for the aggregation factor process.

No.	Categories of usability	Score
1	Agriculture with no limitations (A)	1.00
2	Agriculture with improvements (Am)	0.95
3	Agroforestry with annual crops (Aa)	0.90
4	Sylvopastoral Systems (Ss)	0.75
5	Agroforestry with permanent crops (Ap)	0.85
6	Forest lands for production (F)	0.50
7	Protection forest lands (Fp)	0.20

Source: Ambiente y Desarrollo Consultores, S. A., 2016.

Ground Slope. The ground slope is an important factor for the crop's development, since gentle slopes are required for the plantation's efficient management, the 1993 Soil Survey Manual's table on slopes is used. Table 2 shows the slope ranges used in the classification of attributes of the slope map and its corresponding score applied to the model.

Table 2. Score assigned to the slope categories for the aggregation factor process.

No.	Slope category	Slope Range	Score
1	Almost level	0-2%	1.00
2	Gentle slope	2-5%	1.00
3	Moderate slope	5 - 12%	0.95
4	Moderately steep	12-25%	0.85
5	Steep	25-45%	0.50
6	Very steep	> 45%	0.20

Source: Ambiente y Desarrollo Consultores, S. A., 2016.

Elevation above sea level. For this factor the digital elevation model with 20-meter cells (MAGA, 2007) was used. According to the preferences of elevation above sea level reported by texts on oil palm cultivation (IPNI AND IPI, 2003; INFOAGRO, 2016). Table 3 shows the description of the attribute of elevation to be used and its corresponding assignation score of preference.

Table 3. Score assigned to the elevation categories of level curves for the factor aggregation process.

No.	Level curves (masl)	Score
1	Less than 200	1.00
2	200 to 300	0.95
3	300 to 400	0.90
4	400 to 500	0.85
5	500 to 600	0.50
6	Higher than 600	0.20

Source: Ambiente y Desarrollo Consultores, S. A., 2016.

Temperature. The temperature factor according to what is reported in the literature on oil palm cultivation, with regard to optimum temperatures for the development and productivity of an oil palm plantation, represent the best features for commercial oil palm cultivation. Guatemala's average temperature map was used for the temperature factor (INSIVUMEH, 2012). Table 4 shows the distribution and characteristics of temperature as a characteristic attribute of the temperature map.

Table 4. Score assigned to the temperature categories for the aggregation factor process.

No.	Temperature Ranges	Score
1	26° to 28°C	1.00
2	22° to 26°C	0.90
3	14° to 22°C	0.50
4	8° to 14°C	0.20

Source: Ambiente y Desarrollo Consultores, S. A., 2016.

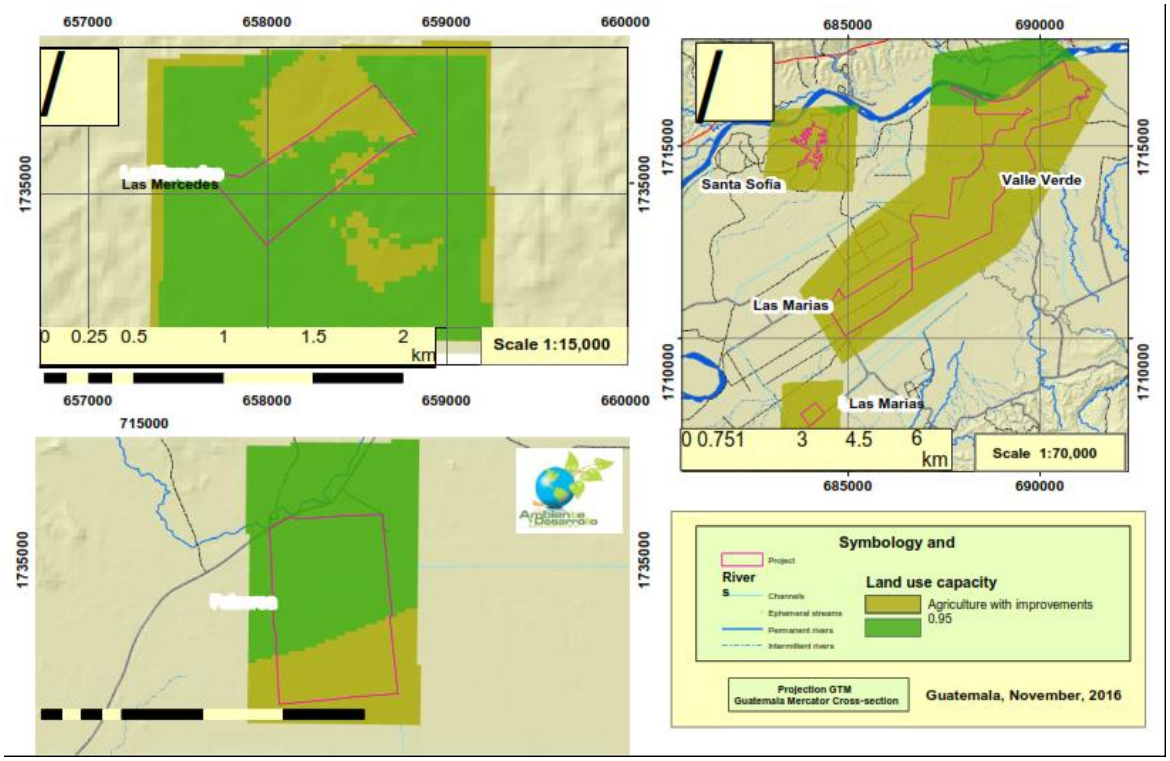
Rainfall. Rainfall is very important to define ideal areas for the development of oil palm cultivationRainfall classification was based on Guatemala's average rainfall map from 1965 to 2011 (INSIVUMEH, 2012). Table 5 shows the ranges of areas between isoetes and their corresponding score of preferences to use for the scrolling process of the model.

Table 5. Score assigned to the rainfall categories for the aggregation factor process.

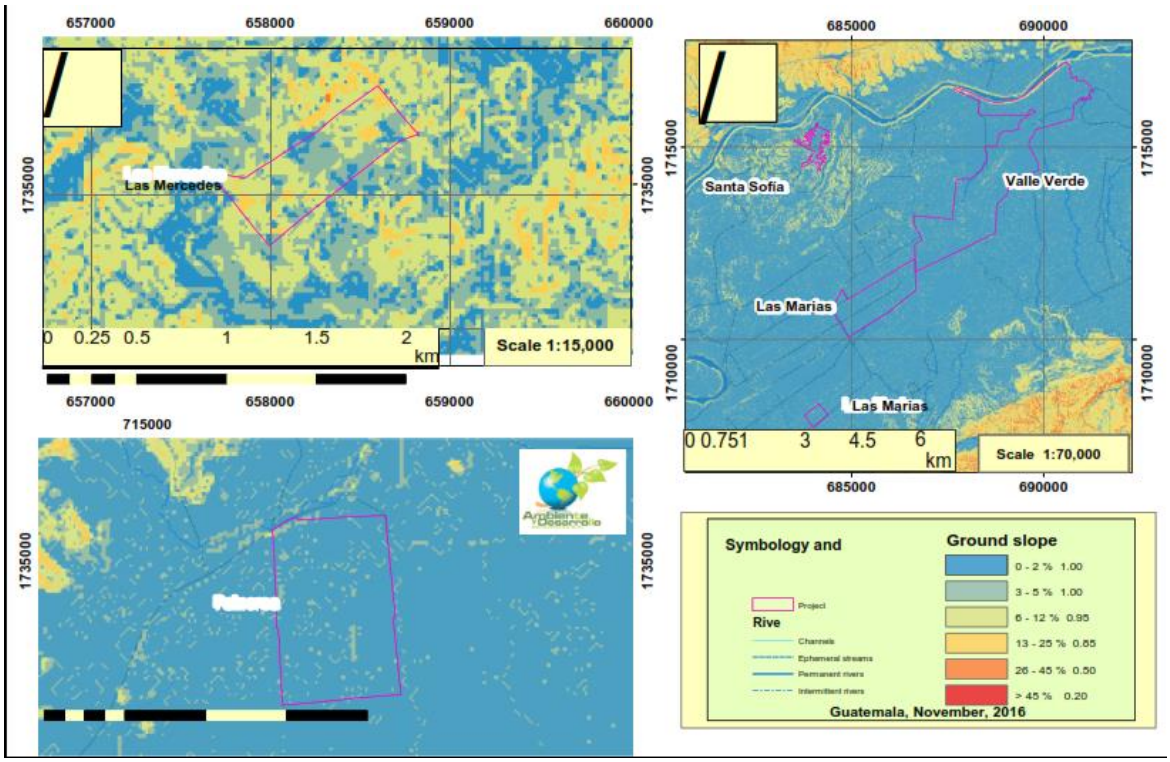
No.	Rainfall areas map	Score
1	Higher than 3000 mm	0.90
2	1800 to 3000 mm	1.00
3	1000 to 1800 mm	0.90
4	Less than 1000 mm	0.60

Source: Ambiente y Desarrollo Consultores, S. A., 2016.

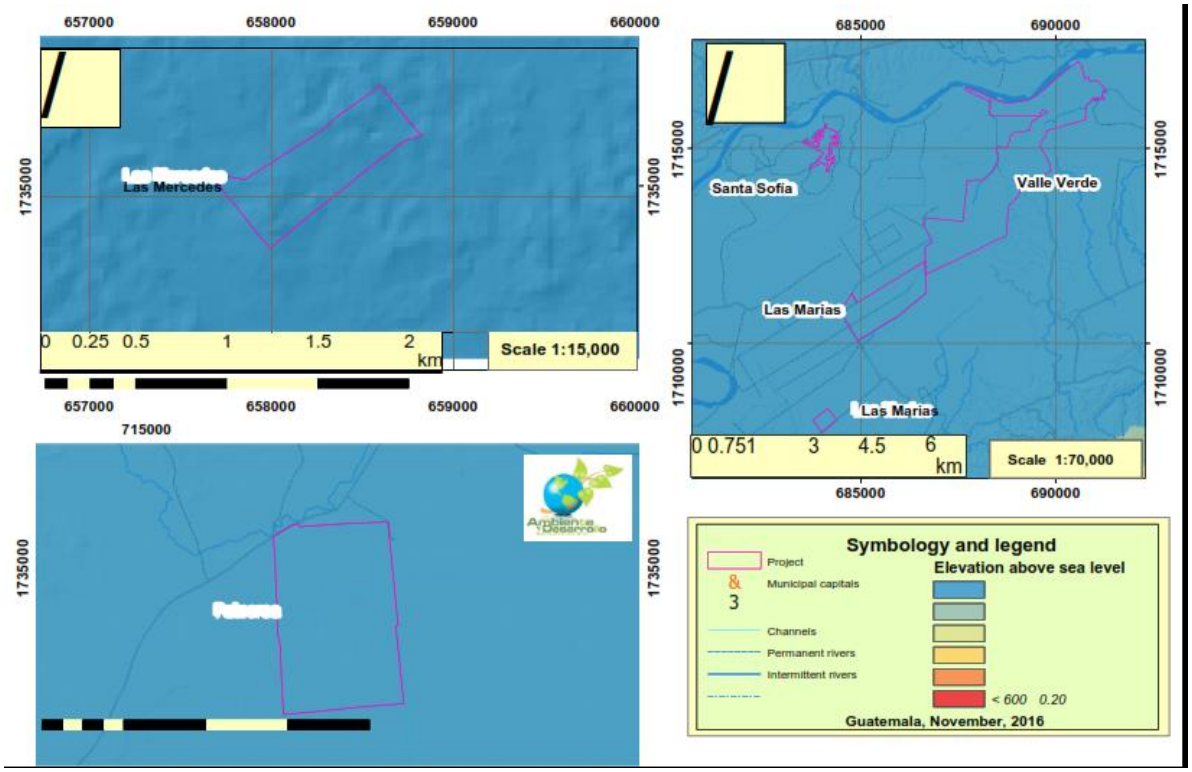
Map of Land Use Capacity



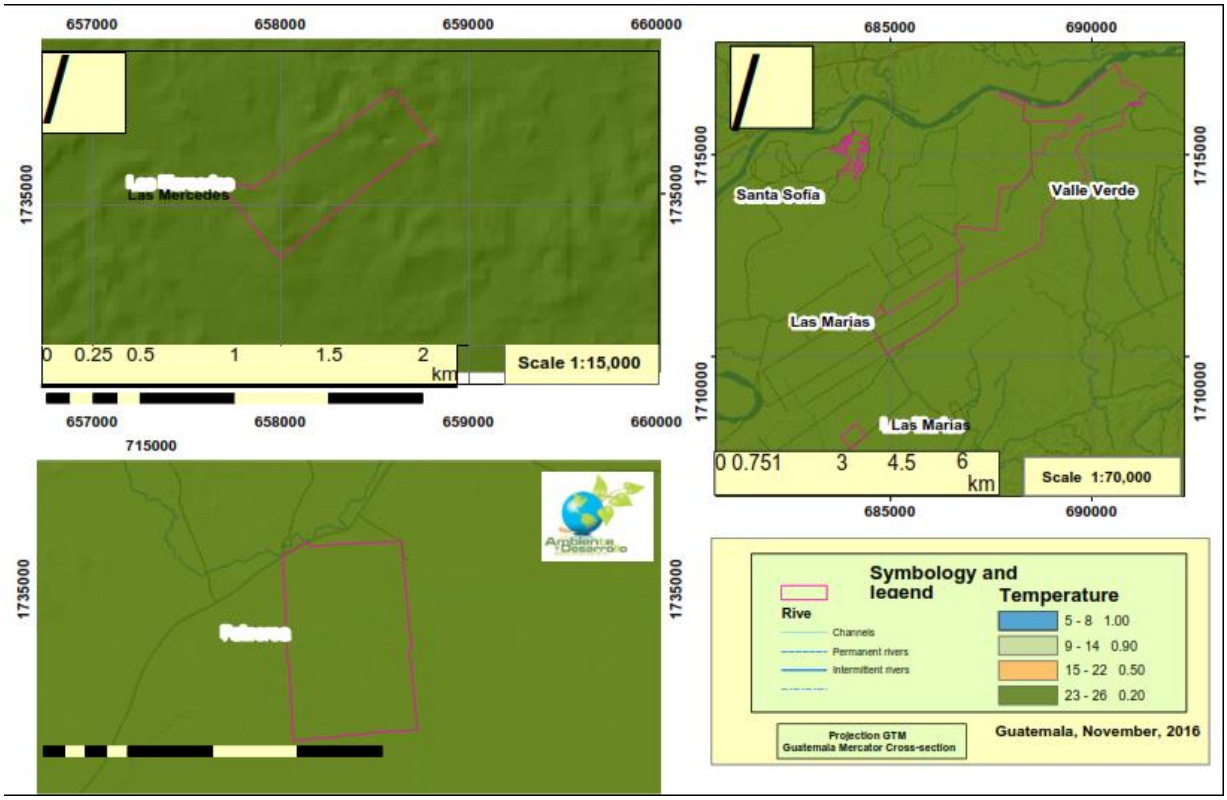
Map of Ground Slopes



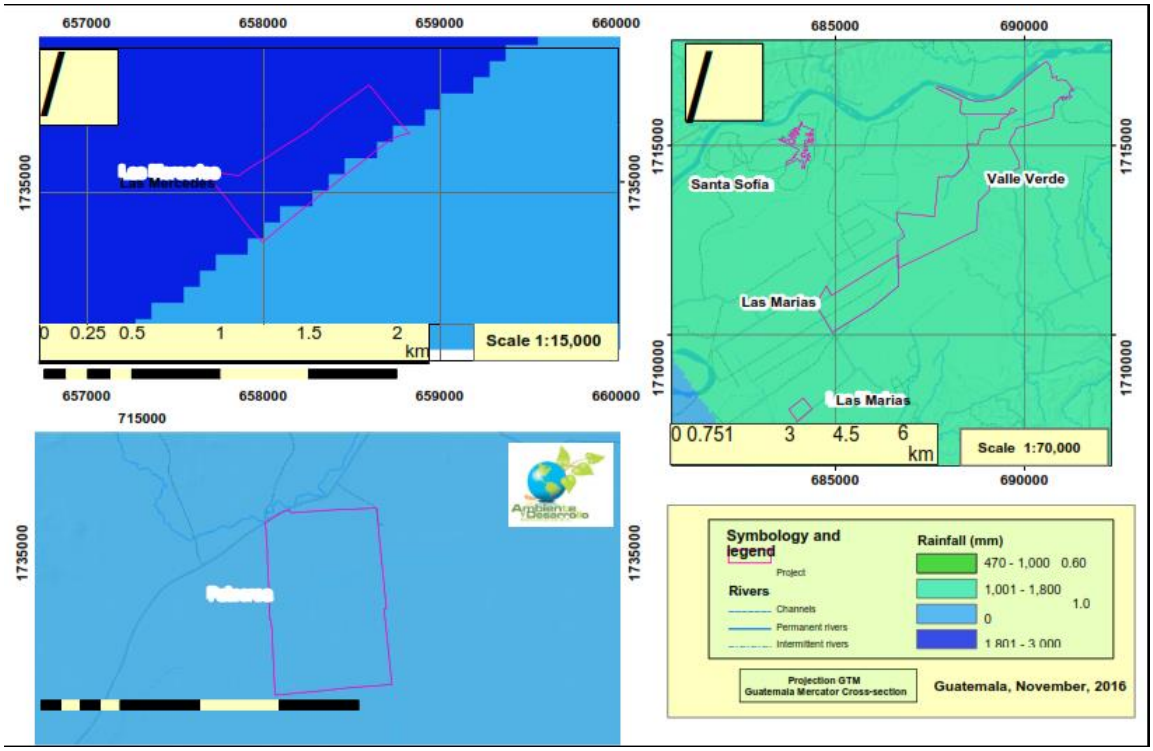
Map of Elevation above the sea



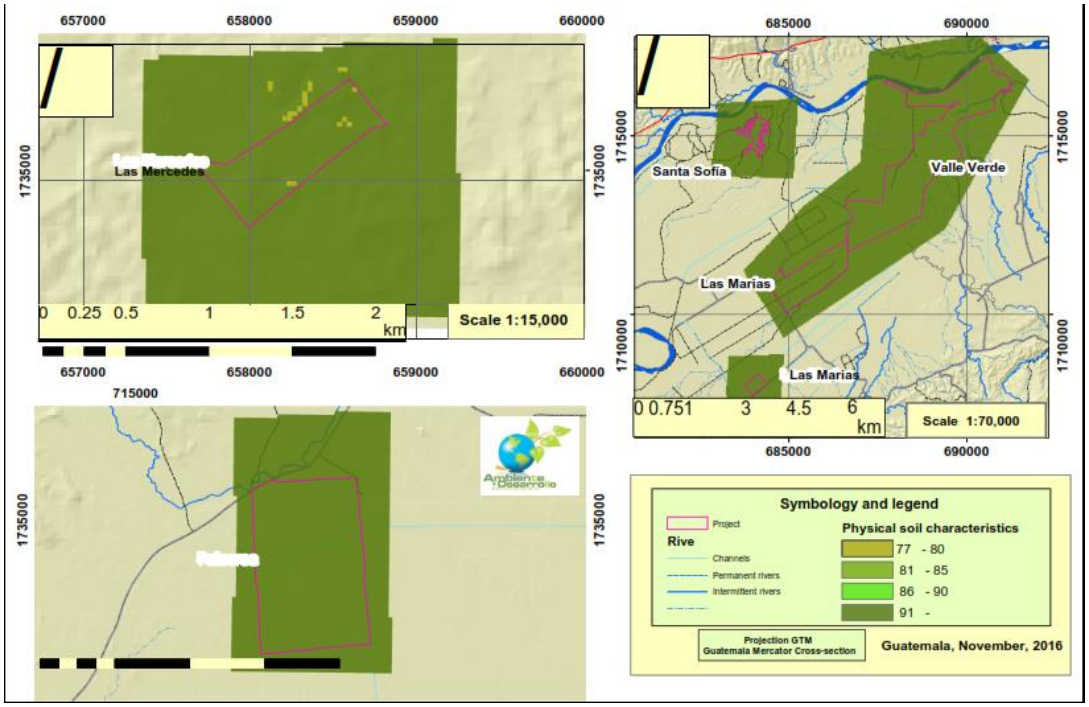
Map of Temperature



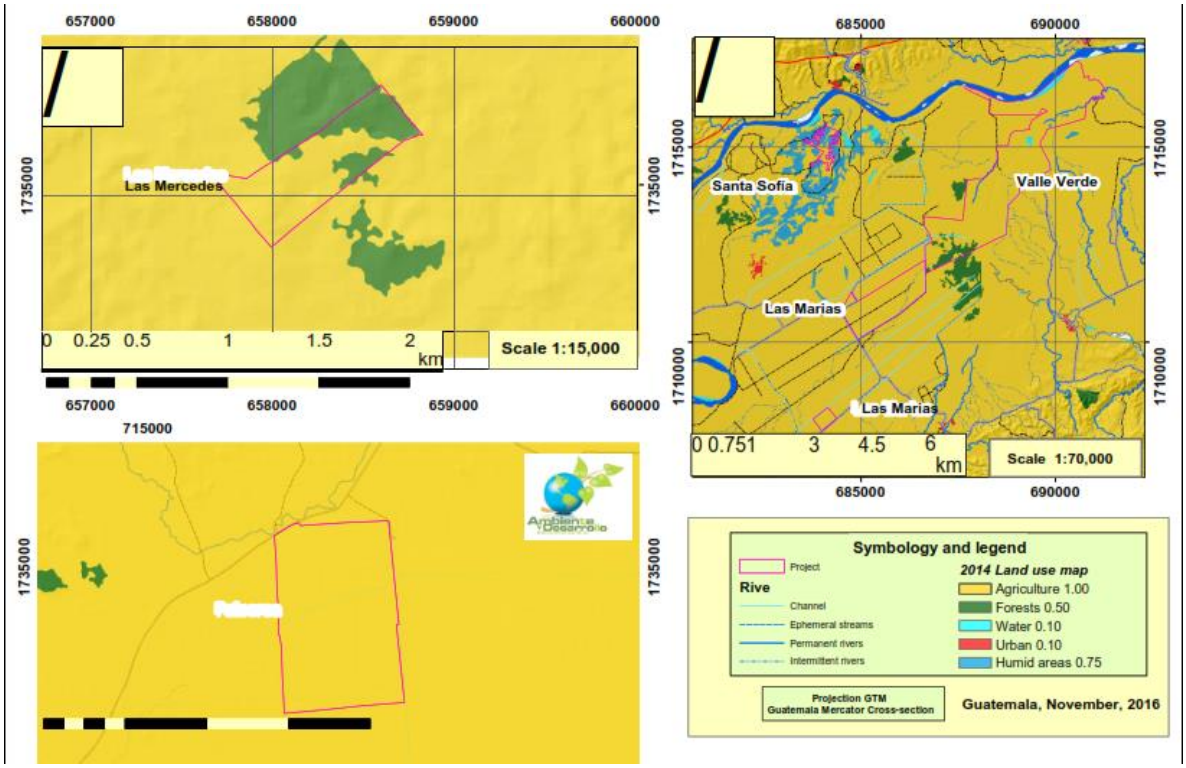
Map of Precipitation



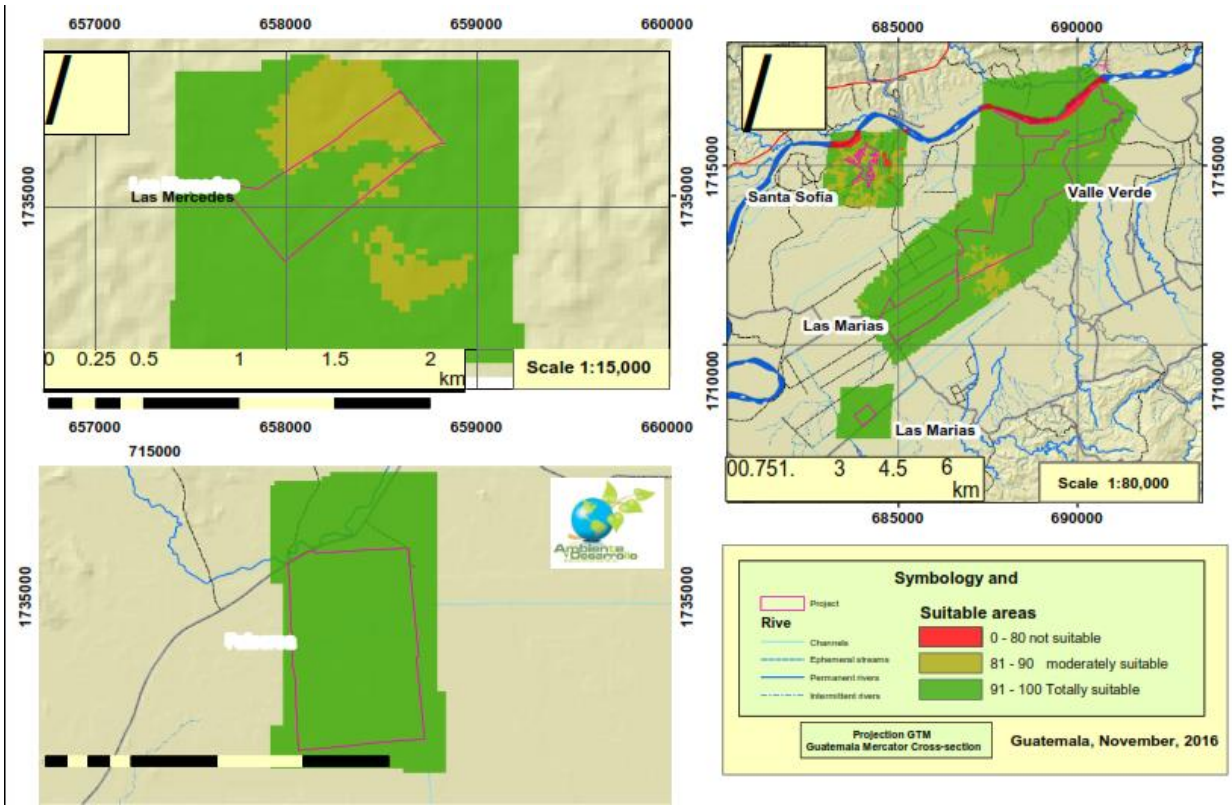
Map Soil Characteristics



Map of Current Land use



Map of Soil Suitable



HCV MANAGEMENT & MONITORING

HCV	Brief description of the HCV present	Main threats
HCV1	Forest coverage associated with water bodies of farm El Rosario, which are connected to the area of multiple uses of the Sarstún River, where there is a significant biological concentration including RAP species. National Park Río Dulce is an important habitat for the manatee and the crocodile and the concentrations of these species in this National Park are considered HCV1. Farm Las Mercedes is connected to this park and has a direct influence on it, because the property is adjacent to the Seja River, which runs into this National Park. Similarly, at the landscape level is the Sierra Santa Cruz, which undoubtedly has HCV1, but it is reiterated that it will not be affected in any way with the development of the farms under study.	Potential elimination of the forest coverage where farm El Rosario has HCV1 and has connectivity with the area of multiple uses of the Sarstún River. This would further encourage the existing fragmentation of the landscape. Eventual poaching in these wooded patches by the employees of the company, or by third parties. Potential pollution and change of the physical conditions of Río Dulce, due to contamination by garbage, agrochemicals, and/or sediments, in the Sejá River. Such effects on the Sejá River could eventually have an impact harming populations of species of fauna associated to the Rio Dulce, mainly the manatee and the crocodile. The scale of the effect would depend on the degree of impact that may be caused.
HCV2	ABSENT	NA
HCV3	ABSENT	NA
HCV4	ABSENT	NA
HCV5	The Sierra Santa Cruz has HCV5 because of its importance about the water supply for the surrounding communities, however, the supply system is poor because the aqueduct is rudimentary and due to the lack of economic resources it does not receive the necessary maintenance to stay in optimal conditions. In farm El Rosario, a water spring which is located on the northern boundary has been identified as an alternative source of water for some communities, therefore this spring has also been identified as an HCV5.	Potential pollution and change of the physical conditions of the water source of farm El Rosario, due to pollution by garbage, agrochemicals, and/or silting. Potential elimination of the forest coverage that surround and protect this spring. Potential pollution and change of the physical conditions of the Ciénaga River, due to contamination by garbage, agrochemicals, and/or silting of the water bodies that go through farm El Rosario. Said impact on these water bodies could eventually negatively affect

	It is important to point out that the Sierra Santa Cruz is located outside the area of direct influence of farm El Rosario, i.e. the agricultural activities to be developed in this farm will not have any impact on this Sierra. On the other hand, the Ciénaga River is in the range of direct influence of farm El Rosario, because several of the rivers that go through farm El Rosario run into this river. Fishing is still carried out in this river, and it is considered to be an activity of great importance for the communities in the area, for some families this is subsistence fishing, so in these cases it is considered a crucial resource. Because of this information, this river is considered an HCV5.	the fish populations associated with the Ciénaga River. The scale would depend on the degree of impact that may be caused.
HCV6	ABSENT	NA

In this section it is very important to point out that only in farm El Rosario, its area of influence and in the area of influence of farm Las Mercedes have any HCVs been identified. For the rest of the farms the presence of HCVs has been ruled out.

The following are recommendations for the management and monitoring of the HCVs identified. Because some of the HCVs identified are not quite in the farm, the Company can only ensure that their activities will not harm them. However, these 2 farms (Las Mercedes and El Rosario) will not be included for this NPP assessment which is involved 445.36 Ha of potential HCV area.

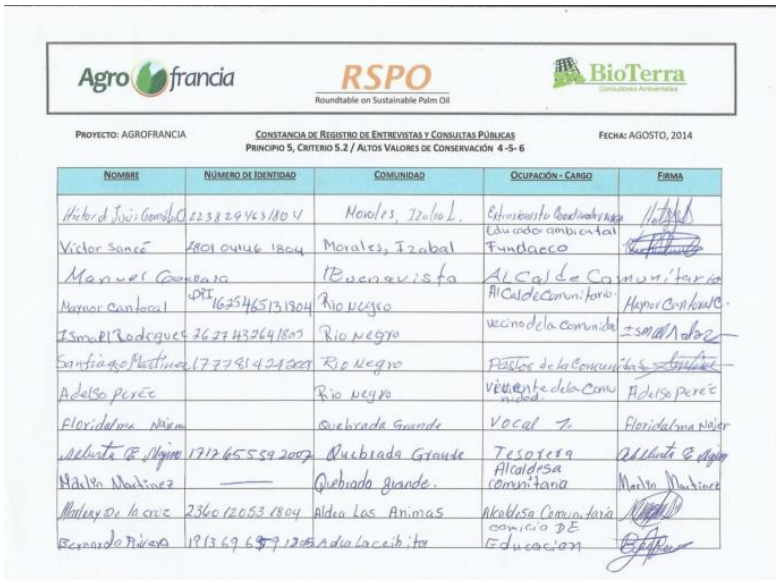
HCV	Brief description of the HCV present	Management Recommendations	Monitoring Recommendations
HCV1	Forest coverage associated with water bodies of farm El Rosario, which are connected to the area of multiple uses of the Sarstún River, where there is a significant biological concentration including RAP species. National Park Río Dulce is an important habitat for the manatee and the crocodile and the concentrations of these species in this National Park are considered HCV1. Farm Las Mercedes is connected to this park and has a direct influence on it, because the property is adjacent to the Seja River, which runs into this National Park. Similarly, at the landscape level is the Sierra Santa Cruz, which undoubtedly has HCV1, but it is reiterated that it will not be affected in any way with the development of the farms under study.	• Keep strict erosion and sedimentation control practices, mainly with regard to surface runoff water that drains into the water bodies associated with the farms. • Ensure that the water bodies associated with the farms are not contamination with agrochemicals. • Promote plant recovery plans in the protection areas of the water bodies. • Keep signs indicating the prohibition of littering, or pollution of the rivers in the farms. • Actively participate in the local and regional programs for the conservation of biodiversity in Protected Areas nearby. • Establish contact with local institutions, NGO's or government entities, in order to publish the conservation and management policies and actions that should be implemented. • To fully respect the protection areas of the water bodies. • Avoid cutting down native trees. • Prohibit poaching in the farms, and establish internal regulations to punish any employee who ignores this prohibition. • Keep signs indicating the ban on hunting, • If possible burrows, shelters or nests of any wildlife species were identified in the farms that required to be relocated, the State offices concerned shall be notified for their relocation. • Place signs, stating the rare, endemic, threatened or endangered species identified in the farms that must be protected to help raise awareness of their ecological value. • Once the activities of new plantations begin, an assessment of the employees should be undertaken with	• Monitor on a regular basis the physical-chemical conditions of the water bodies. • Take annual water samples of the water bodies for the group of macro-benthic invertebrates (biological indicators). • Monitor the behavior and dynamics of the protection areas of the water bodies (increase or decrease). • Monitor the behavior and dynamics of the forests remnants in the farms (increase or decrease of regenerating areas).

HCV	Brief description of the HCV present	Management Recommendations	Monitoring Recommendations
		the purpose of determining the level of awareness that they have on the ecological values of the area, and be able to strengthen these values. • Take a firm stand and inform the communities on the policies and actions that will be taken by the Company in the environmental field. This with the objective of setting a precedent for the protection of the environment in the area. • Identify recurrent socio-cultural behaviors among employees, such as the pollution of water bodies, collecting firewood, and poaching, among others, which eventually may affect areas of ecological importance in the farms or in their surroundings. This to formulate the relevant solutions. • Identify internal Company problems, in regard to the management of the plantations that could eventually affect important ecological areas close to the farms. • Know the position of the owners of the neighboring farms, on the future conservation and management plans for their farms and promote conservation partnerships. • Identify at the landscape level, those sites with potential for connecting the remnants of forest areas and promote such connection that may favor the establishment of biological corridors. • Assess populations of wild, threatened or endangered species that are using the remnant forests in the plantations, with the object to determine their population status. • Once the plantations have been established, determine their use by the wildlife species identified, as transit and travel routes toward better established areas.	

HCV	Brief description of the HCV present	Management Recommendations	Monitoring Recommendations
		• Develop a plantation management plan taking into consideration the environmental impact. • Implement landscape management tools (biological corridors, living fences, fragments or patches of native forests, wetland enrichment and isolation) that ensure the diversity and configuration of the natural landscape. • Design and implement a local system of ecological connectivity that is integrated into the main ecological structure of the region. • The regional oil palm agro-system should not be continuous, and a separation or isolation of the farms of at least 5 kilometers must be sought, in order to promote a diverse landscape. • During the planning of each productive activity, a management plan must be designed and implemented for the landscape that favors heterogeneity of the area and connectivity between relics of ecosystems and the permanence of associated biodiversity. The plan should be based on the implementation of landscape management tools (LMT), such as agroforestry systems, replanting of native species, protection of forest fragments and wetlands, implementation of biological corridors, reconnection of riparian forests, and others.	
HCV2	ABSENT	NA	NA
HCV3.	ABSENT	NA	NA
HCV4	ABSENT	NA	NA
HCV5	The Sierra Santa Cruz has HCV5 because of its importance about the water supply for the surrounding communities, however, the supply system is poor because the aqueduct is rudimentary and due to the lack of economic resources, it does not receive the necessary maintenance to stay in optimal conditions.	The recommendations indicated for the HCV1 are reiterated	The monitoring measures outlined for HCV 1 are reiterated.

HCV	Brief description of the HCV present	Management Recommendations	Monitoring Recommendations
	In farm El Rosario, a water spring which is located on the northern boundary has been identified as an alternative source of water for some communities therefore this spring has also been identified as an HCV5. It is important to point out that the Sierra Santa Cruz is located outside the area of direct influence of farm El Rosario, i.e. the agricultural activities to be developed in this farm will not have any impact on this Sierra. On the other hand, the Ciénaga River is in the range of direct influence of farm El Rosario, because several of the rivers that go through farm El Rosario run into this river. Fishing is still carried out in this river, and it is considered to be an activity of great importance for the communities in the area, for some families this is subsistence fishing, so in these cases it is considered a crucial resource. Because of this information, this river is considered an HCV5.		
HCV6	ABSENT	NA	NA

Meeting with local communities



Agrofrancia RSPO Roundtable on Sustainable Palm Oil BioTerra Consultores Ambientales

PROYECTO: AGROFRANCIA — CONSTANCIA DE REGISTRO DE ENTREVISTAS Y CONSULTAS PÚBLICAS — PRINCIPIO 5, CRITERIO 5.2 / ALTOS VALORES DE CONSERVACIÓN 4-5-6 — FECHA: AGOSTO, 2014

NOMBRE	NÚMERO DE IDENTIDAD	COMUNIDAD	OCUPACIÓN - CARGO	FIRMA
Victor Sancé	1801 04446 1804	Morales, Izabal	Fundaeco	
Manuel Cuevas		Buenavista	Alcalde Comunitario	
Mayor Cantoral	DPI 1635465131304	Rio Negro	Alcalde Comunitario	
Ismael Rodriguez	2627 43764 1809	Rio Negro	Vecino de la comunidad	
Santiago Martinez	1777814241207	Rio Negro	Pastor de la Comunidad	
Adelso Perez		Rio negro	Vicepresidente de la Comunidad	Adelso Perez
Floridalma Najera		Quebrada Grande	Vocal 1	Floridalma Najer
Alberto [illegible]	1717655592007	Quebrada Grande	Tesorero	
Marlin Martinez	——	Quebrado grande.	Alcaldesa comunitaria	Marlin Martinez
Mariny De la cruz	2360 12053 1804	Aldea Las Animas	Alcaldesa Comunitaria	
Reynaldo Rivera	1913 69 [illegible]	Aldea la caeibita	comicio DE Educacion	

3.4.4 Carbon stock assessment and GHG emissions

Assessment of Carbon Stocks- ECS- and Greenhouse Gas GHG Emissions Agrofrancia. Ambiente y Desarrollo Consultores S.A. Guatemala 2016.

Methodology of the Greenhouse Gas (GHG) Assessment

The methodology used for this assessment was based on the guidelines defined by the RSPO for estimates of carbon stocks and greenhouse gas emissions for developing new plantations. For estimating the capture of tC and GHG emissions in $tCO_2$the default values used are the ones used in the PlamGHG. The values for the calculation of carbon stocks are based on the analysis of current land use and the values for the calculation of CO_2 emissions are obtained from the agricultural management plan for new plantations, in particular, the crop fertilization and nutrition plan, the use of fuels for the fieldwork (logistics for the transportation of personnel, vehicles for cultivation) and transfer of inputs for the productive process in the field. For the projections of the tC fixation and its equivalent in tCO_2e, resulting from the development of new plantations, the default values set forth in the PlamGHG for a plantation of vigorous growth are used, given the climatic and edaphic conditions favorable for the crop's growth.

a. Identify the carbon stocks and CO_2 emissions.

By reviewing the planning of new plantation areas new carbon stock sources were identified prior to the use of the soil, through the agricultural management plan of new plantations, in particular, the emissions of the crop fertilization and nutrition plan and the use of fuels for the field work were estimated.

b. Estimate carbon stocks according to current land use.

The PlamGHG default values were used for this, as follows:

Table 1-2. Emmision values for estimating carbon stocks in previous land use.

Land use	tC/ha	tCO2e/ha
Undisturbed forest	268	982.67
Disturbed forest	128	469.33
Shrub land	46	168.67
Grassland	5	18.33
Tree crops	75	275
Food crops/Annual crops	8.5	31.17

Oil palm	63.83	234.04

Source: Own elaboration based on PalmGHG.

a. Estimate the carbon capture projections and CO_2 elimination in areas proposed for new plantations, carbon fixation is considered through the annual growth of oil palm and roots, soil cover and waste from oil palm.

   The biomass and the tCO_2e calculations were estimated by the PlamGHG for a vigorous growth commercial plantation.

b. Estimate $tCO_{2\ emissions}$ derived from the transportation of inputs and agricultural crop management. Default values were considered for the following:

Table 1-3. Default values to estimate CO2 emissions.

Emission Source	Unit	Default values PalmGHG
Sea transportation	Kg CO_2e/km.t	0.01777
Ground Transportation	Kg CO_2e/km.t	0.312
Direct production of N_2O	Applied KgN2O-Nkg of N	0.01
Indirect production of N2O from runoff and leaching	KgN2O-Nkg lost	0.0075
Indirect production of N2O by volatization and	lost of KgN2O-Nkg	0.01
Diesel	Kg CO_2/liter	3.12

Source: Own elaboration based on PlamGHG.

Total of tC fixed and tCO2e previous land use (carbon stocks):

Land Use	Ha	tC/ha	tCO2e/ha	tC	tCO2e
Biomass under the ground	861.59	8	29.36	7,455.12	27,330.47
Pastures (Grassland)	861.59	5	18.33	4,659.45	17,084.65
Secondary forest	5.41	128	469.33	692.48	2,539.08
Primary forest	2.61	268	982.67	699.48	2,564.77
Total				**13,506.53**	**49,518.97**

Table summarising the land cover types of the total concession areas including infrastructure etc.

Finca		Vegetation Type	
	Disturbed forest	Grassland	Other
Valle Verde		677.35	22.42
Las Marías		212.95	
Palnorsa	1.36	115.11	0.24
Tot Veg Type	1.36	1005.41	22.66
tC/ha	128	5	0
Total TC	174.08	5027.05	0

Fuente: Ambiente y Desarrollo Consultores, 2016.

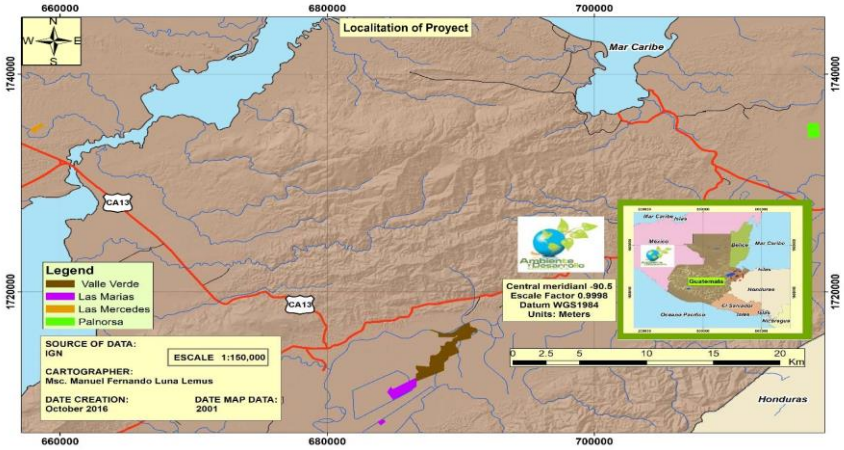
Table building on the above land cover type table of the NPP areas, with RSPO carbon default value for the calculation of total carbon stocks of the areas

Land use	*tC/ha*	*tCO2e*/ha
Undisturbed forest	268	982.67
Disturbed forest	128	469.33
Shrub land	46	168.67
Grassland	5	18.33
Tree crops	75	275
Food crops/Annual crops	8.5	31.17
Oil palm	63.83	234.04

Source: HCS La Francia Ambiente & Desarrollo 2018

Location of new plantations in the landscape and the property. The project is located in the physiographic region called Izabal Depression, where the main geographic element is the Motagua River Valley. This area has been used for agriculture for more than 70 years (see map in the annex section). The location of the project in the landscape is shown in Image 2-1, and in the property in Image 2-2 to Image 2-4.

Image 2-1. Landscape location of new plantations.



Identification of carbon stocks. Estimate carbon stocks in this study include non-tree surface biomass (from land use like agriculture) and surface tree biomass (from forest areas). For the non-tree biomass case the project considers the plantation areas distributed in four different polygons in a total area of 1,066.19 ha, for an effective area for expanding oil palm planting to 861.59 ha. Previous land use was dominated by pastures in more than 90% of the area as can be seen in Table 2-1. Next, the carbon stocks are shown for each of the farms that make up the project.

Image 2-5. Carbon Stock Valle Verde

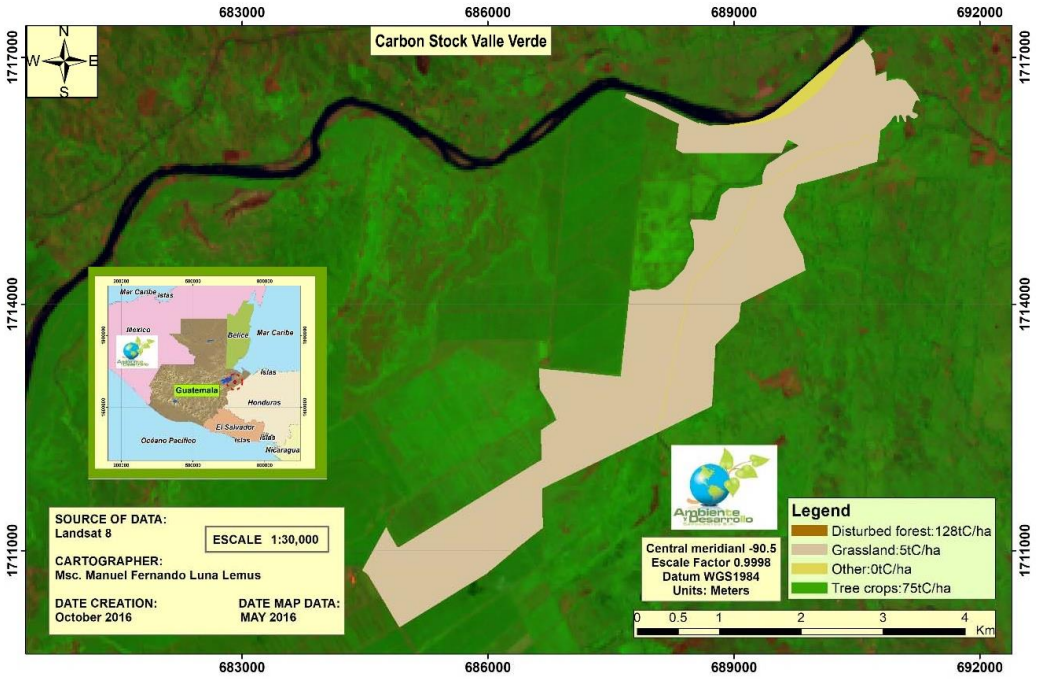


Image 2-6. Carbon Stock Las Marías.

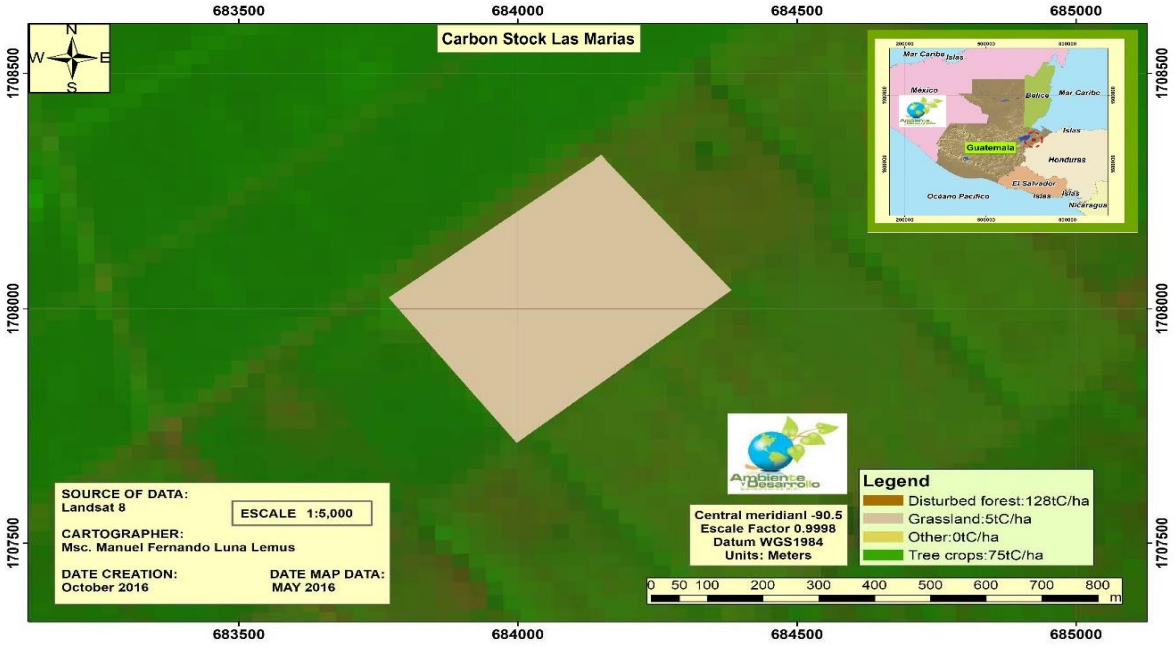
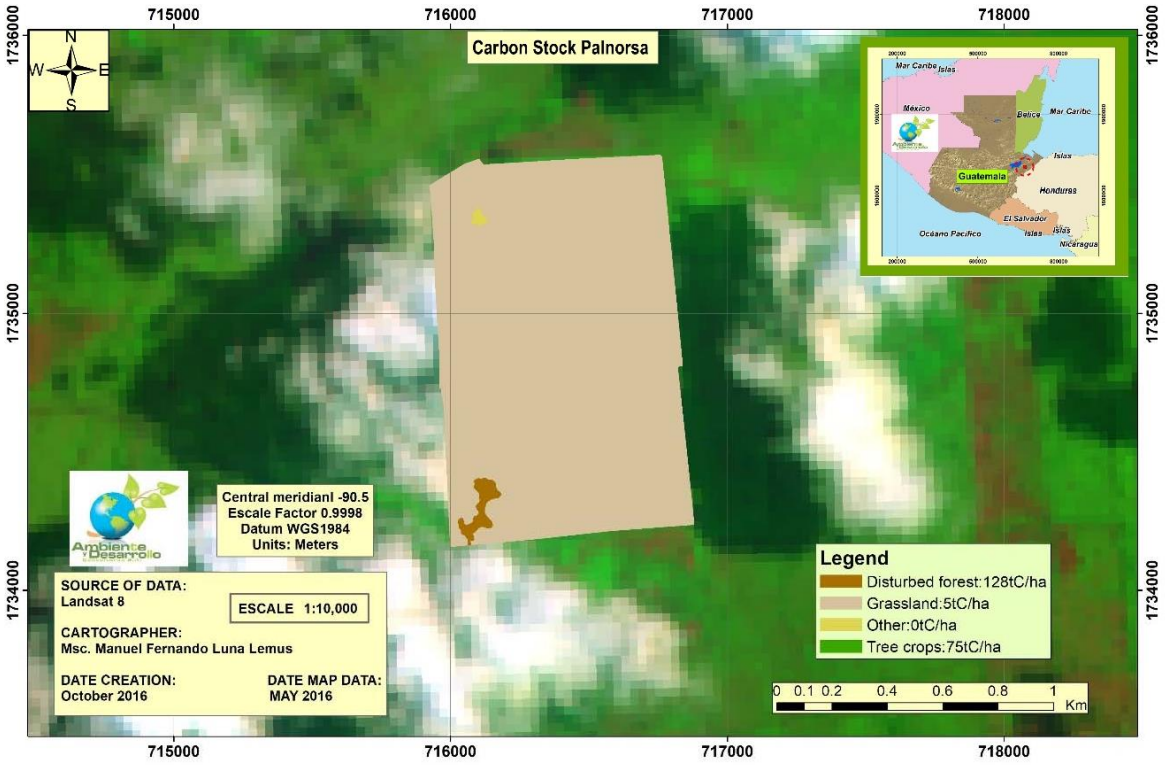


Image 2-7. Carbon Stock Palnorsa.



Identification of the sources of emissions.

For calculating emissions caused by the use of fertilizers, the following guidelines were followed to estimate the greenhouse gases emissions that are generated by the transportation of fertilizers from their origin to their destination. The ports of embarkation and disembarkation of the fertilizer were defined to estimate the distance in kilometers, and the distance to the municipality of Morales, Izabal (Table 3-1) was added to this. An average production of 28.5 tons from FFB were calculated. The use of fuel for the operation of backhoe loaders, trucks and vehicles for the production process with a 25-year life expectancy production was considered for estimating an average use of 81.28 liters/consumption/year.

Use of fertilizers for a 25-year life expectancy for the plantation for a planting area of 861.59 ha.

No.	Fertilizer/year (	Source	Sea distance (km from origin)	Average land distance (km)
1	75.92	Development mix	12,052.00	371.00
2	257.65	NAM	12,052.00	371.00
3	64.80	DAP	3,950.19	371.00
4	194.65	MOP	12,452.00	371.00
5	97.82	Kieserite	11,052.39	371.00
6	23.81	Boron	3,831.19	371.00

Source: Agrofrancia, 2016.

Result and description of carbon stocks in Agrocaribe

Estimate carbon stocks in this study include non-tree surface biomass (from land use like agriculture) and surface tree biomass (from forest areas). For the non-tree biomass case the project considers the plantation areas distributed in four different polygons in a total area of 1,066.19 ha, for an effective area for expanding oil palm planting to 861.59 ha. Previous land use was dominated by pastures in more than 90% of the area as can be seen in Table 2-1. Next, the carbon stocks are shown for each of the farms that make up the project. We identified three sources of Greenhouse Gas emissions, one from the use of fertilizers and other fossil fuel uses in field activities and the processing of fresh fruit bunches (FFB) from the mill.[1]

The study of HCS was developed for Ambiente y Desarrollo consultores

Three scenarios have been considered for the realization of this analysis:

- Scenario 1: called Project A, which consists in establishing 861.59 ha, and keep the primary and secondary forest areas. Without using biogas for the generation of electricity in the mill.
- Scenario 2: included with Project A, which consists in establishing 861.59 ha, and keep the primary and secondary forest areas. Using biogas for the generation of electricity in

the mill.

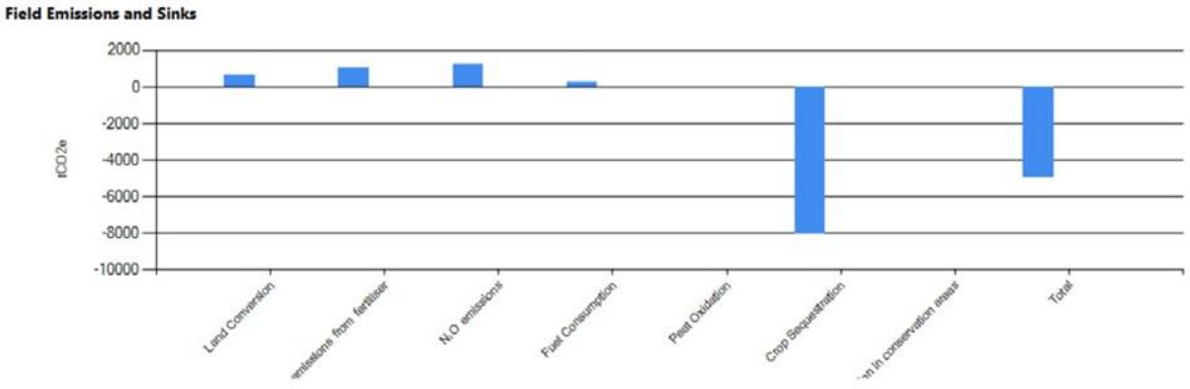
Table 3-1. Summary of tCO_2e emissions for each of the proposed scenarios.

Scenario	Planted hectares of palm oil	Capture of tCO2e emissions	POME tCO_2e emissions	Net tCO_2e emissions
1	861.59	-8,065.98	23,823.4	-19641.93
2	861.59	-8,065.98	2,477.64	-1,301.16

Table 3-2 Fertilizer consumption for a sowing expectation of 25 years in a área of **861.59 ha.**

No.	Fertilizer/year (t)	Source	Distance by sea (km from the Source of origin)	Average land distance (km)
1	72.94	Developing mix	12,052.00	371
2	247.54	NAM	12,052.00	371
3	62.26	DAP	3,950.19	371
4	187.01	MOP	12,452.00	371
5	93.98	Kieserita	11,052.39	371
6	22.88	Boro	3,831.19	371

Table 3-3 Field Emissions and sinks, scenario 1. La Francia, New Plantations.



Source: Ambiente y Desarrollo Consultores, 2017

Table 3-4 Emissions and sinks, scenario 1. La Francia, New Plantations.

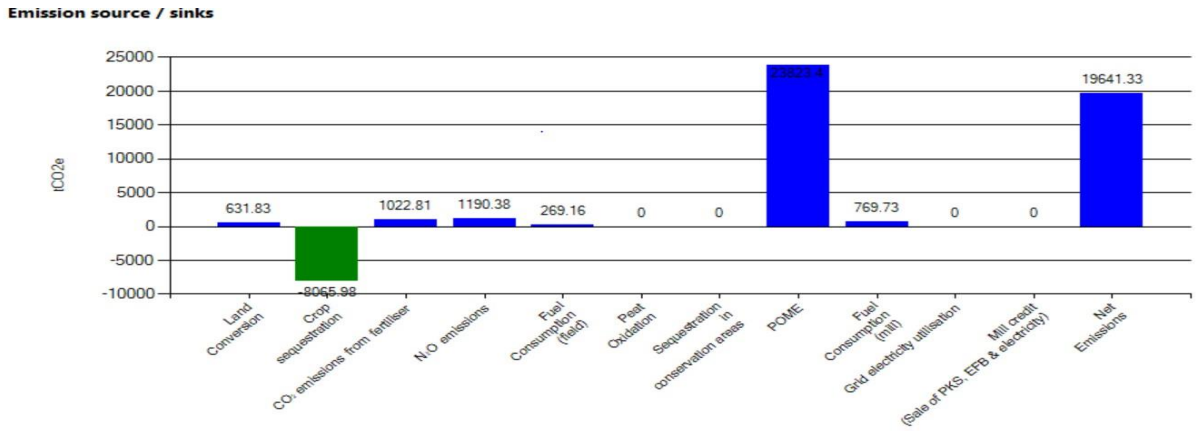
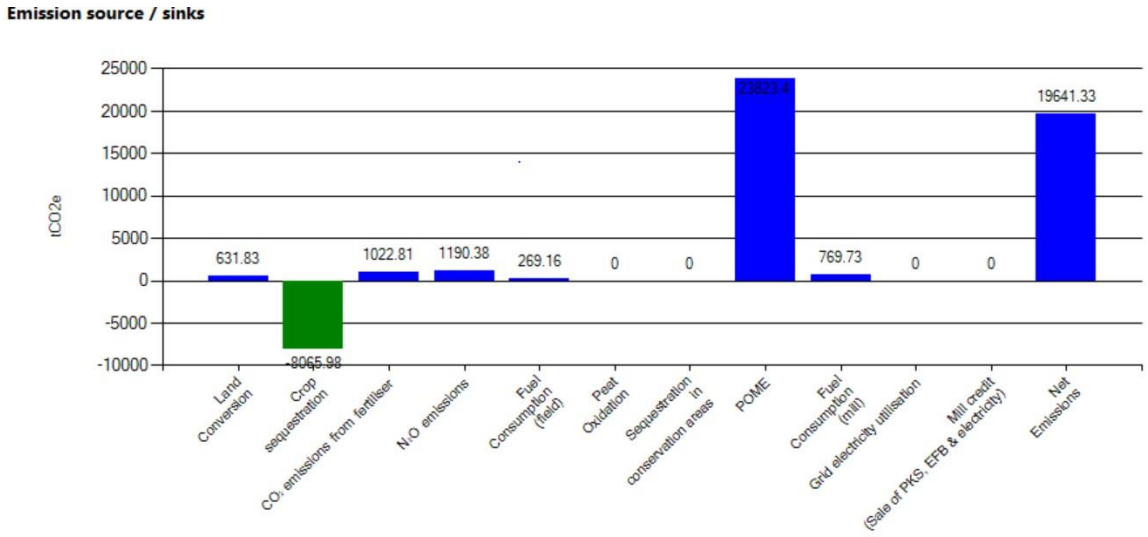


Table 3-5 Source of emissions and sinks, scenario 2. La Francia, New Plantations.



Source: Ambiente y Desarrollo Consultores, 2017

The comparison between the scenarios proposed shows that Scenario 2 is more feasible given the following advantages:

- It keeps the carbon stocks fixed in the biomass.
- It keeps a habitat that serves as a shelter for existing fauna in the place.
- There is a positive balance of net carbon emissions -1,385.96 tCO2e.

Therefore, the best option is Scenario 2 which has been chosen, preserving the areas covered with primary and secondary forests as carbon stocks.

Image 3-10. Map of the distribution of GHG emissions for the selected scenario. Finca Valle Verde.

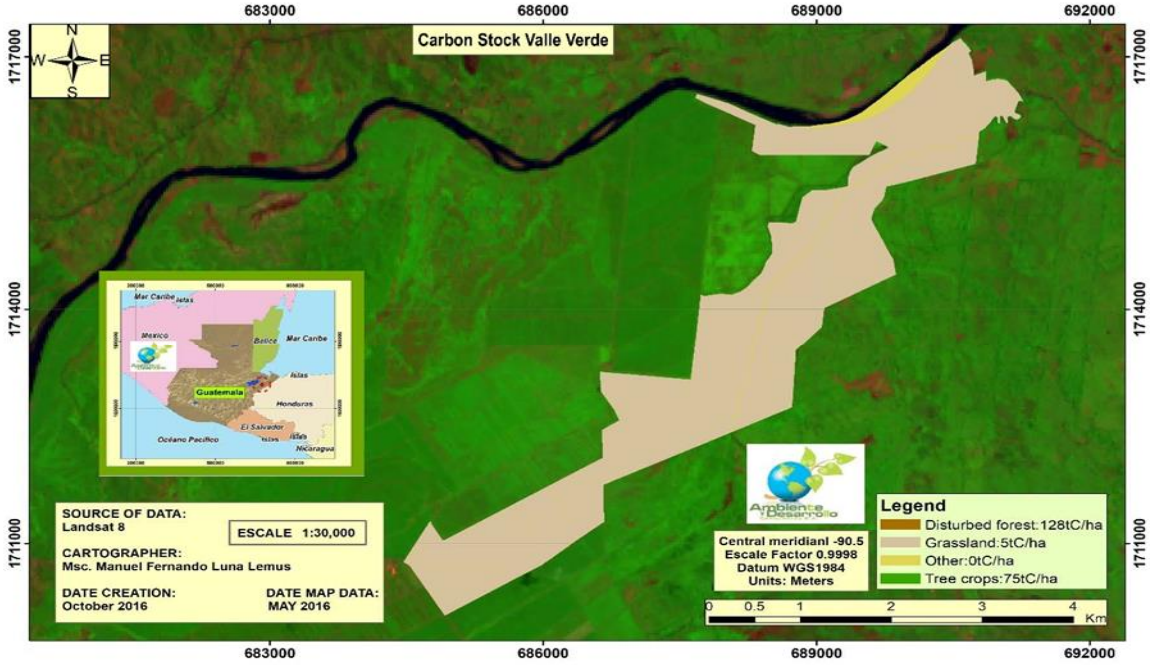


Image 3-10. Map of the distribution of GHG emissions for the selected scenario. Finca Las Marias.

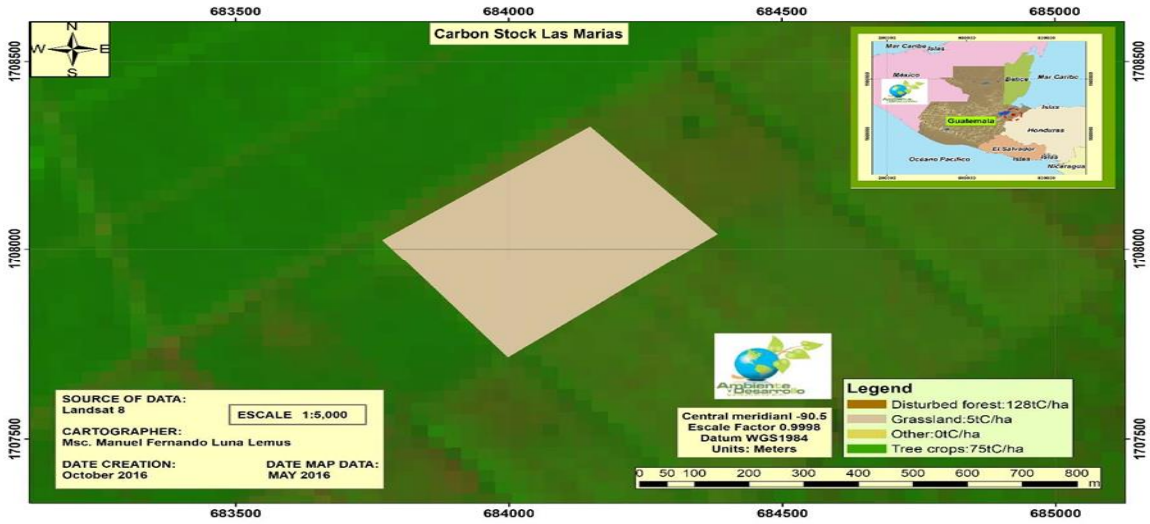
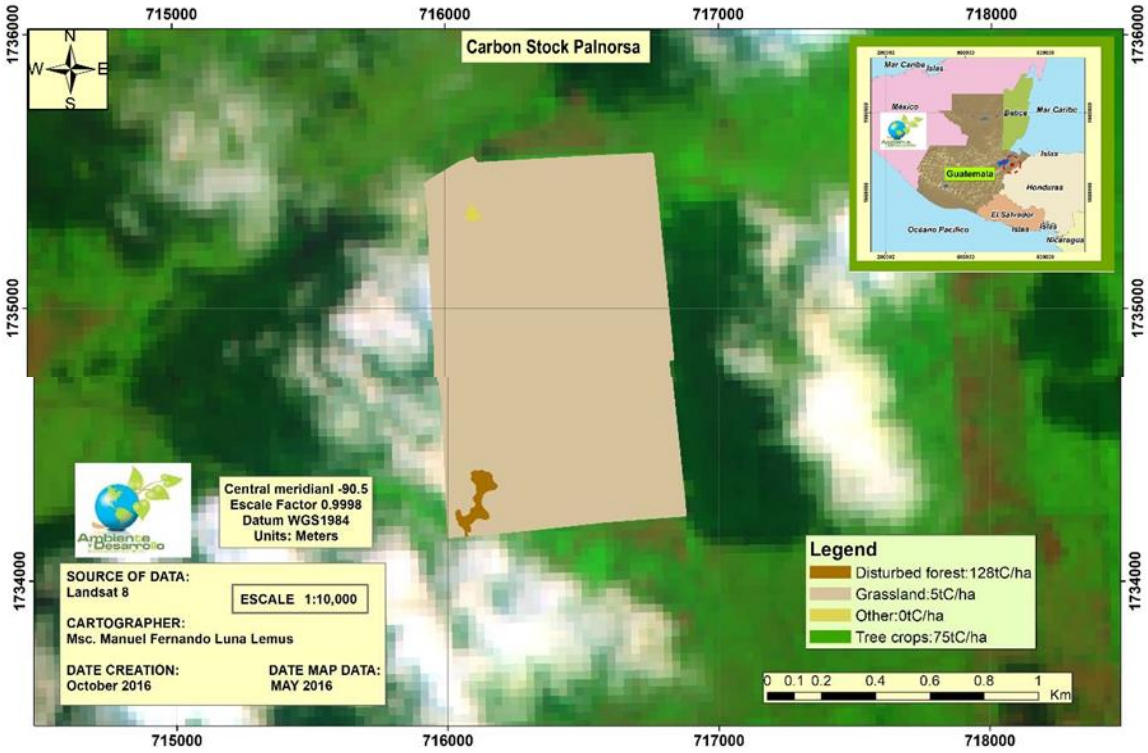
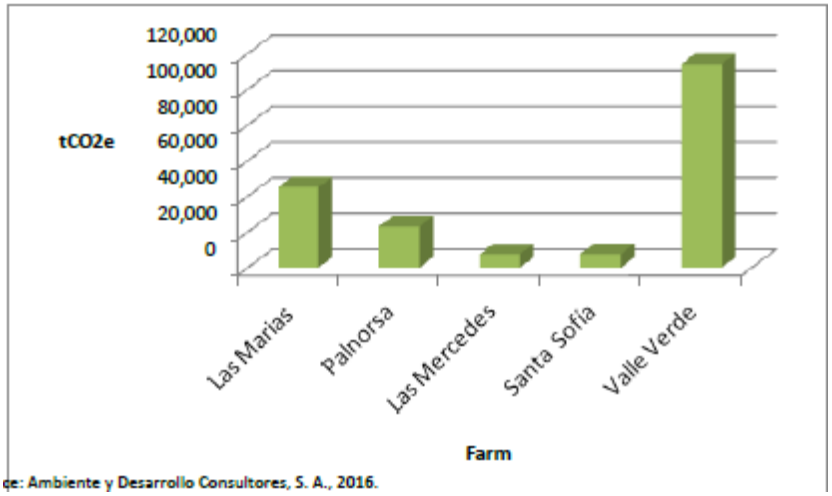


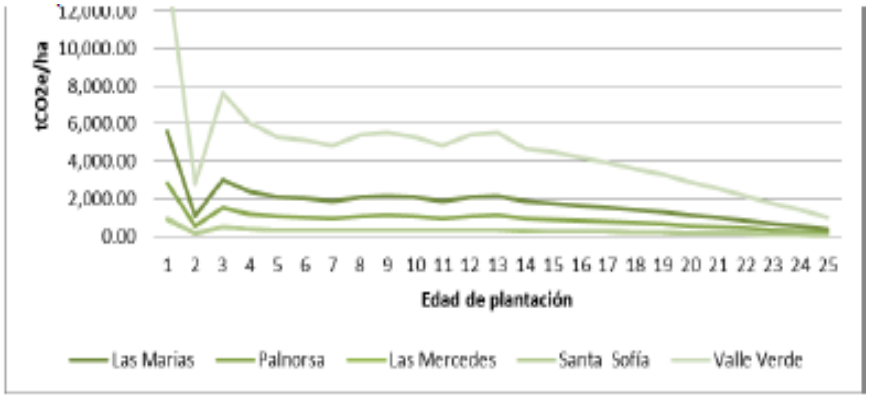
Image 3-10. Map of the distribution of GHG emissions for the selected scenario. Finca Palnorsa.



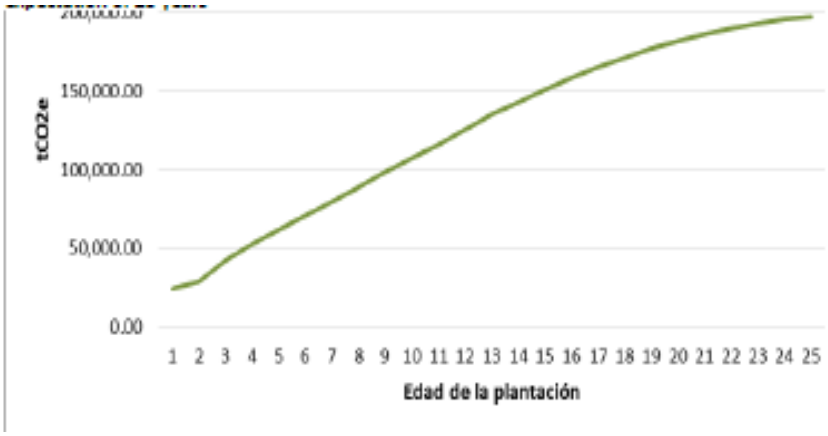
Elimination of tCO2e in palm oil plantations with a planting expectation of 25 years.



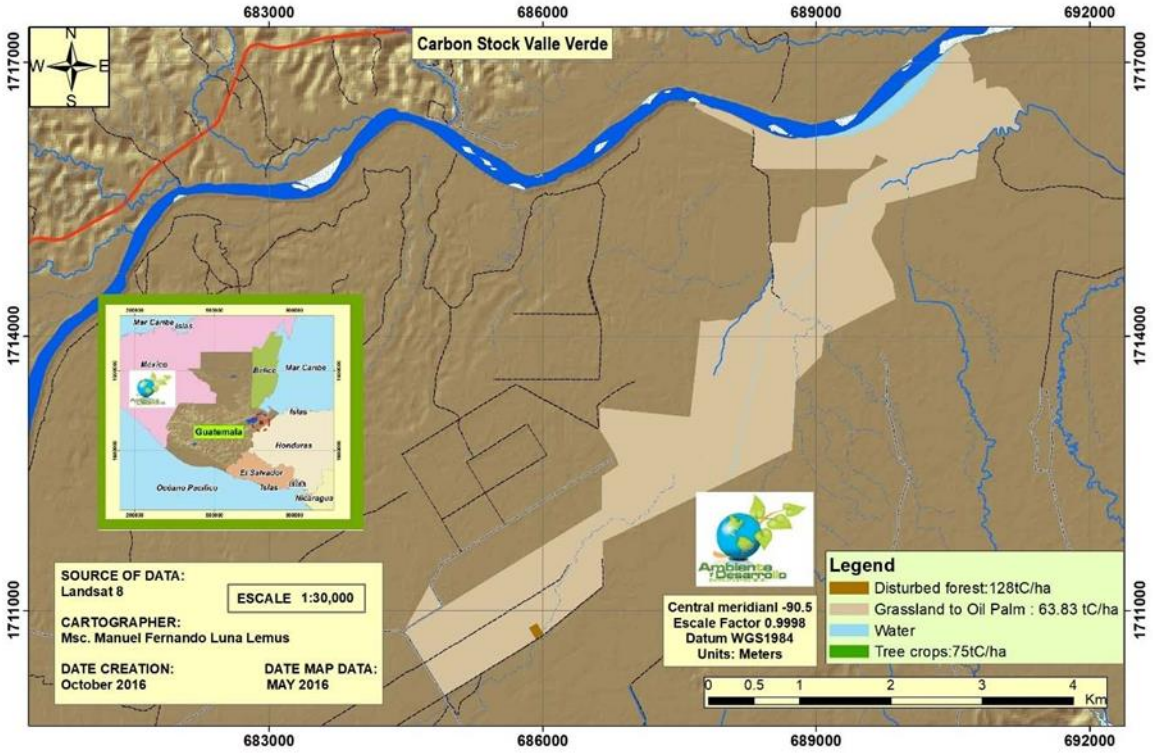
Fixing of tCO2e per year of commercial planting of oil palm per planting farm. Expectation to 25 years.

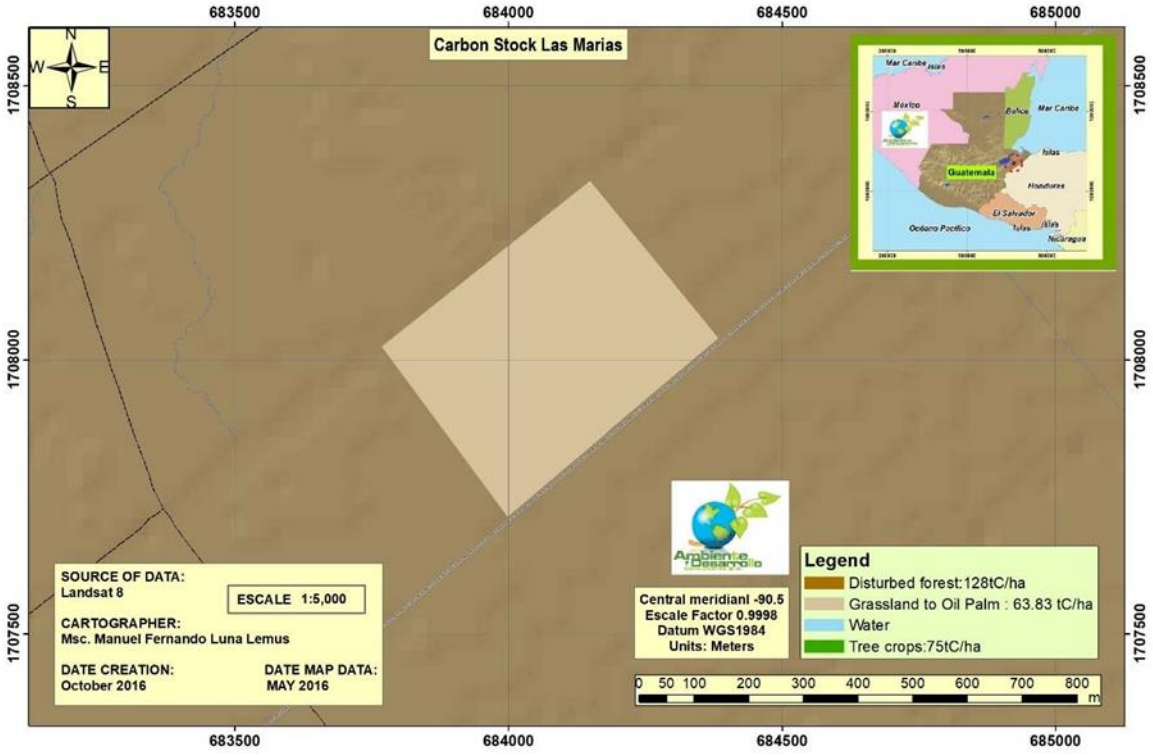


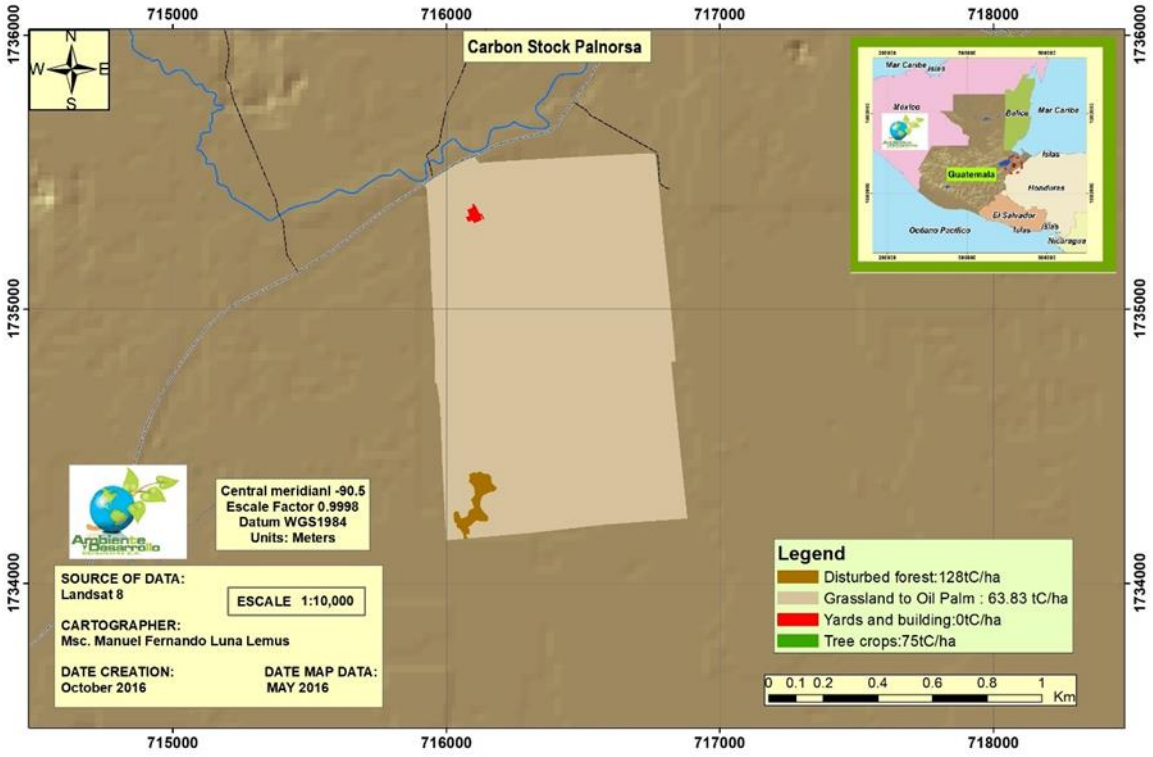
Fixing of tCO_2e (accumulated) per year of commercial oil palm plantation with a cultivation expectation of 25 years



Map indicates areas to be avoided and potential areas for new plantings






Carbon Stock Palnorsa
715000
716000
717000
718000
1736000
1735000
1734000
N
W
E
S
Central meridianl -90.5
Escale Factor 0.9998
Datum WGS1984
Units: Meters
SOURCE OF DATA:
Landsat 8
ESCALE 1:10,000
CARTOGRAPHER:
Msc. Manuel Fernando Luna Lemus
DATE CREATION:
October 2016
DATE MAP DATA:
MAY 2016
Legend
Disturbed forest:128tC/ha
Grassland to Oil Palm : 63.83 tC/ha
Yards and building:0tC/ha
Tree crops:75tC/ha
0 0.1 0.2 0.4 0.6 0.8 1
Km
México
Belice
Mar Caribe
Guatemala
Honduras
El Salvador
Nicaragua
Océano Pacífico

6. INTERNAL RESPONSIBILITY

Team that conducted the analysis.

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Ing. MCs. Consultor

Cesar Sandoval
Dr. Ing. MCs. Consultor

Marianne Zeissig
Ing. Consultor

Leonel Orellana
Engineer, Certifications Manager

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TEAM RESPONSIBLE FOR DEVELOPING MITIGATION PLAN

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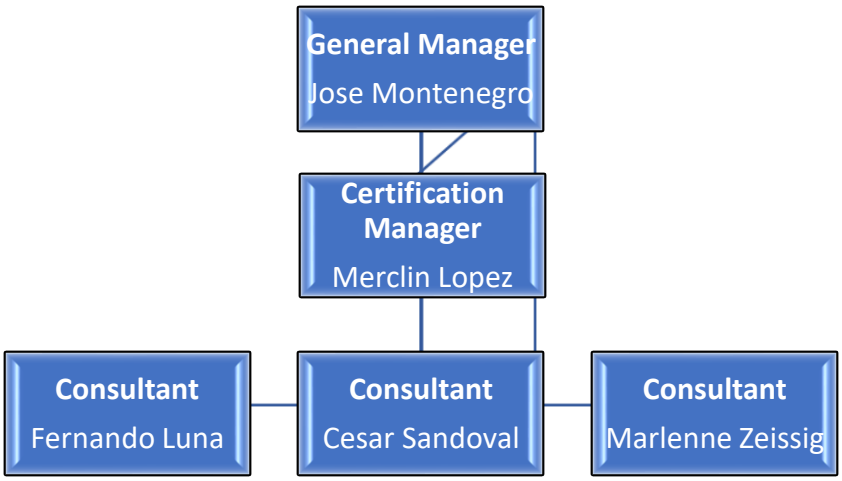
4	Cesar Sandoval	Ambiente y Desarrollo Consultores, S. A.	
5	Marlenne Zeissig	Ambiente y Desarrollo Consultores, S. A.	

Source: Agrocaribe HCS Assessment Page 7

Responsible Team Organisation Chart



3.5 Summary of Management Plans

One of the main purposes of the assessments is to determine which areas are and are not suitable for development. Based on assessment results, a grower can decide which areas will be set-aside and which areas will be developed. Below management plan is specifically developed for SEIA and GHG since there is no HCV area involved in this NPP.

Elements to be included in management plans. Mitigation Plan for the potential socio-economic impacts of the development of new oil palm plantations

No.	Negative impacts	Community view	Agrofrancia's actions	Responsibility	Time
1	Local work	Do not employ people from the communities	• Local administrative personnel • Indirect work to local suppliers for the company's operations	Human Resources Manager	Constant
2	Floods	The banks cause floods	• Bank maintenance	Environmental Manager	Biannual
3	Bad smell of the rachis	The processing mill generates bad smells and the rachis is thrown out in the field	• Rachis Plan with the technical department	Processing Mill Production Manager	Constant
4	Deterioration of streets	The company has damaged the roads that allow access to the communities	• Ballast repair and gallons of diesel to contribute to the maintenance of the streets • Maintenance Plan for internal and external roads	General Manager	Biannual
5	Community support	The company does not provide support for communities	• Pest control • Donation of doors for classrooms • Bridge reconstruction • Reforestation • School renovation • Road repair	General Manager	Non-periodic

Management Plan to improve socioeconomic contributions

Possible positive impact	Measures to maximize potential impact	Person responsible
1. Jobs	- The Company provides direct employment to more than 2,000 workers - The company provides indirect work to local suppliers and trade businesses that have financially benefited from the consumption of palm workers and purchase that the company needs (transportation, building contractors, mom and pop stores, machinery rents, building materials, electronics, etc.) - The workers are paid above the minimum wage required by law and there is no child labor on the plantations or on the processing mills.	- HR, Production, Comptroller, Purchase Manager and General Management
2. Responsible with the communities	- The company works with more than 22 community leaders and local entities with which it keeps a close relationship for community support in infrastructure, education, health and community requests	- HR, Certifications, Corporate Affairs, Production Manager, and General Management
3. Responsible with the workers	- The workers' camps have been remodeled in order to improve their conditions - Protection equipment has been given for risky work in the company's operations - The workers are given ongoing training: field and site work, use of protective equipment, company policies, responsible use of agrochemicals	- General Management, Production, HR, Corporate Affairs, Certifications, Technical Department

	- All the benefits required by law are complied with and employees are also given a personal accident insurance that covers medical expenses for accident and up to Q25,000 for death	
4. Responsible with the environment	Biogas project: There is a biogas project, where the gas obtained from the lagoons is transferred to electric generators to generate clean power and the surplus biogas is burnt at a controlled temperature higher than 600°C, to reduce the greenhouse gas effect. - There is a biomass project where the rachis is burnt producing steam to generate clean energy - There are two biodigester tanks where an anaerobic fermentation of sludge obtained from the extraction process will take place and produce biogas for clean energy generation and reduction of greenhouse gas effect - There are reforestation programs	- Certifications Manager, Processing Mills Managers, Production and General Management

Mitigation Plan for potential socio-economic impacts of the development of new oil palm plantations

Environmental impact analysis for the "air" factor

Source	Impact description and analysis	Preventive, corrective, mitigation, and compensation measures. Optimization	Person responsible
Transport of the fruit (harvest).	Possible generation of suspended dust particles from passing vehicles. Gas emissions to the atmosphere due to vehicle combustion.	Particles: - Driving vehicles should be at a maximum speed of 20 km/h (in internal roads). - Periodic road maintenance. Gases: - Perform preventive maintenances to vehicles. - Keep off vehicle engines during waiting times.	Agricultural Manager and Environment Manager

Environmental impact analysis for the "soil" factor

Source	Impact description and analysis	Preventive, corrective, mitigation, and compensation measures. Optimization	Person responsible
Preparation and making lands adequate	Removal of vegetation that protects the soil from erosion.	In the areas where the oil palm plantation is established, simultaneously implement protective plant cover. Conserve and/or protect the vegetation cover in the water body channels.	Agricultural Manager and Environment Manager
Establishment of protective coverage	Positive impact, weeds fix nitrogen, provide coverage to the soil decreasing erosion and adding organic matter.	Keep permanent plant coverage.	
Pruning and ground clearing	Positive Impact, plant material (mulch) is reincorporated to the soil, gives nutrients to the soil	Continue with the activity to incorporate the plant material from pruning and ground clearing.	

	and provides coverage to decrease soil erosion.		
Pest and disease control	Identified as risk, in the hypothetical case that agrochemicals are not applied and not handled properly.	Continue with the integrated pest management IPM performing the applications according to the doses suggested for the product. Implement all the security measures for the use of this type of product.	
Harvest	Compacting possibility in some areas due to transit of vehicles and/or beasts of burden (in cases in which they are used).	Avoid excessive use of vehicles. Implementing soil conservation practices in the ruts.	
Fruit transport			

Environmental impact analysis for the "surface water" factor

Source	Impact description and analysis	Preventive, corrective, mitigation, and compensation measures. Optimization	Person responsible
Preparation and making lands adequate	Risk of sediment input by surface runoff.	Establish as soon as possible the planting of protective cover to prevent sediments from dragging down to the water bodies. Conserve and/or protect the vegetation cover in the water body channels.	Agricultural Manager and Environment Manager
Establishment of protective cover, pruning and land clearing.	Prevents erosion and helps provide organic matter to the soil, avoiding possible agricultural runoff.	Continue with the use of vegetation cover and incorporation of organic matter to the soil.	
Fertilizer application	Risk of water contamination in the case of surface runoff.	The plantation must have vegetation cover to prevent and/or decrease surface runoff to surface water bodies. Fertilizer applications should be based on the requirements of the plants	

		and in the presence of these elements in the soil.	
Application of agrochemicals	Risk of contamination in the water in the hypothetical case of an incorrect application practice.	Pesticide management according to FAO standards. Implement monitoring and control mechanisms in the application of agrochemicals. The employees must be adequately trained on good practices for the application of agrochemicals.	

Environmental impact analysis for the "groundwater" factor

Source	Impact description and analysis	Preventive, corrective, mitigation, and compensation measures. Optimization	Person responsible
Establishment of protective coverage	Positive impact since it retains the soil's moisture.	Continue with the establishment of vegetation cover on the ground.	Agricultural Manager and Environment Manager
Fertilizer application	Risk of contamination by lixiviation in the hypothetical case of excessive application of fertilizers.	Continue the fertilizer application on the basis of the method of balancing nutrients in the soil and the information obtained from soil, soil types and leaf samples.	
Application of agrochemicals	Risk of contamination in the water in the hypothetical case of an incorrect application practice.	Pesticide management according to FAO standards. Implement monitoring and control mechanisms in the application of agrochemicals. The employees must be adequately trained on good practices for the application of agrochemicals. Implement a treatment system for wastewater with traces of agrochemicals (get advice and use designs validated by AGREQUIMA).	

Generation of ordinary wastewater	Risk of contamination in the hypothetical case of not giving proper treatment to ordinary wastewater.	Perform periodic maintenance of the ordinary wastewater treatment system. According to the operation and maintenance manual.	

Environmental impact analysis for the "flora" factor

Source	Impact description and analysis	Preventive, corrective, mitigation, and compensation measures. Optimization	Person responsible
Preparation and making lands adequate	Removal of the soil's vegetation cover.	Establishment of protective vegetation cover in the plantation. Conserve and/or protect the vegetation cover in the water body channels.	Agricultural Manager and Environment Manager
Establishment of protective coverage	Allows the incorporation of species beneficial for the agro-ecosystem.	Maintenance of vegetation coverage for the benefit of the pollinating insects, as well as to the ground by the trade-offs that exist between them.	

Environmental impact analysis for the "fauna" factor

Source	Impact description and analysis	Preventive, corrective, mitigation, and compensation measures. Optimization	Person responsible
Preparation and making lands adequate	Fauna mobilization	Continue with the protective vegetation cover that provides food and shelter to wildlife, hosts that influence the behavior of beneficial organisms and main host to phyto parasites.	Agricultural Manager and Environment Manager
Establishment of protective coverage	Generates a positive impact for the fauna by the contribution of nutrients for insects (pollinators) and smaller animals.	Establishment of protective vegetation cover in the plantation.	

Environmental impact analysis for the "socio-economic environment" factor

Source	Impact description and analysis	Preventive, corrective, mitigation, and compensation measures. Optimization	Person responsible
Establishment of protective coverage	Job generation.	Provides appropriate working conditions for the project's employees.	Human Resources Manager Agricultural Manager and Environment Manager
Pruning and ground clearing			
Fertilization			
Pest and disease control			
Harvest			
Fruit transport			

Environmental impact analysis for the "landscape" factor

Source	Impact description and analysis	Preventive, corrective, mitigation, and compensation measures. Optimization	Person responsible
Project	Even if the area where the project is located is used for agriculture, the impact can be seen at the landscape level when observing the oil palm plantations.	Conservation of riparian zones. Conserve and/or protect the vegetation cover in the water body channels. In areas where it is necessary to implement hedgerows, assess the feasibility of implementing hedgerows (with native species).	Agricultural Manager and Environment Manager

Parameter to be monitored	Proposed Enhancement/ Mitigation Measures	Responsibility	Estimated Time-frame for completion of task
Education	Conferences, training and communication with the stakeholders.	Corporate Social responsibility	Three times a year.
Health	Medical support program	Corporate Social responsibility	Two times a year
Infrastructure	Road maintenance plan	Engineering	All the year
Work	Training in productivity	Corporate Social Responsibility	Two times a year
Environment	Training in Good Agricultural Practices	Technical Department	Three times a year.

Carbon Stocks and GHG Emissions management plan.

Proposed Enhancement/ Mitigation Measures	Responsibility	Estimated Time-frame for completion of task
Implement a route and logistics plan for the supply of inputs and staff transportation. This allows ordering and structuring a procurement plan for the supply of inputs as well as moving personnel to the different field tasks. This activity can be combined with identification of new suppliers that are closer to the cultivation fields, which will decrease moving for buying supplies.	Jose Montenegro Merclin Lopez	By April 2018 Continuosly implement
Identify among the suppliers of fertilizers those who originate from sources whose shipping ports are closer to Guatemala and that offer competitive prices in a way that it does not affect the production cost.	Jose Montenegro Merclin Lopez	By December 2018
To mitigate emissions from the combustion of fuels, establishing a preventive maintenance plan for machinery and transportation, including tractors, trucks and motor vehicles is recommended. The objective is to maintain the machinery that operates in the project in optimum conditions and in this way reduce emissions by the efficient use of the machinery or means of transportation which serve the project.	Jose Montenegro Merclin Lopez	By April 2018 Continuosly implement
A replacement plan can be designed for the vehicles used for the transportation of fresh fruit, either by means of smaller cylinder units that transport it to a collection center, these can be smaller tractors or using 'small buffalo' type vehicles.	Jose Montenegro Merclin Lopez	By December 2018
Monitor fuel consumption with logs, which allows to measure the efficiency of the use for each one of the motor vehicles. This is a control that tends to be effective and that enables developing a control and monitoring mechanism of the use of fuel in the project.	Jose Montenegro Merclin Lopez	By April 2018 Continuosly implement
Develop a process of gradual renewal of vehicles to have machines with greater efficiency and with reduced greenhouse gases emissions.	Jose Montenegro Merclin Lopez	By December 2018
Replace wherever possible mineral fertilizers by organic fertilizers. This can be obtained by either of two ways, through the management of agricultural	Jose Montenegro Merclin Lopez	By December 2018

wastes to avoid their decomposition and pollution, and which through a composting process be reincorporated into the plantations. Another way may be the identification of sources of organic type for the fertilization of the cultivation fields of the farms closest to the palm oil mill.		
Implement an integrated management plan of herbaceous plants that considers the implementation of cultural measures for the control of unwanted plants within the plantation. This way, it is possible to identify among the herbaceous species, those that have nitrogen fixation characteristics, and that also have a function of covering for their later incorporation to the ground, with the objective of improving its fertility (management of noble weeds).	Jose Montenegro Merclin Lopez	By December 2018
Keep the areas of primary and secondary forests stocks and develop an activity plan for the protection to ensure the conservation of fixed carbon and biodiversity of the associated fauna and flora.	Jose Montenegro Merclin Lopez	Continuosly implemented

Agrocaribe, S.A. hereby represented by Mr. Jose Roberto Montenegro, declares the acceptance of the assessment results conducted for the company and management plan in order to provide sufficient information for the NPP process. The company also declares for all means that the assessments were conducted in accordance to all RSPO New Planting Procedure and confirms its results.

The last time plan for new plantings is in August 2017, however due to delay in progress now move to April 2018 however subject to approval from RSPO.

Name of Grower: Agrocaribe S.A.

Name of Person Responsible: Jose Roberto Montenegro

Position: General Manager

Signed:

Date: April 1/2017

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