Forest Carbon Partnership Facility (FCPF)
Carbon Fund

Emission Reductions Program Document (ER-PD)

ER Program Name and Country: Guatemala
Guatemala National Program for the Reduction and Removal of Emissions

Date of Submission or Review: November 5, 2019

Content

Tables

Figures

Maps

EXECUTIVE SUMMARY

The Emissions Reduction Program (ERP) in Guatemala is expected to generate 9.25 million tons of CO2e in emission reductions and 1.77 million tons of CO2e removal during its five-year implementation. The result will be a total emission reduction/removal balance of more than 11 million tons of CO2e from the accounting subnational area, minus the level of uncertainty, which is between 12% to 15% and a 23% risk of reversal buffer.

This represents an average emission reduction of 71% compared to the net reference level, thanks to an average deforestation of 31,355.86 ha/year, an average degradation of 18,890.23 ha per year and an average rate of increase in forest cover associated with forest plantations of 2,493 ha/year.

The country is expected to transfer 10.5 tons of CO2e from these emission reductions and removals to the Carbon Fund by means of a subnational ERP that excludes the following areas:

- Triángulo de Candelaria and Laguna del Tigre, located in the Maya Biosphere Reserve, in the San Andrés Municipality, Department of Petén.
- The municipalities of Morales, Livingston and Puerto Barrios, Department of Izabal.

The area covered by the ERP is of high priority, given that it accounts for 91.7% of the national territory, 92% (3,676,908.33 million ha) of forest lands, including the areas where most of the population lives, indigenous peoples included. At the same time, the ERP areas proposed to the Carbon Fund include highly vulnerable territories, given the elevated levels of poverty, and coincide with the areas where most deforestation has taken place.

The ERP has been designed to tackle the main drivers of deforestation and forest degradation, which are, among others, the expansion of the agricultural frontier by intensive cropping and subsistence farming, extensive livestock farming, forest fires, the use of non-sustainable firewood and illegal logging, all fostered by underlying socio-economic and cultural conditions, as well as institutional and productive barriers and weaknesses.

To achieve this goal, these drivers were deeply analyzed, and five specific strategic options were established to address them: i) stronger forest governance; ii) conservation, protection and sustainable management of forests; iii) restoration of forest landscape and recovery of forest cover and agroforestry lands; iv) reduction of unsustainable use of firewood; and v) promotion of competitiveness and legal activities in the value chain of forest products and by-products. Each of these strategic options has specific actions associated with the respective implementation plan and will work in accordance with national policies and programs already in place, such as the forest incentive programs (PROBOSQUE and PINPEP) and the Guatemalan System of Protected Areas, as well as projects with early REDD+ actions associated with the voluntary carbon market, which provide important resources to reduce deforestation and forest degradation. These actions will be reinforced by the Forest Investment Program (FIP) currently being designed and will help Guatemala during the implementation phase of the national strategy to address deforestation and forest degradation (ENREDD+).

Guatemala's ERP is also known for **recognizing and allowing the participation of early REDD+ action projects**. The Guatemalan government sees the role of the private sector as a key element for the Program execution and has included three REDD+ projects, in different development stages, carried out by private entities, local communities, government agencies and NGOs that have spearheaded REDD+ actions in the country in the last few years. To be part of the Guatemalan ERP, REDD+ Projects that voluntarily decide to participate in it must be methodologically harmonized with the ERP in order to prevent double counting and to this end Guatemala has prepared a nesting strategy to integrate REDD+ projects. This Guatemala nesting strategy consists of distributing the National Reference Level of Emissions and Removals in quotas, according to criteria defined by the Government of Guatemala, which include the efforts made so far by REDD+ initiatives underway.

This mix of existing strategic options, actions and policies covers almost the entire ERP Accounting Area and lowers the chances that uncovered areas would keep contributing to forest-based emissions.

Although many of these strategic options are exclusively aimed at facilitating actions, that is, they do not generate direct reductions or removals, they do play a key role in the ERP, ensuring the long-term success of conservation and sustainable production and avoiding deforestation driven by economic activities. Among the most important actions, we can highlight the improvement of resources and institutional capacities, interinstitutional and intersectoral coordination, greater access and use of information, and, in particular, the monitoring of land use and better law enforcement and control.

Moreover, the proposed sustainable production systems will be enhanced by investments in public education and awareness.

From an **institutional perspective**, the ERP will be implemented within the current ENREDD+ governance framework by the Interinstitutional Coordination Group (ICG), composed of four institutions in charge of forests and natural resources: the Ministry of Environment and Natural Resources (MARN), the Ministry of Agriculture, Livestock and Food Supply (MAGA), the National Forestry Institute (INAB) and the National Council of Protected Areas (CONAP). Additionally, there is an institutional arrangement for monitoring forests, land use and compliance with safeguards. This structure is composed of different government agencies, civil society, community, indigenous and international cooperation organizations, as well as private sector institutions.

The interventions will be in line with the World Bank **safeguards,** which are reflected in the national legal framework. For this reason, an environmental and social management framework (ESMF) has been developed to avoid or mitigate the negative impacts of interventions by monitoring land use, safeguards and non-carbon benefits. Such monitoring will be carried out under an interinstitutional and intergovernmental cooperation approach.

Guatemala has a **highly developed land tenure and forest policy framework**, and the Program will build on that. This framework includes various land ownership and tenure schemes which also protect rural and indigenous communities' rights.

Like many developing countries, Guatemala also faces challenges regarding inequality in land distribution, which give rise to latent social conflict. However, in the last two decades, important institutional efforts have been made to alleviate this problem. The country has identified around 1,577,124 ha of communal lands throughout the country (approximately 15,771 km2), which corresponds to 12% of the country's surface. Support programs for land recognition and titling, forest incentive programs such as PINPEP and PROFOR, as well as concessions in the protected areas of the Maya Biosphere Reserve are all examples of actions that have restored historic land property rights to local and indigenous communities and that are directly or indirectly linked to the ERP.

The **ability of the Program Entity to transfer title to ERs to the FCPF** will follow sound principles and avoid or mitigate the risk of conflicts. The title transfer is based on i) a Climate Change Law that, in Article 22, establishes the link between rights over ERs and land tenure and a requirement to have a record of that on the National Registry, which makes Guatemala one of the few countries with specific legislation on titles to ER; ii) respect for land ownership regimes, including the constitutional guarantee of private property and the rights of indigenous and local communities; iii) legal arrangements and agreements empowering MINFIN as the rightful Program Entity with the ability to manage title to ER according to the activities that generate ERs; iv) respect for private property through the agreements executed in the ERP early REDD+ projects; v) the exclusion of areas with serious land-related conflicts from the ERP; and, v) the implementation of a national registry system, thus preventing double counting.

In terms of budget, the estimated implementation cost of the ERP will be covered by financial resources from the Government of Guatemala through the improvement of current programs, complemented by a percentage from early REDD+ projects resources, current international cooperation projects and the FIP, among others that may arise during ERP execution.

1. ENTITIES RESPONSIBLE FOR THE MANAGEMENT AND IMPLEMENTATION OF THE PROPOSED ER PROGRAM

1.1 ER Program Entity expected to sign the Emission Reduction Payment Agreement (ERPA) with the FCPF Carbon Fund

Name of entity	Ministry of Public Finances
Type and description of organization	Ministry in charge of Guatemala's finances, being responsible for fulfilling and enforcing all legal dispositions pursuant to the State's financial mandate, including the collection and administration of tax revenues, the management of internal and external financing decisions, budget execution and the registration and control of State assets.
Main contact person	Victor Manuel Martínez Ruíz
Title	Minister
	Kildare Enriquez
	Deputy Minister of Financial Administration
	Public Credit Directorate
	Rosa Maria Ortega Sagastume
Address	8a. avenida 20-59 zona 1, Centro Cívico, Ciudad de Guatemala. - 01001
Telephone	(502) 2374 3000
E-mail	
Website	www.minfin.gob.gt

1.2 Organization(s) responsible for managing the proposed ER Program

Same entity as ER Program Entity identified in 1.1 above?	Yes
If no, please provide details of the organizations(s) that will be managing the proposed ER Program	
Name of organization	
Type and description of organization	
Organizational or contractual relation between the organization and the ER Program Entity identified in 1.1 above	
Main contact person	
Title	
Address	
Telephone	
E-mail	
Website	

1.3 Partner agencies and organizations involved in the ER Program

Name of partner	Contact name, telephone and email	Core capacity and role in the ER Program
Ministry of Environment and Natural Resources	Alfonzo Alonzo Vargas, Minister. Contact: (502) 2423-0500	UNFCCC focal point and governing body on environmental matters at the national level.

	Carlos Walberto Ramos Deputy Minister of Natural Resources and Climate Change	Role and participation in the ERP design and implementation. Secretariat - ICG rapporteur.
Ministry of Agriculture, Livestock and Food Supply	Mario Méndez Montenegro, Minister. Contact: (502) 2413 7000 José Felipe Orellana Mejia Deputy Minister of Rural Economic Development	State institution in charge of promoting comprehensive rural development through the transformation and modernization of the agriculture, forestry and hydrobiology sectors, developing productive, organizational and commercial capacities aimed at achieving food security and sovereignty and ensuring competitiveness based on clear standards and regulations for the management of products in the national and international market, guaranteeing natural resources sustainability. It has a coordination role and participates in the implementation of emission reduction activities and collects monitoring information from the agricultural sector. Role and participation in the ERP design and implementation. Member of the ICG.
National Forestry Institute	Rony Estuardo Granados Mérida, Manager. Contact: (502) 2321 2626 Bruno Enrique Arias Rivas Deputy Manager	Public entity in charge of forestry matters, responsible for implementing and promoting national forestry policy instruments, facilitating access to forestry services to stakeholders through the design and execution of programs, strategies and actions aimed at improving the country's economic, environmental and social development. Its role in the ERP will be to coordinate actions with the ICG, promote direct field activities and enforce compliance through the forest incentive programs (PROBOSQUE and PINPEP). It will also contribute to the collection, processing and analysis of MRV system data outside protected areas. Role and participation in the ERP design and implementation. Member of the ICG.
National Council of Protected Areas	Enrique Octavio Barahona Pereira, Executive Secretary. Contact: (502) 2299 7300 Carlos Eduardo Mansilla Olmedo Executive Deputy Secretary	Responsible for fostering and promoting the conservation of protected areas and biological diversity by planning, coordinating and implementing the necessary conservation policies and models, working together with other stakeholders towards the country's sustainable growth. Participates in the ERP by collaborating closely with implementers of early REDD+ actions in protected areas, and collecting, processing and analyzing MRV system data in protected areas. Moreover, it is one of the proponents of the Guatecarbon Project together with ACOFOP. Role and participation in the ERP design and implementation. Member of the ICG.

2. STRATEGIC CONTEXT AND RATIONALE FOR THE ER PROGRAM

2.1 Current status of the Readiness Package and summary of additional achievements of readiness activities in the country

Guatemala began its Forest Carbon Partnership Facility (FCPF) readiness process by submitting a Readiness Project Idea Note (R-PIN) on December 15, 2008, developed by the Ministry of Environment and Natural Resources (MARN). Subsequently, and after the review of the Inter-American Development Bank (IDB) (as Delivery Partner), the World Bank, the FCPF Participants Committee (PC) and the Technical Advisory Panel (TAP), the country presented the final version of the Readiness Preparation Proposal (R-PP) on March 15, 2013, which granted access to a first non-reimbursable donation of USD 3.8 million.

Between March 2013 and February 2016, Guatemala made significant progress in various areas of the REDD+ readiness phase under the FCPF framework, presenting its Mid-Term Report (MTR) on the latter date, which was approved and gave the country access to a second donation of USD 5 million. After carrying out several studies, partnerships and institutional arrangements, in January 2018, Guatemala submitted the REDD+ Readiness Package (R-Package, approved by the FCPF in March of the same year), showing clear evidence of the significant progress made in the readiness phase.

Some elements can be highlighted with regard to this progress in the readiness phase:

1. Development of the first draft of the National REDD+ Strategy entitled *National Strategy for Addressing Deforestation and Forest Degradation in Guatemala*, which is currently being shared with different interested parties for improvements and subsequent approval and adoption by the Government of Guatemala.
2. Elaboration of reference levels for the 2006-2016 period, including REDD+ activities regarding deforestation, forest degradation and carbon stock increase.
3. Initial design and implementation of various monitoring, reporting and verification (MRV) systems that integrate forest monitoring, information on safeguards, multiple benefits, management and other impacts.
4. An environmental and social safeguards approach through the development of the Strategic Environmental and Social Assessment (SESA), the Environmental and Social Management Framework (ESMF) and the Information and Attention to Complaints Mechanism (MIAQ).

At the same time, the country decided to move forward in the results-based payments (RBP) phase established by the FCPF's Carbon Fund by preparing, presenting and approving the Emission Reduction Project Idea Note (ER-PIN) on September 12, 2014. Also, a Letter of Intent (LOI) was signed between the World Bank and the Ministry of Public Finance (MINFIN) on April 28, 2017, according to which the Emission Reduction Program Document (ERPD) is currently being developed.

It should be noted that, for the REDD+ implementation phase, there are some developments that favorably link the readiness and the results-based payments (RBP) phases:

1. Programs and projects with a national budget that address the main drivers of deforestation and forest degradation in Guatemala and that are detailed in Section 4.3.3 of the ERPD.
2. REDD+ projects developed by private entities and community partnerships with the government following international standards such as the Verified Carbon Standard (VCS) and Climate, Community and Biodiversity (CCB) standard, also detailed in Section 4.3.3. of the ERPD. These projects have received private investment and international cooperation resources, used together with local communities and the government (in the case of the Guatecarbon Project).
3. REDD+ projects in design stage.
4. Forest Investment Program (FIP) with support from the World Bank and the IDB for an amount of USD 24 million. Of this total amount, USD 3,150,000 were granted as donation and USD 20,850,000 as a loan. This initiative is in the design phase.

2.2 Ambition and strategic rationale for the ER Program

Guatemala's ERP has a subnational scope, which, according to 2016 estimates, accounts for 3,389,692.91 ha of forest, i.e. 31% of the national territory and 92% of the country's forests.

In 2016, Guatemala had 3,676,908.33 ha of forests, which accounts for 33.8% of the country's surface. Most of this forest cover (51.9%), were in protected areas. However, it is estimated that between 1950 and 2010, 53.4% of forests were lost. In particular, between 2006 and 2016, the average annual deforestation rate reached 36,893.66 ha, and since 2006, it is estimated that 31.2% happened in protected areas. Despite conservation efforts, forests in protected areas are under threat due to the growing demand for land aimed at other activities.

At the national level, and according to the National Greenhouse Gases Inventory's 2000-2005 data (MARN, 2015), the land use, land use change and forestry sector (LULUCF) accounts for 27%[1] of Guatemala's total annual emissions, which makes the forestry sector one of the top priorities for the country in order to meet the Nationally Determined Contribution (NDC) goals established by the Paris Agreement.

In that sense, Guatemala's NDC establishes the following: *"Considering 2005 as base year, the country pledges to reduce its total GHG emissions projected to 2030 by 11.2% with its own resources and by up to 22.6% with the technical and financial support of the international community"*[2]. To fulfill this commitment, the country has prioritized five sectors: energy and transport, land use change and forestry, agriculture; waste and industrial processes. The land use change and forestry sector stands out due to the amount of emissions.

2.3 Political commitment

Guatemala ratified the UNFCCC on March 28, 1995. It then approved its NDC and ratified the Paris Agreement on April 22, 2016.

As for forest issues, in September 2014, Guatemala voluntarily joined the Bonn Challenge, a global effort led by the German government and the International Union for the Conservation of Nature (IUCN). In the Bonn Challenge, Guatemala is committed to restoring an area of 1.2 million ha of forests by 2045.

Accordingly, and after approving the Warsaw Framework for REDD+, the Ministry of Environment and Natural Resources (MARN) became the REDD+ focal point before the UNFCCC.

CENTRAL GOVERNMENT COMMITMENT

The main support given by the government to the ERP is the Framework Law for the Regulation of Vulnerability Reduction, Compulsory Adaptation to Climate Change Impacts and Mitigation of Greenhouse Gases (Decree 07-2013), issued by the Congress of the Republic of Guatemala and published in the Official Gazette on October 4, 2013.

The Framework Law on Climate Change (abbreviated name of Decree 07-2013) has 28 articles and is applicable to the entire territory of the Republic of Guatemala. The aim of this law is to establish the necessary regulations to prevent, plan and provide an urgent, adequate, coordinated and sustained response to the impacts of climate change in the country. The main purpose is for Guatemala, through its central and decentralized government bodies, self-regulated entities, municipalities, civil society and the population in general, to put in place practices that will help reduce vulnerability, improve their capacity for adaptation and propose alternatives to mitigate the impacts of climate change caused by greenhouse gas emissions.

These are the most relevant articles of the Framework Law on Climate Change for ERP readiness and implementation: i) Article 3: Specific safeguards; ii) Article 8: Creation and Modus Operandi of the National Council for Climate Change,

1Equivalent to 8,497,503 Gg of CO2-eq.
[2]53.85 million tons of CO2e estimated for the year 2030.

chaired by the Presidency of the Republic; iii) Article 9: National Information System for Climate Change (SNICC); iv) Article 11: National Action Plan for Climate Change Adaptation and Mitigation; v) Article 15: Strategic Institutional Plans to Reduce Vulnerability, Adaptation and Mitigation of Climate Change; vi) Article 20: Emission Reduction Derived from Land Use Change; vii) Article 22: Carbon Market Projects and viii) Article 24: National Climate Change Fund.

Article 20, in particular, establishes the mandate for the four ERP participant institutions to implement policies, strategies, programs, plans and projects for the reduction of LULUCF emissions. Therefore, the Framework Law on Climate Change is also the articulation tool for climate action used by the four institutions involved in the ERP execution: the National Forestry Institute (INAB), the National Council of Protected Areas (CONAP), the Ministry of Environment and Natural Resources (MARN) and the Ministry of Agriculture, Livestock and Food Supply (MAGA).

Since 2009, these four institutions have been working on Guatemala's REDD+ Readiness Preparation Proposal (R-PP) and have signed an Interinstitutional Agreement on Technical Cooperation for the Conservation and Sustainable Management of Natural Resources. The goals of this agreement are the following: a) establishing a policy coordination mechanism for activities aimed at the conservation, management and protection of biodiversity and natural resources in the national territory and b) coordinating policy implementation in matters of use, management, conservation and administration of renewable natural resources to steer, foster and aid territorial planning and rural development.

The ERP has the support of the Interinstitutional Coordination Group (ICG), created in 2010 by an institutional cooperation agreement with a five-year mandate. On June 11, 2015 the institutional agreement on the ICG was reviewed and extended for another five years. The ICG was created as a high-level political platform for government coordination and approval of activities carried out in Guatemala's REDD+ process. The group is led by the Minister of Environment and Natural Resources (MARN), the Minister of Agriculture, Livestock and Food Supply (MAGA), the Manager of INAB and the Executive Secretary of the National Council of Protected Areas (CONAP). The ICG is divided in two areas: i) the political ICG, where authorities meet to make decisions and ii) the technical ICG, composed of technical personnel appointed by each authority to review and submit proposals to the political ICG regarding management and administration of natural resources.

The ICG has a Technical Secretariat-Rapporteur Office in charge of operational and technical coordination of each institution. This office is run by MARN. The main responsibilities of the ICG technical secretariat are, among others: i) to mediate dialogues between different institutions involved in the administration of REDD+ in Guatemala, ii) to manage technical and administrative processes necessary for the development of key REDD+ actions in the country, iii) to monitor and report developments in Guatemala's REDD+ activities iv) to publish calls for ordinary and extraordinary meetings of the two ICG bodies.

SECTORAL COMMITMENT TO THE EMISSION REDUCTION PROGRAM

The commitment of the forestry sector to the ERP is reflected in the participation of various stakeholders in the governance mechanisms established for two main lines of action.

The first is strengthening forest incentive programs, e.g., the Incentive Program for the Establishment, Recovery, Restoration, Management, Production and Protection of Forests in Guatemala (PROBOSQUE) and the Forest Incentives Program for Small Forestry and Agroforestry Land Owners (PINPEP), created by specific laws and whose governance is steered by the board of directors of the National Forestry Institute (INAB). This board is composed of central government representatives, such as MINFIN and MAGA; private sector organizations like *Gremial Forestal*, academic institutions like the National Central School of Agriculture (ENCA) and universities, active forestry NGOs and local governments represented by the National Association of Municipalities (ANAM). In the specific case of PINPEP, governance is carried out by a steering committee (CODI) made up of representatives from the central government (INAB), from the National Network of PINPEP Beneficiary Communities and ANAM.

The second line of action is strengthening the activities of the Guatemalan System of Protected Areas (SIGAP), whose governance in mainly under the responsibility of CONAP. The council is composed of representatives from the following institutions: MARN, MAGA, the National Institute of Anthropology and History (IDAEH); the Center for Conservation Studies at the San Carlos de Guatemala University (CECON); ANAM; delegates from NGOs related to natural resources and the environment registered in CONAP and the Guatemalan Tourism Institute (INGUAT).

Regarding REDD+ projects in protected areas, the board's commitment is reflected in their participation governing CONAP's mechanisms, for example, co-managing agreements for protected areas, forest concession contracts with local communities and industries, private natural reserves, municipal areas and CONAP's direct management of protected areas on national lands. As for the REDDES REDD+ project, still in design, the council participates in the governance mechanisms created by INAB, such as the Guatemala National Alliance of Community Forest Organizations and PINPEP's National Network.

These platforms are used by INAB and CONAP as mechanisms for participation and consultation regarding their policies, and have received substantial feedback from local communities and stakeholders while preparing the ERP proposal and developing and implementing actions to manage and protect natural forests and restore forest cover. These platforms will be strengthened during ERP implementation, improving the country's forest governance and meeting the requirements of the main REDD+ safeguards. In both cases, interested parties from the central government, municipalities, the private sector, communities, indigenous peoples, conservation and development NGOs, academics, among others, have made a commitment to support and participate directly in the activities proposed in the ERP framework.

3. ER PROGRAM LOCATION

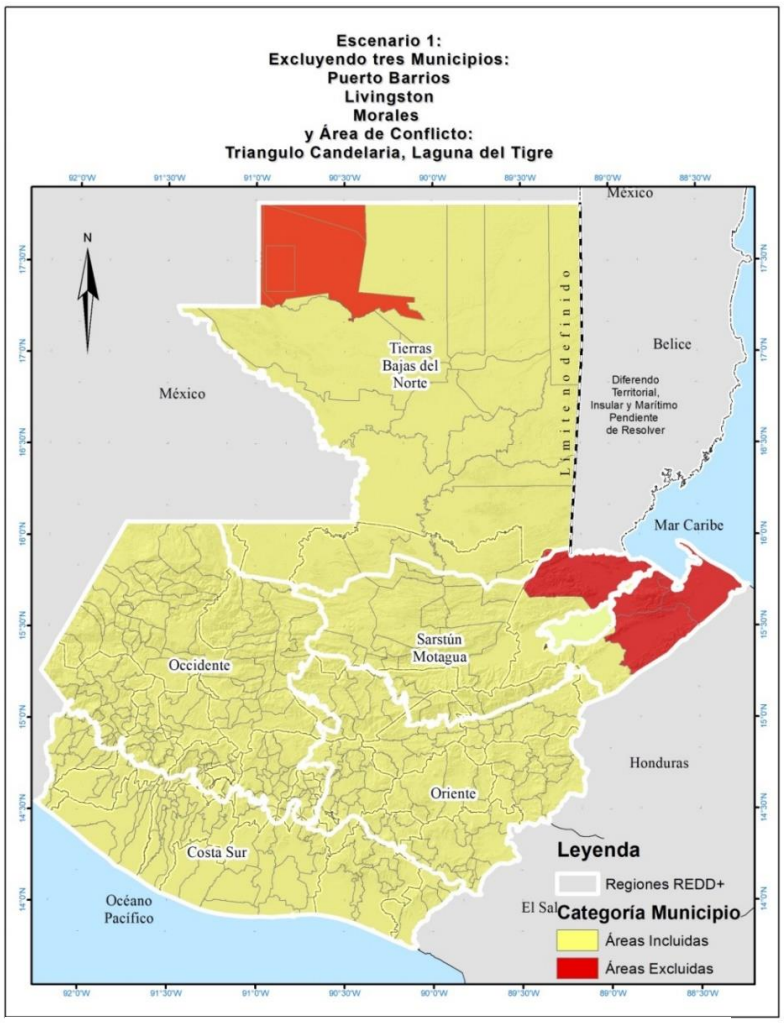
3.1 Accounting area of the ER Program

Guatemala's ERP has a subnational approach. Environmental and social details of the Program's Accounting Area are described in the following ERPD sections.

Although the Government of Guatemala had originally planned a national program, it was finally changed to a subnational approach after conclusions from a World Bank's risk assessment and the fact that possible conflicts with populations in the excluded areas that cannot be solved in the short term and the existence of an Early Action REDD+ Project (Project FUNDAECO), which has been considered unfit for the ERP at this moment.

The excluded areas are (Map 1):

- Triángulo de Candelaria and Laguna del Tigre, located in the Maya Biosphere Reserve, located in the San Andrés Municipality, Department of Petén.
- The municipalities of Morales, Livingston and Puerto Barrios, Department of Izabal.



Map 1. Area excluded from the Program.

The Government of Guatemala has the adequate tools to initiate conflict resolution and thereby expand the program's scope to a national approach in the future, once the conditions are met. This process will be conducted by the Presidential Dialogue Commission (CPD), which is focused on coordinating various government institutions, establishing political and social communication with different sectors of society, communities, indigenous peoples, and addressing issues related to culturally relevant territories. The aim of the commission is to contribute, manage, and change social animosity through dialogue and follow-up of agreements. (http://cpd.gob.gt/quienes-somos.html).

The Ministry of Environment and Natural Resources has planned to have a representation of the Presidential Dialogue Commission in all its regional offices in order to promote dialogue as a form of conflict resolution. This plan will be formalized through the signing of an interinstitutional cooperation agreement between the ministry and the presidential commission.

The Government of Guatemala reiterates its intention to expand the program from a subnational to national scope to ensure the inclusion and participation of stakeholders and sectors interested in the ERP. This will be achieved through continuous dialogue aimed at generating positive impacts in rural communities and managing the country's natural resources sustainably with public and private investments.

3.2 Environmental and social conditions in the ERP Accounting Area

Guatemala has an area of 108,889 km2, administratively divided into 22 departments and 340 municipalities. According to official data for 2012, the country's population was 15,073,375 with an annual growth of 2.44%. Fifty-one percent of the population live in the rural area and 40% identify themselves as indigenous (INE, 2013). By 2015, population density was 149 inhabitants per km2 and by 2011, 53.7% of the total population were below the poverty line, and 13.3% in extreme poverty[3].

Guatemala a multilingual country, with a total of 25 languages (Mayan, Xinca, Garífuna and Spanish). The sociocultural diversity of the Mayan people includes 22 linguistic communities[4]. Moreover, Guatemala is considered a megadiverse country [5] due to its biological and cultural richness. As part of Mesoamerica, it has the second greatest diversity of species and endemism, since it hosts 7% to 10% of all known life forms on the planet (CONAP, 2009). It has a high diversity of species (1333 fauna and 10,317 flora), ecosystems (14 life zones) and endemism (823 species), as a result of an altitude gradient that ranges from sea level to 4,200 meters above sea level, very rugged topography, a 500-6,000 mm annual rainfall volume and highly diverse climates (CONAP, 2008).

Based on physiographic characteristics, 67% of the national territory has forest and agroforestry potential and the rest is fit for agricultural activities (INAB, 2000). The Guatemalan System of Protected Areas (SIGAP) comprises 30.9% of the territory, which includes 339 protected areas of different conservation categories. The hydrographic system is made up of three large watersheds, 38 main basins and 314 sub-bassins (MAGA, 2009). Sixteen percent of the territory is covered by forests of high and very high-water catchment and regulation capacities. The rest of the country shows medium, low and very low capacity (INAB, 2005).

According to the 2010 vegetation cover and land use map (DIGERG-MAGA, 2015) the Guatemalan territory has 52.8% of forests and natural environments (forests, shrublands and areas with little to no vegetation), 42.8% of agriculture lands, 1.6% of wetlands, 1.5% of water bodies and 1.3% of artificial lands. The most recent forest cover survey in the country (2016) points out to 3,649,108 ha of forest, with a total deforestation of 515,280.87 ha between 2001 and 2015, i.e. an annual loss of 34,352 ha. The increase of forest land through plantation forestry was 38,310.85 ha, or 2,554.06 ha per year[6]. Forest cover is divided into different types of forests, of which 25.52% is broadleaved, 4.84% is mixed, 2.76% coniferous and the rest is either dry forests, mangrove forests, wetlands, planted forests and scattered-trees forests (INAB-CONAP, 2015). Most broadleaved forests are primary or old-growth. As for coniferous and mixed forests, most are secondary forests. Primary or old-growth coniferous forests are very scarce. (FAO/INAB, 2003).

[3] https://www.ine.gob.gt/index.php/estadisticas/tema-indicadores
[4] http://www.mineduc.gob.gt/digebi/mapaLinguistico.html
5Guatemala is a member of the UN's Like-Minded Megadiverse Countries group.
[6]NREF updated to the year 2016.

The Guatemalan System of Protected Areas (SIGAP) comprises 30.9% of the territory, which includes 339 protected areas of different conservation categories[7].

The country is among the five most vulnerable nations in the world regarding climate change impacts. This is clearly reflected in three or more threats to the country's gross domestic product (GDP). Around 83% of Guatemala's GDP is generated in risk areas. According to the 2011 Global Assessment Report on Disaster Risk Reduction (UNISDR, 2011)(IARNA-URL, 2012), Guatemala is one of the countries with the highest "extensive risks", associated with many localized weather hazards and is directly influenced by factors such as poorly planned and poorly managed urban development, environmental degradation and poverty (IARNA-URL, 2012).

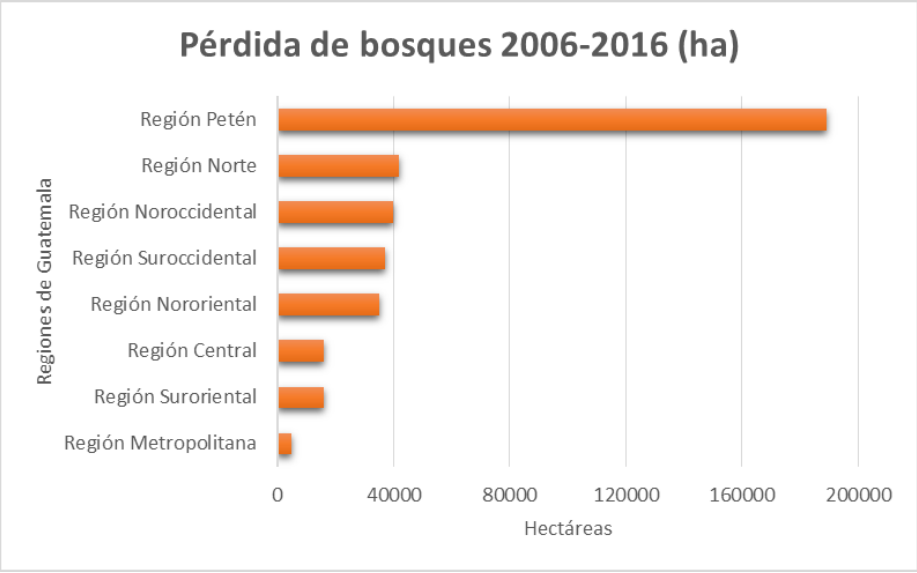
As a result of its geographical location, Guatemala is exposed to extreme events. Between 1998 and 2014, a total of eight extreme hydro-meteorological events linked to climate change have been registered (hurricanes and tropical storms Mitch, 1998; Stan, 2005 and Agatha, 2010; and some tropical depressions and major droughts). Overall losses and damages amount to more than USD 3.5 billion, affecting mainly infrastructure, agriculture and healthcare sectors. Between 1998 and 2010, climate variability led to economic losses in the agricultural sector in the order of USD 1.85 billion (Government of the Republic of Guatemala/MARN, 2015).

4. DESCRIPTION OF ACTIONS AND INTERVENTIONS TO BE IMPLEMENTED UNDER THE PROPOSED ER PROGRAM.

4.1 Analysis of drivers and underlying causes of deforestation and forest degradation, and existing activities that can lead to conservation or increase of forest carbon stocks

This section is mainly based on the preliminary assessment of land use, drivers and agents of deforestation and forest degradation in Guatemala, developed within the framework of Guatemala's National Strategy for Addressing Deforestation and Forest Degradation (first draft published in 2018). This study has focused on the causes of deforestation and degradation at a national and regional level based on the 2001-2010 FREL and on inputs collected in the two rounds of discussion of Phase I. In particular, the quantification and specialization of the causes presented below have been updated based on the 2006-2016 FREL.

According to the multitemporal visual analysis of land use and coverage change based on a grid of 11,345 sampling points, during the 2006-2016 period, 380,000 ha of forests were lost in Guatemala. Fifty percent of forest loss in Guatemala is concentrated in the Petén region. On the other hand, the North, North-Western and South-Western regions together account for 32% of the total area of forests lost in the period shown in the following figure.



[7] http://www.conap.gob.gt/AreasProtegidas.aspx

Figure 1. Forests loss (deforestation) by region in Guatemala, Source: Own elaboration based on Collect Earth points

Also, about 2,742,560 ha of forest showed some degree of degradation in the 2006-2016 period. In this context, forest degradation in Guatemala was estimated based on the decrease of the vegetation stratum. Degradation percentages corresponding to the proportion of trees in a given area were obtained in 2006 and 2016. The spatial distribution of forest degradation in Guatemala is shown on Figure 2.

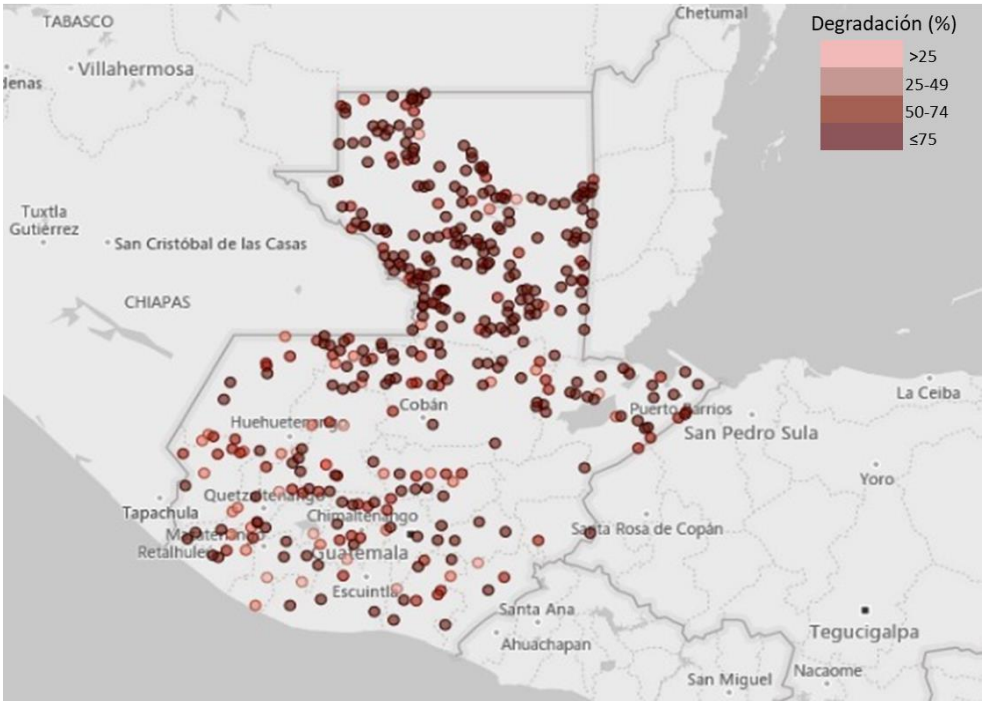


Figure 2. Spatial distribution of forest quality loss (degradation). Source: Own elaboration based on Collect Earth points

The loss of forests has direct causes, in other words, human activities that reduce forest area and/or quality and underlying causes, which are complex social, economic, political, cultural and technological interactions that end up reinforcing direct causes.

In Guatemala, the main causes of deforestation are livestock farming and agriculture. Livestock accounts for 73% of forest loss in the 2006-2016 period, while agriculture is responsible for 21% (Figure 3).

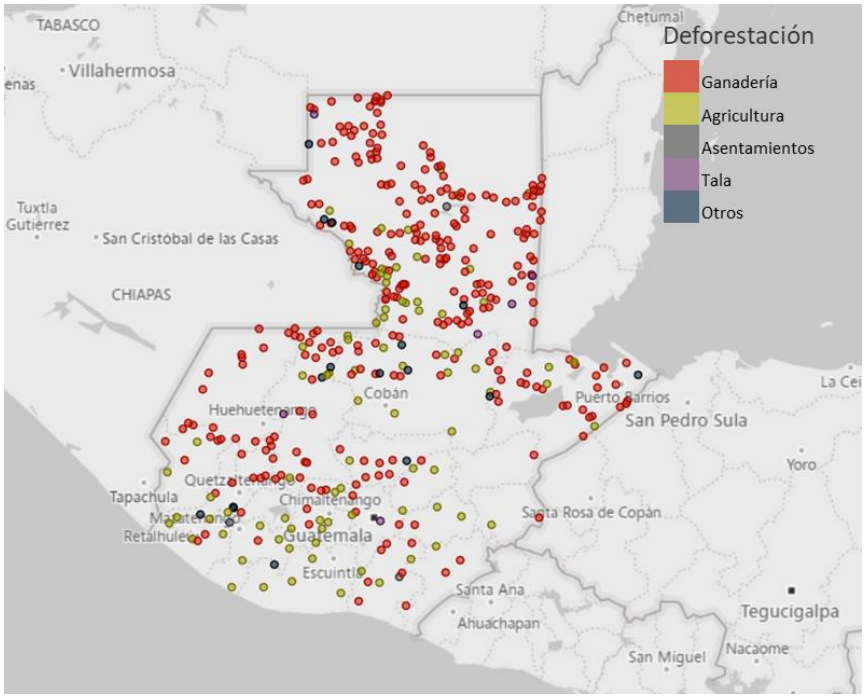


Figure 3. Spatial distribution of causes of deforestation in Guatemala. Source: Own elaboration based on Collect Earth points

According to the change in land use and the national categories established by Collect Earth, **livestock expansion** is classified into **three** types: i) intensive livestock farming, ii) extensive livestock farming and iii) silvopastoral systems. Extensive livestock farming accounts for 53% of forest loss, while silvopastoral systems are responsible for less than 1%. (
Figure 4).

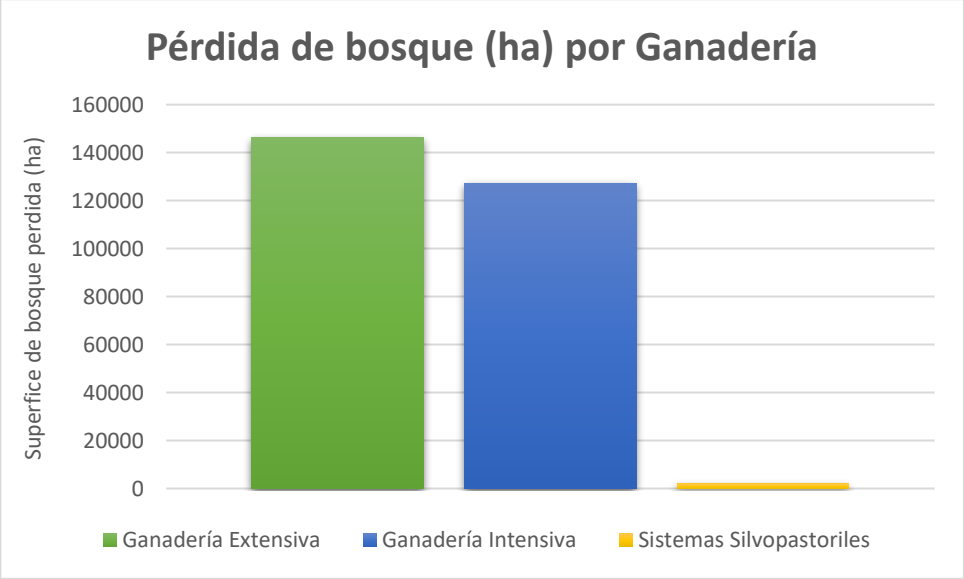


Figure 4. Forest loss by livestock farming in Guatemala. Source: Collect point grid

The isolated silvopastoral systems are not an important cause of deforestation at the national level and are associated to regions with a high level of extensive livestock farming

Intensive livestock farming is concentrated in the Petén, North and Northeast regions. Only in Petén, 61,750 hectares of forest have been lost due to this activity in that period. On the other hand, extensive livestock farming is dispersed throughout the territory. The departments of Chiquimula, Escuintla, Sololá and Zacapa have the lowest levels of forest loss caused by this activity.

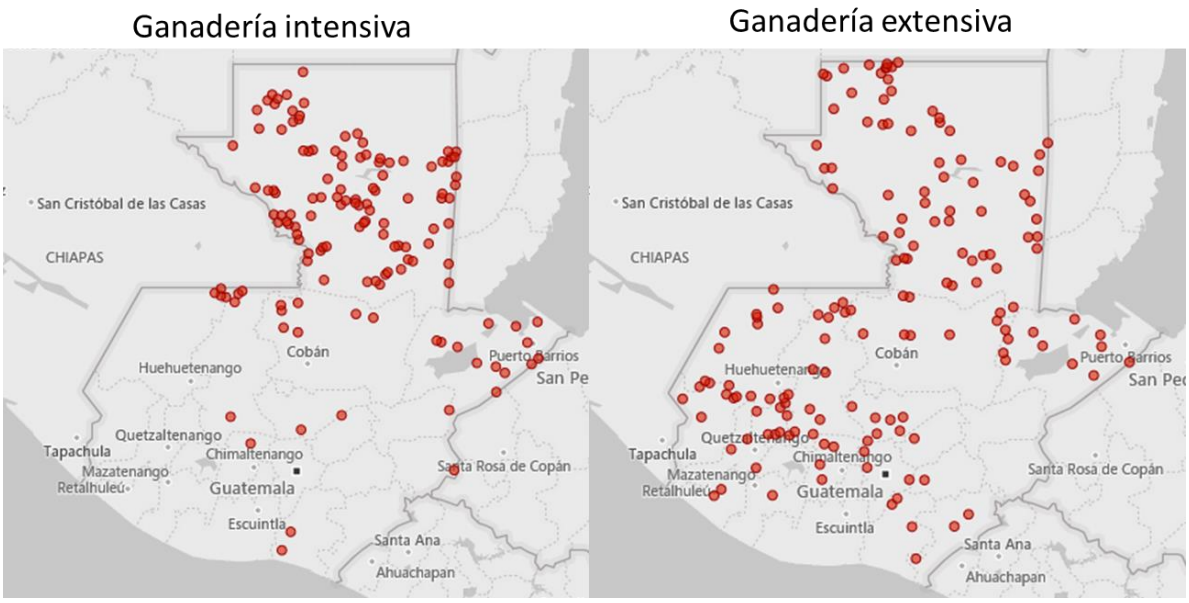


Figure 5. Spatial distribution of forest loss due to extensive and intensive Livestock farming in Guatemala. Source: Collect point grid.

The Petén region shows the highest levels of forest loss by intensive and extensive livestock farming. In this context, in the Phase I dialogue workshops, this activity was associated with two main underlying causes:

- Land grabbing. Use of livestock as a cover for land grabs.
- Money laundering and drug trafficking. Use of livestock as a cover for money laundering and smuggling operations.

In the North region, land grabbing was also identified as an underlying cause. In addition, other causes were identified, such as: i) lack of territorial planning and ii) economic dependence on livestock farming given the intensive production of meat in the region. Finally, in the Northeast, Southeast and East regions, the lack of territorial planning was identified as the main indirect cause, since there are livestock farms on forest lands. Figure 6 summarizes the underlying factors associated with this main causes, divided by region.

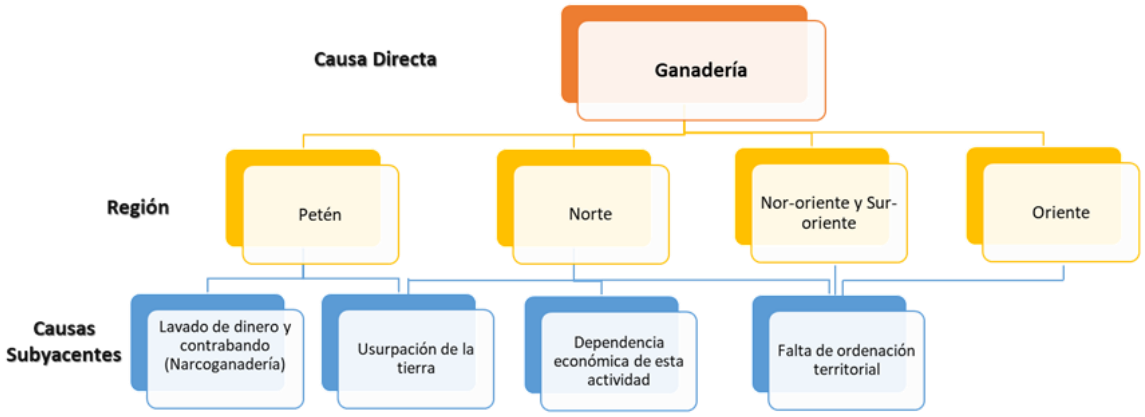


Figure 6. Underlying causes that reinforce livestock farming as a deforestation driver. Source: Phase I dialogues

Forest replacement due to agricultural expansion happens mostly in the case of annual crops and agroforestry systems. At the same time, four crops are especially important as deforestation drivers, namely: i) African oil palm, ii) rubber, iii) sugarcane and iv) coffee (Figure 7).

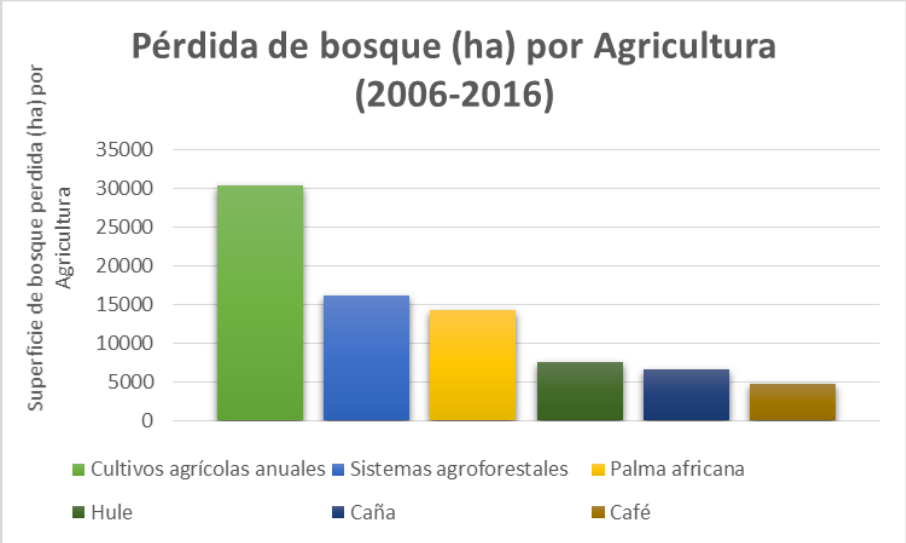


Figure 7. Forest loss by agriculture in Guatemala

Annual crops are a major driver of deforestation in most Guatemalan regions, particularly in the departments of Alta Verapaz, Chimaltenango, Chiquimula, Petén, Quiché and San Marcos. On the other hand, African oil palm crops play a major role as a deforestation driver in the Petén (Petén), North (Alta Verapaz), and Southwest (Quetzaltenango and Suchitepequéz) regions. Coffee is a major deforestation driver in the central (Chimaltenango), southwest (Quetzaltenango), southeast (Jalapa) and northeast (El Progreso) regions. Sugarcane and rubber are concentrated in the southwest and central regions. Rubber crops are also a major deforestation driver in the northeast region. Finally, agroforestry systems cause forest loss in all regions, except Petén (Figure 8).

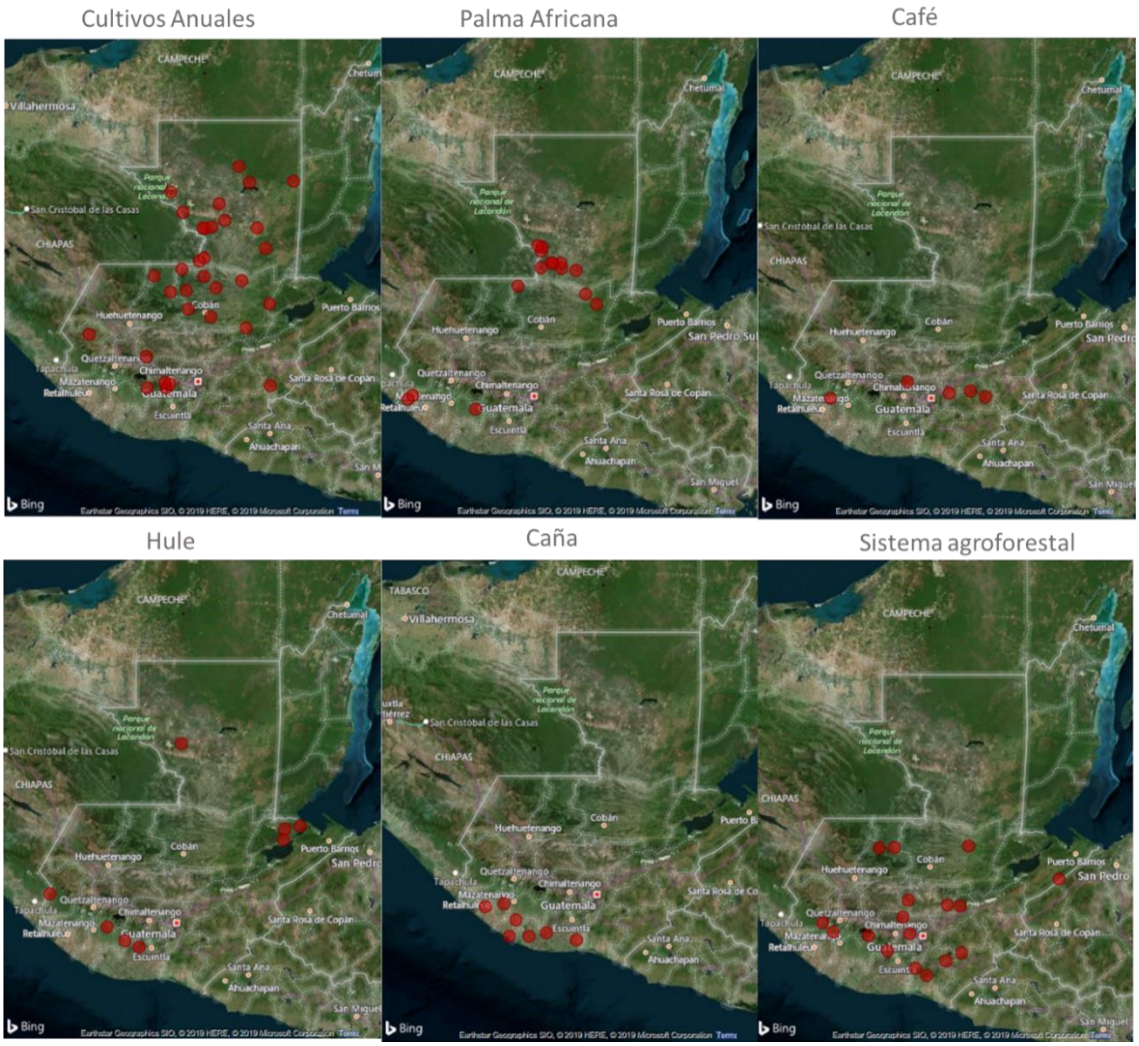


Figure 8. Spatial distribution of forest loss by agriculture in Guatemala. Source: Collect point grid

In addition to the previous classification, agriculture as a deforestation driver can be further classified as commercial agriculture and subsistence agriculture. The first is associated with large-area estates, while the second is linked to small pieces of land. In this context, the underlying causes that reinforce forest loss by agriculture differ by type.
Commercial agriculture drives deforestation in all regions and is associated with large monoculture areas (African oil palm, rubber, sugarcane) replacing forest lands. Commercial agriculture is associated to the high demand for these products together with the low-value given to forests. Self-consumption and subsistence agriculture are linked to extreme poverty, which translates into very small farm plots, land invasion and migranting agricultural production (Figure 9).

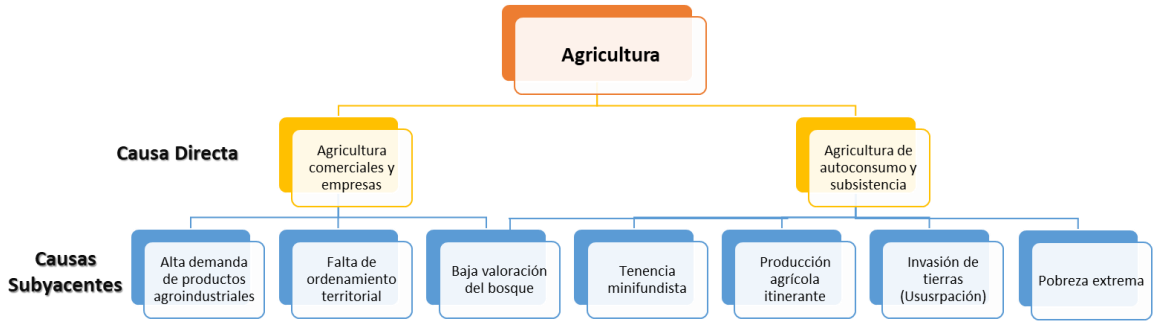


Figure 9. Underlying factors that emphasize agriculture as a deforestation driver. Source: Phase I discussion rounds.

Logging is a deforestation driver in the Petén, metropolitan and Northwest regions. In the 2006-2016 period, it accounted for 5,700 hectares of deforested areas. Finally, human settlements were responsible for the loss of 2,850 ha of forests in the Southeast, Southwest and Petén regions. The loss of forests by settlements are driven by two main reasons: i) urban and community growth and ii) the growth of productive infrastructure and activities.
Therefore, the main underlying causes behind the expansion of settlements are population growth, internal migrations of peasants and unsustainable economic development (growth of mining, hydroelectric, shrimp fishing, oil and other companies).

Regarding forest degradation, the main causes identified in the dialogue rounds are

- Unsustainable and uncontrolled logging to meet the demand for firewood and brick production.
- Illegal and unsustainable extraction of wood and other products by illegal loggers and illegal trade of high-value timber. The above is a result of the absence of forestry authorities on the ground.
- Forest fires. Caused by poorly managed agricultural plots and land invasion and burning.

Additionally, the extraction of Montezuma pine and resin was identified as causes of forest degradation. The main forest degradation drivers in Guatemala are shown on Figure 10.

Figure 10. Underlying factors that emphasize agriculture as a deforestation driver Source: Phase I discussion rounds.

4.2 Assessment of the major barriers to REDD+

The main barriers in addressing deforestation drivers and forest degradation can be: i) administrative, political and legal, ii) socio-economic and iii) technical and financial.

In this context, the main administrative, political and legal barriers to address the main deforestation and forest degradation drivers are:

a) Weak presence of forestry authorities in the regions. This makes it impossible to tackle drivers such as: i) illegal logging and trade of precious woods, ii) unsustainable extraction of firewood, iii) encroachment and

burning of forests, iv) narco-livestock farming. Moreover, weak judicial and law enforcement authorities to deal with high-profile cases, especially the invasion and encroachment of protected areas.

b) Poor coordination of policies and institutional programs to address deforestation and forest degradation in the medium and long term based on a State approach. Local (regional) forest authorities make little effort to conserve forests
c) Poor territorial management, which allows forests to be used for agriculture and/or livestock.
d) Lack of legal certainty about land tenure for local communities and indigenous peoples that sustainably manage forests.
e) Lack of sanctions applied to offenders who damage forests and lack of regulation and territorial planning law enforcement to promote the sustainable use of forest products and/or planting of trees in traditional agricultural production systems.
f) Lack of governance in territories where most forests are lost (Petén and North regions)

Socio-economic barriers are very complex and give rise to various underlying deforestation and degradation drivers, such as:

a) Poverty and extreme poverty. Poverty is associated with high birth rates (population growth), internal migration and land invasion.
b) Poor development of rural areas that translates into a high dependence on firewood and unsustainable subsistence agriculture and livestock farming.
c) Significant differences in the opportunity cost of agricultural activities compared to forest conservation and forestry. The low value given to forests changes land use to other activities aimed at subsistence.
d) High cost of agroforestry systems in poor and extremely poor areas with soils suitable for forest restoration.

The technical and financial barriers in addressing deforestation and degradation drivers are:

a) Lack of forestry research, education, training and forestry and agroforestry extension activities to support the different stakeholders involved in forestry development.
b) Lack of adequate financial instruments for the forestry sector, i.e. terms, guarantees, proper conditions and interest rates related to the forestry value chain.
c) Limited budget allocation for incentive programs that could promote larger-scale protection and restoration of forests that provide ecosystem goods and services.
d) Lack of alternatives for sustainable production and efficient use of firewood.
e) Shortcomings in the organization of the supply of timber products, which lead to poor availability of timber in terms of volume, quality and price.
f) Lack of strategies to ensure the sustainability of investments in the existing forest incentive programs after their completion.
g) Limited budget to undertake control and surveillance in the entire SIGAP.
h) Lack of means to enhance community participation in forest management.

The main barriers identified in addressing deforestation (agriculture and livestock) and degradation drivers (unsustainable extraction of firewood, illegal logging and forest fires) are shown below.

Table 1. Main barriers and limitation in addressing

Main barriers and limitation in addressing	
Deforestation	Degradation
a) Operational weakness of local governments and institutions related to agricultural, forestry and natural resources conservation activities (MAGA, INAB, MARN, CONAP) hampers their performance and the monitoring of forestry and environmental law compliance.	a) Lack of financing and credit mechanisms to promote efficient firewood use systems at household and industry level. b) Lack of an extension system to promote efficient systems of firewood use especially in low-income households.

b) Lack of a comprehensive approach and interinstitutional coordination to promote sustainable economic activities and strengthen protection, conservation and restoration of forests and ecosystems relevant to society. c) Budget and constraints limited resources to strengthen the management and control of SIGAP. d) Low institutional and government presence to supervise and control illegal land use change towards agriculture. e) Little incentive to expand and strengthen the participation of community-based organizations to improve local governance and protect and conserve forests and protected areas. f) Limited investment from the judicial sector to address and close cases of invasion and encroachment of protected State lands. g) Greater profitability in agriculture than forestry activities. Lack of medium and long term mechanisms to promote the protection and conservation of natural forests and plantations. h) Lack of mechanisms to promote and implement incentive programs in areas that are of key importance in protecting and restoring degraded lands and forests. i) Lack of non-agricultural labor or economic opportunities in rural areas.	c) Lack of policies and regulations to promote the inclusion of trees in agricultural production systems. d) Low participation of government and local authorities in the control and extraction of forest products. e) Little community participation in the control of forest wood extraction and use and in the prevention and control of forest fires. f) High management cost for small agricultural producers and local communities to access forestry incentive programs to include trees into agricultural production systems. g) Scarce articulation of players in the competitive supply of wood. h) High management cost to get permits and licenses for the management and use of forest products. i) Limitations on the promotion and sustainable use of certified forest products. j) Corruption and poor enforcement of environmental and forestry legislation k) Lack of institutions and financial resources to promote the prevention and control of forest fires. l) Lack of regulation and control in the use of fire in agricultural and livestock activities. m) Lack of research on the effects and emissions from forest fires. n) Lack of preventive forestry to reduce the spread of forest fires. o) Lack of systems for the immediate detection of forest fires.

4.3 Description and justification of the planned actions and interventions under the ER Program that will lead to emission reductions and/or removals

The ERP is part of a strategic framework of actions undertaken by the country to support forest governance at the national level through various policies, strategies and policies aimed to enhance national efforts to address the drivers of deforestation and forest degradation. Figure 11 shows the policy framework underpinning the ERP.

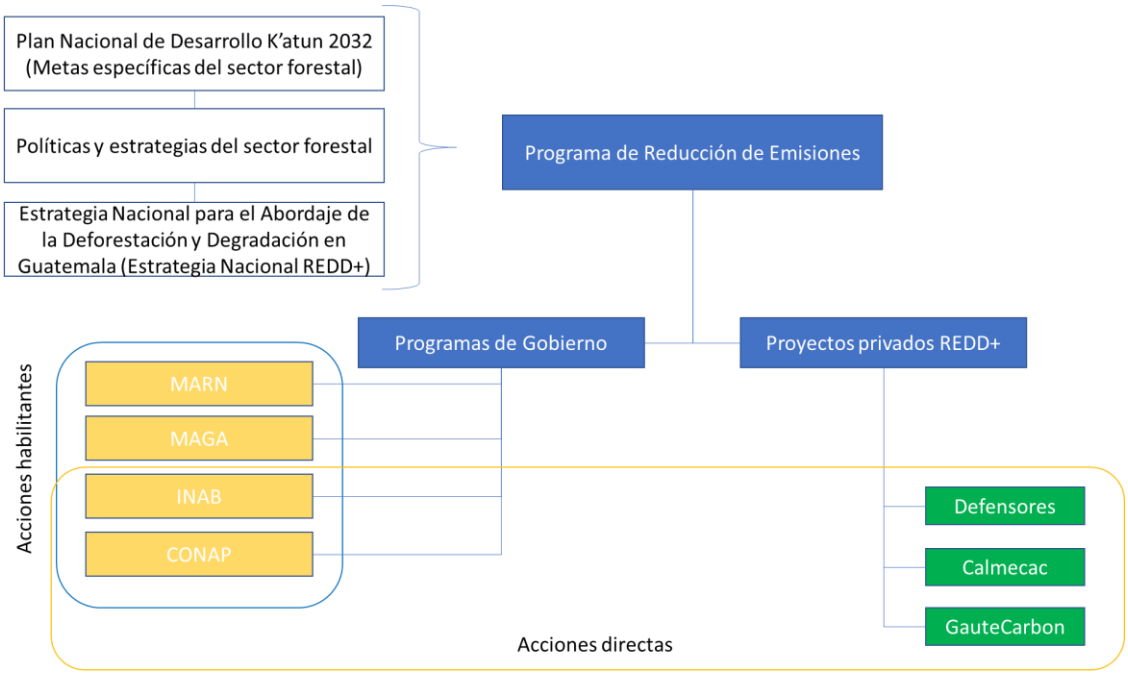


Figure 11. ERP national support framework

At the national level, there is a public policy framework in place aimed at complying with national climate goals and international climate change commitments, highlighted on Table 2. This set of policies make up the institutional framework in which the ERP will be developed and that will coordinate different government levels and improve institutional conditions to reach the amount of emissions reduction from deforestation and forest degradation agreed upon in the ERP.

Table 2. Institutional policies and strategies that contribute to face deforestation and forest degradation at the national level

Institutional policies and strategies that contribute to face deforestation and forest degradation at the national level	Institution in charge	Type of contribution to the ERP
K'atun 2032 National Development Plan	SEGEPLAN	Creates enabling conditions through the coordination of government institutions to achieve national development objectives.
National Climate Change Action Plan (PANCC)	MARN	Develops a set of enabling conditions for the coordination of the institutional framework and to reach the climate change adaptation and mitigation goals.
Forestry Policy	INAB	Contributes directly by means of tools to tackle deforestation and forest degradation and allows for the recovery of lands without forests.
Framework Policy on Concessions for the Comprehensive Management of Natural Resources in the Protected Areas of Petén	CONAP	Direct contribution through the implementation of sustainable forest management models in

Institutional policies and strategies that contribute to face deforestation and forest degradation at the national level	Institution in charge	Type of contribution to the ERP
		protected areas owned by the State.
Policy for the Joint and Shared Administration of the Guatemalan System of Protected Areas and of Natural Areas Relevant for the Conservation of Biological Diversity in Guatemala	CONAP	Creates enabling conditions to expand the institutional coverage in the territories, by means of partnerships with civil society.
National Development Strategy with Low Greenhouse Gas Emission	MARN	Establishes specific measures to reduce emissions from AFOLU.
National Energy Plan	MEM	Undertakes support activities for the efficient use of firewood.

4.3.1 Support programs

The programs that will provide the main support for the implementation of ERP are listed below:

Incentive Program for the Establishment, Recovery, Restoration, Management, Production and Protection of Forests (PROBOSQUE):

Created in 2015 by Decree 02-2015, issued by Congress, to continue the actions of the Forest Incentive Program (PINFOR), which had been implemented for 20 years. It started operating in 2016 and will be concluded in 2045. It is executed by INAB and promotes six lines of action: planting and maintaining forests for industrial purposes; planting forests for energy generation; setting up and maintaining agroforestry systems; managing natural forests for production purposes; managing natural forests for the protection and provision of environmental services; restoring degraded forest lands. It also promotes technical assistance, research and links to the productive sector. The amounts granted as incentives are different for each action. Average for plantations: USD 2,175/ha for six years; agroforestry systems: USD 684/ha for six years; natural forest management: USD 394/ha for the first 15 ha and USD 71/ha as additional resources for ten years; restoration of degraded forest lands: USD 2,433/ha for ten years.

Forest Incentives Program for Small Forestry and Agroforestry Land Owners (PINPEP):

Created in 2010 by Decree 51-2010. Executed by the National Forestry Institute (INAB), it began operating in 2011 and has no expiration period. Intended for land owners with less than 15 ha. It promotes four lines of action: managing natural forests for production and protection; planting and maintaining forests; setting up and maintaining agroforestry systems. Also, strengthening the technical capacities of beneficiaries. The allocated amounts are the following: management of productive natural forests: USD 406/ha for the first five ha and USD 113/additional ha; protection of forests: USD 379/ha for the first five ha and USD 97/additional ha; planting and maintaining forests: USD 2,061/ha; planting and maintaining agroforestry systems: USD 1,030/ha. For plantations and agroforestry systems (AFS), these are average figures, since the amounts are assigned by ranges of hectare.

Program for the Restoration, Protection and Conservation of Protected Areas and Biological Diversity:

This is the program executed annually by CONAP, which seeks to effectively manage and conserve the Guatemalan System of Protected Areas together with strategic partnerships, and joint administration, co-administration and forest concessions schemes. Control and monitoring actions are carried out to protect ecosystems and the biological diversity of the Guatemalan System of Protected Areas (SIGAP), as well as prevention and control actions to protect ecosystems and biological diversity against anthropogenic catastrophic events, as well as the development of norms through regulation instruments and the sustainable use and management of natural resources (permits, concessions, master plans, management plans, operational plans, business plans, tourism

development plans, etc.) for the sustainable use and management of natural resources and biological diversity associated with SIGAP.

Forest Investment Program (FIP): to be implemented in 47 priority municipalities based on the criteria of deforestation and forest degradation rate due to fires and illegal logging of timber and firewood. Potential for increasing forest cover and generating environmental and social co-benefits will also be assessed. The FIP seeks to contribute to the improvement of the implementation of forest incentive programs (PROBOSQUE and PINPEP) in the prioritized territories, under an integrated approach with the following forestry sector programs and strategies: Forest-Industry-Market Integration Strategy, National Strategy for the Sustainable and Efficient Use of Firewood, Interinstitutional Action Plan for the Prevention and Reduction of Illegal Logging and the National Strategy for the Restoration of Forest Landscape. In relation to strategies for strengthening SIGAP's management activities, the restoration, protection and conservation of protected areas and biodiversity will be improved.

The FIP is composed by three projects in the design phase and have the following objectives:

- Project 1. Sustainable forest management: seeks to promote sustainable forest management aimed at improving the timber value chain and forest landscape restoration. This project includes improving the institutional capacities of INAB and CONAP to address the administrative, technical, market and financing barriers that limit the coverage and expansion of forest incentive programs for sustainable forest management.
- Project 2. Governance and diversification of livelihoods: promotes the efficient management of forest landscapes and ecosystem services in pilot areas through capacity building and stakeholder's participation (local communities, indigenous peoples, local governments, private sector) to generate strategic partnerships and consolidate sustainable livelihoods in forest landscapes.
- Project 3. Access to financing: aims to promote access to public (forestry incentives) and private financing in order to make the proposed investments viable.

The FIP projects aim to increase forest cover through forest incentive programs, reduce deforestation and forest degradation, improve forest landscape governance, increase participation of local governments, increase the availability of forest goods and services and improve coordination and institutional efficiency of INAB and CONAP to meet the demand for services for key stakeholders involved in sustainable forest management.

Early REDD+ projects: Some projects have been implementing early REDD+ actions for more than ten years, using private investments. These interventions in specific territories are reducing and removing emissions and will therefore be part of the ERP support programs. Two of these projects, plus another REDD+ project in the design phase, will be part of the ERP support programs. They are:

- *Guatecarbon* (validated by VCS and CCB), a project that includes forest concessions in the Multiple Use Zone of the Maya Biosphere Reserve.
- *Lacandón Bosques para la Vida* (validated by VCS and CCB), includes private and cooperative areas in the north of the country, in the Sierra del Lacandón National Park.
- *REDDes Locales para el Desarrollo* (under development since 2017), which plans activities in the north of the country.

4.3.2 ERP actions

Specifically speaking, the ERP framework has defined direct and enabling actions for reduction and removal of emissions from deforestation and forest degradation.

The direct actions interventions carried out in the territory, which are quantifiable and translate into reduction or removal of emissions. Enabling actions are those that facilitate conditions for direct actions.

In the case of direct actions, selection and exclusion criteria were applied, as well as general considerations regarding the Benefit Sharing System (BSS), whose main elements and criteria are established on Annex I and will be developed in detail throughout the first four months of 2019.

After applying the Annex I criteria, the ICG institutions selected programs and projects to be implemented between 2020 and 2025, many of which have an identified source of financing, while others still have some gaps to cover. In terms of compliance with the World Bank's operational policies on environmental and social safeguards for direct actions, a work plan will be proposed to address gaps and compliance with the ERP framework.

In total, 19 direct and indirect REDD+ actions have been defined. They have been grouped into five main strategic options, under a programmatic approach, and are closely tied to current national efforts to address deforestation and forest degradation.

Table 3 summarizes the strategic approach of these REDD+ actions planned by the country for ERP implementation.

Table 3. ERP strategic actions and options

STRATEGIC OPTIONS	REDD+ ACTIONS
1. Stronger forest governance	1.1 Review and update the regulatory framework for the development and sustainable use of natural resources.
	1.2 Improve access to forest management institutional services inside and outside protected areas.
	1.3 Promote coordination and effective participation of stakeholders to reduce illegal logging.
	1.4 Improve forest information and monitoring systems.
	1.5 Prevention and control of illegal forestry activities.
	1.6 Strengthening municipal and communal forestry.
	1.7 Institutional strengthening.
2. Conservation, protection and sustainable management of forests	2.1 Set up payment mechanism for ecosystem services.
	2.2 Improve conservation, valuation and development of biological diversity.
	2.3 Protection and conservation of protected areas and biological diversity.
	2.4 Effective management and administration of protected areas.
	2.5 Prevention and control of forest fires.
	2.6 Protection against forest pests and diseases.
3. Restoration of forest landscape and recovery of forest cover in areas suitable for forestry and agroforestry activities.	3.1 Forest landscape restoration.
	3.2 Promotion of sustainable livestock farming.
4. Reduction of the unsustainable use of firewood	4.1 Promotion of sustainable and efficient use of firewood.

STRATEGIC OPTIONS	REDD+ ACTIONS
5. Promotion of competitiveness and legal development of the value chain of forest products and by-products	5.1 Develop value chains for forest products and by-products
	5.2 Promote the establishment of agroforestry systems and forest plantations.
	5.3 Promote sustainable forest management in natural forest areas.

Each strategic option has a defined scope. For each REDD+ action, there are activities that will contribute directly or enable the conditions to achieve emissions reduction and removal goals. Table 4 shows them in detail.

Table 4. Description of the ERP REDD+ actions and strategic options scope

STRATEGIC OPTIONS	REDD+ ACTIONS	TYPE OF INTERVENTION / SCOPE
1. Stronger forest governance Scope: Improve interinstitutional and intersectoral coordination mechanisms with stakeholders related to forests, deforestation and forest degradation, encouraging participation at the local level, transparency, legitimacy in decision-making and effective enforcement of forest regulations.	1.1 Review and update of the regulatory framework for the development and sustainable use of natural resources.	Enabling activities: • Review, update and complement the regulatory framework and internal procedures regarding registration, monitoring and control of the sustainable use, transport and trade of natural resources and biological diversity. • Coordination between INAB and MAGA towards actions for the promotion of silvopastoral systems. • Approval of norms and regulations for sustainable forest use inside and outside protected areas.
	1.2 Improve access to forest management institutional services inside and outside protected areas.	Enabling activities: • Promote forest management decentralization from INAB to municipalities. • Strengthen coordination and management processes in protected areas. • Improve INAB's forest management services by eliminating roadblocks to authorization procedures and reducing transaction costs for institutional users. • Implement automation of forest management authorization processes.
	1.3 Promote coordination and effective participation of stakeholders to reduce illegal logging.	Enabling activities: • Reactivate the operational agreement of the Intersectoral High-Level Roundtable for

STRATEGIC OPTIONS	REDD+ ACTIONS	TYPE OF INTERVENTION / SCOPE
		the Prevention and Reduction of Illegal Logging in Guatemala. • Update the Interinstitutional Action Plan for the Prevention and Reduction of Illegal Logging in Guatemala, based on the roles and mandates of each institution. • Promote the creation of subnational roundtables and local networks for the reduction and prevention of illegal logging and judicial procedures.
	1.4 Improve forest information and monitoring systems.	Enabling activities: • Set up, strengthen and equip six SIGAP monitoring centers. • Improve information, registration and traceability systems for legal forestry activities (SEINEF, SEGEFOR, SIFGUA, SEAF and CONAP). • Set up early warning systems for prevention and control of illegal forest activities and forest fires. • Integration of local stakeholders to implement community forest monitoring systems through forestry consultation, administration and co-administration services for protected areas.
	1.5 Prevention and control of illegal forestry activities.	Direct activities: • Implement control and monitoring plans at the municipal level to detect illegal activities and monitor authorized activities. • Strengthen oversight and control of forest-based companies. • Strengthen control operations for forest products transport.
	1.6 Strengthening municipal and communal forestry.	Enabling activities: • Encourage the participation of local governments, communities and indigenous organizations in forest dialogues to provide transparency and legitimacy in decision-making regarding forests. • Strengthen municipal and community-level capacities through Municipal Forestry

STRATEGIC OPTIONS	REDD+ ACTIONS	TYPE OF INTERVENTION / SCOPE
		Offices (OFMs), UGAM and SIGAP support offices to improve knowledge on forest legislation, access to tools to promote legal activities and forest incentive programs. • Promote and appreciate indigenous peoples' and local communities' knowledge and ancient practices regarding the use and care for natural resources.
	1.7 Institutional strengthening.	Enabling activity: • Improve technical, operational, technological and financial capacities of the institutions in charge of forest management inside and outside protected areas, to expand coverage and impact of programs and services.
2. Conservation, protection and sustainable management of forests Scope: Promote the implementation of sustainable forest management models for the livelihoods of the population, using different options in accordance with their strategic importance and productive capacity, and focused on those areas with higher levels of deforestation and forest degradation.	2.1 Set up payment mechanism for environmental services.	Direct activity: • Develop and implement a new payment program for environmental services, in addition to PINPEP and PROBOSQUE forest incentive programs, establishing a results-based payment scheme for sustainable forest management, conservation and protection models. This is aimed at setting up payment mechanisms for ecosystem services, restoration of forest landscapes, forest plantations, and management of agroforestry systems in productive units.
	2.2 Improve conservation, valuation and development of biological diversity.	Direct activity: • Develop and implement a biodiversity conservation incentive program Enabling activity: • Support the implementation of the National Biodiversity Strategy and its action plan.
	2.3 Protection and conservation of protected areas and biological diversity.	Direct activity: • Enhance control and monitoring operations to protect ecosystems within the Guatemalan System of Protected Areas (SIGAP) and the country's biodiversity.

STRATEGIC OPTIONS	REDD+ ACTIONS	TYPE OF INTERVENTION / SCOPE
	2.4 Effective management and administration of protected areas.	Enabling activities: • Strengthen institutions to improve management effectiveness of the Guatemalan System of Protected Areas (SIGAP). • Strengthen the co-administration of protected areas and forest concession processes in protected areas.
	2.5 Prevention and control of forest fires.	Direct activities: • Improve equipment and workforce training to fight forest fires, reduce their incidence and impacts. • Control and avoid anthropogenic catastrophic events to preserve ecosystems. • Strengthen the capacities of beneficiaries of forest incentive programs (PINPEP and PROBOSQUE), municipalities, users, institutional staff and community groups and other stakeholders, aimed and the prevention and control of fires.
		Enabling activities: • Raise awareness towards prevention and control of forest fires. • Strengthen contingency plans against forest fires. • Implement the National Integrated Fire Management Strategy. • Strengthen rural extension actions to carry out good integrated fire management practices in agricultural lands, through the National Rural Extension System (SNER/MAGA) and INAB's Forest Extension Program.
	2.6 Protection against forest pests and diseases.	Enabling activity: • Approval, institutional adoption and implementation of the National Forest Health and Vitality Strategy. • Train populations on prevention and control of pests and forest diseases.

STRATEGIC OPTIONS	REDD+ ACTIONS	TYPE OF INTERVENTION / SCOPE
3. Restoration of forest landscape and recovery of forest cover in areas suitable for forestry and agroforestry activities. Scope: Promote investment in forest and forest land restoration activities to maintain and improve the sustainable provision of goods and services from forest ecosystems, and reduce pressure from agriculture expansion.	3.1 Forest landscape restoration.	Direct activity: • Foster demand for PROBOSQUE's modalities degraded lands restoration in agricultural areas. • Promote recovery and protection of transition areas from non-forest to forest and natural regeneration in degraded areas.
	3.2 Promotion of sustainable livestock farming.	Enabling activities: • Practices and technologies for sustainable low-emission livestock farming. • Institutional strengthening for the implementation of the low-emission National Sustainable Bovine Livestock Strategy. • Promotion and strengthening of value chains and market access. • Use of technologies for sustainable low-emission livestock farming through the adoption and implementation of the strategy.
4. Reduction of the unsustainable use of firewood Scope: Promote sustainable and efficient use of firewood to reduce the pressure on natural forests, which is one of the main drivers of degradation.	4.1 Promote the sustainable and efficient use of firewood.	Direct activity: • Increase the supply of firewood from sustainable sources by promoting the energy strategies in the forest incentive programs (PROBOSQUE and PINPEP).
		Enabling activity: • Reduction of firewood consumption through the promotion of wood-saving stoves. • Implementation of the National Strategy for the Sustainable and Efficient Use of Firewood.
5. Promotion of competitiveness and legal development of the value chain of forest products and by-products. Scope: Improve the forestry sector competitiveness through the integration of different economic agents in forest	5.1 Development of value chains of forest products and by-products.	Direct activities: • Training forest producers in demand-oriented forest management. • Design and implementation of a program to strengthen industrial hubs for the sustainable use of forest products. • Design and implementation of a forest market intelligence program. • Support companies in competitiveness issues.

STRATEGIC OPTIONS	REDD+ ACTIONS	TYPE OF INTERVENTION / SCOPE
products value chains and the promotion of regulated forestry.		Enabling activities: • Support the implementation of the Forest-Industry-Market Integration Strategy.
	5.2 Promote the establishment of agroforestry systems and forest plantations	Direct activity: • Increase demand for forest plantations and agroforestry systems in priority areas and deforestation hotspots within PROBOSQUE and PINPEP lines of action.
		Enabling activity: • Support the implementation of the National Forest Landscape Restoration Strategy.
	5.3 Promote sustainable forest management in natural forest areas.	Direct activity: • Increase demand for natural forest management actions aimed at production and protection within the scope of PINPEP and PROBOSQUE forest incentive programs.

4.3.3 List of REDD+ actions and drivers of deforestation and forest degradation

Each direct or enabling REDD+ action addresses the main deforestation and forest degradation drivers, as described in the following figures.

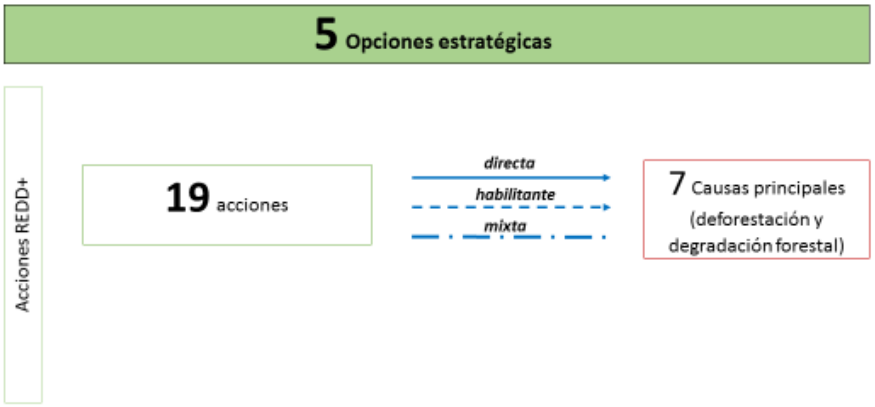


Figure 12. REDD+ actions and relation to drivers

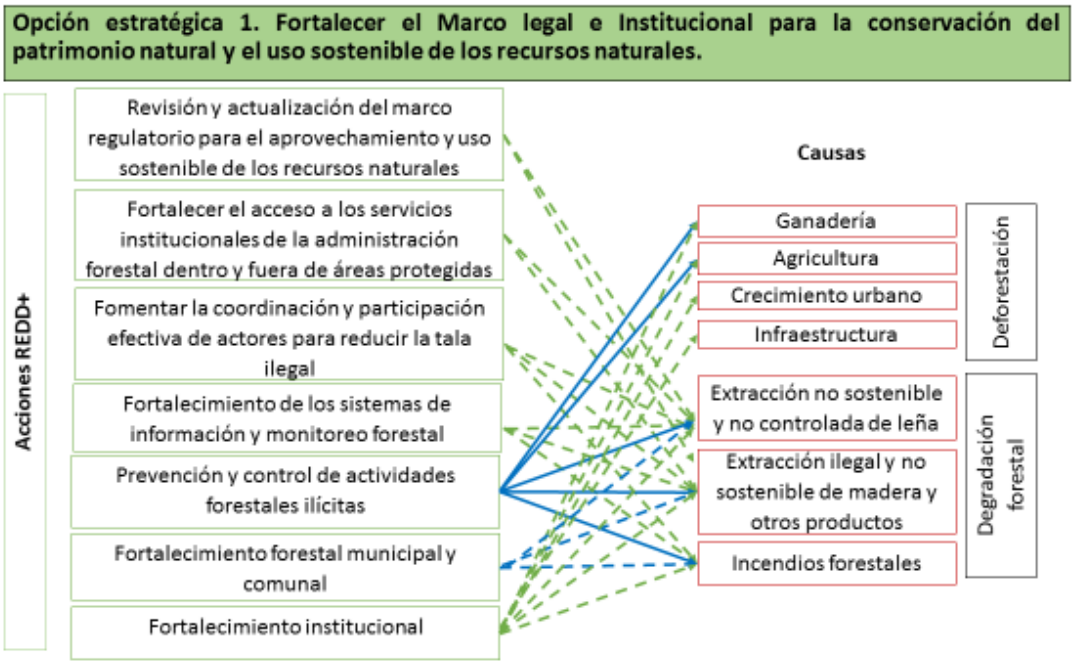


Figure 13. Strategic option 1.

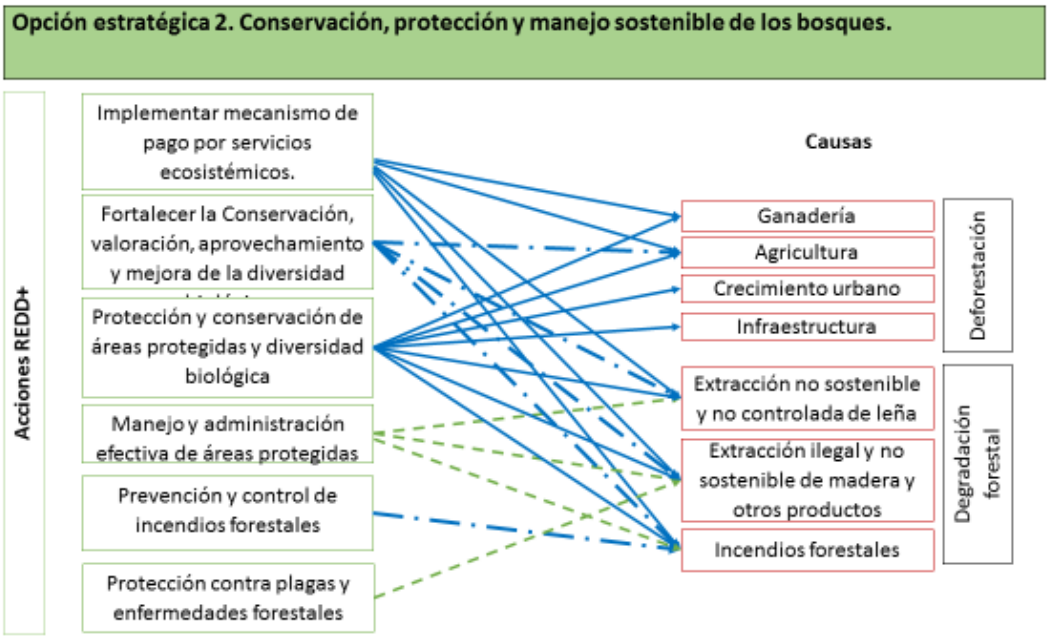


Figure 14. Strategic option 2.

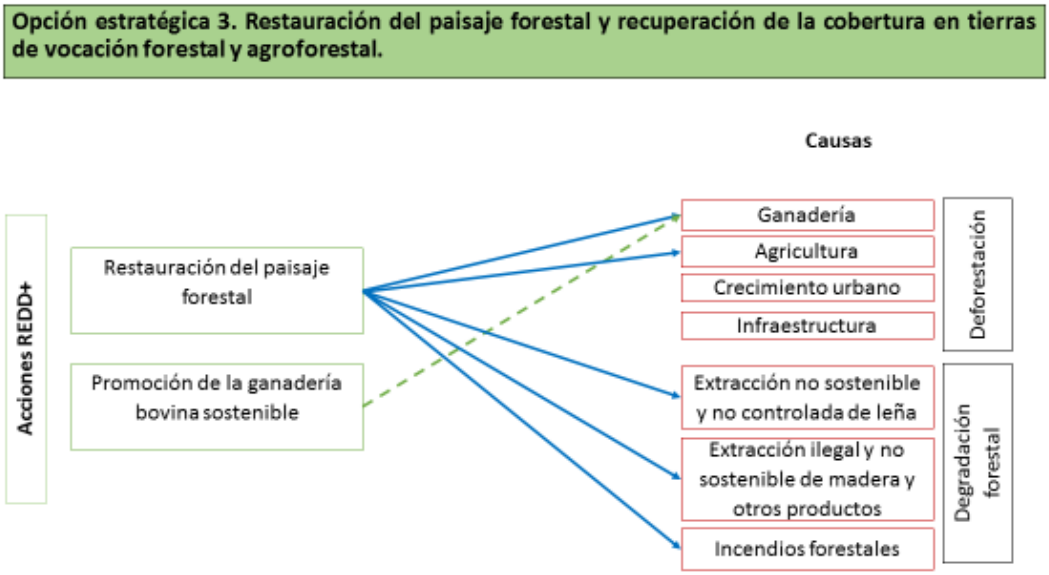


Figure 15. Strategic option 3.

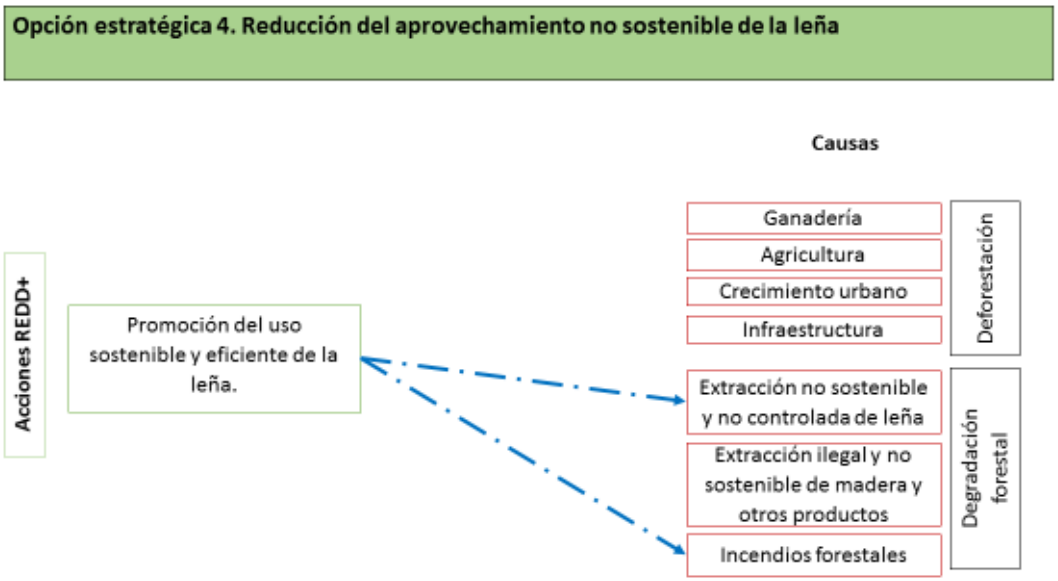


Figure 16. Strategic option 4

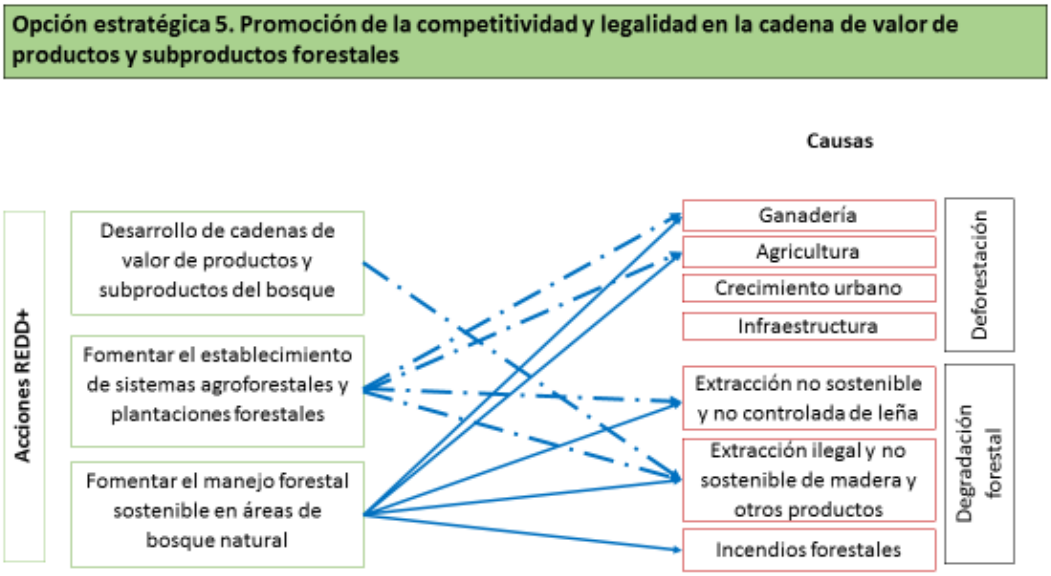


Figure 17. Strategic option 5.

Annex II contains descriptive sheets for each of the 19 REDD+ actions presented in this section. These sheets provide more detail on the actions, notably on the institutions involved in the implementation and the financing sources identified.

In addition, there are projects financed by international cooperation that carry out activities linked to ERP actions, which makes them important partners in reducing and removing emissions. Table 4 describes these projects.

Table 5. International cooperation projects with actions linked to the ERP

Project	Institution in charge	Promoted activity
GEF Project: Promoting sustainable and resilient territories in landscapes of Guatemala's Central Volcanic Chain	MARN-UNDP	Development of an enabling environment for multiple global environmental benefits through sustainable models of agricultural and forest production and economic incentives derived from improved markets and environmental services. Creation of multiple global environmental benefits (biodiversity conservation, reduction of land degradation, reduction of deforestation and carbon emissions, and increase carbon storage) through landscape-level initiatives aimed at avoiding the loss of biodiversity and forest cover and land degradation driven by unsustainable agricultural practices.
KFW Project: Climate change adaptation in Guatemala's dry corridor	MARN-KFW	Training, awareness raising and interinstitutional coordination with INAB, MAGA and INSIVUMEH, to improve production systems and water, soil and forest management.
Debt Exchange Project with KfW (Germany) for climate change adaptation	MARN-KFW	Local institutional strengthening, training, awareness raising, regulations, productive integration.
GCF Readiness: Elaboration of the country program for the GCF	MARN-UICN	Strengthening institutional capacities for climate change and for the GCF, promotion of public-private partnerships to present projects to the GCF, agreements on privileges and priorities; developing guides to submit projects for indigenous peoples and women. Alignment to PANCC priorities.

Source: Prepared by the author, based on information from the ICG

4.4. Assessment of land and resource tenure in the Accounting Area

As established in Section 4.3, Guatemala plans to implement its ERP at the subnational level, including the following activities (direct intervention):

1. FIP actions;
2. Forestry Incentive Programs; and compensation mechanisms;
3. Early REDD+ action projects (Defensores de la Naturaleza's project in Sierra Lacandón, Guatecarbon Project, REDDES Locales para el Desarrollo Project. The latter is under development).

Consequently, this section will analyze land and natural resources tenure in the municipalities of the program's subnational area. Then, these matters will be analyzed within the scope of the early REDD+ action projects included in the program. Given that FIP interventions are limited to the country's municipalities, the present analysis related to FIP activities must be done under the perspective of the general land tenure in Guatemala.

Characterization of land distribution in Guatemala

Guatemala is characterized by deep inequality in land distribution, which gives rise to a latent social conflict. Conflicts over land are one of the oldest structural problems in the country, mainly characterized by the exclusion of women from land rights, the opposition between national legislation and customary law, different views on private and communal property, claims and struggles for land, among other problems of social relevance.

The last Agricultural Census, in 2003[8], shows that inequality in access to land has been maintained and portions of land are concentrated in few hands for extensive agriculture, while the vast majority of the population is displaced to small pieces of land for subsistence farming. Guatemala is characterized by intense land concentration, with a land distribution Gini coefficient of 0.84 in 2003, according to official data. On the other hand, such concentration implies that the vast majority of families only have access to land with limited productive capacity and that is often overexploited.

Characterization of land uses in the regions of Guatemala

Table 6 classifies the uses of rural land in the country and the dynamics of land uses in the five subnational regions, all of them totally or partially included in the Program[9].

In the Tierras Bajas del Norte region, where several protected areas are located, among them, Laguna del Tigre[10], the Maya Biosphere Reserve, Sierra Lacandón, deforestation and forest degradation are related to the expansion of livestock farming, in many cases, associated with illegal land invasions, with the participation of peasants groups. Internal migration waves often converge in this region, increasing the pressure on forests and lands. Invasions of peasant groups in protected areas are frequent. It is an extensive farming area, with crops such as African oil palm, pineapple, rubber, among others that are expanding into forest areas.

In the Sarstún-Motagua region, forests have suffered due to the expansion of the agricultural frontier, both for subsistence farming as well as export agriculture and livestock farming. The African oil palm is the crop that most affects forest areas. As in the Tierras Bajas del Norte, livestock is associated with illegal activities occupying large pieces of land and there are several protected areas invaded by communities.

In the Verapaces region, African oil palm, coffee and cardamom crops lead in the expansion of the agricultural frontier. The region also suffers from constant fires and pests. The Occidental region, characterized by smallholdings and significant population growth, is going through a process of conversion of forests into subsistence farms. Forest degradation is further accentuated by forest fires and firewood harvesting, despite being an area where there has been a remarkable recovery of forest cover. Similar to the Occidental region, in the Oriente region, degradation and deforestation result from the expansion of subsistence farming.

Table 6[11]. Characteristics of land and forest uses in the five subnational regions

Region	Main use of rural lands	Municipal and communal forests forests	Main dynamics of changes in land use
Southern	Plantations (sugarcane and banana)	Mangroves	Gradual invasion of mangroves by agricultural companies
Center and Eastern	Subsistence farming	Some arid forests aggregates	Extensive livestock farming
Western	Subsistence farming	Municipal and communal forests	Subdivision of smallholdings, pressure is exerted on

[8] National Institute of Statistics, Agricultural Census, 2004.
[9]Characterization based on a preliminary assessment of the factors influencing land use, drivers and agents of deforestation and forest degradation in Guatemala, REDD+ Strategy Readiness, Government of Guatemala, 2018.
[10] Note, however, that Laguna del Tigre is an area excluded from the ERP
[11] Table from the USAID study *Sustainable Tenure of Resources and Landscapes in Guatemala*, 2014, p.48.

	and vegetable coffee and cardamom crops cardamom	municipal and communal	communal and municipal forests as a result of the demand for resources and land.
Sarstún-Motagua	Coffee, palm and sugarcane crops that enter the Polochic Valley Polochic	Private lands and areas protected by the State	Workers in coffee farms claim land. Consolidation of palm and sugar companies in the lowlands, which seek to buy land from owners recently registered in the RIC. Migration of people from the lowlands and new invasions of protected areas.
Tierras Bajas del Norte	Livestock and subsistence farming	Areas protected by the State	The colonized State lands are legalized. Overlap with protected areas.

Impact of the tenure regime on deforestation and land degradation

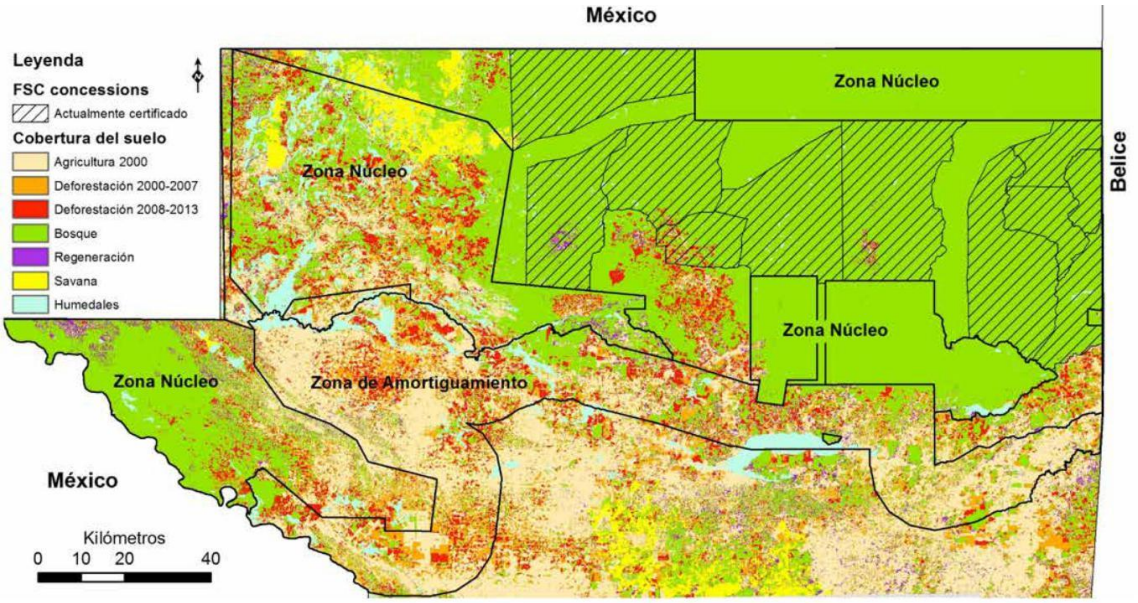
In Guatemala, there is no detailed nationwide analysis that establishes a correlation between the land tenure regime, deforestation and degradation, nor is there a study that proves that tenure security leads to a decrease in deforestation or degradation. There are, however, examples of areas in the country that prove that land tenure security has had a significant impact in reducing deforestation and land degradation due to the use given to these lands under a specific property regime.

The first example is the case of the Maya Biosphere Reserve concessions (included in the Guatecarbon Project, part of the ERP). In the Maya Biosphere Reserve, from 2000 to 2013, the deforestation rate was 1.2% per year, which is lower than the national deforestation rate during 2000-2010 (1.4%). In addition, as shown in the Forest Cover Change of the Maya Biosphere Reserve between 2000 and 2013 (**Error! Reference source not found.**), the area of concessions s hows the lowest deforestation and degradation impact. Moreover, according to the monitoring of the National Council of Protected Areas, in the last two years, the concessions area in the eastern part of the Maya Biosphere Reserve has registered, for the first time in 17 years of monitoring, a positive net rate of change, with 1087 ha of restored forests.[12] Significant deforestation (1.8%) was also observed in the Multiple Use Zone of the Maya Biosphere Reserve where concessions were canceled due to non-compliance with the management plan. This proves that the concession regime and the legal security it provides to the concessionaire communities leads to sustainable forest management and contains deforestation and forest degradation.[13] (See Map 2[14]).

[12]Maya Biosphere Reserve governance monitoring, August 2018. http://www.conap.gob.gt/images/slide/GOBERNABILIDAD_20180906.pdf, p. 49.
[13]Several studies confirm the importance of granting land tenure rights to community groups as a strategy to ensure the protection and sustainable use of forests and reduce deforestation and degradation in the Maya Biosphere Reserve. For example, http://rightsandresources.org/wp-content/exported-pdf/librofinaltenenciadetierrabiosferamaya.pdf, or https://www.cifor.org/?s=derechos+de+la+tierra+Guatemala+&submit=%EF%80%82

[14] CONAP & RainForest Alliance, *Trends in deforestation in the Maya Biosphere Reserve*, Guatemala 2000-2013, 2015

Map 2. Forest cover change from 2000 to 2013 in the MBR



The second example that shows that land tenure is strongly related to forest management and conservation is a study carried out in the Sarstún-Motagua region. This work shows how landowners protected by law tend to take better care of forests and to reforest more. Therefore, forest land property rights promote reforestation[15] .

Types of land and forest property in Guatemala depending in relation to the owner's role

Currently, Guatemala does not have an established legal framework for the different types of land ownership. Land tenure and the rights associated to forest tenure, must be analyzed in accordance with the Political Constitution[16], the Civil Code[17], the Peace Agreements[18] and different legal dispositions such as the Protected Areas Law,[19] the Forestry Law[20], the Municipal Code[21] and the Cadastral Information Registry Law[22].

The Guatemalan Civil Code recognizes two types of property: private property (property of an individual, company or group of persons) and State property (Article 456), which may be owned by the central government or by a municipality (Article 457). Guatemala, unlike other Central American countries, does not recognize indigenous property as a distinct property category. An indigenous community own lands only if it is formalized as one of the legal entities established by the Guatemalan legislation, such as an association or cooperative, with a property title that grants private property to the community.

In terms of classification, the Guatemalan law offers the following four types of land tenure, which includes forest tenure:

1. **State property:** The State (Article 456 of the Civil Code) has registered properties and exercises constitutional control over the so-called Territorial State Reserves (Article 122 of the Guatemalan Constitution). In the case of Protected Areas, these are public or individual property areas managed by the State given their special interest and value to the nation. The Civil Code establishes in Article 462 that the assets that constitute the State's heritage (national lands, private nature reserves, municipal regional parks) are subject to special laws. In this sense, according to Article 9 of the Protected Areas Law, when the characteristics of these reserves or of the registered state property allow it, the State must manage these areas for conservation purposes.
   State property includes underground assets, hydrocarbons and minerals (Article 121 of the Constitution).
2. **Municipal property:** (Recognized in Article 457 of the Civil Code). These municipal lands are originally communal lands. Thus, many communal lands have been registered in the name of municipalities because communities were looking for a way to protect their lands and, at the time of registration, there was little difference between the municipality and the community. In practice, municipal lands are often used by the community, whose rights precede those of the municipality itself and by groups of people to whom the municipality grants tenure.
3. **Private property:** Article 460 of the Civil Code defines private property assets as those that belong to individuals and legal entities with a legal title. The 1985 Constitution protects private property as an inherent human right (Article 39) and although it allows expropriation under certain circumstances (including social benefits and idle land), compensation must always be paid affected parties (Article 40).
4. **Community property:** This category includes communal property of local communities and also of indigenous peoples, since there is no category of indigenous forest tenure as such. The 1985 Constitution includes a formal recognition of indigenous culture and their right to land, but does not recognize their particular legal systems. Other laws have expanded the recognition of community rights to land, such as the 1996 Peace Accords (specifically the Agreement on Identity and Rights of Indigenous Peoples), the 2002 Municipal Code, the 2005 Cadastral Information Registry Law and the 2009 Regulation of the Law on Cadastral Information Registry for the Recognition and Declaration of Communal Lands.

[15] CEAB-UVG. (2016). Baseline of avoided deforestation in the subnational REDD+ Sarstún-Motagua region, Guatemala: Center for Environmental Studies and Biodiversity, Valle de Guatemala University.
[16]Political Constitution of the Republic of Guatemala of 1985,
[17]Civil Code (Decree 106-1963).
[18]1996 Peace Accords.
[19]Protected Areas Law (Decree 4-89).
[20]Forestry Law, (Decree 101-96).
[21]Municipal Code (Decree 12-2012).
[22]Cadastral Information Registry Law (Decree 41-2005).

Forest property and tenure in Guatemala is distributed as follows: i) State 34%; ii) municipalities 8%; iii) private companies 38%; iv) communal groups 15%; v) others 5%[23]. These percentages are expressed in the graph on the following Figure.

Figure 18[24]. Distribution representing the percentage of land property and tenure of forests in Guatemala

Types of land tenure legal regimes

In relation to private and communal property, it should be noted that the rights associated with land tenure -including forest tenure- can be more or less broad depending on whether the right holders are owners, holders or tenants. These distinctions are important in the context of the ERP, since the activities proposed by the program and the early REDD+ projects combine some of these categories. Next, tenure rights are detailed according to whether the occupiers of the land or forest are:

1. **Owners:** In this case, they have a registered title to the land. The Civil Code does not define the "domain" over property[25], but it does include the right to use and exploit it (Article 464)[26], defend it (Article 468)[27], claim it (Article 469)[28] and benefit from the fruits or products that the land is capable of yielding by accession (Article 471)[29]. Private property belongs to the individual or legal entity that holds the respective legal title (Article 460)[30]. Land title and the actual rights over it are described in the Land Registry (Article 1125)[31]. This, together Article 460 dispositions, allows us to conclude that the owner is the individual or the legal entity in whose name the legal title is registered in the Land Registry.

[23] R-PP Guatemala (2013) p. 70, based on The Forest Dialogue, Promoting REDD+ civil society processes in the framework of the National REDD+ Strategy development in Guatemala, 2011, p. 19

[24] Graph showing the property and tenure of forests according to the percentages established in the R-PP Guatemala (2013) p. 70, based on The Forest Dialogue, Promoting REDD+ civil society processes in the framework of the National REDD+ Strategy development in Guatemala, 2011, p. 19.

[25]The generated goods are managed by public or private parties (Article 456 of the Civil Code).

[26] Article 464 of the Civil Code: *Property is the right to enjoy and dispose of goods within the limits and in accordance with the obligations established by law*

[27] Article 468 Civil Code : The owner has the right to defend his property by legal means and not to be disturbed within its boundaries, if not previously subpoenaed, tried and convicted in court.

[28] Article 469 Civil Code : *The owner of a thing has the right to claim it from any possessor or holder.*

[29]Art icle 471 Civil Code : *The owner of a good is entitled to its fruits and to what is included by accession, in accordance with the provisions of the respective chapter of this Code*

[30] Article 460 : Civil Code: *Private property is owned by individuals or legal entities that have a legal title over it.*

[31]Art icle 1125 Civil Code: *The Registry will contain: 1st.- The titles that prove real estate ownership and property rights imposed on them….*

2. **Holders:** In this case, the holder has a just title[32], which is not registered in the Land Registry. This ownership category is important for it represents a large number of small farmers and communities in Guatemala. According to the Civil Code, a holder is someone who exercises some or all of the powers inherent to the property (Article 612)[33]. The Cadastral Information Registry Law establishes a similar description of a holder as that "who, without being the owner, exercises on a property all or some of the powers inherent in that domain". Generally, municipalities are responsible for issuing the title of possession in favor of holders, either individuals or communities.
3. **Tenants of land that belong to others.** Unlike the terms "owner" and "holder", the "tenant" does not appear in the Civil Code but is included in the Cadastral Information Registry Law, which defines it as "the person who, by any circumstance, has possession over a property, registered or not in the Land Registry, without being the owner or legitimate holder of the property, and whose condition does not imply any right regarding this Law". Those who rent a property fall within this category.

Forest concession is a special category of land use regime. The Protected Areas Law and its application rules [34] provide that the National Council of Protected Areas (CONAP), as the administrator of protected areas in the country, may issue forest concessions. Forest concessions are contracts with both private companies and local communities for sustainable and productive forest management. To date, these concessions, mostly granted to forest communities, have been issued only in the Maya Biosphere Reserve, and are mainly a result of the Peace Accords. The rights of the concessionaires are established by concession contracts and limited to the rights stipulated in those contracts. The community concessions regime is analyzed in more detail later in this section given its relevance for the Guatecarbon Project and in relation to the ER title regime, described in Section 17 of this ERPD.

Tenure of local communities and indigenous peoples and customary law

Indigenous tenure in Guatemala is recognized by law and institutionally encouraged despite the absence of an *ad hoc* legal framework for indigenous lands and forests. Indigenous peoples' tenure is regulated as general communal tenure. Although the regions historically influenced by indigenous peoples in Guatemala are well known, there is no legal status defining indigenous territories or reserves, nor a specific state process to identify indigenous communities or authorities. Although there are several indigenous NGOs, there are no national or regional systems of representation of these communities. The organization that most resembles such status is the Council of the Peoples of the West (CPO). The Network of Indigenous Authorities and Organizations has operated voluntarily since 2010 in order to try to form a national network of indigenous authorities.

Although the Guatemalan legal regime, as in other Latin American countries, does not have specific dispositions on indigenous property or a category of specific rights for indigenous peoples, it does recognize some type of indigenous property. The Political Constitution of the Republic of Guatemala recognizes communal property, through Article 67 on the protection of indigenous agricultural land and cooperatives. In addition, this provision goes beyond the mere recognition of communal land, especially regarding indigenous communities, and declares that "*the State will provide State lands to indigenous communities that need them for their development*[35]". Although recognition of indigenous territories have often been limited in practice, the State has established regulatory mechanisms for the recognition of indigenous lands and rights, as shown below.

Data on community tenure[36]*.* Communal lands, in their different modalities, are present throughout the country although the lack of a specific census prevents quantifying their total and accurate extension. CONAP's 2009 *Diagnosis of the conservation and management of natural resources in communal lands*[37], identified a total of 1,307 communal lands with a total area of 1,577,124 ha throughout the country (15,771 km2), which accounts for 12% of the country's surface.

[32]Article 621 Civil Code: *The just title for usucaption, which, being a domain transfer, has some circumstances that makes it ineffective to constitute alienation by itself.*
In simple terms, the just title is the cause by which one entered into possession, that is, any situation investing the holder with rights.
[33]Article 612 of the Civil Code: *The holder exercises on a property all or some of the powers inherent to the domain.*
[34]Regulation of the Protected Areas Law, (Government Agreement 759-90).
[35] Article 68 of the Constitution of the Republic of Guatemala.
[36]Community tenure data included in this section covers the entire country and not just the Program area.
[37] http://www.conap.gob.gt/Documentos/Pueblos/Diagnostico.pdf

Distribution of communal lands by department shows that the most cases were found in the departments of San Marcos, Huehuetenango, Alta Verapaz and Chiquimula, with more than 100 cases each, followed by Quetzaltenango, Totonicapán, Quiché, Baja Verapaz and Sacatepéquez, with 50 to 100 cases. The departments with fewer cases of communal lands are those on the south coast. In terms of total surface, they larger communal lands are in Petén, Izabal, Alta Verapaz and Quiché, each with more than 100,000 ha, followed by Huehuetenango, Baja Verapaz and Jutiapa. The southern coast departments have the smallest area of communal lands.

Table 7. Number and surface of communal lands in Guatemala[38]

Departments	N.º of Cases	Hectares
Alta Verapaz	136	159521
Baja Verapaz	57	99603
Chimaltenango	46	7373
Chiquimula	102	27237
El Progreso	20	3781
Escuintla	12	5619
Guatemala	42	1642
Huehuetenango	127	65630
Izabal	48	264230
Jalapa	18	43940
Jutiapa	28	65351
Petén	38	512276
Quetzaltenango	86	26329
Quiché	82	205819
Retalhuleu	14	8110
Sacatepéquez	57	3048
San Marcos	134	11026
Santa Rosa	18	7575
Sololá	38	4552
Suchitepéquez	4	1,025
Totonicapán	77	47084
Zacapa	29	6358
Total	**1,307**	**1,577,129**

According to the data above, most communal lands are found in the central and western highlands. On the other hand, in the southern coastal plains and Bocacosta, they are very scarce, given the intense dismantling of the community land system in favor of export crops. In Verapaces and Petén, the dissolution of communal lands occurs as a result of the 19th-century agrarian colonization policies. In the east, this type of tenure remained only in those communities that managed to organize themselves and defend their lands.

If we compare, and as seen in the following Figure, the western and eastern departments have a great number of communal lands, however, very small in size, with few exceptions. This is mainly due to the high demographic density found in these regions. On the contrary, in the northern departments, communal lands are less numerous, but much bigger, precisely because of the low demographic density of this region.

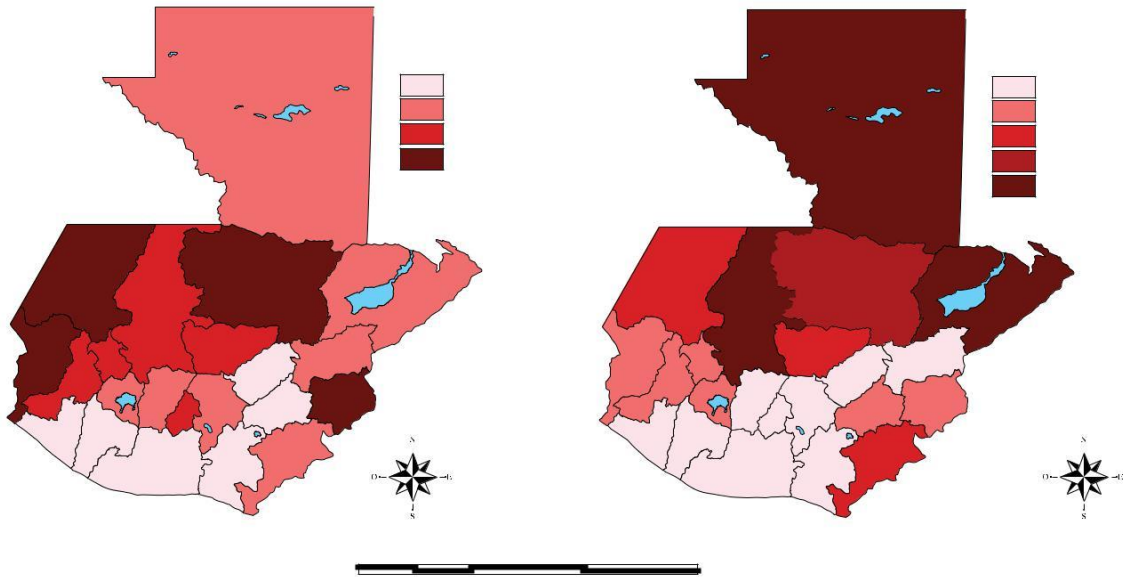
[38] Data obtained from the report by the Communal Lands Promotion Group and the Diagnosis of Conservation and Management of Natural Resources in Communal Lands, CONAP, 2009, p. 45.

Figure 19[39]. Number of communal lands and area by department

Number of cases in communal lands Hectares in communal lands

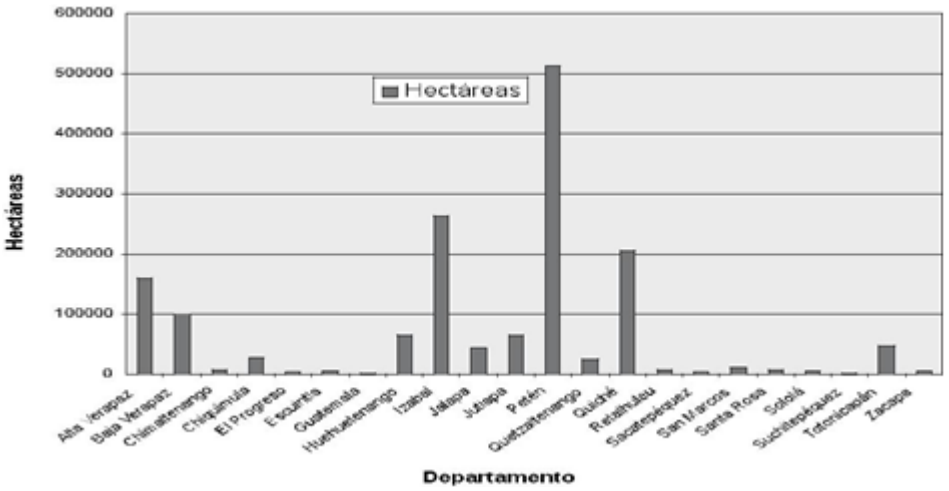
N.º of cases
0-25
25-50
50-100
More than 100

Hectares in communal lands
0-10000
10000-50000
50000-100000
100000-200000
200000-500000



[39] Communal Lands Promotion Group and the Diagnosis of Conservation and Management of Natural Resources in Communal Lands, CONAP, 2009, p. 44. http://www.conap.gob.gt/Documentos/Pueblos/Diagnostico.pdf

Figure 20[40]. Surface of communal lands by Department by number of ha in 2008



Access to land by indigenous communities and peoples and their legal regime. The government's general policy on land access by indigenous peoples is formally recognized in the Peace Accords commitments that established the government's obligations in relation to the restitution of indigenous communal lands, based on the constitutional provision (Article 67) that grants special protection to the lands of indigenous groups, cooperatives or communities. Since the approval of the Peace Accords, remarkable legal efforts have been made to recognize the uses and ownership of land by indigenous communities and peoples. The government has developed the Peace Agreements and Art. 67 in various ways, including a forest concession system in favor of the communities. Annex VI provides a brief summary of the Peace Accords content in relation to land tenure and indigenous communities and the legislative development of the Peace Accords on that matter. Despite national efforts, many cases land rights recognition to local and indigenous communities remain pending. *Table 8 summarizes the rights to community tenure under the Political Constitution of Guatemala.*

Table 8. Communal lands rights in the Political Constitution of the Republic of Guatemala41

[40] Communal Lands Promotion Group and the Diagnosis of Conservation and Management of Natural Resources in Communal Lands, CONAP, 2009, p. 46.

[41]Based on the study carried out by the Communal Lands Promotion Group and the Diagnosis of Conservation and Management of Natural Resources in Communal Lands, CONAP, 2009, p. 28.

General rights	Specific rights	Article
Use, possession and ownership of communal lands.	Lands owned by cooperatives, indigenous communities or any other forms of communal or collective ownership of agrarian property, as well as the family estate and low-income housing will enjoy special protection and guarantee of possession and development.	67
Historical right to communal lands.	Indigenous communities and others that have lands that historically belong to them and that have traditionally managed them in a special way will maintain that system.	67
Right to the inalienable, unattachable and imprescriptible nature of communal lands.	Indigenous communities and others that have lands that historically belong to them and that have traditionally managed them in a special way will maintain that system.	67
Collective access to land	Through special programs and adequate legislation, the State will provide State lands to indigenous communities that need them for their development.	68

In general terms, the recognition of land rights and resources in Guatemala in favor of indigenous and rural communities has been affirmed in several ways, which include:

- lands owned by the communities;

land for community use, but with municipal title (municipal land); communities usually occupy land owned by the municipal government and, for example, according to the PROBOSQUE law, a certificate of the item of the proceedings signed by the Municipal Council is required in order to be a program beneficiary.

- recognized lands associated to the use of forest resources such as community forest concessions.

Lands in favor of indigenous or local communities are registered in the name of different legal entities such as cooperatives, associative peasant enterprises and collective agrarian estates.

The **2002 Municipal Code** was the legal turning point for the recognition of indigenous peoples in Guatemala. Thus, the Municipal Code recognizes that indigenous peoples have the right to a legal status and that the State must recognize and respect their traditional authorities (Article 20). The Code also recognizes indigenous or community mayors (as appropriate) as parallel (though implicitly subordinate) authorities with whom local governments should discuss a wide variety of issues (Article 55), implicitly recognizing customary law. In accordance with the 2002 Municipal Code, municipal governments should consult community authorities and create mechanisms that guarantee their use, conservation and administration over communal lands (Article 109). This code details three different procedures for legally binding consultations at the municipal level (Articles 63-66). In general, should there be any issue with a special impact on the rights and interests of the municipal indigenous communities or authorities, a "*consultation with municipal indigenous authorities or communities"* may be requested. Such consultation must use "*criteria adequate to the customs and traditions*" of these communities. However, it must be highlighted that there is not a specific law for public consultation of local communities and indigenous peoples. In any case, the dialogue and public participation processes carried out to date have been extensive and detailed, both at the country level and at the level of each REDD+ early action project, as documented in Section 5 of this report.

The **2005 Cadastral Information Registry Law** (Decree 41-2005) also advanced the recognition of indigenous population rights. The law establishes the obligation to draft regulations for the recognition of communal lands. The product of this provision is the 2009 Specific Regulation for the Recognition and Declaration of Communal Lands, which represents the first initiative to secure legal communal tenure rights in Guatemala. This regulation establishes a single procedure for the recognition of communal lands belonging to two different types of communities: indigenous peoples and peasants. Also, there are established criteria for each. Although the Specific Regulation is an important

step, it has not yet achieved the effective recognition of communal tenure and there are still countless disputes and conflicts, many quite serious, regarding ownership of lands by local and indigenous communities demanding their rights[42].

The **Land Fund** (FONTIERRAS) has played an important role in facilitating access to land for families and communities and, in general, has contributed to the improvement of rural agrarian governance in Guatemala. In its 2013 report, the Land Fund indicates that, by 2025, in order to contribute to the agrarian governance of the country's rural areas, it will facilitate access to land for 784,764 peasant families without or with insufficient land. These actions will be oriented towards the sustainable comprehensive development of 92 agrarian communities with a total area of 1,333,300 ha and will generate 33,440 land adjudication public deeds. On the other hand, by 2019, it aims to formalize the total number of State land adjudications to favor beneficiaries who have been awarded the land, securing legal rights and contributing to its integral and sustainable development[43]. The role of FONTIERRAS in subsidizing the purchase of land, as well as the leasing and regulating State land holdings, are elements that help reduce the pressure exerted by population growth, poverty and land distribution inequality on forests and protected areas and will contribute to the reduction of deforestation.

Other Guatemalan institutions, such as **INAB**, have been working for the development of community property by integrating community tenure as a target of forest incentives. Thus, the PROBOSQUE Law (Decree 2-2015) has included cooperatives and indigenous owners as beneficiaries. Similarly, the PINPEP Law (Decree 51-2010) includes holders as beneficiaries, which may be associations, communities or community cooperatives. To participate, for example, in incentive programs, communities, whether indigenous or not, must be registered and organized. The same is required to be the holder of community concessions, for which CONAP requires that the community be registered and organized. Many indigenous communities are currently registered and have been constituted as different legal entities (association, cooperative). These categories of community tenure are precisely what INAB plans to enhance as beneficiaries of the Program.

Customary rights and practices. Guatemalan legislation holds customary law as a source of rights in the Judicial Organism Law.[44] The Municipal Code also recognizes indigenous customary law as a legal category (Article 65, 162, 164 and 165 among others)[45]. Both laws are supported by the constitutional recognition of customary law establishing that indigenous and other communities that have lands that historically belong to them and that have traditionally

[42]To date, the results achieved by the Specific Regulation for the Recognition and Declaration of Communal Lands are the following: a) 47 land plots have been identified as potential communal lands; b) 37 requests for recognition and declaration of communal lands have been filed ; c) 11 recognition and declaration of communal lands resolutions have been issued ; Ten diagnoses have been issued for the identification of communal lands; d) Ceremonial and archaeological sites have been identified, as well as protected areas within properties that have been declared communal lands. There is no information regarding the number of individuals or families that have been recognized to date in the process of declaration and recognition of communal lands. There are no census or records these communities and individuals. Source, RIC data provided as of November 13, 2018.

[43] https://www.fontierras.gob.gt/portal/viewer/index/a36M

[44] Article 2 of the Judicial Organism Law, (Decree 2-89): Sources of rights. The law is the source of the legal system. Case law complements it. Customs will govern only in the absence of applicable law or by delegation of the law, provided that it is not contrary to morality or public order and that it is supported by evidence.

[45]Art icle 65 of the Municipal Code: Consultations to the municipalities' indigenous communities or authorities. When the nature of an issue affects the particular rights and interests of indigenous communities in the municipality or their own authorities, the Municipal Council will consult, at the request of the communities or authorities, and will apply customary and traditional criteria of the indigenous communities.

Art icle 162 of the Municipal Code: Exercise of the court of municipal affairs' administrative jurisdiction. The municipal affairs judge exercises jurisdiction and authority in the area of the municipal district in question, in accordance with the rules of the Political Constitution of the Republic, this Code and other ordinary laws, ordinances, regulations and other municipal provisions and laws of the matter, as well as the corresponding customary law.

Article 164 of the Municipal Code: Requirements to be a municipal court judge. The judge of municipal affairs must fulfill the requirements established by the Judicial Organism Law in relation to justices of peace: Guatemalan by birth, of impeccable reputation, a collegiate lawyer or a student in one of the country's university law schools, who has attended and approved courses of customary or administrative law, and all procedures of the current course of studies. In absence thereof, they must have been declared suitable in accordance with the requirements established in the Judicial Career Law to be a judge of peace in courts of justice; speak the municipality's majority language or count on the assistance of a translator to exercise their functions.

Article 165 of the Municipal Code: Scope of competence. The judge of municipal affairs is competent to know, resolve and execute what he judges: a) Of all those matters affecting good morals, decoration and cleanliness of populations, the environment, health, municipal public services and public services in general, when the power over such matters is not attributed to the mayor, the Municipal Council or another municipal authority, or the traditional scope of customary law, in accordance with the laws of the country, ordinances, regulations and other municipal provisions.

managed them in a special way, shall maintain that system (Article 67 of the Political Constitution)[46]. However, customary law varies widely from community to community, so it will always be necessary to keep in mind what the real practices are within each community. Indigenous and peasant communities often have internal regulations that govern the use and exploitation of natural resources, including, for example, the distribution of community resources or access to land, and common uses. These are very important for REDD+ projects, given that these same principles can inspire ways to implement REDD+ projects in the communities, as well as benefit sharing models.

At the community level, local and indigenous communities have a series of rules on land use and common resources that can be classified into four types[47]:

1. **Own rules**: those that depend exclusively on the communities, whether or not they are registered, but that have been built based on local initiatives and criteria. Some of these rules have been approved by the State and are published in the form of Statutes and Regulations, but most are governed by customary law.
2. **Rules influenced by the State**: These are the rules that, in addition to local criteria, include aspects related to the agreements for the management of the protected areas, reserve lands or even the lands granted by the Land Fund. This applies mainly to communities that are in or around protected areas, such as Community Forest Concessions.
3. **Rules oriented to forest management**: These are the rules that, in addition to local regulations, include elements that ensure compliance with forest management commitments made to INAB, PINFOR or any other entity supporting forest activities.
4. **Rules negotiated with municipalities**: These are the rules that demonstrate the commitment made before the municipalities for the use and management of resources in communal lands. They generally apply to communities that use municipal lands.

Table 9[48]. Example of existing rules in the communities

Type of Rule	Rule	Sanctions for infractions
Own rules	Only those who recognize themselves as members of the community are entitled to the use of communal resources	Confiscation and denunciations before competent authorities
	Any use of resources must be guaranteed by local authorities	Verbal sanctions and fines according to recurrence
	Land cannot be sold to those who do not belong to the community	Loss of rights of those who sell No rights are recognized of those who purchase
	Participate in services for the upkeep of communal property and resources. (Field work, forest rangers, reforestation and positions in the local government)	Whoever refuses is not entitled to the common goods.
	It is not allowed to sell or negotiate forest products outside the community without authorization	Fines in cash or wages Restitution of the traded value Moral sanction before the community

[46]Article 67 of the Political Constitution. Protection of indigenous agricultural land and cooperatives. Lands owned by cooperatives, indigenous communities of the State, credit assistance and preferential technology, which guarantee forms of communal or collective ownership of agrarian property, as well as the family estate and low-income housing will enjoy special State protection, credit and technical assistance to guarantee their possessions and development in order to ensure a better quality of life for inhabitants. Indigenous communities and others that have lands that historically belong to them and that have traditionally managed them in a special way will maintain that system.

[47]Classification based on the Communal Lands Promotion Group and the Diagnosis of Conservation and Management of Natural Resources in Communal Lands, CONAP, 2009, .

[48] Table based Table Lands Promotion Group and the Diagnosis of Conservation and Management of Natural Resources in Communal Lands, CONAP, 2009, p.77.

	Respect communal agreements for the use of resources (use of water and protection of water sources)	Sanctions and fines according to the severity of the infringement
	The sacred places must be respected	Moral sanctions on the part of elders or spiritual guides
Rules influenced by the state	Uses must be in accordance with the authorized management plan	Written prevention Cancellation of rights
	Transfer of land rights to people outside the community is not allowed.	Loss of original beneficiaries' rights
Rules oriented to forest management	Make good use of forest incentives	Fines or banning as a member of the group
	Fulfill reforestation commitments	Fines or complaint to the competent authority
Rules negotiated with municipalities	Respect the limits established by the municipality	Fines or cancellation of rights
	Pay the fee for use rights	Fines or cancellation of rights
	Participate in maintenance activities	Fines or restriction of rights

Relevant legislation on forest tenure rights for the purposes of the Program

Guatemala has a general forest legislation and specific protected areas legislation, both of which are relevant for the ERP for they establish the conditions for rights over natural resources in those areas. First, many of the activities under the Program will be carried out in areas classified as protected areas, including some of the early REDD+ actions. Secondly, forest incentive schemes will be one of the activities included in the ERP to steer incentives to individuals and local communities.

Tenure in forest incentive programs

Some ER activities under the Program will be carried out through forest incentive programs currently in force (PINPEP and PROBOSQUE), or figures such as the Compensation Mechanism for Ecosystem and Environmental Services Associated with Forests (in design phase) and will receive REDD+ resources. PINPEP and PROBOSQUE similar initiatives that can be created to channel REDD+ resources. Both programs include considerations on tenure requirements for beneficiaries, as explained below. A broad category of tenure rights and beneficiaries have sufficient legal security for receiving REDD+ benefits.

A. **The Program for Small Forestry and Agroforestry Land Holders (PINPEP) Law** was approved in 2010[49]. This initiative has no expiration date and is open to holders of small individual tracts of land, between 0.1 and 15 ha, without registered titles, but not those who have invaded or seized land. In other words, it addresses holders in the strict sense of the legal term, and excludes owners. Beneficiaries can be individuals, but also

[49]Forest Incentives Law for Holders of Small Forestry and Agroforestry Lands (PINPEP), (Decree 51-2010).

organized groups or municipal communities (Article 7 of the PINPEP Law)[50] that can hold more than 15 ha, as long as no individual within the group owns more than that amount, and they must have a management plan. The PINPEP Law (Article 9) specifically allows projects to be carried out within protected areas, subject to CONAP's approval.[51]

In practice, PINPEP must present a certificate of possession certified by the municipal mayor (Article 8 of the PINPEP Law). This certificate is thus considered a just title[52]. In the case of beneficiaries in protected areas, the certificate of possession must be issued by CONAP.

The benefits may be granted for periods of 10 years (management of natural forests) or 6 years (plantations and agroforestry systems) (Article 15 of the PINPEP Law).

B. **The PROBOSQUE Law gives rise to Guatemala's forest development, recovery, restoration, management, production and protection program Decree 2-2015[53].** PROBOSQUE provides compensation for ecosystem services. Beneficiaries are:
   a. Land owners, including municipalities.
   b. Social groups with legal personality that, by virtue of a legal arrangement, occupy land owned by the municipality.
   c. Tenants of reserve areas. The PROBOSQUE law has included this type of "tenant" with the goal of recovering mangroves, given that communities or individuals located in these areas could not be classified as owners (PINFOR) and/or holders (PINPEP). To be a beneficiary, the tenant requires an endorsement from the State Reserves Control Office (OCRET) (Article 16 c.3 of the PROBOSQUE Law Regulation).
   d. Cooperatives, indigenous communities or any other form of communal or collective possession of agrarian property, which has historically belonged to them and which they have traditionally managed in a special way, provided they are duly represented. This criterion is designed to favor indigenous and peasant organizations, without explicitly mentioning eligibility for a category of tenure.

Table 10. Tenure considerations in the Forest Incentive Schemes (PINPEP and PROBOSQUE) show tenure requirements for forest incentive programs, as well as their main characteristics.

Table 10. Tenure considerations in Forest Incentive Schemes (PINPEP and PROBOSQUE)

[50] Article 7 of the PINPEP Law Decree 51-2010: The State, through the National Forestry Institute (INAB), in coordination with the Ministry of Public Finance (MINFIN), will grant incentives to organized groups, municipal communities and individual for the management of natural forests for production or protection, development and maintenance of forest plantations and agroforestry systems, and will encompass:
a) Holders that do not have property title; b) Lands suitable for forestry or agroforestry activities; c) Lands with or without forest cover
No incentives will be granted to those identified in Article 3 of this Law. Each project must include evidence of real estate possession, granted by the Municipal Mayor, free of charge, within the proper jurisdiction.

[51] Regulation of the Forest Incentives Law for Small Forestry and Agroforestry Land Holders.

[52] It is a certification issued by a competent municipal authority that certifies the possession of the real estate and, where appropriate, serves as a public deed stating the possession.

[53] Law for the Promotion of the Establishment, Recovery, Restoration, Management, Production and Protection of Forests in Guatemala (PROBOSQUE) Decree 2-2015.

Program	Tenure requirements	Characteristics
PINPEP	-Being a land holder -Tenure certificate issued by the mayor of the municipality	● Owners who have registered titles in the Land Registry are excluded[54] ● The beneficiaries cannot receive benefit twice within the Program [55]
PROBOSQUE	-Owners -Holders: social groups with legal personality that, by virtue of a legal arrangement, occupy land owned by the municipality (cooperatives or indigenous communities). -Tenants, with OCRET endorsement. -Cooperatives or indigenous communities.	● The beneficiaries can receive benefits only once. ● The maximum amount of years for incentives is 10

It is clear that Guatemala has established a vast array of forest incentive beneficiaries, including not only land owners and holders, but also others categories such as tenants and, what is more relevant, emphasizing indigenous and local communities. This approach of favoring not only owners and holders but also other categories will also apply to the Program, since REDD+ benefits will go to a wide group of beneficiaries.

Tenure regime according to the Protected Areas Law

The Guatemalan System of Protected Areas (SIGAP) is the main initiative in the country for the conservation of biodiversity and the associated resources. By 2017, 3,468,588.11 ha were included within the conservation and management schemes of SIGAP's protected areas, i.e., 31.88% of the national territory. The ERP includes areas of natural reserves where Program activities will be carried out. Guatemala has approved specific legislation for protected areas, the Protected Areas LAW (LAP) and its regulations (RAP). The LAP and its regulations define what a protected area is, its different management categories depending on the type of zoning applied[56], including biosphere reserves, and establish the Guatemalan System of Protected Areas as well procedure to declare new protected areas. The LAP requires the development and implementation of master and operative plans to direct the management of protected areas. This legislation has been complemented by different decrees that have defined several territories as protected areas, among which is the Law on the Declaration of Protected Area in the Maya Biosphere Reserve (RBM Law)[57].

The territories declared as protected areas are considered State management areas [58] but allows private areas to be protected areas if they were already private before being declared as such. Article 10 of the LAP establishes that when a private property area has been declared protected, the owner will maintain his rights over it and will manage it according to the norms and regulations of the Guatemalan System of Protected Areas. The aforementioned article implies that in private areas declared as protected, owners can retain property rights, although subject to fulfillment

[54]Article 21 of the PINPEP Law Regulation excludes "properties with legal title registered in the Land Registry".

[55] Article 11 of the PINPEP Regulation.

[56] Article 8 of the LAP "For optimal management and administration, protected areas are classified as follows: national parks, biotopes, biosphere reserves, multiple-use reserves, forest reserves, biological reserves, water springs, resource reserves, natural monuments, cultural monuments, scenic routes, marine parks, regional parks, historic parks, wildlife sanctuaries, natural recreational areas, private natural reserves and others established in the future with similar purposes. They all make up the Guatemalan System of Protected Areas, created by the same law, regardless of the entity or legal personality in charge of its management". Different management categories are regulated by the RAP.

[57]Law on the Declaration of Protected Area in the Maya Biosphere Reserve, (Decree 49-90).

[58]Although the LAP grants CONAP the management of protected areas, the Protected Areas Law, on Article 57, allows CONAP to delegate the administration of protected areas, and thereby strengthens CONAP by increasing the scope of its work. These formal associations take shape as co-administration agreements of protected areas with NGOs, by which current technical, financial and administrative responsibilities are shared.

of applicable regulations. Article 14 of the LAP establishes that individuals or legal entities may manage protected areas of their property directly or by delegation, once requirements established by this law are met, as well as regulations and other provisions of the National Council of Protected Areas[59]. The RAP also mentions municipal areas in protected areas in Article 8, which deals with the management regime of natural recreational areas, regional parks and scenic routes (management category IV) that include municipal lands[60].

There are three factors that determine the type of tenure and the associated prerogatives held by holders of property rights in protected areas:

a. If the property precedes the declaration of protected area status;
b. The zone in which the property is located;
c. The application of CONAP's Human Settlements in Petén's Protected Areas Policy.

Currently, CONAP has three institutional policies that address the issue of human settlements: a National Policy and two regional policies (the Human Settlements Regional Policies) for El Petén and Verapaces. In practice, FONTIERRAS[61] always requests the opinion of CONAP before registering any title to a property located within a protected area. Likewise, the current institutional policy of CONAP is to approve only those lands in buffer zones when their property precedes the declaration as protected area.

Considerations on community tenancy under the Cadastral Information Registry Law and the Land Fund Law

The Cadastral Information Registry Law (Decree 41-2005), allows the recognition of communal lands -both for indigenous and non-indigenous groups- and includes limitations regarding the areas classified as reserves (Article 68). Article 45 of the Land Fund Law (Decree 24-99) provides that property titles could not be given in core zones or in multiple use zones of protected areas.

The RIC Law establishes the obligation to elaborate a regulation for the recognition of communal lands and, based on that obligation, the 2009 Specific Regulation for the Recognition and Declaration of Communal Lands was approved, which represents the first effort to provide legal security for communal tenure rights. This regulation establishes a single procedure for the recognition of communal lands belonging to two different types of communities: indigenous peoples and peasants. Also, there are established criteria for each. The biggest difference between both categories is that indigenous communal lands are defined by historical property, and do not require any kind of just title. In turn, and if favored, indigenous communities can declare themselves as peasant communities, without losing any of their other rights (Article 2 of the Specific Regulation for the Recognition and Declaration of Communal Lands).

Legislation on territorial planning and land use

No land use planning has been established at the national level. The most recent map of soils in Guatemala dates from 1957 and is not exhaustive enough for a thorough national planning system. In accordance with Article 142 of the Municipal Code, municipalities are mainly responsible for land use planning. Each municipality should elaborate its own Municipal Development and Territorial Organization Plan (PDM-OT) for urban and rural areas, based on soil surveys. Municipalities have a Methodological Guide for the Elaboration of Municipal Development and Territorial Organization Plans in Guatemala[62] prepared by the Presidency's Secretariat for Planning and Programming (SEGEPLAN), which, since 2011, makes considerable efforts to support municipalities in preparing municipal land use plans. However, PDM-OT preparation is expensive and although some departments have completed their surveys on rural land, most municipalities have focused their plans on urban areas.

[59]Article 8 of the RAP additionally regulates private natural reserves as category V management.

[60]Both the establishment of regional natural parks by municipalities and private natural reserves by private parties can be made at the request of municipalities and private owners to CONAP. (Articles 15 and 16 of the RAP, respectively).

[61]Government institution created by Decree 24-99 to facilitate access to land.

[62]Presidency's Secretariat for Planning and Programming, Undersecretariat for Planning and Territorial Planning, 2018, available at: https://bit.ly/2RXc5WB

Additionally, Guatemala is currently developing public policies that affect the relevance of land use and planning. Guatemala's long-term planning and development document, called *Plan Nacional de Desarrollo K'atun Nuestra Guatemala 2032* (National Development Plan K'atun: Our Guatemala 2032) prioritizes land use planning, while the Framework Law on Climate Change summons SEGEPLAN, MAGA and MARN (Article 12) to support municipalities in their territorial planning, focusing on the mitigation and adaptation to climate change.

In terms of forests, it is relevant that the Forestry Law includes a planning mechanism that guarantees maintenance of forest lands and their respective use, or at least its control by INAB, since Article 46 of the Forestry Law requires INAB's approval to change forest cover in lands bigger than one hectare. The change of land carried out by beneficiaries of forest incentives without authorization is also sanctioned with fines and imprisonment (Article 98 of the Forestry Law). Although the law is clear regarding the prohibition of deforestation or degradation not authorized by CONAP, institutional weakness has been an obstacle to enforce regulations over the years.

Tenure in REDD+ projects that are part of the Program

The Program's early REDD+ actions have their own characteristics in terms of location, types of land and forest and their tenure regime. The details for each project are detailed below.

Types of tenure in the Guatecarbon Project area included in the ERP

The territory where the Guatecarbon Project is located is classified as a biosphere reserve, as declared by Decree 5-90[63]and located in the Maya Biosphere Reserve (MBR) in Petén and registered in favor of the State. The MBR, with an area of around 2.1 million ha managed by the National Council of Protected Areas (CONAP), accounts for 20% of the country's surface and 60% of the area within the Guatemalan System of Protected Areas (SIGAP). The MBR is composed of three zones, namely, the Core Zone (national parks and biotopes, exclusive for scientific research and tourism), Multiple Use Zone (MUZ) where low-impact natural resource management activities are allowed) and a Buffer Zone (a 15-kilometer strip along the southern limit of the MBR, where a variety of management activities, including agriculture, are allowed). The MUZ has a system of forest concessions granted by CONAP to local communities and companies which are part of the Guatecarbon Project and therefore, the ERP.

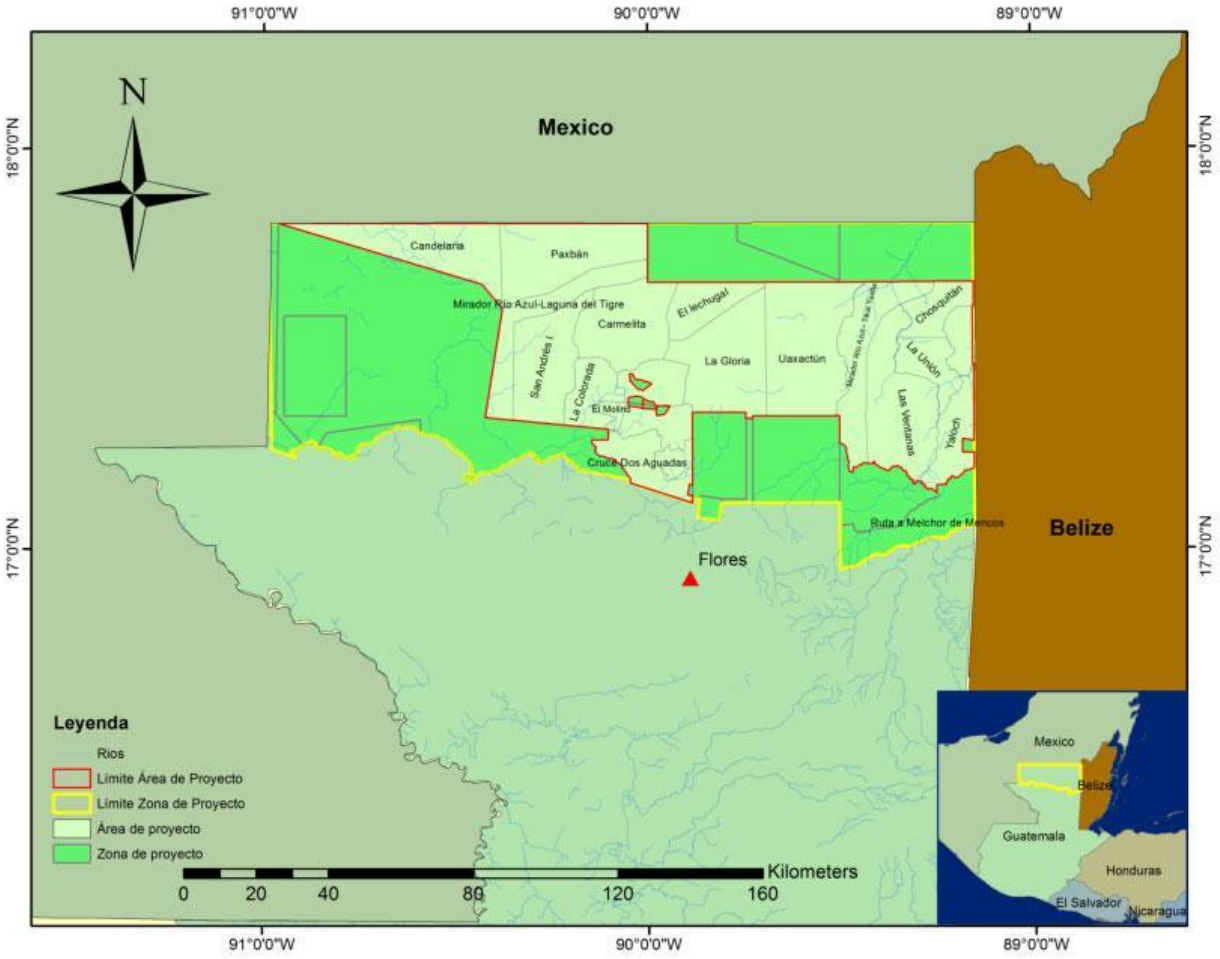
The Guatecarbon Project area included in the ERP is made up of the following subareas:

1. Management units or community and industrial forestry concessions (Chosquitán, Chanchich River, La Union, Yaloch, Las Ventanas, Uaxactún, La Gloria, Paxbán, Carmelita, San Andrés, Cruce a La Colorada, La Pasadita, San Miguel la Palotada, and La Colorada), all areas granted by CONAP as forest concessions (information on the status, categories of concessions, owners and areas of these concessions can be seen in Annex IIa);
2. The reserved areas of El Lechugal and El Molino and
   the two preservation corridors Laguna del Tigre - Mirador Río Azul and Mirador Río Azul- Tikal Yaxhá, the Cruce a Dos Aguadas Community Polygon; and

The Triángulo Candelaria Special Use Zone, despite being included in the Guatecarbon Project area and being registered in the VCS, has been excluded from the ERP for reasons related to an existing conflict. Likewise, the entire area of Laguna del Tigre has been excluded from the ERP, previously part of the Guatecarbon Project zone.

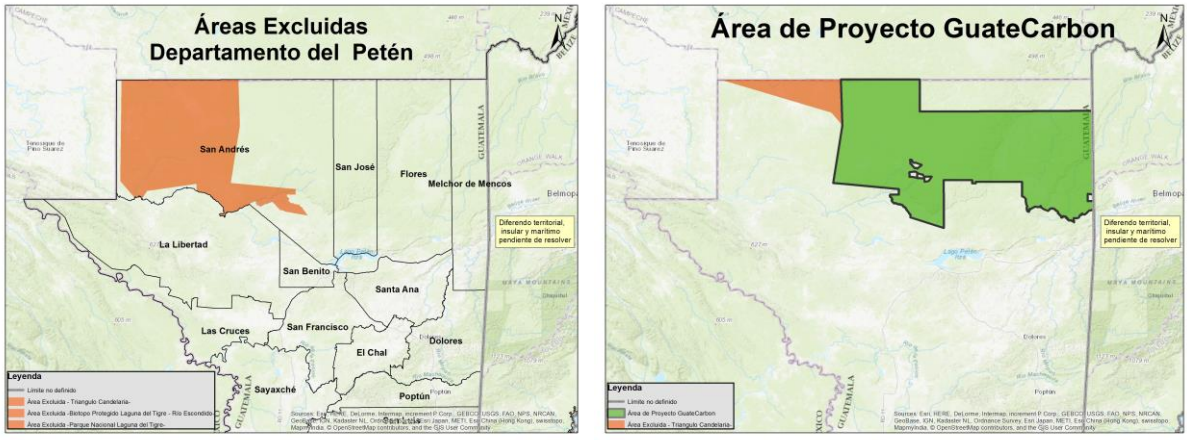
In total, the Guatecarbon Project area as registered in the VCS consists of 721,000 ha, of which 660,820 are forests. In the Guatecarbon Project area, there are no mining, gas or hydroelectric concessions.

[63]Decree 5 of February 5, 1990, of the Declaration of the Protected Area of the Maya Biosphere Reserve.



Map 3[64]. Guatecarbon Project Area as registered in the VCS and location of forest concessions.

The Guatecarbon Project area and areas excluded from the ERP are represented in the combined maps of Map 4.



Map 4. Maps of the areas excluded from the Program in the Guatecarbon Project zone

[64] CONAP, 2018.

The Guatecarbon Project area includes 14 management units under concession (forest concessions), two of them canceled and one under review. These concessions have been granted by CONAP in favor of rural communities (12) and companies (2) and have as legal basis Article 19 of the Protected Areas Law that establishes that CONAP may lease or grant concessions in protected areas under its management, subject to an authorization clearly stated on the master plan and the corresponding concession contracts. All concessions have forest certifications and have been assess by the Smart Wood Program under the socio-economic, forestry and environmental standards of the World Forest Stewardship Council. Several studies, such as those by Radchowsky (2011) and Hughell and Butterfield (2008), confirm the success of the concession regime in terms of conservation and good forest management in the MUZ. Conclusions point out that, despite challenges governance in the MUZ, the concession model has been relatively more successful in terms of protecting deforestation than other areas of the MBR that have even stricter protection measures[65].

The Guatecarbon Project areas that are part of the ERP are owned by the State, including the areas where forest concessions are located. Existing concessions granted to local communities under the forest concession regime or to private concessionaires under the industrial concessions regime do not grant them any formal recognition as owners or holders of forest areas. The Guatecarbon Project area is registered in the Land Registry as State property.

Special mention to the regime of rights related to forest concessions issued by CONAP in the MBR that are part of the Guatecarbon Project, within the ERP

The Guatecarbon Project area is composed mostly of forest concessions granted by CONAP to rural communities or companies. Its legal basis is Article 19 of the LAP that establishes that CONAP may lease or grant concessions in protected areas under its management, subject to an authorization clearly stated on the master plan and the corresponding concession contracts.[66]. The concessions granted in the project area are divided into two categories: community concessions and industrial concessions[67]. This distinction does not appear in the concession contracts or in the regulations of protected areas, but is included in CONAP's Concession Rules. Both types are considered as concessions for the use and management of renewable forest resources in accordance with Article 37 and subsequent articles of the Regulation of Protected Areas.[68]The rules that regulate the granting of these concessions were approved by CONAP as rules for concessions aimed at the use and management of renewable natural resources in the Multiple Use Zone of the Maya Biosphere Reserve (Granting Rules)[69]. Of the granted community concessions, two have been revoked for breach of contract and two others are under review. A brief summary of the status of the Guatecarbon Project concessions is provided in Annex IIa. Moreover, Annex IIb offers a summary of the forest concession contracts content. The Triángulo de la Candelaria area is not a concession area and is not included in the Program.

Figure 21. Description of the Guatecarbon Project concessions

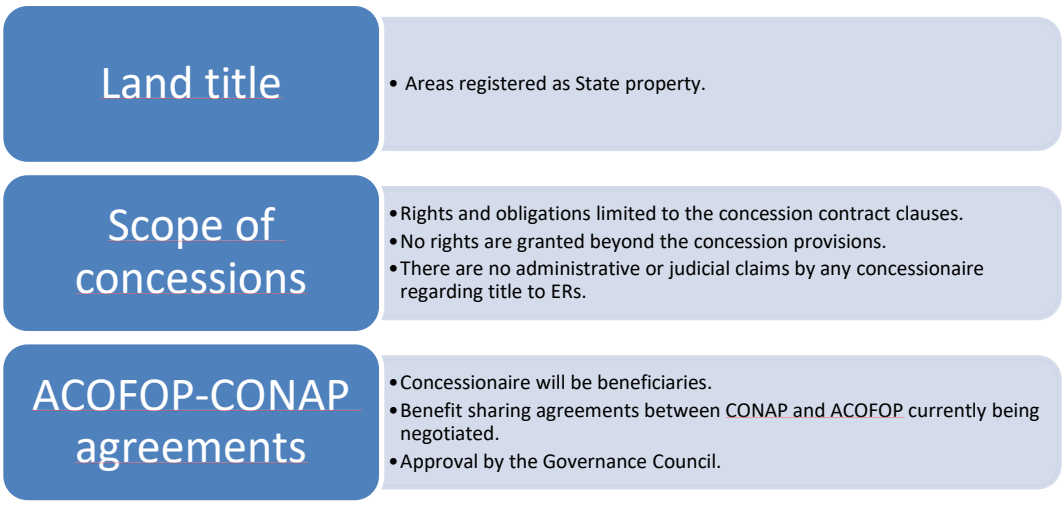
[65]Dave Hughell and Rebecca Butterfield, Impact of FSC Certification on Deforestation and the Incidence of Wildfires in the Maya Biosphere Reserve, February 2008; and Jeremy Radachowskya, Victor H. Ramosa, b, Roan McNaba, Erick H. Baurc, Nikolay Kazakovd, Forest concessions in the Maya Biosphere Reserve, Guatemala: A decade later, Forest Ecology and Management, 2011.

[66]Article 19 of the Protected Areas Law - Decree 4-89: Article 19. Concessions.
CONAP may lease or grant use concessions in protected areas under its management, subject to an authorization clearly stated on the master plan and the corresponding concession contracts.

[67]This distinction does not appear as such in the concession contracts nor in the regulation of protected areas, but is included in the Concessions Granting Rules for the Use and Management of Renewable Natural Resources in the Multiple Use Zone of the MBR (CONAP Concession Rule, CONAP minutes 15-98, of December 4, 1998). Both types of concessions must be considered as concessions for the use and management of renewable forest resources in accordance with Article 37 of CONAP's Regulation of Protected Areas and Concession Rules. Likewise, concession contracts are subject to the Forestry Law.

[68]Regulation of Protected Areas 759-90 of August 22, 1990. Article 37, Concessions.
In order to grant concessions for the use and management of wild flora, forest resources, afforestation or reforestation, CONAP will seek technical assistance of a state or private entity to identifying, classify and assess the resources available.

[69]CONAP minute 15-98.



The term of the concessions may represent risks to the Program, although these are minor risks. Concession contracts establish a 25-year term, by which two community concessions (Rio Chanchic and Carmelita) expire after the duration of the ERPA contract with the FCPF (See Annex IIb)[70]. This means that, theoretically, these concessions, if not renewed, could result in the cessation of sustainable forest management activities and all Guatecarbon project actions included in the ERP until a new concession contract is negotiated. It must be said, however, that the concession contract establishes that the concessionaire should request the extension of the concession.

The extension of the concession is subject to the provisions of the contract and is subject to the regulations of protected areas, including the RAP and Article 41 of the Rules for the Granting of Concessions for the Use and Management of Renewable Natural Resources in the Multiple Use Zone of the Maya Biosphere Reserve, which establishes that concessions may be extended as long as the concessionaire so requests two years prior to the expiration of the concession and has satisfactorily complied with the terms of the current concession contract[71]. Therefore, in order for the renewal to take place, there must be a request from the concessionaire and this must be done two years prior to its conclusion. CONAP, as the institution in charge of managing and extending concessions, and with the aim of avoiding risks in the extension process, has already taken the following measures to renew not only the two Program concessions, but all the MBR concessions:

- CONAP already has a new regulation for granting concessions; which include an exclusive section or chapter that establishes the administrative procedure for extensions. This regulatory disposition should be approved by the CONAP Council by the end of June 2019. It will explain the extension rules applicable to all forest concessions in the MBR. The two concessions that will expire during the Program time frame shall be the renewed first, hence the importance of updating the rules for concession extension. This regulation is supposed to set new rules for concession contracts and update the content of these concession contracts to the current reality.
- CONAP already has a working group to review the concessions and has established an Evaluating Committee to ensure compliance with concession contract rules for the two cases in question.

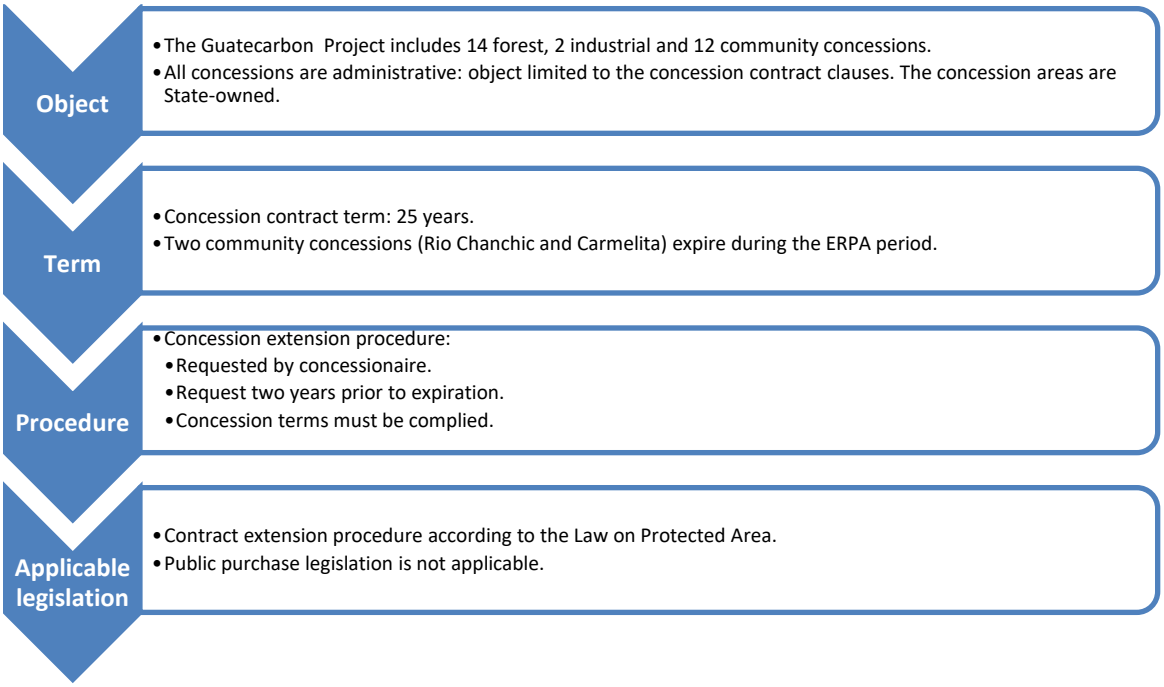
The concessions do not seem to pose a significant risk, which is why this document had classified it medium risk, particularly in Chapter 11 of the ERPD, for the purposes of the Program or for the future FCPF ERPA. On the one hand, the institutional and procedural approach has been described above by CONAP. On the one hand, there is enough time to conclude the renewal of concessions and therefore avoid an impact on the generation of ERs by the Program. Given that concession renewal should be requested by the concessionaire, it seems that forest communities will most likely do it, given that these are local communities whose main purpose is precisely continue to use and benefit from

[70]The Paxban and La Gloria concessions expire days before the end of the Program.

[71] ARTICLE 40 of the RAP- Conditions and Procedures. The respective public bidding will establish the term, price and other conditions regarding the respective contract. The procedures and requirements for the bidding will be stipulated by this regulation, as well as those that are applicable, established by the Forestry Law (Decree 70-89) and its regulations.

forest resources[72]. In addition, concessions that remain in force have been satisfactorily complying with contracts terms.

Figure 22. Regulatory situation of concessions in the Guatecarbon REDD+ Project and procedures for extension of community concessions



Types of tenure in the Lacandón Bosques para la Vida Project

The Lacandón REDD+ project area covers 45,288.81 ha of forest within the Maya Biosphere Reserve (MBR), Guatemala, in the Sierra de Lacandón National Park. In terms of forest tenure, this is how the project area is divided:

1. The Defensores de la Naturaleza Foundation (FDN) is the private owner of Centro Campesino and Naranjitos. These private properties were purchased by FDN in the 1990s. FDN has a formal co-administration agreement with CONAP[73], and cooperates with CONAP in other areas as well as with other governmental institutions. Their aim is to include REDD+ experiences into national processes in Guatemala and adapt project strategies to national development initiatives.
2. Three communities (La Lucha, La Técnica Agropecuaria and Unión Maya Itzá cooperatives) have legal private property of the land. The La Lucha Cooperatives have private property over the "special use zone". The La Técnica Agropecuaria Cooperative is a community located in the buffer zone of the Sierra de Lacandón National Park. The land is owned by several families organized in a cooperative. The Union Maya Itzá Cooperative is a private property located in the "special use zone" within the park.

Therefore, there is no irregular tenure in the Lacandón Project areas as far as these four private owners are concerned.

Types of tenure in the Redes Locales para el Desarrollo REDD+ Project

The Redes Locales para el Desarrollo REDD+ Project promoted by the CALMECAC Foundation (CALMECAC Project) is a project under development and does not currently have concrete data on the tenure status within its area. It is

[72]The Public Procurement Law (Decree Law 57-92, and modifications of Decree 46-2016) is not applicable to the renewal of concessions in the MBR.

[73]Agreement between the National Council of Protected Areas and the Defensores de la Naturaleza Foundation for the Co-administration of the Sierra de Lacandón National Park, February 17, 1999.

currently developing a land tenure map.

The Reddes Locales para el Desarrollo project is a nested project that affects an area of 747,708.64 ha. The project is located in three areas classified as vulnerable in terms of the loss of forest mass but that are not classified as protected areas and will be developed at the municipal level as described below:

- Departments of Alta Verapaz: municipalities of Cobán, San Pedro Carcha, Lanquin, Cahabón, San Juan Chamelco and Tamahú. Total area included in the project: 483,321.85 ha.
- Department of Quiche: municipalities of Nebaj, Chajul and Cotzal. Total area included in the project 153,941.23 ha.
- Department of Huehuetenango: municipalities of Nenton, Santa Ana Huista and Jacaltenango. Total area included in the project: 110,445.55 ha.

The project is focused on conserving, reducing deforestation and forest degradation, as well as increasing forest cover. The project will work with the communities of the included municipalities. Participants can enroll in the CALMECAC Project using a participation ticket at an Emissions Reduction teller, which will be available at the Municipal Environmental Management Units (UGAM) and/or at the Municipal Forestry Office (OFM) in the municipalities that participate in the Project.

According to estimates by the project developer, the CALMECAC Project is expected to cover up to 24,000 beneficiaries. All of them will be individual or collective land holders or owners

Tenure rights regime and natural resources in forest areas

Based on the considerations on types of property and tenure analyzed above, the following table shows the classification of forest tenure rights under the concept known as bundle of forest rights in the program area, following the Rights and Resources methodology for defining bundle of rights [74].

Table 11. Bundle of forest rights in Guatemala by type of property

Type of property/ Right	Access	Use	Management	Exploitation	Exclusion	Alienation	Duration
Private (individuals or communities) owners or holders	Yes	Yes	Yes, in accordance with the management plans and license requirements of INAB or CONAP, if applicable	Yes, according to management plans and licenses	Yes	Yes, owners. Owners must previously register it.	Indefinite
Forest communities (local or indigenous) under a protected area concession regime	Yes To participate in a concession, it is necessary to have a formal legal structure	Yes	Yes, but limited scope as established in the concession contracts, master plan, management plan and	Yes (Timber and non-timber products). Scope defined by concession contracts	Yes, concession contracts are enforceable as to third parties	No	25 years, extendable (subject to applicable legal rules and procedures)

[74] https://rightsandresources.org/es/tenure_data/what-is-the-bundle-of-rights/#.W74diq13GCc. The Rights and Resources methodology is based on the bundle of rights concept as described by Schlager, Edella, and Elinor Ostrom, "Property-rights regimes and natural resources: A conceptual analysis". Land Economics. 68 (3): 249–62, 1992. Although this methodology is applied especially for the analysis of community-type tenure, in this report, the different types of rights are analyzed for all property categories.

	(cooperative, association)		RBM legislation.				
State lands	Yes	Yes	Yes	Yes	Yes	No, they are inalienable	Indefinite
Private property in protected areas	Yes	Yes, in accordance with protected areas legislation	Yes, in accordance with legislation and managemen t plans	Yes, established in management plans	Yes	Yes	Indefinite

Impact of forest tenure on ER ownership

Guatemala has a Framework Law on Climate Change[75]that associates ER ownership to land tenure. Although this law will analyzed in the chapter dedicated to the transfer of ER ownership in Section 17, the general implication of land tenure ownership for ERs is discussed here.

The Framework Law on Climate Change (LMCC) clearly ties the rights over emission reduction units to the ownership or possession of the underlying lands, subject to the registry of the projects, and establishes the creation of a national registry of emission reduction projects. Article 22 of the LMCC stipulates that the rights, ownership and negotiation of emission reductions belong to project owners, which may be individual persons, legal entities or the State, provided that they are the owners or legal holders of the land or property in which the project is carried out and that it is registered in the National Registry. The government has 18 months (starting on September 2013) to regulate the operation of this article even though this regulation has not yet been approved.

The law mentions the owners or legal holders of the land on which the project is executed as the owners of the ER projects. The term *legal holders* is not clear because it does not appear on the Civil Code tenure terminology, which only mentions *holders*[76]. The law is interpreted in the sense that ER owners would be the owners and holders of the land and this is also how the new Registry regulations will interpret during the drafting phase. However, the wording on the draft of this article was initially criticized by REDD+ stakeholders.

The interpretation of Article 22 was controversial at first as to whether forest concessionaires of the Guatecarbon Project could be considered legal holders and ultimately, whether or not they could own ERs as a by-product of the sustainable forest management activities defined by the concession contract. The opinion that concessionaires could not be considered legal holders argues that there can be no property over the nation's assets, such as protected areas, since any possession implies usucaption (will to own) and this is not possible when speaking of public assets. Moreover, concessions are administrative law contracts that should be interpreted strictly in the sense that concessions grant only the rights defined by concession contracts[77].

Initially, concessionaires, through ACOFOP, argued that they could be considered as immediate holders and, being so, owners of ERs. This different theoretical interpretation was initially expressed in meetings between CONAP and concessionaires, but there are no administrative or judicial procedures put forward by concessionaires, either collectively or individually, regarding the ER ownership, nor are they expected since there is currently a consensus between CONAP and concessionaires that the latter will be effectively considered beneficiaries. CONAP is currently preparing a norm of ecosystem services in SIGAP's national lands called Normative for the Ecosystem Service of Emission Reduction and/or Removal in National SIGAP Lands. This document is still under construction and the overall

[75]Framework Law for the Regulation of Vulnerability Reduction, Compulsory Adaptation to Climate Change Impacts and Mitigation of Greenhouse Gases, Decree 7-2013-Congress of the Republic of Guatemala.

[76]The Cadastral Information Registry Law includes, in Article 23, definitions of owner and holder.

[77] Those who favor the interpretation that concessionaires could be considered holders according to Article 22 of the LMCC claim that concessionaires would have the status of immediate holders with no will to own, in accordance with the provisions of Article 613 of the Civil Code that differentiates mediate and immediate possessors, and according to which temporary holders are immediate possessors, and mediate possessors are those who confer such right to the holder. Some of the arguments to consider concessionaires as holders for the purposes of Article 22 include the fact that the PROBOSQUE Law includes access to new incentives to State-land tenants, which indirectly recognizes the rights of those who work with public assets to obtain the REDD+ results. Therefore are usufructuaries, concessionaires and tenants would be considered owners of the ER rights. It could therefore be alleged that, in accordance with actual administrative rights derived from concessions, the possession of public goods is a possibility. In this sense, see Luis Guillermo Ramírez Porrez, *La posesión y los Derechos sobre Proyectos REDD+.*

objective is to regulate the submission of applications to CONAP's environmental services and its potential financial mechanism, so, currently, it is not certain whether this will solve the doubts about concession rights in the Guatecarbon project. However, an institutional effort is being made to provide the adequate conditions so that the Guatecarbon project and forest concessions can receive monetary and non-monetary benefits in the ERP.

In any case, the granting of ER ownership to the FCPF will be safeguarded by the agreement between concessionaires and CONAP, in which the former will waive any type of current or future ER rights. The agreement will also establish a benefits sharing plan. Section 17.2 will analyze in more detail community concessions with regard to ER ownership. For the rest of the Program, the LMCC does not raise questions on ER ownership.

Land conflicts, disputes and implications for the Program

This section gives an overview of conflicts and disputes over land in Guatemala and its implications for the Program. It also provides a detailed overview of land conflicts related to early action REDD+ projects.

Data on land conflicts[78]

The land and forest tenure regime in Guatemala continues to be informal and conflicts on access to land are still present despite the policies and institutional efforts made in the last 20 years. Local communities and small landowners are the most affected by the lack or gaps in the legal recognition of their lands. Conflicts over land access and tenure are frequent throughout the country. Land tenure conflicts have three main reasons: i) Lack of legal certainty regarding property registration in the General Land Registry; ii) Historical claim of indigenous communities on the possession of ancestral territories, reinforced by identity claims made in recent years; and iii) Overlapped properties. The types of land conflicts can be classified into four categories:

1. Rights dispute: Disputes over land rights.
2. Territorial limits: Border disputes.
3. Land Occupation: Disputes over land occupations.
4. Regularization: Legalization of community property on national lands.

In recent years, both the Secretariat of Agrarian Affairs (SAA) and the Human Rights Ombudsman and the Presidential Commission for the Coordination of Executive Policies have continuously monitored and worked for the resolution of land conflicts in the country. With these objectives, both institutions publish annual reports on the development and resolution of agrarian conflicts and have been increasingly providing more qualitative and quantitative data. The latest data from the SAA for 2018 were published in February 2019, from which the following conclusions have been drawn:

1. There are currently 1,485 cases being processed in the SAA, mostly from Huehuetenango, Alta Verapaz, Petén and Quiché.
2. The most common agrarian conflicts are those related to disputes over land tenure and possession (in which there is an overlap of rights over the same areas) and cases regarding recognition of land possession.
3. Between January and December 2018, total 513 were resolved, most of them in the departments of Petén, Alta Verapaz and Quiché.
4. Land conflict resolution is more effective when there is close collaboration between the SAA and local institutions.
5. Cases filed in 2018 in the SAA come from Petén, Quiché and Alta Verapaz.

A series of statistical information and land conflict maps in Guatemala are presented below, based on the cases of conflict addresses by the SAA by February 2019.

Table 12. General data on land conflict - Secretariat of Agrarian Affairs[79]

78The data in this section refer to the country level and not only to the Program area, given the relevance of the topic for the Program implementation.

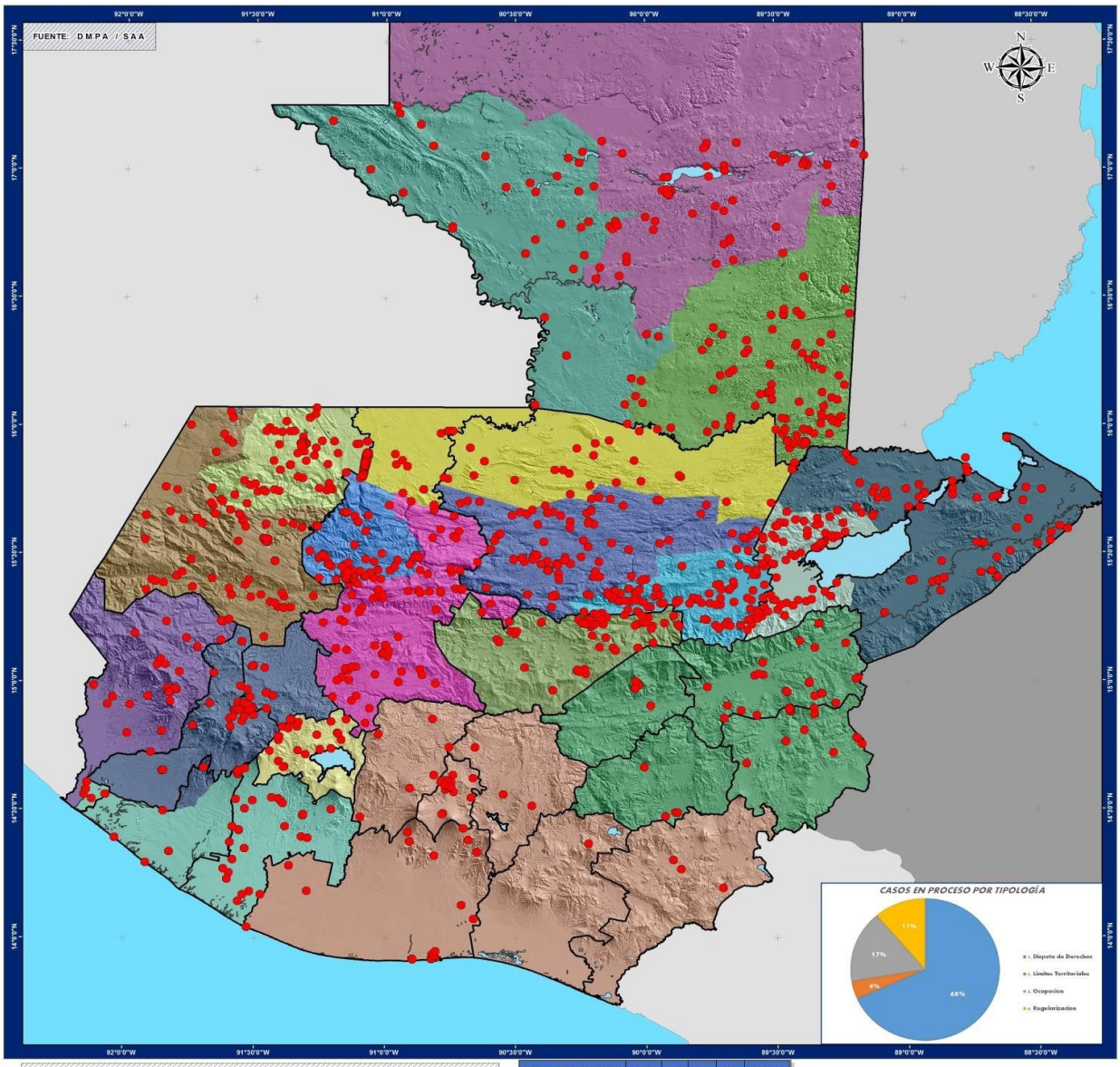
[79]Secretariat of Agrarian Affairs, February 2019.

LAND CONFLICT DATA REPORTED BY THE SAA	
Cases currently in process in the SAA	1,485
Cases resolved in 2018	513
Cases filed in 2018	560
People benefited 2018	131,163

Figure 23[80]. Land conflict map - Secretariat of Agrarian Affairs

[80]Data and maps prepared by the Secretariat of Agrarian Affairs, February 2019.

MAPA DE CONFLICTOS AGRARIOS POR DEPARTAMENTO
- GUATEMALA 2018 -



SIMBOLOGÍA

- CASOS EN PROCESO 2018
- LÍMITE DEPARTAMENTAL

DELEGACIONES

- EL ESTOR
- SOLOLÁ
- NEBAJ
- SUCHITEPÉQUEZ

REGIONALES

- CENTRO
- CHISEC
- COBÁN
- HUEHUETENANGO
- IZABAL
- LA LIBERTAD
- POLOCHIC
- POPTÚN
- QUETZALTENANGO
- QUICHÉ
- SALAMÁ
- SAN BENITO
- SAN MARCOS
- SOLOMA
- ZACAPA

DEPARTAMENTO	DD	LT	OC	RE	TOTAL
Guatemala	2		1	1	4
El Progreso	4		1		5
Sacatepéquez	30	2			32
Chimaltenango	4				4
Escuintla	9		11	1	21
Santa Rosa	2				2
Sololá	21	4	8		33
Totonicapán	5	3			8
Quetzaltenango	71	5	1	1	78
Suchitepéquez	13		2	18	33
Retalhuleu	1		1	8	10
San Marcos	41	6	4	10	61
Huehuetenango	237	12	3	33	285
Quiché	136	10	48	7	201
Baja Verapaz	69	1	2	11	83
Alta Verapaz	116	5	93	11	225
Petén	120	8	23	53	204
Izabal	84		43	9	136
Zacapa	17	4	1	2	24
Chiquimula	24	1	2		27
Jalapa	3			2	5
Jutiapa	4				4
Total general	1013	61	244	167	1485

0 15 30 60 90 120 KLM

Coordinate System: GTM
Projection: Transverse Mercator
Datum: WGS 1984
False Easting: 500,000.0000
False Northing: 0.0000
Central Meridian: -90.5000
Scale Factor: 0.9998
Latitude Of Origin: 0.0000
Units: Meter

Escala=> 1:800,000

Secretaría de Asuntos Agrarios
Departamento de Monitoreo
Política Agraria
Guatemala, 2018

Autor: CABB

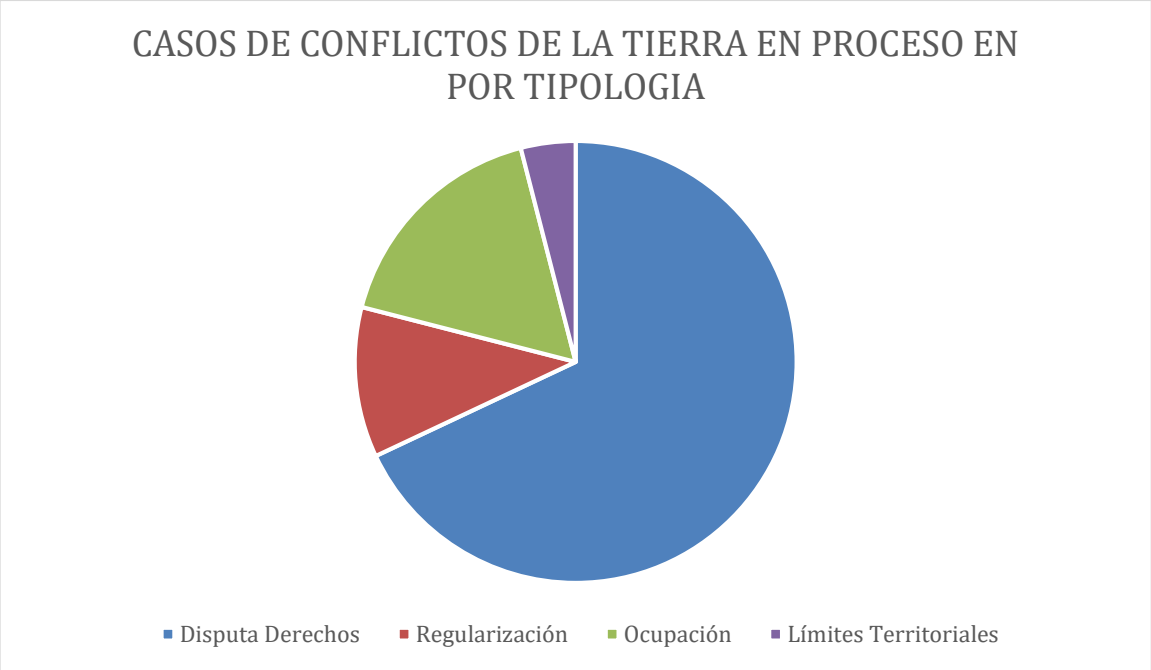
GUATEMALA
SECRETARÍA DE ASUNTOS AGRARIOS DE LA PRESIDENCIA

Table 13[81]. Statistics of agrarian conflicts according to their type.

Department	TYPE OF CONFLICT				Total	Number of hectares	People served
	Rights dispute	Territorial limits	Occupati	Regularizati on			
01 = Guatemala	2	0	1	1	4	265.00	5,063
02 = El Progreso	4	0	1	0	5	1,048.63	2,258
03 = Sacatepéquez	30	2	0	0	32	3,844.31	36,520
04 = Chimaltenango	4	0	0	0	4	1,857.17	16,600
05 = Escuintla	9	0	11	1	21	7,083.22	23,673
06 = Santa Rosa	2	0	0	0	2	38.06	172
07 = Sololá	21	4	8	0	33	6,651.07	43,313
08 = Totonicapán	5	3	0	0	8	650.98	41,257
09 = Quetzaltenango	71	5	1	1	78	2,999.21	144,831
10 = Suchitepéquez	13	0	2	18	33	1,162.41	210,772
11 = Retalhuleu	1	0	1	8	10	687.80	2,676
12 = San Marcos	41	6	4	10	61	1,931.62	89,755
13 = Huehuetenango	237	12	3	33	285	28,957.00	623,505
14 = Quiché	136	10	48	7	201	80,338.67	239,362
15 = Baja Verapaz	69	1	2	11	83	18,753.07	51,484
16 = Alta Verapaz	116	5	93	11	225	327,697.08	47,593
17 = Petén	120	8	23	53	204	93,628.37	23,486
18 = Izabal	84	0	43	9	136	43,411.50	50,657
19 = Zacapa	17	4	1	2	24	4,193.21	17,438
20 = Chiquimula	24	1	2	0	27	2,431.46	7,923
21 = Jalapa	3	0	0	2	5	2,845.58	52,145
22 = Jutiapa	4	0	0	0	4	839.10	5,315
TOTAL	**1,013**	**61**	**244**	**167**	**1,485**	**631,314.53**	**1,735,798**
	68%	4%	16%	11%	100%		

[81]Data supplied by the Secretariat of Agrarian Affairs, February 2019.

Figure 24. Relevance of types of land tenure conflicts in process in Guatemala's Secretariat of Agrarian Affairs



Rights dispute: 68%
Regularization: 11%
Occupation: 16%
Territorial limits: 4%

Table 14. Ethnicity, beneficiaries and number of women by type of conflict in the Secretariat of Agrarian Affairs

Type of conflict					Cases processed				
Rights dispute	**1,031**	**Territorial limits**	**61**	**Occupation**	**246**	**Regularization**	**166**	**No information**	**1**
Achi	13	Akateko	1	Ch'orti’	3	Achi	1		
Akateko	4	Ch'orti’	2	Chuj	1	Ch'orti’	1		
Awakateko	1	Chuj	3	Ixil	4	Ixil	3		
Ch'orti’	25	Ixil	1	K’iche’	51	K’iche’	2		
Chuj	32	K’iche’	16	Kaqchikel	1	Ladinos	22		
Ixil	60	Ladinos	4	Ladinos	28	Mam	4		
K’iche’	115	Mam	4	Mestizo	29	Maya	3		
Kaqchikel	11	Mestizo	12	Others	19	Mestizo	50		
Ladinos	114	Others	2	Poqomchi’	3	Others	1		
Mam	15	Popti’	2	Q'anjob'al	1	Q'anjob'al	17		
Mestizo	312	Q'anjob'al	2	Q'eqchi’	81	Q'eqchi’	50		
Mestizos	4	Q'eqchi’	7	No information	25	No information	12		
Others	33	No information	4						
Popti’	3	Tz'utujil	1						
Poqomam	3								
Poqomchi’	9								

Q'anjob'al	44								
Q'eqchi’	176								
No information	51								
Tz'utujil	1								
Xinca	5								

Institutions involved in land conflict resolution

Social pressure for an agrarian reform was an important driving force of the 1954 revolution and armed conflicts. Since the signing of the 1996 Peace Accords, the Government of Guatemala has established a comprehensive institutional framework that seeks to resolve agrarian conflicts and support access to land and ensure legal tenure rights for communities. The Peace Accords established a program of land redistribution based on market criteria and gave origin to new institutions. Currently, land disputes and conflicts involve several institutions as detailed below:

a) The Secretariat of Agrarian Affairs (SAA) is the government agency responsible for monitoring, reporting and resolving agrarian conflicts in Guatemala. It seeks to mediate and solve conflicts and looks for administrative solutions to agrarian conflicts within the Public Administration.
b) The National Land Fund (FONTIERRAS) is the government agency responsible for ensuring access to land and legal tenure rights to communities, either through subsidized loans or through an administrative process that transfers national lands to communities.
c) The Cadastral Information Registry (RIC) provides technical support and land-related information to these institutions to inform and support conflict resolution. Land disputes identified by the RIC (classified as irregular properties) are referred to the SAA. Coordination is often insufficient, which further hampers the resolution of disputes[82].
d) The Human Rights Ombudsman Office and the Presidential Commission for the Coordination of Executive Human Rights Policies Presidential Commission for the Coordination of Executive Policies on Human Rights Presidential Commission for the Coordination of Executive Policies on Human Rights(COPREDEH) provide oversight and support for communities affected by conflicts, ensuring that government institutions respond efficiently and rapidly to cases that may give rise to conflicts, based on a human rights perspective. Since 2010, COPREDEH has had an early warning system conceived as the mechanism through which the State can identify and monitor social tension and harness efforts to prevent it, including land-related conflict. Likewise, with regard to social conflict mediation performed by COPREDEH, continuous monitoring is done by the Conflict Analysis and Mediation Department.
e) The Presidential Dialogue Commission is a newly created body (2016) and has the objective of coordinating, together with various government institutions, a political and social approach to culturally relevant sectors of society, territories, communities and indigenous peoples, in order to contribute, prevent, manage and resolve social conflicts through dialogue and agreements reached. They address mainly conflicts of wide social scope. The Presidential Dialogue Commission is composed of the ministries of Government, Energy and Mines, Finance, Environment and Natural Resources as well as the Presidency's Secretariat for Planning and Programming, the Secretariat of Agrarian Affairs, the Presidential Commission for the Coordination of Executive Human Rights Policies (COPREDEH).
f) CONAP also has a role in the resolution of land disputes in protected areas. The Protected Areas Law and its regulations do not specify how this authority should be exercised, for which CONAP has had to develop its own mechanisms. These include the use of negotiation roundtables, management units and cooperation agreements (Articles 22 and 24 of the Protected Areas Law) aimed at improving governance. See the following table on the procedures applied by CONAP in human settlements in protected areas.

[82]Institutional Strategic Agenda 2012-2025. Short-, medium- and long-term guidelines, Guatemala, August 21, 2012, Land Fund, p. 9 "There is a lack of interinstitutional coordination in the agrarian sector to promote order and synergies for a comprehensive proposal and resolution of agrarian issues”.

g) At the regional level, the Interinstitutional Roundtable on Agrarian Coordination (MICAI), with the participation of government institutions and local stakeholders, aims to address land conflicts and ensure close coordination between the main government institutions.

Table 15. Summary of CONAP's processes regarding human settlements in protected areas [83]

HUMAN SETTLEMENTS MANAGEMENT MECHANISMS IN PROTECTED AREAS OF SIGAP
CONAP as the national guarantor of the Guatemalan System of Protected Areas is responsible for managing natural resources in protected areas. In this sense, if a person or a group of people illegally occupy a protected area, before pressing any charge, CONAP will try to establish a dialogue with the occupiers, notify them about the protected area status of that piece of land and ask them to leave without damaging the area. If occupiers insist, refuse to leave or cause any damage, it is the duty of CONAP to file a complaint to the Public Ministry regarding any protected area in Guatemala. Therefore, it is the Public Ministry's role to take the issue to the corresponding court and apply the necessary measures to remove occupiers. The Guatemalan law enforcement authorities (national police) could be required by the corresponding judges to carry out a possible eviction. **The law clearly defines human settlement rules for the MBR, as well as the recovery of areas and the strengthening of territorial governance. To that effect, there are four relocation rules regarding illegal settlements:** • **Voluntary relocation. In this case, occupiers leave the protected area voluntarily after a process of dialogue and eventual assisted by a third party (church or peasant group, for example) without any commitment on the part of the protected area managers in providing any land outside that area.** • **Assisted relocation. Here, protected area managers provide assistance to the groups to facilitate their access to land outside protected areas through legal mechanisms, in order to clear the occupied protected area.** • **Regulation of presence. Protected area managers seek and implement jointly-agreed mechanisms with occupiers to adapt their presence and regulate the use of natural resources, including the land. This measure will depend on the category of that particular protected area. The overall aim is to mitigate the impacts on natural resources and ecosystems.** • **Eviction. Eviction mechanisms will be used as a last resort all due processes of law have been tried without reaching a successful outcome. It should be noted that these processes are applicable to existing settlements, since new ones are not allowed, and to those that pose a threat not only to the project but also to the law and public order.**

Data on land conflict in early REDD+ actions

Regarding early REDD+ actions, the main issues related to tenure conflicts are described below:

1. **Guatecarbon Project:** In general, there are no disputes regarding the legal recognition of land ownership. The main problem is illegal occupation of protected areas[84]. The agreement by which the government created MUZs and community concessions recognizes the existence of resident communities inside these areas and their right to use resources and live there through a system of forest concessions granted to communities settled prior to the declaration of protected area. As mentioned, the fact that the project area is owned by the State is not subject to controversy. The most serious problem is that of illegal occupation by non-concessionaires. Therefore, land disputes are mostly derived from illegal occupation in very few areas (less than 5%). On the other hand, since the granting of concessions began, there have been a series of cancellations and suspensions due to breach of contract (See Annex VII).

[83]Summary of the lines of action described on the documents regarding the human settlements policies in protected areas / National Council of Protected Areas (CONAP, 1999); Human settlement policy in protected areas of Petén. (CONAP 2002) and Human Settlements Policy in Protected Areas of Verapaces (2002).

[84]The crime of occupation of protected areas is provided for in Article 82 bis of the Protected Areas Law, Decree 4-89.

On the other hand, in the MUZ areas not included in the Guatecarbon Project, neither ACOFOP nor CONAP have carried out any action against legitimate legal holders or legitimate occupants prior to the declaration of the areas. None of the ERP Guatecarbon Project activities has caused an involuntary relocation either. The Triángulo de la Candelaria area has not been concessioned yet and some areas have been subject to frequent invasions. This area is not included in the ERP.

Some of the main conflicts regarding land use have occurred mainly in concessions that were canceled and that have been subject to external pressure exerted by criminal groups or areas without community management. Some isolated settlement cases began when the original management units were planned and designed and some have pending legal claims under review by CONAP. There are farms in concession areas with presumably illegal registrations. Although land use in these areas are kept separate, they pose a conflict of interest because these areas are included in the concession contract and therefore payments for these concessions are foreseen, even though the illegally occupied area cannot be adequately used. This issue has existed for many years, therefore, these areas are excluded from the project until the situation is resolved. However, one of the project objectives is for its activities to provide solutions to existing conflicts in the MBR areas and avoid emerging conflicts of this type. It should be added that the Guatecarbon Project, like the rest of the early REDD+ actions, has an advanced system of conflict resolution and complaints as documented on Table 85. Summary of the MIAQ by project.

Although it is estimated that, as long as the requirements and legal procedures are met, the two concession contracts that expire during the Program's term will most likely be renewed (see the above section), there are several medium risk factors for their extension and associated rights:

a) Future government officials occupying key position might be committed to different sectors, or might be unfamiliar with the community forest governance model, which could make them unwilling to extend the contracts. This risk does not seem significant given that the concession regime has been in place for many years and it would be politically difficult for a government to break the agreements with the concessionaire communities.
b) There are several proposals by the business sector to include different uses in the MUZ. On the one hand, is the so-called "Cuenca Mirador", a proposal to promote the tourism in archaeological sites that aims to delimit an intangible area in the Multiple Use Zone by law, which would affect activities in concession areas. This proposal would imply a change of legislation in protected areas. Although this could be considered as a long-term risk, it does not pose a threat during the term of the Program and would not affect the future ER transaction contracts between the State of Guatemala and the FCPF.
c) The possibility of oil exploration tenders issued by the government in the current Program areas. The Protected Areas Law does not allow such concessions, so this is considered a low-probability risk.
d) Therefore, these risks should be considered as minor risks. On the other hand, forest concessions have significant technical and scientific justification in their favor. Studies show that forest cover in concession areas is in a much better state of conservation than in areas not managed by communities. Also, it has been shown that they have fulfilled the objectives of creating the Maya Biosphere Reserve and the commitments established in the concession contracts and the MBR master plan. In this sense, the community forestry model has been quite successful in timber and non-timber products development climate change mitigation[85]. Additionally, it does not seem feasible for the central government to oppose contract renewals, given the special relationship with local communities and community associations and the social unrest that a non-renewal would imply.

[85]In this regard, see the following studies that demonstrate the success of concessions for conservation purposes: http://www.acofop.org/descarga/Estudio-ACOFOP-PRISMA.pdf
http://www.acofop.org/descarga/MBR-Deforestation_150213-ES-2.pdf
https://es.mongabay.com/2016/12/guatemala-las-comunidades-salvaron-la-caoba-la-reserva-la-biosfera-maya/
http://www.acofop.org/descarga/PB-24-Conservacion_Especies_Peten.pdf
https://www.equatorinitiative.org/wp-content/uploads/2017/05/case_1_1363201261_SP.pdf
http://www.ccmss.org.mx/comunidades-acofop-peten-guatemala-manejo-forestal-comunitario/

2. **Sierra Lacandón Project**: There are no ongoing or unresolved land disputes or conflicts. The Defensores de la Naturaleza Foundation owns Centro Campesino and Naranjitos. Three communities, La Lucha, La Técnica Agropecuaria and Unión Maya Itzá have legal private property of the land. The owners have all documentation to support their rightful ownership. The conflicts that have arisen in the project area have been minor and are mostly related to internal land tenure issues. Two of the three cooperatives (La Lucha and Unión Maya Itzá) have completely "parceled out" their land (all land owners are individual), while in La Técnica the land is owned by the community, so decisions about the sale of plots are agreed by the community. There have been occasions when the community, especially in La Lucha and the Unión Maya Itza, sold their land to livestock farmers or private owners with no interest in forest conservation, therefore, land use changed after this purchase, giving rise to internal conflicts, given that land clearings negatively affected farms, forest areas the rest of the community. In any case, these are minor conflicts and, in order to avoid them, the Project has mitigation measures and aims to mediate relations among different parties and, if necessary, will monitor and follow up complaint regarding illegal acts.
   The Sierra Lacandón Project has also faced illegal invasion conflicts, though of a small scale. In these cases, the Defensores de la Naturaleza Foundation has carried out the adequate eviction measures in order to protect the legitimate rights of communities and small farmers.
3. **REDDES Locales para el Desarrollo Project (CALMECAC)**: This project is still in the early design phase, therefore, there is no specific data relating to land conflicts. In any case, the CALMECAC Project will effectively limit land conflicts, as it will only consider as beneficiaries individual or collective holders and owners duly accredited by the municipalities. The municipality will require a possession or land tenure certificate from any potential beneficiary who wishes to participate in the project, or will issue a Land Ownership Certificate for owners who do not have it yet[86]. Allowing only land holders or owners means that those who cannot prove their possession or property, or those lands where there is some type of conflict, will be left out.

At the level of the REDD+ Projects, tenure and land conflicts problems are summarized below.

[86] The Land Ownership Certificate is *issued by the Mayor of the corresponding municipality in a stamped sheet, and states that the interested party owns the land in a peaceful, publicly-known and sustained manner and in good faith, and that there is no claim over said land by another person.*

Table 16. Risks related to tenure problems in REDD+ Projects and mitigation measures

REDD+ projects	Scope of tenure problems and illegal occupation	Proposed mitigation measure
Guatecarbon Project (CONAP-ACOFOP)	● Land ownership is not disputed. The problem is basically illegal occupation though of a very small scale. ● Candelaria has been identified as a potential illegal occupation area and is not included in the Program. ● Illegal land occupation (illegal settlements).	● The Program has excluded the area of La Candelaria. ● CONAP has specific procedures to deal with land occupation issues and has established different human settlements categories. ● The World Bank safeguards will apply.
Sierra Lacandón Project - Defensores de la Naturaleza	● All land plots belong to three sole owners with registered titles. ● Minor problems of land subdivision within cooperatives that hold the land and land selling.	• The Project has mechanisms to prevent the use of land for other purposes.
REDDES Locales para el Desarrollo Project (CALMECAC)	● It will only admit holders and owners in the same terms as the PINPEP and PROBOSQUE incentive programs.	● Municipalities that participate in the project shall certify land ownership and/or require title deeds from project beneficiaries. ● In the case of uncertified holders, municipalities will issue a Land Ownership Certificate. ● The Land Ownership Certificate includes a statement by the land holder confirming that there are no land claims regarding their property.

All projects have, or will design in the case of the CALMECAC Project a complaint and grievance mechanism to address issues related to land use. However, this mechanism does not replace the existing legal mechanisms available in Guatemala to resolve land conflicts and apply safeguards.

Summary of tenure regime, land conflict and forest governance challenges for the Program and proposals for mitigation measures.

From the preceding sections, it is clear that the Program implementation faces important land tenure and forest governance challenges. Guatemalan institutions are aware of such challenges and are taking the appropriate measures, as shown below:

1. **High level of land conflict.** There is no doubt that land conflict in Guatemala, as shown in the statistics presented in this section, may affect Program implementation.

Proposed measure: Although the Program's objective and its direct actions do not have land conflict resolution as a central aim, there is no doubt that the Program execution can support the consolidation of the institutional strategy to solve conflicts and increase land tenure security. In this sense, direct Program actions will be addressed to institutional conflict resolution programs and policies and will work in parallel with them. As an example, MARN and INAB will maintain constant interaction with the SAA to identify conflicts and promote REDD+ activities in areas that have recently solved conflicts and will support the economic development of populations and families. Additionally, the SAA will maintain its active conflict resolution policy[87], and FONTIERRAS will continue its program aimed at providing land access for comprehensive and sustainable development and regulating processes the allocation of State lands.

2. **Institutional weakness at the municipal and forestry levels**. Law enforcement weaknesses of forestry institutions such as INAB and CONAP are a reality and institutions are well aware of them. While the country has strong compliance regulations for the Program execution, for example, the Forestry Law or the regulations on protected areas, both with clear guidelines that prohibit deforestation and degradation, the country's institutions are not sufficiently present in the territory or lack the means to enforce the law.

   Proposed measure: To face this institutional weakness, the Program has a series of specific enabling activities aimed at strengthening institutions, mainly CONAP and INAB, but also in reinforcing monitoring measures not only at the institutional level but also in local communities and governments. At this point it can be observed that many project activities are also focused on strengthening municipal and communal institutions, given the importance of the municipality in the monitoring and controlling forest policies and territorial planning.

3. **Institutional weakness regarding tenure recognition**. The lack of coordination in institutions responsible for the recognition of land tenure and resolution of conflicts (SAA, RIC, FONTIERRAS, COPREDEH, municipalities). Additionally, there are budget gaps that affect the functioning of these institutions.

   Proposed measure: While the Program does not have a specific goal of tenure recognition or the creation of specific programs to address this issue, enabling activities included in the Program do focus on institutional coordination. On the other hand, incentives created by the Program will especially favor community organizations, families and farmers and will indirectly support them in land regulation processes.

The implications of land and resources ownership regimes in program areas and existing conflicts and possible mitigation measures are detailed below.

[87]In this sense, the SAA activities at the country level yield ever broader results, for example, from 2016 to 2018, it has resolved conflicts in more than 7,000,000 ha.

Table 17. Program challenges related to tenure and proposed mitigation measures

Topic	Risk	Mitigation measure
Expiration of community concessions in the Guatecarbon Project	● Two community concession contracts expire during the program execution period. ● Medium risk, due to the lack of continuity in forest management activities and impact on the generation of ERs	● Concessions will be negotiated during the two-year term before its conclusion in order to guarantee its renewal, in accordance with the existing legislation. ● There is a clear administrative procedure, with established deadlines and responsibilities to require an extension. This is currently being addressed by a specialized team at CONAP and conclusions must be presented by June 2019. A final version of the project update should be ready with all concessions regulations, as well as an opinion by the CONAP Executive Secretariat prior to being approved by the National Council of Protected Areas. This means it will be ready before the ERP, therefore, this administrative procedure for concession contracts should be ready during project implementation.
Conflicts in the MUZ area in the MBR in the Guatecarbon Project	● There are conflicts due to the illegal entry of third parties and usurpation	● The area of La Candelaria has conflicts in the MUZ, and has been excluded from the Program.
Lacandón and CALMECAC Projects	● There are no risks regarding land ownership. ● There are specific risks arising from the subdivision and sale of land within cooperative-held lands, and sale of land in the Lacandón Project, which could lead to the new dwellers not fulfilling the project's objectives. ● Lack of information regarding risks in the CALMECAC Project.	● The Lacandón Project has designed mechanisms to prevent the use of land for other purposes. The Defensores de la Naturaleza Foundation maintains direct contact with owners and holders, ensuring that REDD+ commitments and benefits are met by the new owners and holders.

CALMECAC Project	● No significant risks are foreseen in terms of land tenure since the Project will only accept duly accredited owners and holders.	● Municipalities included in the Project will certify owners and holders by requiring a property title deed, an accreditation as land holder or the issuance of a holder certificate in case they do not already have it.
General conflict and land tenure recognition **Lack of institutional coordination regarding tenure and regulation**	● Existing land conflicts. ● Lack of land recognition for small owners and local communities and land grabbing cases.	● The Program, through the incentives regime, establishes indirect activities to recognize tenure for small owners and communities. ● The Program institutions will follow up the information and actions of the Agrarian Conflicts Secretariat in order to improve institutional coordination.
Weakness in forestry institutions	● Little presence in the territory and lack of means to enforce the law on the part of INAB, CONAP and municipalities .	● The Program plans enabling activities to strengthen the monitoring and execution capacities of INAB and CONAP. ● The Program includes enabling activities to strengthen the role of municipalities in forest governance.

4.5 Analysis of laws, statutes and other regulatory frameworks

Guatemala has created a solid institutional architecture for developing the REDD+ Strategy, whose institutions will lead the Program implementation.

The Ministry of Public Finances will act as a Program Entity guaranteeing compliance with the requirements established in the ERPA with the FCPF.

The Interinstitutional Coordination Group (ICG)[88] formed by the Ministry of Environment and Natural Resources (MARN), the Ministry of Agriculture, Livestock and Food Supply (MAGA), the National Council of Protected Areas

[88] Regarding the ICG mandate, the third clause of the Agreement stipulates the following roles:

a) Reaching consensus among the governmental agencies responsible for environmental policies and coordinate actions with municipalities to develop solutions regarding policies, laws and rules related to the administration and use of renewable natural resources, without prejudice to the legal competences of each institution.
b) Providing guidance, public policy coordination, plans and sectoral actions for the development, implementation and monitoring of the priority areas of the ICG Interinstitutional Program Agenda, which includes:
    - National Program for the Reduction of Emissions in Guatemala through the strengthening of forest governance in vulnerable communities;
    - Reduction of deforestation and degradation;
    - Restoration of degraded forest landscapes.
c) Designing and implementing policies linked to the international agreements on environmental and natural resources ratified by the country, provided that one or some of the ICG entities are accredited as focal points, for which coordination, consultation and validation in national and international dialogue platforms will be necessary.
d) Coordinating the application of strategic actions affected by the current context regarding government institutions that manage natural resources or their users.
e) Proposing to the National Council on Climate Change short- and medium-term discussions that facilitate government management of renewable natural resources.

(CONAP) and the National Forestry Institute (INAB), is leading the process of REDD+ Strategy readiness and program design, and each institutions plays a key role in the implementation, and MARN will act as the focal point for the UNFCCC[89].
The main competent institutions for the implementation of the Program are described below:

1. MARN: The Ministry of Environment and Natural Resources' competences are based on the Environment Protection and Improvement Law (Decrees 68-86 and its reforms, 114-97, 90-2000, 91-2000, issued by the Congress of the Republic of Guatemala and the Government Agreement 50-2015, issued by the Presidency of the Republic of Guatemala). In terms of climate change policies, MARN is the leading institution, as established in the Framework Law for the Regulation of Vulnerability Reduction, Compulsory Climate Change Adaptation and the Mitigation of Greenhouse Gases (Decree 7-2013, issued by the Congress of the Republic of Guatemala) and ICG coordinator[90].
2. MAGA: State institution in charge of promoting comprehensive rural development through the transformation and modernization of the agriculture, forestry and hydrobiology sectors, developing productive, organizational and commercial capacities aimed at achieving food security and sovereignty and ensuring competitiveness based on clear standards and regulations for the management of products in the national and international market, guaranteeing the sustainability of natural resources, (Decree 114-97, issued by the Congress of the Republic of Guatemala and Government Agreement 338-2003, issued by the Presidency of the Republic of Guatemala). The MAGA develops productive actions especially in agroforestry and silvopastoral systems, which seek to reduce the pressure on natural forests.
3. CONAP: The National Council of Protected Areas is the leading institution responsible for directing and coordinating the Guatemalan System of Protected Areas (SIGAP) and its legally declared territories (Decree 4-89, issued by the Congress of the Republic of Guatemala) with jurisdiction throughout the national territory, its maritime coasts and airspace, developing actions to develop and improve protected areas promoting different models to include local stakeholders and women's organizations in forest management.
4. INAB: The National Forestry Institute (Forestry Law, Decree 101-96 issued by the Congress of the Republic of Guatemala and its regulation contained in Resolution 01.43.2005, of the National Forestry Institute Board) is an autonomous State institution, decentralized, legally incorporated, with its own assets and administrative independence. .

ER Program policies and legislation

Guatemala has a broad legal framework aimed at protecting the Program implementation. This legal framework will be complemented in the coming years by new legal and regulatory measures. A legislation catalog is presented below, divided by topics relevant to the Program and explaining how each piece of legislation supports the Program implementation.

Legislation and climate policy

The two main instruments in the fight against climate change are the for the Regulation of Vulnerability Reduction, Compulsory Adaptation to Climate Change Impacts and Mitigation of Greenhouse Gases (LMCC-Decree 07- 2013) and the National Action Plan for Climate Change Adaptation and Mitigation based on the National Climate Change Policy

f) Fostering and establishing links with other institutions related to the management of renewable natural resources, such as organized civil society stakeholders, private sector representatives, local communities and indigenous peoples, in order to agree on collaborative actions for national and regional management of local natural resources.
g) Proposing policy actions for treating and providing solutions to problems regarding the management and conservation of renewable natural resources.
h) Promoting intersectoral links and integration of natural resources and environment policies with other related public policies, coordinated by other sectors, namely: infrastructure and housing, agriculture, food security, energy security, tourism, economy, among others.

[89] Article 20 of the Framework Law on Climate Change names the four institutions (MARN, MAGA, CONAP and INAB) as leaders of climate policies, although it does not refer to the ICG as such.
[90]Clause II of the Technical Cooperation Agreement between MARN, INAB, CONAP and MAG for conservation and sustainable management of natural resources: ¨The ICG will be coordinated by the Minister of Environment and Natural Resources¨.

(PNCC) (Government Agreement 329-2009, issued by the Presidency of the Republic of Guatemala). The aim of this law is to establish the necessary regulations to prevent, plan and provide an urgent, adequate, coordinated and sustained response to the impacts of climate change in the country. The LMCC creates a National Council on Climate Change as a regulatory entity with public and private participation and a National Climate Change Information System in the Ministry of Environment and Natural Resources. Moreover, the law regulates the relation between ERs to and land ownership and legal possession and the registration of emission reduction programs and projects. To this effect, the law also includes provisions for the development of a registry of Projects GHG Emissions Removal and Reduction.

Table 18. Main legislative instruments and climate policies

LEGISLATION AND CLIMATE POLICY	
Framework Law for the Regulation of Vulnerability Reduction, Compulsory Adaptation to Climate Change Impacts and Mitigation of Greenhouse Gases (Decree 07-2013 issued by the Congress of the Republic of Guatemala).	It establishes responsibilities and competences that go beyond those of MARN and includes other governmental and non-governmental sectors. Additionally, it establishes mandates and guidelines for the design, development and implementation of climate policy instruments. Likewise, the law establishes emission reduction projects ownership rights for legal land owners and holders.
Law for the Development of Renewable Energy Projects Incentives (Decree 52-2003, issued by the Congress of the Republic of Guatemala)	Declares the urgency and the national interest in developing renewable energy resources. Its purpose is to promote the development of renewable energy projects and establish fiscal, economic and administrative incentives for this purpose.
National Climate Change Policy (PNCC) (Government Agreement 329-2009, issued by the Presidency of the Republic of Guatemala)	As a general objective, it proposes that the State of Guatemala, through the central government, the municipalities, the organized civil society and citizens in general, adopt risk prevention practices, reduce vulnerability and improve adaptation to climate change, and contribute to the reduction of greenhouse gas emissions.
National K'atun Development Plan: Our Guatemala 2032 (Resolution measure 03-2014, CONADUR, 2014)	General country development plan. Includes guidelines and goals aimed at adaptation and mitigation against climate change.
Environment Protection and Improvement Law (Decree 68-86, issued by the Congress of the Republic of Guatemala)	General law on protection, conservation and improvement of the country's natural resources, and the restoration of the environment in general.
National Action Program to Combat Land Degradation, Desertification and Drought	It establishes guidelines and measures to avoid desertification and drought in the country.
2013-2017 Energy Policy 2013-2027 (Government Agreement 80-2013, issued by the Presidency of the Republic of Guatemala)	Energy matrix objectives. It includes objectives for the use of firewood and biomass.
National Biological Diversity Policy (Government Agreement 220-2011, issued by the Presidency of the Republic of Guatemala)	It describes strategies for articulating efforts of biological diversity and climate change conventions, covering all aspects (vulnerability, adaptation and mitigation) as well as the financial mechanisms under development and the national policy on this issue.
Institutional agenda for the reduction of vulnerability and	The objective is to leverage commitments and organize institutional resources defined in the LMCC guidelines (Decree 7-2013) to contribute to the

climate change adaptation and mitigation. CONAP 2016-2020.	implementation of the National Action Plan on Climate Change Adaptation and Mitigation.
2017-2032 National Energy Plan, Ministry of Mines and Energy, 2016	It includes objectives of rational use of energy resources and economic development band is also presented as a tool to achieve emission reduction goals.
2019-2050 National Energy Plan (Ministry of Mines and Energy, 2018)	Its objective is to set long-term guidelines for sustainable energy supply, at competitive prices and helping the country's growth.
2019-2032 National Electrical Energy Plan (Ministry of Mines and Energy, 2018)	The goal is to get to 2032 with 99% access to electricity.

Forest and agricultural legislation and policies

The objectives of reforestation and conservation are places at the highest level of the country's legal system. Regarding social rights and the economic and social regime, the Political Constitution of the Republic of Guatemala makes (Article 126) references to reforestation, declaring that "the reforestation of the country and the conservation of forests are a matter of national urgency and social interest".

The main forest management rules in Guatemala are the Forestry Law (Decree 101-96, Forest Incentives Law for Holders of Small Forestry and Agroforestry Lands (PINPEP) (Decree 51-2010) and the Law for the Promotion of the Development, Recovery, Restoration, Management, Production and Protection of Forests in Guatemala (PROBOSQUE) (Decree 2-2015) and the Protected Areas Law (Decree 4-89), this norm established the Guatemalan System of Protected Areas (SIGAP)under CONAP's supervision. The SIGAP oversees 340 protected areas.

The ambitions of the Guatemalan government regarding forestry policies have been materialized through various programs to support forest land owners and holders. INAB currently manages both forest incentive programs (PROBOSQUE and PINPEP). In the past, INAB managed the PINFOR program, which was concluded at the end of 2016 and, like PINPEP, worked on protection, production, reforestation and agroforestry activities in more than 435,809.11 ha of forests nationwide. The PINPEP supports forestry activity of small land owners without property titles, in areas bigger than 0.1 ha. As of 2017, the Law for the Promotion of the Development, Recovery, Restoration, Management, Production and Protection of Forests in Guatemala (PROBOSQUE) has come into force and will be valid for 30 years (2017-2046). These forest incentive programs have promoted the participation and benefits for forest land owners and holders, as well as for local communities and have contributed to the conservation and economic development of the poorest and most vulnerable groups, including indigenous peoples and women. Between 1998 and 2015, more than 4.1 million people (of which 30% were women), benefited from PINFOR. Also, between 2007 and 2015, 135,000 people benefited from PINPEP, among them, 57% are indigenous and 30% are women. The PROBOSQUE Law establishes an allocation of an amount of no less than 1% of the national budget (about USD 40 million per year) to promote forest protection, restoration and good forestry practices. It is expected that, between 2017 and 2046, the PROBOSQUE Law will have established 1.2 million ha of forests. This would benefit more than 1.5 million rural families (30% would be women).

The main legal instruments for the forestry sector are summarized below.

Table 19. Main legal instruments and forest policies

FOREST AND AGRICULTURAL LEGISLATION	
Protected Areas Law (Decree 4-89, issued by the Congress of the Republic of Guatemala)	Its objective is to establish the necessary protected areas in the national territory aimed at the public and social interest. The law declares biodiversity as a matter of national interest and an integral part of the Guatemalan natural heritage, therefore, its conservation is also an object of the utmost importance and is achieved mainly through duly declared and well managed protected areas.
Forestry Law (Decree 101-96, issued by the Congress of the Republic of Guatemala)	Declares reforestation and forest conservation as a matter of national urgency and social interest. The aim is to reduce the deforestation and the expansion of the agricultural frontier, as well as to increase forest productivity with rational and sustained management, as well as to encourage public and private investment in forestry activities and improve the living standards of communities.
Forest Incentives Law for Holders of Small Forestry and Agroforestry Lands (PINPEP), (Decree 51-2010, issued by the Congress of the Republic of Guatemala) **Regulation of the Forest Incentives Law for Holders of Small Forestry and Agroforestry Lands (PINPEP), Resolution Nº. JD 312017 of August 21, 2017.**	Objectives of sustainable forest management through incentives to holders of small forestry and agroforestry lands.
Law for the Promotion of the Establishment, Recovery, Restoration, Management, Production and Protection of Forests in Guatemala (PROBOSQUE) (Decree 2-2015, issued by the Congress of the Republic of Guatemala) **Regulation of the PROBOSQUES Law, Resolution Nº. JD.12.2016, of March 16, 2016.**	Financial incentives to increase forest cover through the establishment, recovery, restoration, management, production and protection of forests that ensure the production of goods, the generation of ecosystem and environmental services and the protection of water basins.
Policy for the Joint and Shared Administration of the Guatemalan System of Protected Areas and of natural areas relevant for the conservation of biodiversity in Guatemala, 2014 **Support regulation for the Joint Administration, Co-administration and Shared Management of SIGAP and in Natural Areas of Importance for the Conservation of Biodiversity of Guatemala (Resolution 04-30- 2015, of December 15, 2015)**	The policy is defined as the set of principles, objectives, strategies and instruments that CONAP issues in agreement with its conservation partners for the joint administration and shared management of areas of importance for conservation inside and outside SIGAP. The regulation aims to ensure the optimal functioning of SIGAP in natural areas of importance for conservation by including non-profit public and private legal entities; legally recognized local community or indigenous organizations represented by their ancestral leaders in accordance with their own organizational system. The goal is to achieve effective solutions for the administration of conservation areas.

Rules for the Granting of Concessions for the Use and Management of Renewable Natural Resources in the Multiple Use Zone of the Maya Biosphere Reserve (July 1999)	Regulates procedures for granting concessions in natural areas and the rights and responsibilities of concessionaires.
National Policy of Integral Rural Development - (Government Agreement Nº. 196-2009)	Establishes as one of its specific objectives to strengthen socio-environmental management and the rational use of natural resources and assets, especially land, water and forest, in accordance with bioethics principles, and to mitigate vulnerability and the effects of climate change.
Interinstitutional Action Plan for the Prevention and Reduction of Illegal Logging (2010)	Establishes a coordinated plan with different institutions to reduce illegal logging, promote information systems and strengthen the legal system.
2013-2024 National Strategy for the Sustainable Production and Efficient Use of Firewood (2012)	Promotion of timber crops for energy purposes through forest incentive programs, coordinating efforts with local governments, governmental entities, non-governmental and community organizations, as well as international partners to facilitate the use of suitable technologies that guarantee the production and sustainable use of firewood in Guatemala.
National Policy on Prevention and Control of Forest Fires and Integrated Fire Management (2009)	Forest Fires Control and Prevention System and coordination between entities at different administrative levels.
2016-2025 CONAP's Institutional Strategic Plan, (2015)	Systematization of CONAP's conservation and protection objectives and policies in protected areas and institutional strategies.
Strategic Climate Change Plan of the Ministry of Agriculture, Livestock and Food Supply (2012)	The strategic greenhouse gas mitigation pillar proposes activities to reduce gas emissions and/or increase carbon removal by uptake, through the maintenance of current carbon sinks.
Agrarian policy (2014)	Establishes the objective of reducing socioeconomic inequalities through access to land, to resolve agrarian conflicts.
National Strategy for the Management and Conservation of Natural Resources in Communal Lands (2009)	Promotion of collective forest management led by CONAP.
2016-2020 Rural Agenda (2015)	Promotion of well-being in rural settings. Inclusion of the forestry sector. Actions planned in the area of agriculture and climate change mitigation and adaptation.
Forest-Industry-Market Integration Strategy, 2011	Promote and execute the strategic actions to promote more investment, employment, higher income and improving the manufacturing processes of forest products, especially timber, taking into account the sustainability and resilience of forest ecosystems.
2015-2045 National Strategy for Forest Landscape Restoration, mechanism for the sustainable development of Guatemala (ERPF) , 2015	It aims to recover, maintain and optimize biodiversity and the flow of ecosystem goods and services for development, respecting local values and beliefs through an intersectoral approach.

Land tenure legislation

Guatemala has a robust legal system regarding the recognition of land tenure and property rights. The Political Constitution of the Republic guarantees the right to private property (Article 39) with wide protection, but always in accordance with the law and in favor of national development and for the benefit of all Guatemalans. The Civil Code, the Registry Law and other legal instruments regulate land tenure, its categories and associated rights. The Ministry of Finance's State Assets Directorate is in charge of state assets at the national level.

Based on the Agreement on Socioeconomic Aspects and Agrarian Titling derived from the 1996 Peace Process, criteria and proposals were put in place to address matters such as legal reforms, land access and regulation, indigenous peoples' land rights, resolution of agrarian conflicts and the registry of property. This agreement was also the basis for the creation of new institutions (Land Fund, Secretary of Agrarian Affairs, National Peace Fund, Social Investment Fund and sectoral initiatives). However, land tenure problems are still a significant obstacle and even the many laws that came out of the Peace Process, governmental initiatives and efforts have not been able to solve all issue pursuant to land access and distribution for small owners and local communities. Even though there are several competent institutions working on the solution of land tenure tensions, agrarian conflict in Guatemala is deepened by the lack of expedition in cadastral processes, flaws in the General Land Registry of Property and the lack of a specific agrarian jurisdiction.

Table 20. Main legal and policy instruments for the protection of indigenous peoples

LAND TENURE LEGISLATION	
Political Constitution of the Republic of Guatemala	Recognizes private and State land ownership. Recognizes tenure rights of indigenous communities and peoples.

Civil Code (Decree Law 106-1963)	Establishes different types of property and their content.
Land Fund Law (Decree 24-99, issued by the Congress of the Republic of Guatemala);	Creates FONTIERRA, an organization in charge of allocating, selling and titling lands, individually or collectively. Through this program, indigenous peoples, small producers and communities can access land under different modalities.
Law on Urban and Rural Development Councils (Decree 11-2002, issued by the Congress of the Republic of Guatemala)	Permanent instrument for the participation and representation of the Guatemalan people in the country's urban and rural development process and in discussions regarding the use of forest resources.
Municipal Code (Decree 12-2002, issued by the Congress of the Republic of Guatemala)	Regulates consultations to citizens in matters within their jurisdiction and establishes the "consultation to municipal indigenous authorities and communities".
Cadastral Information Registry Law (Decree 41-2005, issued by the Congress of the Republic)	Creates the Cadastral Information Registry (RIC), as the competent authority in land-related matters, whose purpose is to establish, maintain and update the national land registry. Defines the different types of property, owner, holder and communal lands. The Secretariat of Agrarian Affairs (SAA) is thus created for the resolution of tenure problems.
Peace Agreements, on Socioeconomic Aspects and Agrarian Situation. **Chapter IV addresses the Agrarian Situation and Rural Development (1996)**	Framework to guarantee access to land and productive resources to the poorest communities in the country. Fosters participation and social agreements.
National Policy on Human Settlements in the Protected Areas of Petén and Verapaces (2004)	Management mechanism that establishes operational principles, objectives, strategies, lines of action and instruments as basic elements for the presence of human settlements in protected areas in compliance with the Protected Areas Law.
Specific Regulation for the Recognition and Declaration of Communal Lands (Regulation 123-001-2009, of the RIC Council)	Regulates the procedure to recognize and declare communal lands in an area under cadastral process. Conditions are different depending on whether it is a peasant or indigenous community.

Legislation on indigenous peoples and local communities

The Political Constitution of Guatemala recognizes the rights of indigenous communities and establishes special programs and legislation to that end. The State shall provide lands for the development of indigenous communities by means of a specific law. Although Guatemala has not developed a specific law on indigenous property, it has regulated their access to land, such as the Specific Regulation for the Recognition and Declaration of Communal Lands (Regulation 123-001-2009, from the RIC Council). In the case of indigenous lands, there are still claims to their historical property. The majority of communal lands, including indigenous lands, have been more commonly registered as cooperatives, associations of producers or community-based agricultural companies.

The protection of the indigenous communities' and peoples' rights has advanced not only through legal regulations but also case law decisions made by the Constitutional Court of Guatemala, which has recognized territorial rights of indigenous peoples, as well as rules of consultation to indigenous peoples[91].

[91]In an advisory opinion (file 199-95 of the Constitutional Court of Guatemala), regarding the term "indigenous territory" on ILO Convention 169, it considered that: "It can be considered that Article 13 provides that the territory concept covers the entire habitat of the regions occupied or used in some way by the peoples concerned, and should not be given another meaning. In addition, this concept is applicable to Articles 15 and 16 of the Convention, which refers, firstly, to the protection of existing natural resources on their lands and, secondly, to the provisions contained therein in the cases of relocation from the lands they occupy.

Regarding the participation in the benefits derived from the exploitation of natural resources belonging to the State, this will take effect whenever possible".
Regarding the procedure for consultation of indigenous peoples, the Constitutional Court defined in OXEC ruling (May 26, 2017), the guidelines for conducting such consultations, until the approval of a specific law.

Table 21. Main legal instruments and policies on gender equality policy for the protection of indigenous peoples

LEGISLATION ON INDIGENOUS PEOPLES	
Political Constitution of the Republic of Guatemala	The Constitution establishes the protection of ethnic groups and recognizes that Guatemala is made up of multiple ethnicities, including indigenous groups of Mayan descent. The State recognizes, respects and promotes their ways of life, customs, traditions, forms of social organization, the use of indigenous attire in men and women, their languages and dialects.
Law on Urban and Rural Development Councils (Decree 11-2002, issued by the Congress of the Republic of Guatemala)	The Development Councils System is the main way for Mayan, Xinca and Garífuna and non-indigenous populations to participate in public management and democratic development planning, taking into account principles of multiethnic, multicultural and multilingual national unity of the Guatemalan people. It stipulates consultations with municipal indigenous communities or authorities whenever an issue affects the particular rights and interests of the indigenous communities. Respect for indigenous customs.
Municipal Code (Decree 12-2002,, issued by the Congress of the Republic of Guatemala)	The code establishes that indigenous communities have the right to be recognized as a legal entity, and be registered in the civil registry of the corresponding municipality, with respect for their organization and internal administration. It also addresses the recognition of traditional authorities by the State, according to constitutional and legal provisions. It contains principles related to the indigenous mayor offices, given that municipalities must recognize, respect and promote existing indigenous mayors, and their own forms of administration.
Specific Regulation for the Recognition and Declaration of Communal Lands (Regulation 123-001-2009, of the RIC Council)	Regulates the procedure to recognize and declare communal lands in an area under cadastral process. Conditions are different depending on whether it is a peasant or indigenous community.
Land Fund Law (Decree 24-99, issued by the Congress of the Republic of Guatemala)	Based on the agreements on Identity and Rights of Indigenous Peoples and Socioeconomic Aspects and Agrarian Situation. FONTIERRAS is the institution responsible for addressing requests on access to State lands, with a view to providing relocated people spatial and legal security and access to individual or collective properties, in accordance with the Land Fund Law.
ILO Convention 169 on indigenous and tribal peoples in independent countries	Convention 169 of the International Labor Organization (ILO) is significant for being first the recognition of indigenous people as a collective subject of law. Recognizes the aspirations of indigenous peoples to manage their own institutions and ways of life, their economic development and the maintenance of their identities, languages and religions, within the legal framework of the States where they live.
PROBOSQUE Law(Decree 2-2015, issued by the Congress of the Republic of Guatemala)	The articles specifically mention indigenous communities, especially on paragraph d) of Article 8. Granting of incentives.

Gender legislation

In the last decades the State of Guatemala has ratified international commitments for the development and implementation of a number of policies and strategies aimed at reducing gender inequality. These policies include the

environmental sector. In this sense, the LMCC itself includes the concept of gender equality within its principles (Article 6, letter d) where the guiding principles are established for the PINPEP forest incentive law that also aims to promote gender equity, prioritizing the participation of women's groups in the management of natural forests. Despite this, there are many obstacles for the achievement of effective gender equality.

The commitment to the defense of gender equality has recently resulted in the signing of a Letter of Understanding for the Strengthening and Institutionalization of the Technical Roundtable for Rural Development with a Gender and Peoples Approach (November-2017). The LOU was signed by several ministries and secretariats related to rural development and aims to strengthen the work of the government institutions and development projects that benefit rural women[92].

[92]A significant number of authorities have signed the Letter of Understanding: Food and Nutrition Security Secretariat (SESAN); Ministry of Agriculture, Livestock and Food Supply (MAGA); Ministry of Public Health and Social Assistance (MSPAS); Ministry of Economy (MINECO); Ministry of Social Development (MIDES); Ministry of Public Finance (MINFIN); Ministry of Education (MINEDUC); Secretariat of Agrarian Affairs (SAA); Land Fund (FONTIERRAS); National Forestry Institute (INAB); National Institute of Statistics (INE); and the National Council of Protected Areas (CONAP).

Table 22. Main legal instruments and policies related to safeguards[93]

GENDER LEGISLATION	
Political Constitution of the Republic of Guatemala	Adopts principles of freedom and equality. Men and women, whatever their marital status, have equal opportunities and responsibilities. No person may be subjected to servitude or to any other condition that undermines their dignity.
Women's Dignity and Integral Development Law (Decree 7-99, issued by the Congress of the Republic of Guatemala)	Aims to improve and guarantee a better quality of life for women.
Municipal Code (Decree 12-2002) Decentralization Law (Decree 14-2002) both issued by the Congress of the Republic of Guatemala	Addresses women representation at the municipal, departmental, regional and national levels.
National Policy for the Promotion and Integral Development of Women and the 2008-2023 Equal Opportunity Plan (Government Agreement 302-2009)	Aims to promote women integration in sectoral policies.
Gender Environmental Policy, MARN (Ministerial Agreement 248-2015, issued by the Ministry of Environment and Natural Resources).	The objective is to promote equity and inclusion of women and men who work for the protection, conservation and improvement of natural goods and services, by adopting an effective gender perspective in the Ministry's policies, strategies, plans, programs, projects and environmental instruments.
Framework Law on Climate Change (Decree 07- 2013, issued by the Congress of the Republic of Guatemala)	One of the guiding principles that must be taken into account in decision-making processes and integral development is "considering the cultural and ethnic relevance, as well as the gender perspective, in the design of plans, programs and actions.
Institutional Policy for Gender Equality and Strategic Implementation Framework for 2014-2023, (Ministerial Agreement 693-2014, issued by the Ministry of Agriculture, Livestock and Food Supply) MAGA, 2014	It aims to contribute to the exercise of women's human rights through the creation of opportunities for their participation in all stages of the agricultural, livestock, forestry and sustainable hydrobiological production chain, highlighting ethnic and cultural relevance, establishing a framework of equality between men and women and promoting comprehensive rural development.

Safeguard legislation

In addition to the legislation and policies previously described, the country has put in place legislative measures that meet the safeguards related to information access, accountability, prevention of corruption, participation in decision-making and integration of environmental and social aspects in decision-making processes. The following table lists the main laws that provide such measures. For a more detailed discussion on safeguard policies, see Section 14. Safeguards.

In terms civil society participation, it is worth highlighting ILO Convention 169, the Municipal Code, the Decentralization Law and the Urban and Rural Development Law, which establish a broad participation of civil society at all levels, including Community Councils for Urban and Rural Development (COCODE), the Municipal Council (COMUDE), Departmental Councils (CODEDE) and the National Council for Urban and Rural Development (CONADUR), as well as the preponderant role of women in these levels of participation.

[93]A more exhaustive list is offered in Section 14.

Table 23. Main legal instruments and policies related to safeguards

Safeguard legislation	
Political Constitution of the Republic Guatemala; Public Information Access Law (Decree 57-2008, issued by the Congress of the Republic of Guatemala). ILO Convention 169 (Decree 9-96, issued by the Congress of the Republic of Guatemala). United Nations Declaration on the Rights of Indigenous Peoples (107th Session, September 2007).	Legislation that ensures that Guatemala's government structures grant the right of access to information, to the population in general. Legislation on the inclusion of social and environmental aspects in decision-making processes.
Executive Body Law (Decree 114-97, issued by the Congress of the Republic of Guatemala); Public Information Access Law (Decree 57-2008, issued by the Congress of the Republic of Guatemala) Penal Code (Decree 17-73 issued by the Congress of the Republic of Guatemala).	Legislation that guarantees that Guatemala's government structures ensures institutions' accountability capacity.
Anti-Corruption Law (Decree 31-2012, issued by the Congress of the Republic of Guatemala), Law on the Integrity and Responsibility of Civil Servants and Public Employees (Decree 89-2002, issued by the Congress of the Republic of Guatemala); Organic Law on the Accounts Comptroller Office (Decree 31-2002, issued by the Congress of the Republic of Guatemala).	Legislation for the prevention of corruption.
Forestry Law (Decree 101-96, issued by the Congress of the Republic of Guatemala); Protected Areas Law (Decree 4-89, and its Reforms, issued by the Congress of the Republic of Guatemala); Regulation of Environmental Evaluation, Control and Monitoring; Regulation on Environmental Evaluation, Control and Monitoring (Government Agreement 137-2016, issued by the Presidency of the Republic of Guatemala); the Framework Law for the Reduction of Vulnerability, Compulsory Climate Change Adaptation and Mitigation of Greenhouse Gases (Decree 7-2013, issued by the Congress of the Republic of Guatemala), Municipal Code (Decree 58-88, issued by the Congress of the Republic of Guatemala) - Law on Urban and Rural Development Councils (Decree 11-2002, issued by the Congress of the Republic of Guatemala).	The structures of the Guatemalan government include public participation in making forest-related decisions.
Political Constitution of the Republic of Guatemala, Agreements on Firm and Lasting Peace (APFD- 1996) Agreement on Socio-Economic Aspects and Agrarian Situation (AASESA- 1996), Agreement on the Identity and Rights of Indigenous Peoples (AIDPI 1996) Framework Law for the Regulation of Vulnerability Reduction, Compulsory Climate Change Adaptation and Greenhouse Gas Mitigation, Decree 7-2013, issued by the Congress of the Republic of Guatemala, ILO Convention 169 (Decree 9-96, issued by the Congress of the Republic of Guatemala)	Legislation that recognizes and respects the rights of indigenous peoples and local communities.

International treaties signed by Guatemala

Guatemala is part of many international treaties and agreements on human rights. In that sense, the Political Constitution of the Republic of Guatemala (Article 46) establishes the general principle that, in terms of human rights, all treaties and conventions signed and ratified by Guatemala have priority over domestic laws. The main relevant agreements for the Program are described below.

Table 24. Main international treaties signed by Guatemala relevant to the Program

INTERNATIONAL TREATIES SIGNED BY THE REPUBLIC OF GUATEMALA RELEVANT TO THE PROGRAM IMPLEMENTATION
- United Nations Framework Convention on Climate Change (Decree 15-95, issued by the Congress of the Republic of Guatemala) - Kyoto Protocol linked to the United Nations Framework Convention on Climate Change (Decree 23-99, issued by the Congress of the Republic of Guatemala) - United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification (Decree 13-98 issued by the Congress of the Republic of Guatemala) - ILO Convention 169 on Indigenous Peoples[94] (Decree 9-90 issued by the Congress of the Republic of Guatemala) - United Nations Declaration on the Rights of Indigenous Peoples - Convention on Biological Diversity (CBD) (Decree 5-95 issued by the Congress of the Republic of Guatemala) - Central American Agreement on Climate Change, signed on October 29, 1993 (Decree 30-95, issued by the Congress of the Republic of Guatemala) - Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization linked to the Convention on Biological Diversity (Decree 6-2014 issued by the Congress of the Republic of Guatemala)[95] - Regional agreement for the management and conservation of natural forest ecosystems and the development of forest plantations in Central America (Government Agreement 2910-93) - Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention) (Decree 4-88 issued by the Congress of the Republic of Guatemala) - UNESCO Convention on the Protection of the World Cultural and Natural Heritage (Decree 47-78 issued by the Congress of the Republic of Guatemala) - Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (Legislative Decree 63-79 issued by the Congress of the Republic of Guatemala) - Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) (Decree Number 21-2017 issued by the Congress of the Republic of Guatemala) - International Treaty on Plant Genetic Resources for Agriculture and Food adopted in 2001 (Decree Number 86-2005 issued by the Congress of the Republic of Guatemala) - Convention for the Elimination of All Forms of Discrimination against Women and Declaration of the Beijing Platform for Global Action (ratified by Guatemala in July 1982)

Institutional and regulatory deficiencies and mitigation measures for adaptation to the Program

Most legal and political instruments currently in place in the country are in accordance with the Program's objectives and activities. As shown in the previous sections, the State of Guatemala has a broad set of legal provisions with sufficient elements for the successful implementation of the Program. Additionally, Guatemala has extensive experience in the design and management of forest incentives, which are relevant for the implementation of the Program, the achievement of its objectives and the fulfillment of the planned actions.

The implementation of the Program may require the adaptation of certain Legal Regulations, as well as the possible approval of other instruments that will allow the integral development of the activities proposed by the Program. Likewise, and despite the country's sound institutional framework for the forestry sector, certain actions are required

[94]Guatemala ratified ILO Convention 169 (Decree 9-90) although, upon ratification, it did so stating that it is subject to the Political Constitution of the Republic, which many believe is not correct because it is human rights treaty.
[95]Provisionally suspended by Decision 2606-2016 of the Constitutional Court.

to improve the operability and efficiency of the institutions that participate in the Program. The main institutional and legal deficiencies and the measures that Guatemala intends to undertake to guarantee the full effectiveness of the Program are described below.

Institutional deficiencies

1. At the INAB level, and despite being an institution with wide technical capacity, one of its main weaknesses is its financial limitation, reflected in insufficient staff and technical equipment to carry out forest incentives initiatives[96].

    - Mitigation measure: To alleviate this deficiency, INAB will work on a budget expansion to improve the effectiveness the analysis and approval of incentives, and the overall harmonization of administrative procedures. Program activities aimed at improving governance will help to alleviate these deficits.

2. At the CONAP level, the main identified risk is a limited budget allocation, which affects the effective administration of SIGAP[97]. In addition, the lack of technical personnel also hampers the timely issuance of licenses and permits for the use of resources.

    - Mitigation measure: CONAP will require a budget expansion, and will receive additional support regarding institutional governance activities foreseen in the Program.

3. Deficit in institutional coordination. Institutional coordination between MARN and MAGA and between CONAP and INAB shows deficiencies.

    - Mitigation measures: Strengthening the coordination of the institutions according to their competences.

4. Weakness at the municipal level. Municipalities have a key role in forest governance, but their current resources and capacities are insufficient.

    - Mitigation measures: Strengthening municipal offices will facilitate staff training on topics related to forest governance, territorial planning and will support local government bodies such as COCODEs and COMUDEs and their relationship with community authorities (indigenous mayorships, elder councils).

5. Financial weakness at the level of non-governmental organizations. Environmental and development non-governmental organizations have limited resources.
    - Mitigation measures: Search for financial mechanisms.

Legal deficiencies

Although the regulatory framework addresses and validates all Program activities, certain legal issues should probably be reviewed to ensure compliance of Program objectives and guarantee the generation of ERs. Some legal deficiencies and proposed measures aimed at integrating the Program in the Guatemalan legal framework are described below:

1. Definition of legal holders in the Framework Law for the Regulation of Vulnerability Reduction, Compulsory Adaptation to Climate Change Impacts and Mitigation of Greenhouse Gases[98]. As discussed in Section 17, ER

[96]Guatemala Forest Investment Plan, March 2017, p. 49.
[97]Only 0.15% of the Gross Domestic Product (GDP) for the management of natural resources (forests) through budgets allocated to INAB, CONAP and MARN, Forestry Investment Plan, March 2017, p.34
[98] Decree 7-2013, issued by the Congress of the Republic of Guatemala.

rights under the Framework Law on Climate Change correspond to owners and legal land holders. The definition of legal holder and, in general, the ownership of ERs related to land possession is a controversial issue among different REDD+ stakeholders.

- Mitigation measure: Guatemala will establish an Emissions Registry regulation in 2019. A draft text has already been developed and is in accordance with the requirements of the Framework Law on Climate Change. This regulation will not alter the content of the LMCC in terms of ER ownership and, therefore, will not affect the transfer of ERs to the FCPF.

2. Conditions to access the Program benefits. As explained in Section 4.4, the PINPEP and PROBOSQUE laws have provisions that forbids people that have already been beneficiaries of incentive program to be a beneficiary in the future. Likewise, the legislation establishes a time limit for being a beneficiary. Having said that, although neither the PINPEP and PROBOSQUE laws nor their regulations address REDD+ incentives[99], in REDD+ is interpreted as PINPEP and PROBOSQUE benefits, REDD+ payments may be denied to individuals and communities that have been PINPEP and PROBOSQUE beneficiaries in the past.

   - Mitigation measure: Guatemala is currently preparing and designing measures for the implementation of Program activities and is designing normative acts for the inclusion of compensation payments made by the Program (Compensation Mechanisms for Ecosystem and Environmental Services Associated with Forests) to facilitate wide and effective access for beneficiaries and therefore comply with the Program objectives.

As mentioned, the country will adopt regulations to comply with the MRV requirements, including the formalization of the Registry. In this regard, see Section 18.2 on the principles and main elements of the Registry, which currently has a draft regulation.

4.6 Expected lifetime of the proposed ER Program

The ERP has been planned for a 30-year term, considering the beginning of its implementation in 2016, the date on which the PROBOSQUE Law came into effect, and its conclusion in 2046.

5. STAKEHOLDER CONSULTATION, AND PARTICIPATION

The National REDD+ Strategy and FIP dialogue and engagement process has been worked at two levels, a government-led process (dialogue and engagement) and a consultation process, which are early REDD+ actions to meet the standards of voluntary markets.

5.1 Description of stakeholder consultation process

In Guatemala, the ENREDD+ readiness process is governed by FCPF's Guidance on Stakeholder Engagement (2012) which focus on social inclusion and provision of rights and establish guidelines to develop the national REDD+ strategy. In terms of dialogue and engagement, a process was developed within the ENREDD+ framework in order to integrate and outreach general information aimed at collective construction and validation.

This consultation based on FCPF guidelines is called "Dialogue and Engagement" which clearly describes the nature of the process: It is not about a single event or yes or no questions, but rather a continuous and dynamic exchange

[99]Despite not mentioning REDD+, the PROBOSQUE Law establishes compensation mechanisms in "Article 19: Compensation mechanisms for forest ecosystem and environmental services. INAB, in collaboration with beneficiaries and other stakeholders, will promote compensation mechanisms aimed at project participants that generate ecosystem and environmental services associated with forests. Aspects related to the planning, organization, direction and control of different compensation mechanisms will be established in the regulations of this law."

process between State and stakeholders in order to obtain a National REDD+ Strategy that reflects the vision of stakeholders, based on the three REDD+ measures.

The main purpose of the dialogue and engagement process is for the National Strategy[100] to reflect the views of the stakeholders, and its goals are:

- Promoting the voluntary and free participation of stakeholders (including indigenous peoples, local communities and groups of women who depend on forests) in such a way that collaborative processes support REDD+ governance in territories and regions. This support, in turn, will contribute to the success in the implementation of the Strategy.
- Ensuring that the ENDDBG takes into account and includes the opinions of the stakeholders, in compliance with national and international standards and guidelines

The Dialogue and Engagement Plan[101] was developed and designed in mid-2017 during the preparation of the R-Package. The methodology proposed in the General Dialogue and Engagement Plan takes into account FCPF's social and environmental sustainability standards, in line with the country's international and legal framework, and seeks to generate active involvement and feedback from the country's main stakeholders and participants. This methodology is operated in eight steps aimed at ensuring citizens' right to participation.

Figure 25. The eight FCPF steps as a continuous cycle of dialogue and engagement.

In the General Dialogue and Engagement Plan, these steps were divided in a preparation phase plus four additional phases.

Table 25. General Dialogue and Engagement Plan

FIRST PHASE	Outreach, capacity building and initial agreements

[100] Outreach activities within the framework of the National Strategy development in http://www.marn.gob.gt/s/redd_/paginas/Socializacin_durante_el_proceso_de_construccin_de_la_Estrategia

[101] See http://www.marn.gob.gt/s/redd_/paginas/Dilogo_y_Participacin_2

SECOND PHASE	Open and informed dialogues at the regional and local level, in some cases translated into the local language and with gender considerations.
THIRD PHASE	Construction of agreements and recommendations to be integrated to the ENREDD+.
FOURTH PHASE	Systematization and feedback (continuous)

In its early idea note for the National Emissions Reduction Strategy (ER-PIN), Guatemala divided the country into five REDD+ regions: Tierras Bajas del Norte; Sarstún-Motagua; Occidente; (Centro) Oriente y Costa Sur. The priority territories are:

Tierras Bajas del Norte (TBN)[102]**:** Specifically, the entire Petén Department.

Sarstún-Motagua: a) Izabal in the area near the border; and b) The Cobán area in Alta Verapaz and the municipality of Ixcán in Quiché (part of the TBN REDD+ region)

Oriente Region: includes the dry corridor of Chiquimula, Zacapa, El Progreso and Jalapa.

Occidente: Includes the highland municipalities with the greatest impact due to the use of firewood (Huehuetenango, Quetzaltenango, Quiché, Totonicapán, San Marcos, Chimaltenango and Sololá).

The indicated territories have a series of factors that support their inclusion:

(i) They are key areas in the country to combat emissions from deforestation and/or forest degradation, or present an opportunity to increase the carbon stock;

(ii) They have had a prior process of REDD+ readiness activities, including participation in preparing the Social and Environmental Strategy Assessment (SESA) and/or design of REDD+ projects;

(iii) They have been prioritized in the country's Forest Investment Program (FIP), during the REDD+ mechanism implementation phase; and

(iv) They have an important civil society base and organizations or institutions capable of carrying out consultations at the territorial level.

The Dialogue and Engagement Plan is aimed at national stakeholders the prioritized territories[103]:

- Representatives of indigenous peoples and local communities, with support from the Mayan Languages Academy of Guatemala
- Local organizations that influence the management of forest resources.
- Municipalities that manage forests (Municipal Environmental Management Unit (UGAM), Municipal Forestry Office (OFM), Municipal Forestry Office (OMA) and Municipal Women's Office (OMM).
- Representatives of the different levels of SISCODE.
- Groups of women and young people who manage or influence the management of forest resources.
- NGOs and community forestry networks.

[102]In the Tierras Bajas del Norte (TBN) REDD+ region, in addition to the Petén Department, the northern part of the municipalities of Ixcán, Cobán, Chisec, Raxruhá, Fray Bartolomé de las Casas, Chahal de la Franja Transversal del Norte. However, for purposes of clarity, the analysis was divided in two: One including Petén, differentiating the northern and southern part; and another including the area of the Franja Transversal del Norte, Verapaces and Ixcán. In this last area, the REDD+ regions of Tierras Bajas de Norte, Sarstún-Motagua and Occidente are contiguous, so there are municipalities of the three regions.

[103]The identification of stakeholders for the Dialogue and Engagement Plan was made according to the FCPF definition: *"Stakeholders are defined as those groups that have a stake, interest or right in the forest and those that will be affected either negatively or positively by REDD+ activities. They include relevant government agencies, formal and informal forest users, private sector entities, indigenous peoples and other forest-dependent communities"*

- Academia.
- Private businesses.
- Government institutions. In addition to the delegations of MARN, INAB, CONAP and MAGA, entities such as the Secretariat of Agrarian Affairs, SEGEPLAN, PDH, COPREDEH, SEPREM, Indigenous Women Defender's Office, judicial organisms, DIPRONA, municipal courts, environmental law enforcement agencies and the National Institute of Cooperatives (INACOP).

The first version of the ENDDBG[104], was built by reviewing and compiling the Government of Guatemala's previous proposals, plus inputs obtained in the First and Second Round of Territorial Dialogue and Engagement Meetings that took place from October to December 2017.

In April 2018, the Third Round of Territorial Dialogue and Engagement Meetings was carried out with the objective of providing feedback to the first ENDDBG draft and had the support of various stakeholders organized in working groups. Information was gathered on the drivers of deforestation and forest degradation, as well as the objectives, pillars, lines of action and strategies.

With this new feedback, we began to integrate the information in a second draft version of the ENDDBG, which, through a collaborative construction process, was presented at the Fourth Round of Territorial Meetings[105].

For the execution of the Dialogue Plan, a dissemination and communication strategy has been developed with key messages and the means of support and dissemination[106].

For the development of the four regional workshops, the following methodology was applied to ensure the full participation of relevant parties:

1. Context: The agenda was presented to the participants, as well as general concepts such as: climate change, forests and REDD+; Progress at the national level in the preparation of Guatemala's National REDD+ Strategy; What is the Strategic Social and Environmental Assessment (SESA)?; positive and negative impacts in the framework of REDD+ activities identified in Guatemala.

2. Identification of REDD+ measures (avoided degradation, avoided deforestation and increased storage of carbon credits) that most affect the region and identification on a map of where REDD+ measures are carried out.

3. Presentation of the proposed REDD+ activities. Since REDD+ options are quite general, in order for participants to identify impacts at the regional and local levels, it was decided that they would work at the level of REDD+ activities and actions. As noted above, the National REDD+ Strategy is under developed, REDD+ actions have not been formally adopted in the country, therefore, the regional workshops were guided by the REDD+ Execution Unit and followed by the ICG institutions.

4. Identification of potential actions, stakeholders, positive and negative impacts by activity: to this end, participants were divided into six groups using the World Cafe Method, which allows collaborative dialogues around important issues. During these dialogues, one hour was dedicated to go around each table, then 40 minutes to come up with ideas and exchange thoughts, learnings and understandings of the work generated by the first group, thus connecting ideas and experiences of each participant. For this specific case, the main issue were the six activities identified for the country. Participants were instructed so that, when identifying

[104]For a better understanding of this process, review the General Dialogue and Engagement Plan for the Collective Construction of the ENDDBG (available at http://www.marn.gob.gt/Multimedios/10064.pdf), as well as the Territorial Dialogue and Engagement Plans for the participatory construction of the ENDDBG (http://www.marn.gob.gt/Multimedios/10066.pdf).

[105]See "*Sistematización. Rondas de encuentros territoriales de diálogo y participación de la Estrategia Nacional para el abordaje de la Deforestación y Degradación de Bosques en Guatemala*". Guatemala, June 2018.

[106]See *Estrategia de Socialización, Difusión y Comunicación para la construcción participativa de la Estrategia Nacional de Reducción de la Deforestación y Degradación de Bosques en Guatemala (ENDDBG)*. http://www.marn.gob.gt/s/redd_/paginas/Dilogo_y_Participacin_2

socio-environmental impacts, they would analyze how the identified actions could benefit or affect women and indigenous peoples. To maintain a gender focus during the workshops, groups of women were formed to discuss and analyze impacts of each action.

5. Identification of proposals for mitigation measures and identification of the legal framework that already addresses negative impacts: six working groups were formed (one per REDD+ activity), so that each group could identify mitigation proposals for each negative impact, as well as existing laws, policies or regulations that already address these negative impacts.

6. Results outreach: each group picked a rapporteur to share information and each group presented the general results. In this way, participants had the opportunity to give feedback regarding the work presented by each group.

7. Closing of the event: participants reflected on their work a Q&A session took place. The next steps were then presented to the plenary and their participation was acknowledged and appreciated.

8. Workshop documentation: minutes of every workshop were drafted and the information generated in each region was systematized.

Following the propositions of the General Dialogue and Engagement Plan, during the first round of territorial meetings, participants elaborated a Territorial Dialogue and Engagement Plan of how the process should be organized and carried out in each territory, according to their sociocultural context. The reason for these territorial plans is that, in a country as multicultural and multilingual as Guatemala, a program focused on combating deforestation and degradation cannot be done with a single, uniform model. Managing the dialogue process in the territories allowed stakeholders to expose their reality and base their interventions on local practices of each town and community.

The first territorial meetings were held in five territories, namely: Petén, Verapaces and Ixcán (Quiché), Izabal, Occidente (Quetzaltenango, Totonicapán and San Marcos, Sololá) and Oriente (Corredor Seco de Chiquimula and Jalapa). Although five territories have been given priority due to their biophysical characteristics and deforestation figures, the dialogue process will be expanded to include more departments and territories.

For each territorial meeting, a list of participants was developed with an inclusive approach of cultural relevance and gender and shared with the Interinstitutional Coordination Group (ICG) and with local governance platforms and other stakeholders. The aim is including new REDD+ stakeholders in every process. Then, MARN and the local institutions invited participants and shared the agenda and work methodology with them.

The methodology of the territorial meetings was based on an inclusive and collaborative approach in which representatives of all stakeholders presented their experiences, knowledge and doubts about the REDD+ process. During each round of territorial meetings, the advances of the ENDDBG were presented.

In each workshop, participants were asked to form working groups to analyze and develop proposals and reflect on the country's forestry issues. In some cases, groups were formed exclusively with women, to include their perspective. All the generated results were recorded and systematized.

It is noteworthy that, although the dialogue process was developed in Spanish, in particular cases local Mayan languages were used to facilitate communication. In these circumstances, participants used their native languages to facilitate dialogue.

During 2017 and 2018, territorial workshops were held to present, outreach and hear feedback about the National Deforestation and Degradation Strategy for Guatemalan Forests. Regarding the dialogue and engagement topics, they were agreed upon within the framework of the Territorial Participation and Engagement Plans development. The main topics considered are detailed below[107].

[107]The scope of content and the order of topics discussed varied in each territory and are explained in the Territorial Dialogue and Engagement Plans. http://www.marn.gob.gt/s/redd_/paginas/Dilogo_y_Participacin_2

1. **Drivers of deforestation and forest degradation in each region.**
2. **Forest and Climate Change.**
3. **REDD+ Strategy General Approach**: strategy proposal in terms of its policy guidelines. (audiovisual support material was used).
4. **Implementation and safeguard measurement**: proposal for the National Safeguard Approach and SIREDD+ operational proposal.
5. **REDD+ priority actions for a particular region**.
6. **Social and Environmental Strategic Assessment (SESA) and the environmental management model**.
7. **Proposal for the Attention, Information and Attention to Complaints Mechanism (MIAQ) and Measurement, Reporting and Verification (MRV): its usefulness and access**.
8. **Benefit sharing mechanism.**

The first territorial workshop, held in October 2017, had the main objective of jointly elaborating Territorial Dialogue and Engagement Plans. Also, it aimed to give details about the preparation of the strategy; train stakeholders on forest issues and its relationship to climate change, REDD+ mechanisms, the Cancun Safeguards, REDD+ Gender Route and reference levels of greenhouse gases. In the first meetings, a proposal for the Information and Attention to Complaints Mechanism (MIAQ) was also presented, which is aimed at hearing and redressing grievances related to the preparation and future implementation of the strategy[108].

Generally speaking, the first round of meetings introduced the REDD+ process in the territories, where it was previously unknown, except for Petén and some areas in Izabal[109].

The second territorial dialogues, organized in the five pilot territories between November and December 2017, had the main goal of gathering participants and determine the main drivers of deforestation and forest degradation in their territory, and also let them build and provide feedback on the REDD+ strategy approach. If the first round was more informative, the second meetings had a more concrete focus aimed at analyzing forest issues from a territorial or local perspective, and collecting inputs, priority actions and recommendations from local stakeholders.

This exercise was carried out using large maps of the territory where participants pointed out the main factors affecting forest resources. In all territories, specific women groups were formed, in which they had the opportunity to analyze and make comments on their particular perspective.

In all territories, except for Petén (where indigenous authorities did not participate) and Verapaces and Ixcán (with a lot of indigenous representation), specific groups were formed with participants . This allowed them to focus on their own priorities and be able to express themselves freely. Stakeholders identified underlying causes of deforestation and degradation related to the model of forest management and sustainability. As solutions, indigenous authorities offered traditional practices of care and respect that have allowed the survival of such fragile and strategic ecosystems.

It is worth mentioning that during the second round of dialogues, greater participation was achieved from private sector stakeholders that affect forests positively and negatively. These included, among others, palm tree growers (the GREPALMA and Naturaceites associations) in Petén, livestock farmers, Mayaníquel S.A. and the PERENCO oil company in Izabal, and ANACAFE in the Oriente region. The representatives of private companies participated in the same way as the others in the analyses and group discussions, contributing to a rapprochement with civil society and environmental organizations.

Another of topic analyzed with wide participation were the obstacles and limitations to tackle deforestation and degradation of forest resources. To do that, participants worked in groups (with separate groups for women and indigenous peoples) with the support of external facilitators. The obstacles and limitations indicated were similar in all the territories, with special emphasis on the following aspects:

[108]See *Sistematización de Primer Encuentro de Diálogo "Primer encuentro nacional para dialogar sobre la construcción de la ENDDBG"* at http://www.marn.gob.gt/s/redd_/paginas/Dilogo_y_Participacin_2.

[109]Three REDD+ individual projects are underway in these departments: Guatecarbon (CONAP and ACOFOP), Lacandón Bosques para la Vida (Defensores de la Naturaleza Foundation) and REDD+ for the Guatemalan Caribbean (FUNDAECO).

- operational weaknesses, lack of sufficient budget and little coordination among public institutions (MAGA, MARN, INAB, CONAP, municipalities, DIPRONA and others) in charge of ensuring the sustainable use of forests.
- Little incentive to strengthen forest governance based on the replication of community models that have worked in the past.
- Operational and budgetary limitations when acting against illegal activities (illegal logging, invasions and encroachments, etc.)
- Lack of job opportunities and poor agricultural production, which drives the expansion of crops lands.
- Little control over forest fires; vegetation burning.
- Generalized corruption.
- Lack of municipal territorial planning policies, or weak implementation.
- Lack of knowledge and access to new sustainable production techniques.
- Limitations and high cost for obtaining permits and licenses to use timber.
- Lack of a systematic mechanism of exchange between forest-dependent communities, indigenous peoples, and public institutions (there are Development Councils, but especially in Occidente and Petén, stakeholders are not happy with their performance or representation).

Stakeholders identified and prioritized these obstacles and limitations, according to their daily experiences. They were then ordered and analyzed by the consultant team and are found in the introduction section of the ENREDD+ draft.

The analysis of the main barriers and limitations gave way to activities and strategic actions suggested by participants, who best know their own territorial reality. These inputs are the backbone of the National Strategy.

The third round of territorial dialogue and engagement meetings had the support of the ICG. There, first version of the ENREDD+ was presented to the FCPF for feedback. This round of meetings was held in April 2018. Again, work groups were formed by diverse stakeholders to provide feedback to the Strategic ENREDD+ Framework and analyze the proposed objectives, strategic lines of action and the main drivers of deforestation and forest degradation.

In fourth and last round of territorial dialogue and engagement meetings, the second reduced version of the ENREDD+ was presented, including the modification based on the information obtained in the third round of territorial meetings.

The objective of fourth round of workshops was to review and provide feedback on the ENREDD+, mainly the cross-cutting pillars and main topics: i) deforestation, ii) forest degradation and iii) restoration of forest and degraded lands. Again, work groups were formed for the participation of diverse stakeholders. Each group was given the second reduced version of the ENREDD+ and a form to fill out, in which the participants put the territory to which they belong, the name and institution they represent and reviewed the reduced document of the strategy with the strategies and the topics. Next, they wrote down their comments in the corresponding fields with the purpose of enriching the second ENREDD+ draft.

Regarding information, outreach and feedback within the Dialogue and Engagement Plan process and aspects related to the program's environmental and social safeguards, it is worth noting that during the 2017-2018 period, two national forums and four workshops in five priority territories discussed main safeguard concepts within the framework of the National Safeguard Approach.

In the second meeting, the strategic options (strategic lines) and their articulation with the results of the Social and Environmental Strategic Assessment (SESA), the Environmental and Social Management Framework (ESMF) were analyzed, as well as the Information and Attention to Complaints Mechanism (MIAQ)[110].

It is emphasized that the Stakeholder Engagement Plan, whose draft is included as an Annex, contains details regarding the methodology and spaces for dialogue and communication during the Program formulation and implementation to address safeguard instruments (which will be aligned with the guidelines established in Environmental and Social Standards 1 and 10).

The following table summarizes the progress in each of the general phases of dialogue and participation.

Table 26. Level of progress in the general phases of dialogue and participation.

PHASES OF DIALOGUE AND PARTICIPATION REGARDING ENREDD+			
Phases	Steps[111]	Main actions	Progress
National level			
PREPARATION OF THE DIALOGUE AND PARTICIPATION PLAN	Step 1 Step 2 Step 3 Step 4	- Discussing of the Dialogue and Participation Plan with stakeholders. - Stakeholders' capacity building. - Establishing of a virtual platform to receive proposals (SIREDD+ and/or REDD+ portal). - Establishing of a grievance and complaints mechanism in MARN. - Setting up databases and formats for recording and systematizing the dialogue and participation process.	- The proposal of the General Dialogue and Engagement Plan, based on a territorial approach, was analyzed and outreached to stakeholders who participated in the National Forum in September 2017. - In the case of INAB, in September 2017 a training session was organized for the institute's regional and subregional delegates. - The first round of dialogues, held in October 2017 in five territories, served to inform stakeholders about REDD+ and build their capacities. - The REDD+ Information System platform (SIREDD+) has been enabled to serve as a virtual exchange forum. The draft version of the National Strategy, together with all the documents produced, are published on MARN website. - A complaints and grievance mechanism called MIAQ (Information and Attention to Complaints Mechanism) has been proposed. - A stakeholder database has been created.
Four phases at the level of regional territories and platforms			
Phase 1: **OUTREACH, CAPACITY BUILDING AND INITIAL AGREEMENTS**	Step 1 Step 2 Step 3 Step 4 Step 5	- Selection and demonstration of interest from regional and local support organizations. - Dissemination of basic information on REDD+ and ENREDD+. - Preparation of Dialogue and Engagement Plans with delegates from the institutions that make up the ICG and representatives of local organizations.	- Regional and local support platforms were selected. - Basic information on REDD+ and ENREDD+ readiness has been outreached. This has been done mainly in regional meetings with institutional representatives and stakeholders involved in the management of forest resources. - In October 2017. the Dialogue and Engagement Plans that provide the guidelines for the territorial processes were developed in a collective manner. - An outreach, dissemination and communication strategy was developed to communicate with territorial stakeholders and the general public.

[111] Corresponding to those established by the FCPF

		- Broad information with communication strategy; Preparation of informative materials. - Agreements with possible collaborators to follow up the dialogue and participation process.	Outreach and dissemination activities are coordinated with the ANOFCG and regional stakeholders that participate in ongoing REDD+ projects. - Possible collaborators of the dialogue and engagement process were identified in the General Plan. Territorial meetings have benefited from the presence of representatives from the SAA, PDH, FONTIERRA, DEMI and others who have been invited to participate as observers and guarantee the transparency of the process. Regional collaborators (for example, international cooperation programs) were otherwise engaged and have not shown interest in playing a greater role in the ENREDD+ readiness process. However, they are part of and have actively participated in the territorial dialogues.
Phase 2: **OPEN AND INFORMED DIALOGUES AT REGIONAL AND LOCAL LEVELS**	Step 5 Step 6	- Information with calls to members of regional platforms. - Informative sessions, dialogue on priority issues from the perspective of local stakeholders. - Exchange with and between indigenous authorities. - Assemblies of indigenous authorities on priority REDD+ issues. - Information and discussion with the private sector.	- Information was disseminated and members of regional platforms were invited to participate in the first territorial dialogues. For this, the support of local organizations was crucial. - Two rounds of territorial meetings were held in five priority territories. The first meetings aimed to disseminate information, educate participants on issues related to climate change and forests, REDD+ and safeguards . Likewise, the Territorial Dialogue and Engagement Plans were prepared. The second round meetings analyzed, together with local stakeholders, the drivers, agents and dynamics of deforestation and forest degradation, and began to build the REDD+ Strategy in a collaborative manner. - Thoughts were shared with and among indigenous authorities. The most active participation of indigenous authorities happened in the territories of Verapaces and Ixcán, Izabal, Oriente and Occidente, where indigenous authorities formed their own groups to analyze the issues. As a result of the dialogues, the ENREDD+ readiness process has also been included in the agenda of the indigenous representatives of CONADUR. - Representatives of private sector entities related to the use of forest resources have been increasingly involved in territorial dialogues.
Phase 3: **CONSTRUCTION OF AGREEMENTS AND RECOMMENDATIONS TO BE INTEGRATED TO THE ENREDD+**	Step 5 Step 6 Step 7	- Deepening issues in local organizations and national partnerships. - Information analysis and dialogue between organizations at the local and regional level.	- Territorial dialogues address details regarding critical issues identified by stakeholders (there are different issues in each particular territory). - Analyses are carried out in a collaborative manner (group work with the support of external facilitators) during territorial dialogues in which representatives of community organizations, indigenous authorities, women's groups and others participate.

		- Receiving recommendations and addressing perspectives and concerns among stakeholders in the platforms. - Prioritizing recommendations and agreements by region and platform.	- During the dialogues, stakeholders have pointed out and agreed on the priorities. The exchanges and agreements will continue throughout the 2019 territorial dialogues.
Territorial level with regional platforms and later at the national level			
Phase 4: **SYSTEMATIZATION AND FEEDBACK (CONTINUOUS)**	Step 8	- Systematization of results and feedback to regional platforms. - Conclusions based on review of received proposals. - National Forum for ENREDD+ with social inclusion. - Inclusion of recommendations in the preparation of the National REDD+ Strategy. - Redress of grievances and complaints regarding the dialogue and engagement process.	- Systematization of inputs and results has been done. - The first version of the REDD+ Strategy has been built based on recommendations and inputs from stakeholders, collected and recorded in the territorial meetings. Territorial dialogues will continue based on the feedback received. The aim is to improve ENREDD+ proposal until reaching the final version. - In September 2017, a first National Dialogue and Engagement Forum on ENREDD+ was organized. The second National Forum took place in February 2018. - MIAQ is working and receives and redresses complaints and grievances not only regarding the dialogue and engagement process, but also the entire REDD+ Strategy preparation.

The workshops held are summarized below, indicating dates and number of participants divided by gender.

Table 27. Workshops undertaken within the framework of the dialogue and engagement rounds.

Nº.	Name	Place	Date	Participants	Women	Men
1	ENREDD+ Implementation and Planning Workshop	Guatemala	March 7, 2014	28	9	19
2	1st Workshop on REDD+ Planning and Joint Coordination	Escuintla	May 27 to 30, 2014	43	15	28
3	2nd Joint Planning Workshop for the Preparation of the National REDD+ Strategy	Izabal	January 31, 2015	51	17	34
4	3rd Joint Planning Workshop for the Preparation of the National REDD+ Strategy in Guatemala.	Escuintla	June 3, 4 and 5, 2015	75	23	52
5	1st Workshop on the National REDD+ Safeguards Approach	Antigua Guatemala	August 25, 26 and 27, 2015	65	30	35
6	1st Workshop to Exchange Experiences and Visions on the Reduction of Greenhouse Gas Emission from Deforestation and Forest Degradation (REDD+) and its Relationship with Gender.	Antigua Guatemala	September 9 and 10, 2015	37	30	7
7	Workshop on Forest Degradation within REDD+ Framework in Guatemala	Guatemala	November 5 and 6, 2015	55	19	36
8	2nd Workshop on Gender and REDD+	Sololá	November 9 to 13, 2015	39	30	9
9	4th Workshop on the Progress of the National REDD+ Strategy.	Chiquimula	March 1 to 3, 2016	100	34	66
10	3rd Workshop on REDD+ and Gender	Guatemala	March 10, 2016	40	36	4
11	Workshop with the REDD+ Implementers Group for the Presentation of Early REDD+ Activities in Protected Areas and Progress in the National REDD+ Strategy Readiness process.	Petén	June 9 and 10, 2016	64	28	36
12	Training for trainers course on governance and forest management with emphasis on REDD+	Quetzaltenango	July 15 to 21, 2016	49	16	33
13	Workshop for the Presentation of Work Plans by the following Consultancies: “Elaboration of the SESA, ESMF and MAR", and "System of monitoring and reporting of greenhouse gas emissions, multiple benefits, other impacts, management and REDD+ safeguards”	Guatemala	July 28, 2016	29	11	18
14	Workshops for the Outreach of PROBOSQUE Law and Regulation	Mazatenango	August 24 to 25, 2016	79	15	64
15	2nd National Climate Change Congress	Quetzaltenango	October 5 to 7, 2016	715	191	524
16	Municipal workshop for the outreach of the PROBOSQUE regulation	Mazatenango	November 18 , 2016	35	4	31
17	Municipal workshop for the outreach of the PROBOSQUE regulation	Quiche	November 24 , 2016	35	5	30
18		Zacapa	November 29 , 2016	27	10	17

	General workshops on climate change and early outreach of ENREDD+ readiness					
19	Social and Environmental Strategic Assessment (SESA) of the proposed options for Guatemala's REDD+ Strategy	Petén	February 20 to 22, 2017	50	15	35
20	Social and Environmental Strategic Assessment (SESA) of the proposed options for Guatemala's REDD+ Strategy	Alta Verapaz	February 27 to March 1, 2017	62	22	40
21	Social and Environmental Strategic Assessment (SESA) of the proposed options for Guatemala's REDD+ Strategy	Zacapa	March 01 to 03, 2017	45	16	29
22	Social and Environmental Strategic Assessment (SESA) of the proposed options for Guatemala's REDD+ Strategy	Sololá	March 06 to 08, 2017	32	16	16
23	Workshop on a common language for the national REDD+ process in Guatemala	Guatemala	May 8, 2017	33	18	15
24	Operational mapping definitions within the framework of the National REDD+ strategy for low-emission development in Guatemala	Guatemala	June 12 to 14, 2017	28	11	17
25	Mesoamerican university forum on climate change and its relationship with REDD+	Antigua Guatemala	June 21, and 22, 2017	37	16	21
26	Proposal for the Environmental and Social Management Mechanism (ESMF) and an Information and Attention to Complaints Mechanism for REDD+	Petén	August 1 and 2, 2017	50	17	33
27	Proposal for the Environmental and Social Management Mechanism (ESMF) and an Information and Attention to Complaints Mechanism for REDD+	Alta Verapaz	August 8 and 9, 2017	63	21	42
28	Proposal for the Environmental and Social Management Mechanism (ESMF) and an Information and Attention to Complaints Mechanism for REDD+	Zacapa	September 9 and 10, 2017	40	13	27
	Training of the INAB technical staff	Antigua Guatemala	September 19 to 20, 2017			
29	Proposal for the Environmental and Social Management Mechanism (ESMF) and an Information and Attention to Complaints Mechanism for REDD+	Chimaltenango	August 17 and 18, 2017	41	15	26
30	Proposal for the Environmental and Social Management Mechanism (ESMF) and an Information and Attention to Complaints Mechanism for REDD+	Quetzaltenango	August 22 and 23, 2017	50	22	28
31	Proposal for the Environmental and Social Management Mechanism (ESMF) and an Information and Attention to Complaints Mechanism for REDD+	Huehuetenango	August 24 and 25, 2017	35	17	18
32	National Forum to Validate the National REDD+ Strategy Dialogue and Engagement Plan	Guatemala	September 11 to 12, 2017	88	31	57
33	First territorial meeting to discuss the National REDD+ Strategy	Petén	October 04 to 05, 2017	55	17	38
34	First territorial meeting to discuss the National REDD+ Strategy	Alta Verapaz	October 12 to 13, 2017	93	20	73
35	First territorial meeting to discuss the National	Izabal	October 17 to 18, 2017	62	25	37

	REDD+ Strategy					
36	First territorial meeting to discuss the National REDD+ Strategy	Quetzaltenango	October 24 to 25, 2017	87	31	56
37	First territorial meeting to discuss the National REDD+ Strategy	Chiquimula	October 30 to 31, 2017	51	25	26
38	Second territorial meeting to discuss the National REDD+ Strategy	Quetzaltenango	November 13 and 14, 2017	78	29	49
39	Second territorial meeting to discuss the National REDD+ Strategy	Alta Verapaz	November 16 and 17, 2017	74	24	50
40	Second territorial meeting to discuss the National REDD+ Strategy	Petén	November 22 and 23, 2017	45	19	26
41	Second territorial meeting to discuss the National REDD+ Strategy	Izabal	November 28 and 29, 2017	54	34	20
42	Second territorial meeting to discuss the National REDD+ Strategy	Chiquimula	December 5 and 6, 2017	45	14	32
43	Participatory Assessment Workshop (Self-Assessment) of the Multiple Stakeholders of Guatemala's ENREDD+	Guatemala	January 17, 2018	50	19	31
44	Second National Forum for ENREDD+ Dialogue	Sololá	February 8, 2018	82	31	51
45	Third territorial meeting to discuss the National REDD+ Strategy	Petén	March 13, 2018	26	8	18
46	Third territorial meeting to discuss the National REDD+ Strategy	Izabal	March 15, 2018	18	4	14
47	Third territorial meeting to discuss the National REDD+ Strategy	Coban	March 20, 2018	18	6	12
48	Third territorial meeting to discuss the National REDD+ Strategy	Zacapa	March 22, 2018	23	6	17
49	Third territorial meeting to discuss the National REDD+ Strategy	Quetzaltenango	April 5, 2018	38	5	33
50	Fourth territorial meeting to discuss the National REDD+ Strategy	Quetzaltenango	June 14, 2018	31	10	21
51	Fourth territorial meeting to discuss the National REDD+ Strategy	Petén	June 19, 2018	32	16	16
52	Fourth territorial meeting to discuss the National REDD+ Strategy	Izabal	June 21, 2018	30	6	24
53	Fourth territorial meeting to discuss the National REDD+ Strategy	Coban	June 26, 2018	23	6	17
54	Fourth territorial meeting to discuss the National REDD+ Strategy	Chiquimula	June 28, 2018	19	2	17

On the other hand, it should be noted that, within the REDD+ framework in Guatemala, dialogue and engagement processes have been carried out in two projects that are part of the following early REDD+ projects:

- Guatecarbon REDD+ Project, in charge of ACOFOP and CONAP. .
- Lacandón Bosques para la Vida REDD+ Project, undertaken by the Defensores de la Naturaleza Foundation and cooperatives.

It is relevant to mention that these were implemented according to a Voluntary Carbon Market project cycle rationale, under the Climate, Community and Biodiversity Standards (CCBS) and the Verified Carbon Standard (VCS), so they respond to the validation process of that cycle. The validation process, in the three early activities mentioned above, was developed by the Spanish Association for Standardization and Certification (AENOR).

The CCBS standards (CCBA, 2013), include stakeholder participation in its verification list, which establishes the following indicators: access to information; consultation; participation in decision-making and implementation; anti-discrimination; feedback procedures and grievance redress; and labor relationships. Another issue included in the standards verification list is the legal and property rights conditions, which include indicators regarding the respect for land, territories and resources rights, and free, prior and informed consent.

The Guatecarbon Project is located in the Multiple Use Zone of the Maya Biosphere Reserve in the department of Petén. It aims to prevent the deforestation of 660,820 ha of forest belonging to the State of Guatemala. This initiative is in undertaken by the National Council of Protected Areas (CONAP) as the Guatemalan government counterpart, and has the co-participation of Petén's Forest Communities Association (ACOFOP) located in the Maya Biosphere Reserve. The latter include nine community forest concessions and two industrial forest concessions.

The Guatecarbon consultation process was conducted by the project's Guidance Committee (also known as the Technical Committee), made up of representatives from ACOFOP and CONAP, which identified the population in the project impact area, the population that is not part of the organizations or companies that own forest concessions and, also, the population surrounding the project area. The first group includes more than ten communities which, in 2012, had a population of 2,637 people approximately. There are more than ten neighboring communities around the project area, an estimated population of 142,018 inhabitants. The consultation process was carried out with partners from nine community forest concessions and with coordinators of community development councils surrounding the project area.

Currently, Guatecarbon, besides the Technical Committee, has a Governance Council with a mixed structure that includes representatives from the government and concessionaires: four of them represent CONAP (Executive Secretary, Regional Director of CONAP Petén, Director of the MUZ, and Head of the Guatecarbon Project management). Concessionaires are represented by three leaders from different blocks (Flores, Melchor, San Andrés and Carmelita), one industrial concessionaire and one ACOFOP representative who is responsible for establishing guidelines, regulations, analyzing and approving the annual operating plans presented by management, as well as designing and approving the legal and administrative structures necessary for emission reduction credit negotiations. There is also a Technical Committee that provides assistance and takes decision-making issues to the Governance Council.

In relation to the REDD+ Lacandón-Bosques para la Vida Project, it is located in the department of Petén, specifically in the Sierra del Lacandón National Park (PNSL), one of the seven core zones of the Maya Biosphere Reserve.

The project's climate objectives are addressed by strategies to legalize land tenure and the execution of forest management plans in 45,288.81 ha of forest, located in three community cooperatives and on private lands of the Defensores de la Naturaleza Foundation.

In the case of this project, initially, a Project Committee was formed, which was responsible for defining the project's governance mechanism. The organizational structure for project monitoring is called the Governance Committee of the Lacandón Bosques para la Vida REDD+ Project and has an Internal Operating Regulation. The Governance Committee is composed of representatives from: La Técnica Cooperative, La Lucha Cooperative, Unión Maya Itzá

Cooperative and Defensores de la Naturaleza Foundation. One of its functions is to promote the outreach of the project to participants, in addition to cooperatives and communities surrounding the project area.

The two REDD+ projects follow the validation process. The entities of each project have carried out the relevant public consultations according to the project context and the guidelines established by the Climate, Community and Biodiversity Standards (CCBS). They have also followed the Verified Carbon Standard to ensure that tradable emissions reductions are real, measurable, verifiable, additional, transparent, permanent, independent, and conservatively estimated.

The CCBS and VCS standards include stakeholder participation in its verification list, which establishes the following indicators:
• access to information;
• consultation;
• participation in decision-making and implementation;
• anti-discrimination;
• feedback procedures and grievance redress; and
• labor relationships.

Another issue included in the standards verification list is the legal and property rights conditions, which include indicators regarding the respect for land, territories and resources rights, and free, prior and informed consent.

A summary of early REDD+ projects actions is presented below for each of the eight steps of the FCPF and UN-REDD consultation process.

a) Definition of the desired results:

A Steering Committee and a Technical Committee were created for the implementation of the free, prior and informed consent (FPIC) process of the Guatecarbon Project. The committees are made up of representatives of all the parties participating in the project (concessionaires and CONAP) who have been informed about the FPIC planning and have approved it. The process was prepared by the Technical Committee and taken to the Steering Committee for a decision. The design and implementation of the CLIP included: the definition of the process, the design and planning, the preparation of the information to be shared, the meetings and consultation workshops, and the systematization of results. The project has the advantage of counting on the participation of forest concessionaires (direct users of the Guatecarbon project) in the Steering Committee, as well as some communities with influence in the project area, which allowed them to be aware of planning process for consultations.

In the case of the Lacandón Bosques para la Vida REDD+ Project, a guide for the development of a community CCBS-based consultation in REDD+ projects were used. This guide includes reflections related to the concept of "public consultation", such as:
• The importance of defining and designing the general objectives of the consultation.
• Thoughts on the number of meetings necessary to achieve the objectives of the consultation process.
• The importance of the information provided by the population related to the "occupation and development of activities of common interest that take place or are expected to take place in the area in the case the planned activity does not take place".
• The requirement to inform the "interested/affected people about the project's objectives, the programmed activities, execution deadlines and returns expected as a result of the activity development".

b) Identification of stakeholders:

In the Guatecarbon Project framework, besides the concessionaire populations that compose the organizations, two other groups were identified: non-concessionaires, that is, populations of communities established within the

project area that have no relation to forest concessions; and a group that is made up of the communities that live near project areas.

In the Lacandón-Bosques para la Vida REDD+ Project, two groups were identified as stakeholders for consultations: one is made up of the population of three community cooperatives (Unión Maya Itzá, La Lucha and La Técnica) and the other is the Defensores de la Naturaleza Foundation. Both groups are proponents of the project to be implemented in the private lands they own within the Sierra de Lacandón National Park.

c) Definition of the aspects to be consulted:

In both projects, the consulted aspects were limited to the environment and specific topics of each project, and the process was aimed at encouraging participation to obtain communities' endorsement or support for each REDD+ project. For the Guatecarbon Project, a project in the design phase was put up for consultation, given that many aspects still needed to be clarified.

In the case of the Lacandón-Bosques para la Vida REDD+ Project, during the consultation and search for consent, the central idea of the REDD+ mechanism, its projects, objectives and the standards to be used (CCBS and VCS) were explained. This process was carried out independently with the population of the three community cooperatives that proposed the project.

d) Definition of the consultation terms:

The Guatecarbon Project had a Guiding Committee that defined the terms of the consultation. To plan the consultation, the FPIC was reviewed and developed with the boards of directors and then a consultation workshop was carried out with the General Assembly of each concession. The Guiding Committee held nine face-to-face, Skype or e-mail planning meetings. The CLIP report details the entire consultation process.

For its part, the Lacandón-Bosques para la Vida REDD+ Project used a guide for the development of a community CCBS-based consultation in REDD+ projects, although it is not specific to the context of the National Park Sierra del Lacandón nor for the cooperatives involved in the project. The guide contains all the relevant aspects for a consultation process.

e) Selection of methods of consultation and social dissemination:

In the two REDD+ projects, before the consultation (in the case of Guatecarbon) and consent (for Lacandón), all stakeholders received the adequate information. For the most part, workshops were the main form of participation in consultation processes for the three REDD+ Projects. Additionally, the Guatecarbon project carried out surveys in two municipal capitals to establish the level of support in communities near the project's perimeter.

In the case of the Lacandón Project, the information process, the consultation and the search for consent were carried out differently. Prior to consultations, in order to provide information and attract participation, a list of workshops implemented during 2015 served as reference.

f) Development of consultation:

the two systematized projects developed training processes and information outreach actions for project personnel, stakeholders, key participants and the population inside and outside the project area. These actions included topics considered as priorities by the technical bodies and support organizations.

g) Analysis and dissemination of results:

The Guatecarbon Project consultation process was developed in the following phases: design and planning; preparation of information to be shared; meetings and consultation workshops; and systematization of results. The process was developed by CONAP's staff and personnel from the Forest Concession Associations of the MBR through ACOFOP and support from the Rainforest Alliance and Wildlife Conservation Society (WCS).

The Lacandón Project conceived the free, prior and informed consent (FPIC) in order to "outreach all the existing information regarding REDD+ with sufficient time and as clearly as possible, so that the community members could determine, without any type of pressure or coercion, the convenience of participating in a REDD+ project" (FDN, 2016). As will be seen later, this process goes beyond the outreach of REDD+ information.

Regarding the Forest Investment Program (FIP) projects, which are under development, the safeguard instruments have been elaborated, namely an Environmental and Social Management Framework (ESMF), an Indigenous Peoples Planning Framework (IPPF) and a Procedural Framework (PF) in line with the World Bank's Operational Policies. For the dialogue and engagement process regarding these documents, the same methodology developed for the strategy was used, including dialogues with stakeholders from five municipalities, and representatives from different groups of interest of other municipalities within the intervention area (47 in total). In total, five Participatory Dialogue Workshops were held in November 2018, with the participation of 211 people, 40% women and 60% men; 32% Mayan and Xinca and 68% non-indigenous. The results of the Participatory Dialogue Workshops have been included in the final versions of the ESMF, PF, and IPPF within the Governance Strengthening and Diversification of Livelihoods Project (PIF2).

The process captured the viewpoints and perceptions of people who may be affected or who have an interest in this forestry project, and provides channels for these opinions, questions and recommendations to be taken into account as contributions to the design and implementation of improved projects that would prevent or reduce adverse impacts and increase benefits. In addition, these dialogues were important to validate and verify data and improve the quality of environmental and social impact assessments. This allowed people to understand their rights and responsibilities in relation to the project and contributed to a greater level of transparency and stakeholder participation. It helped to increase confidence and project acceptance as well as local ownership, key aspects for achieving project sustainability and good development results. The process allowed stakeholders to better understand the project's objectives, scope and possible effects, as well as proposed measures to reduce or avoid negative impacts. Dialogue and engagement was based on the Forest Investment Plan (FIP), the Environmental and Social Management Framework (ESMF), the Indigenous Peoples Planning Framework (IPPF) and the affirmative actions towards gender equality; and the Procedural Framework (PF), which allowed a broad and significant participation of stakeholders. All the information has been systematized.

In compliance with the new World Bank Social and Environmental Framework, a Stakeholder Engagement Plan will be developed for the ERPD, which will describe the methods and timing of stakeholder participation during the entire Program cycle, distinguishing between affected parties and interested parties.

5.2 Summary of the comments received and how these views have been taken into account in the design and implementation of the ER Program

Guatemala began preparing the National REDD+ Strategy (ENREDD+) in 2012. The elaboration activities included, among others: developing a Gender and REDD+ Roadmap, identifying potential risks and opportunities as part of the Social and Environmental Strategic Assessment (SESA), and a management mechanism (ESMF) was proposed. In addition, significant progress was made in the development of a National REDD+ Information System (SIREDD+), reference levels, and an Information and Attention to Complaints Mechanism (MIAQ), among other topics. All these activities had an information and participation process that gave feedback on each product developed.

One of the inputs generated by the dialogue process is the identification of potential impacts of REDD+ options.

The work of identifying potential impacts of REDD+ options began with preliminary office work. A matrix structure was developed to facilitate the identification and systematization of potential impacts derived from the National REDD+ Strategy and the proposed REDD+ options.

After a preliminary identification, four regional workshops were organized within under the SESA framework to provide preliminary feedback to relevant stakeholders[112]:

- Tierras Bajas del Norte: Workshop in Petén with participants from Petén and part of Izabal
- Verapaces: Workshop in Cobán with stakeholders from Alta and Baja Verapaz
- Oriente: Workshop in Teculután, Zacapa, with representatives from Oriente departments and Izabal stakeholders
- Occidente: Workshop in Panajachel, Sololá, with stakeholders from Occidente departments.

The results of the workshops have compiled in Workshop Minutes, published on MARN website and contain feedback from the government.

On the other hand, with the aim of providing information on the Social and Environmental Strategic Assessment (SESA) process and obtain inputs to complement the analysis done in regional workshops and prioritize social and environmental impacts, a national workshop was held where a prioritization exercise was carried out to define an Environmental and Social Management Framework (ESMF) to addresses identified priorities. The main results of the national SESA workshop included the prioritization of impacts made by stakeholders[113].

The following table summarizes the specific objectives of the first territorial dialogues, the level of achievement and the recommendations included afterward[114].

Table 28. Analysis of the achieved objectives in the first territorial dialogue

SPECIFIC OBJECTIVE OF THE FIRST DIALOGUE	ANALYSIS OF THE ACHIEVED OBJECTIVE	RECOMMENDATIONS
1. Disseminating information on forests and climate change, and the three REDD+ phases developed by the Government of Guatemala.	In all the meetings, information was disseminated regarding the relationship between forests and climate change and on the preparation of the ENREDD+. This information was known to a certain degree in Petén and Izabal, where private REDD+ projects are under way and where environmental organizations have disseminated and trained community members on these issues. However, the difference between the three phases (ENREDD+, FIP and the LOI) and the relationship between them is not entirely clear.	In future meetings, demonstrate, with concrete examples, which government actions fit in which phase, so that the relationship between the Strategy, the FIP and the LOI is clear, especially in those areas where there are actions linked to the different funding sources. With the change of authorities and representatives of organizations and public institutions, it will be important to include in every future activity a reminder about the reasons for the strategy. This message can be reinforced with the current communication material.
2. Presenting reference levels relevant to the	A representative of GIMBUT presented the general reference levels of each	The reference levels are a central part of the same REDD+ Strategy, they are

[112]See in http://www.marn.gob.gt/s/redd_/paginas/Socializacin_durante_el_proceso_de_construccin_de_la_Estrategia
[113]See ICG, 2017. Social and Environmental Strategic Assessment (SESA). National Strategy for the Reduction of Deforestation and Forest Degradation in Guatemala (ENDDBG) under the REDD+ mechanism. Interinstitutional Coordination Group (MARN, MAGA, INAB and CONAP). With the technical and financial support of the IDB and FCPF. Guatemala. 2017 at http://www.marn.gob.gt/s/redd_/paginas/Salvaguardas
[114]The summary of achievements by territory can be found in the systematization reports of each particular territory.

territory, analyzing, together with stakeholders, what these mean for the deforestation and degradation trends, and for the REDD+ mechanism.	particular territory. This presentation was especially important in order to clearly determine levels and specify the criteria for such an exercise. The presentation of the first round was put to practice with exercises carried out with maps of the territory during in second round of meetings.	also the basis of the benefit sharing calculations. As such, they should be included in the dialogues in which the proposal of the strategy as a whole is analyzed and discussed.
3. Elaborate the Territorial Dialogue and Engagement Plans together with the regional platforms, representatives of local communities and organizations, indigenous authorities, women's groups, the private sector and regional delegates of MARN, INAB, CONAP and MAGA.	In the five territories, a draft of the Territorial Dialogue and Engagement Plan was prepared. The territorial plans reflect the participation mechanisms identified by stakeholders, and contain information such as better dissemination channels and the central issues to be addressed during the construction of the strategy. In addition to the final documents, the fact that stakeholders themselves developed the dialogue and engagement plan based on the territorial reality makes it an important exercise of rights, and a significant milestone for safeguards compliance.	Follow the guidelines identified in the territorial plans that provide details on their inclusion and an approximate timetable for the territorial meetings. For each territory, its respective plan recommends a way to invite indigenous authorities and ensure the participation of women.
4. Reflecting on how the country can comply with safeguards, and how it can guarantee the full and effective participation of indigenous peoples through relevant cultural structures and practices.	The dialogue and engagement process, as well as the joint elaboration of territorial plans, is an exercise of rights and contribute to the compliance of the Cancun Safeguards (especially Safeguard C on indigenous knowledge and Safeguard D that ensures the full and effective participation of all interested parties). In the territorial meetings in Verapaces and Ixcán, Occidente, Oriente and Izabal, participants undertook analysis exercises regarding cultural issues: they were asked to identify benefits and risks that a strategy such as REDD+ could bring. The best way to ensure participation and respect for indigenous rights and to integrate the indigenous worldview into the strategy was discussed with their authorities.	The issue of safeguards is central to meeting FCPF and UN-REDD requirements. A systematic dialogue and engagement process must be carried out respecting the guidelines identified in the territorial plans.
5. Presenting a roadmap to include gender considerations in the national REDD+ process, and offer training for its practical application in the territories.	The Gender Work Roadmap was presented in all the territories except Petén and Verapaces and Ixcán. The implementation of the strategic actions contained in the roadmap will require including them in the ENREDD+ and ensure monitoring mechanisms. The roadmap recommendations have been	Demonstrate concretely in future meetings and dialogues, how the strategic actions of the gender roadmap are integrated into the REDD+ strategy, who will implement them, and who will ensure compliance.

	included in the proposal for monitoring the dialogue and engagement process, and indicators have been harmonized.	
6. Presenting how process participants can access the information and file complaints and claims.	Lacking a final version, the Information and Attention to Complaints Mechanism (MIAQ) proposal was presented at the territorial meetings. The electronic platform is not yet enabled	It should be remembered, in every activity, where and how people can get information about the process, and how they can file a complaint or grievance, who will serve them and how. Likewise, the MIAQ platform (SIREDD+) should be enabled as soon as possible.
7. Clarifying any doubts that may arise in this first phase and agree on the next steps in the dialogue and engagement.	Participants' doubts on the REDD+ process were clarified. Comments and doubts were heard and followed up in the second round of dialogues. The next steps of the process were clarified to participants and the date of the second territorial meeting was agreed with them.	Continue recording comments and doubts, systematize them and follow up in future activities to increase transparency and ensure that there are no misinterpretations. An additional recommendation is to upload these questions and comments in a section of the SIREDD+ virtual platform.

The following table summarizes the specific objectives and the level of achievement for the second round of dialogue:

Table 29. Analysis of the achieved objectives in the second dialogue

SPECIFIC OBJECTIVE OF THE SECOND DIALOGUE	ANALYSIS OF THE ACHIEVED OBJECTIVE	RECOMMENDATIONS
1. Identifying and discussing with the participants the drivers and agents of deforestation and forest degradation in this territory.	In the five territories, group work was carried out (with separate groups for women and indigenous peoples), with large maps of the territory, to analyze the drivers and agents. These served as study inputs regarding drivers of deforestation and forest resources degradation. Besides providing information, the exercise is part of the stakeholders' empowerment process with respect to their territory and the construction of the REDD+ Strategy.	During the ENREDD+ implementation, as a participatory monitoring action, it may be useful to use the territory maps to verify whether ENREDD+ actions have managed to curb negative trends.
2. Understanding the general process for the participatory construction of the National REDD+ Strategy.	In all the territories, participants learned about the participation channels presented in the Territorial Dialogue and Engagement Plan, elaborated during the first territorial meeting. The general steps of the process, the responsibilities of the different stakeholders (especially the division of roles between the ICG and the consultants) and how people can participate were also explained.	In all the activities, make sure that the people involved understand where the current status of the readiness process, the next steps and how they can continue participating.

3. Providing feedback on the progress made in the construction of the National REDD+ Strategy.	The readiness framework and timeline, the progress and preliminary approaches for the Strategy were presented. Participants in the five territories worked in groups to analyze the current limitations and prioritize actions necessary to combat deforestation and degradation of forest resources.	Depending on the territorial dynamics, try to form different groups for women and indigenous peoples. Focus the process at the local level according to the guidelines determined within the territorial plans.
4. Clarifying any doubts that may arise in the second phase and agree on the next steps in the dialogue and engagement.	As in the first meeting, doubts about the REDD+ process were clarified. These comments and questions were compiled and are summarized.	Continue recording comments and doubts, systematize them and follow up in future activities to increase transparency and ensure that there are no misinterpretations. An additional recommendation is to upload these questions and comments on the SIREDD+ virtual platform.

The document called "Design and Implementation of the National REDD+ Strategy Stakeholder Dialogue and Engagement Process, with Cultural Relevance and Gender Approach[115]: General Dialogue and Engagement Plan" summarizes the comments received in the second round of territorial dialogues, the answers provided and the actions taken. The report entitled "Systematization of the ENREDD+ Round of Territorial Dialogue and Engagement Meetings" gathers all the inputs and information generated in each workshop from October 2017 to June 2018.

The information gathered during the second territorial meeting was part of the Readiness Package document and the first version of the ENREDD+ submitted and presented to the FCPF in the first quarter of 2018.

In the fourth round of territorial dialogue and engagement meetings, the modified version of the ENREDD+ Strategic Framework was presented, with comments and solutions provided by different working groups, taking into account the viewpoints of women, local communities and indigenous peoples.

Although the ENREDD+ dialogue and engagement process has not been completed, the following achievements can be identified:

1. Stakeholders affecting forests were identified:
   - The mappings were reviewed and completed in the First National Forum, and updated again before and during the meetings together with stakeholders in each territory. During the process, the principles of free participation and self-selection were respected: Stakeholders decided if they wanted to participate in the process, and how they would do it, and chose the form of representation.
   - The mappings review improved attendance in the second territorial meeting, contributing to a broader participation and a more active involvement of private sector representatives. At no time was the selection of participants influenced by the consultant team or by the government, although the participation of women and indigenous people were especially encouraged.
   - The mappings offer updated information to implement actions and programs.
   - More than 240 social organizations participated in the first dialogues in five prioritized territories.

2. The first information outreach process about the strategy and associated issues included:

[115] GUATEMALA - Design and Implementation of the National REDD+ Strategy Stakeholder Dialogue and Engagement Process, with Cultural Relevance and Gender Approach: General Dialogue and Engagement Plan. October 2017. INDUFOR.

- The role of forests in mitigating climate change.
- The reasons why the government is pursuing such strategy
- The strategy and its elaboration is less confused with other high-impact processes.
- A first commitment has been made by regional institutions' representatives to develop prioritized actions.
- More transparency and trust between public institutions and stakeholders in the territory.
- Helped prevent and manage potential conflict hotspots.
- Focuses dialogues on important topics in each location.
- Increases ownership of future actions and focuses on territorial reality.

4. Stakeholders questions were addressed:
   - Contributes to a transparent ENREDD+ elaboration
   - Reduces the risk of confusion with other processes (such as low-emission development programs, known as LEDs).

5. Partnerships with key stakeholders
   - Increases stakeholders' sense of ownership, for they will be responsible for the future implementation of the strategy.
   - Increases the possibility of successful implementation by expanding the positive impacts of the actions (scaling-up).
   - Decreases potential conflicts.
   - Facilitates logistics at territorial level.
   - It is an exchange mechanism that can be institutionalized and used for other policies and programs.

In the five priority territories, there is a growing interest in having, as soon as possible, strong environmental institutions, which, in principle, should be the gateway to an institutional and social process that applies and respects the current policies and laws aimed at the optimal functioning of ecosystems and the protection and conservation of forests.

The two cases of specific participation and consultation were limited to REDD+ projects. The result of these consultations was the endorsement given by the concessionaires and cooperatives to the project.

The draft ERP Stakeholder Engagement Plan (SEP) is presented in the Annex, with the methods and time frame for stakeholder participation during the entire cycle of the Emissions Reduction Program.

Given that the specific project sites have not yet been identified, this SEP describes the general principles and the current status regarding stakeholder identification, as well as the plan for the participation process to be implemented once the specific activities and their location are defined.

This SEP will be updated in the upcoming dialogue and participation activities in July and August 2019 described in the section referring to the Workshops under the Stakeholder Participation Plan (PPPI) of the Emissions Reduction Program (PRE) of the SEP.

6. OPERATIONAL AND FINANCIAL PLANNING

6.1 Institutional and implementation arrangements

The Guatemala ERP has been developed by the Interinstitutional Coordination Group (ICG) composed by the Ministry of Environment and Natural Resources (MARN), the Ministry of Sustainable Agriculture and Livestock (MAGA), the National Forestry Institute (INAB) and the National Council of Protected Areas (CONAP), in close coordination with the Ministry of Public Finance (MINFIN). In terms of governance, the ICG Political Group is responsible for decision-making and the Technical Group is in charge of the analysis, development and monitoring of the issues related to the ERP and ENREDD+, as well as other aspects related to environmental issues. This governance structure is the main institutional arrangement for ERP implementation.

At the operational and administrative levels, a specific management unit will be set up for the ERP, which will mainly support the implementation of the ERP activities. This special implementation unit will be set up in the MARN. This unit will be supported by the Interinstitutional Group for the Monitoring of Forests and Land Use (GIMBUT) that is part of the ICG together with Guatemala's Universidad del Valle and Rafael Landívar University. The National Geographic Institute (IGN) also participates. GIMBUT is in charge of developing the country's theme maps and is currently leading the development of the 2016 land cover and land use change maps, as well as monitoring and evaluating social and environmental safeguards. The roles of the MARN's implementation unit will be:

- Making institutional arrangements for legal assistance and management to reach the necessary agreements between MINFIN and the ICG government institutions, early REDD+ action implementers (private REDD+ projects), project participants and other counterparts involved in multiple Program actions.

- Supporting the implementation of institutional agreements on benefit sharing. These agreement documents will be necessary, according to the rules of budget execution, to distribute the financial resources between government entities and participants outside the public administration. Likewise, these agreements will seek to define the roles of each beneficiary organization (government and non-government), their commitments, and the aim of the resources in order to give transparency to the benefit distribution scheme.

- Leading national and international communication of REDD+ program activities with the main REDD+ project stakeholders.

- Monitoring and presenting ERP reports on: a) Possible complaints to the program and compliance with safeguards according to the framework of the World Bank's environmental and social standards; b) Dialogue, guidance, assistance and follow-up with stakeholders; c) National Consolidated Reports on Emissions Reduction; d) Emissions reductions or removals, according to the defined frequency; e) Issuance of emission reductions to be traded in ERP transactions; and f) Coordination with the national registry and REDD+ projects.

- Support, when feasible, ERP field actions executed by the ICG entities through existing operational and technical mechanisms.

- Promote synergies with the ICG entities to facilitate Program implementation through existing technical and administrative structures.

i. CONAP: 10 Regional Directorates.
ii. MAGA: 8 Regional Coordinations and 22 Department Directorates
iii. INAB: 9 regional offices and 35 subregional ones
iv. Climate Change Units of the ICG entities

The competencies of the ICG institutions are described below:

- The MARN is a government entity specialized in environmental and natural goods and services. It is the REDD+ and UNFCCC focal point.

- MAGA has several policy tools that support and complement the efforts to reduce emissions related to land use change. Like other ICG members, it establishes strategies, plans and activities for the reduction of greenhouse gas emissions, as foreseen in the 2013 Framework Law on Climate Change. MAGA implements policies to support agricultural producers in approximately 1.3 million hectares of permanent cash crops (coffee, cocoa, rubber) and about 1.8 million hectares of pastures throughout the country, which accounts for about 30% of Guatemala's territory. Both the cash crop and pasture systems have tree cover. MAGA supports these production systems through technical and financial assistance, especially in the emission reduction buffer zones. MAGA is developing a proposal to support silvopastoral systems in livestock

breeding areas. These actions will help avoid emissions from land use change in areas adjacent to those where REDD+ initiatives are developed, especially for Guatecarbon and Lacandón in the Tierras Bajas del Norte REDD+ region[116].

- INAB is the competent State authority for forestry issues. It is decentralized legal entity, with institutional autonomy, sufficient resources and administrative independence. It is the entity in charge of managing and implementing Forest Incentive Programs (PINPEP and PROBOSQUE). It has a decentralized operational structure with wide coverage in the national territory, and more than 600 employees who work in 9 regional and 35 subregional offices.

  CONAP is a government entity under the Presidency of the Republic of Guatemala and is chaired by MARN. CONAP is the executive and operational body responsible for overseeing the Guatemalan System of Protected Areas (SIGAP) and the conservation of biodiversity of protected areas throughout the country, including the coastline and airspace. CONAP's vision is to safeguard conservation areas and encourage the sustainable use of biological diversity and the protected areas of Guatemala, as well as the ecosystem goods and services they provide to current and future generations. They do that by designing, applying and executing policies, standards, incentives and strategies, in coordination with other stakeholders. Within the priority territories for ERP actions, CONAP has technical and professional presence, as well as control and surveillance and administrative personnel in regional offices in El Petén, Izabal, Zacapa, Quetzaltenango and Huehuetenango. At the central level, CONAP has strengthened its climate change unit (with one director, two technicians and one administrative assistant), which will help coordinate all REDD+ initiatives in protected areas, with the help of regional offices.

6.2 ER Program Budget

This section presents the results of the budget analysis and financial gap exercise carried out by the Government of Guatemala with the support of Econometría Consultores S.A. This analysis is mainly aimed at identifying the costs associated with ERP implementation, which consists of 19 REDD+ program actions, grouped into five strategic options identified by the Government of Guatemala through the ICG institutions. The REDD+ actions of each strategic option, their scope and intervention type are described in detail in section 4.3.2.

Program actions are classified as enabling and direct actions. Enabling actions are activities that generate favorable conditions for direct actions. These activities should help prepare the country to receive REDD+ payments. Among other things, enabling actions should: Promote forest management decentralization from INAB to municipalities; strengthen coordination and management processes in protected areas; and update the Interinstitutional Action Plan for the Prevention and Reduction of Illegal Logging in Guatemala. Direct actions are interventions planned for the national territory to reduce and remove emissions, seeking to prevent deforestation and forest degradation. Among other things, direct actions should: protect forests; restore degraded forest areas; and transform agricultural and agroforestry areas. Program actions are closely related to national efforts that have been traditionally developed in Guatemala to face deforestation and forest degradation. The analysis of costs associated with ERP implementation is complemented by an opportunity cost analysis, which calculates the cost that a private stakeholder would have to incur when moving from a basic productive activity (agriculture, livestock, etc) to an activity that reduces deforestation and forest degradation in Guatemala (forest plantations, agroforestry, protection of natural forests, etc), or that prevents forests from becoming areas with productive activities that cause deforestation or

[116] The MAGA tries to increase the climate change adaptation and mitigation capacity of the agricultural sector in Guatemala through proper sustainable technologies, taking into account the ecological, biophysical and socioeconomic conditions of the country. With respect to mitigation, MAGA has plans to help reduce greenhouse gas emissions from agriculture. Strategic interventions include increasing forest cover in the middle and upper water basins, soil conservation, the introduction of agroforestry systems, emphasizing silvopastoral systems, increasing the production of organic fertilizers and the productive rehabilitation of land to improve local economies. MAGA also has the technical capacity to implement these programs, and its Climate Change Unit is developing new activities that are being promoted in the field through the National Agricultural Extension System (SNEA), which has offices in all country municipalities. MAGA's Directorate of Geographic, Strategic and Risk Management Information (DIGEGR) generates images and thematic maps to support planning, monitoring and assessment of the activities.

degradation. The opportunity cost associated with the transition from one activity to another is calculated by adding the income that would be lost by stopping the basic productive activity and the additional investment costs required to achieve the desired land use change.

As a second objective, the budget and financial gap analysis identifies possible sources of funds that can be used by the Government of Guatemala to finance ERP implementation. The sources of financing include: in-kind and monetary contributions from Government programs currently led by the ICG entities, and concession and non-concession resources from operations financed by multilateral and bilateral organizations such as the World Bank, the Inter-American Development Bank and USAID. It also includes resources from early REDD+ action implementations (private REDD+ projects), which make important private investments to avoid deforestation and forest degradation in Guatemala. The identification of available funding sources in turn makes it possible to estimate costs not covered by the Program so far. In this sense, the difference in costs and sources of financing make up the Program's financing gap.

The budget analysis on this section differs from the budget shown in previous versions of this document. This difference is explained by several reasons. First, the initial budget and funding calculations considered a period of 10 years. For the purposes of this analysis, the costs of the ERP are estimated for 5-year period (2020-2024), in line with the ERP results period. Second, the methodological approach used to calculate Program costs differs from the one used previously. While previous versions used information available in the Guatemala ER-PIN to calculate the budget and funding sources, this version of the document uses a methodology in line with FCPF's technical guidelines and based on the REDD+ FCPF Cost Element Assessment Tool [117]. This last analysis is technically more adequate, since it allows to identify land use changes necessary to achieve the goal of reducing emissions in Guatemala[118] and the cost associated with these changes. The goals in land use changes are calculated as a result of an analysis comparing a REDD+ scenario with ERP vs. a baseline scenario. The baseline scenario is developed by projecting the country's current rates of deforestation and degradation. Finally, this analysis recognizes that there is a significant difference in the deforestation and degradation rates between the areas of the Maya Biosphere Reserve and areas managed by REDD+ projects, and other areas in Guatemala that don't have any project[119]. Taking into account all of the above, this analysis assumes a higher rate of effectiveness of Program actions in concession areas, under the management of private projects, or in areas where enabling actions under the FIP project are foreseen[120]. This higher rate of effectiveness assumes that, for each protected or intervened hectare, 1.4 hectares of deforestation would be avoided[121]. In practical terms, the higher effectiveness rate reduces the number of hectares in need of intervention to achieve the country's emission reduction goal. Annex III presents a summary of the costs and funding sources for the ERP 2020-2024 period shown below.

a. Emissions Reduction Program costs

The following table shows the Program's budget and summarizes: the costs of each REDD+ activity grouped in the five strategic options of the ERP, the possible operational costs of the MRV system, and the costs associated with program management and supervision. The costs of the activities were estimated by calculating how much the

[117]The FCPF REDD+ Cost Element Assessment Tool was used to calculate the program opportunity costs. This tool used the following sources of information: i. The 2006-2016 CollectEarth point grid used to calculate the Program's reference level; ii. The study on restoration opportunities for Guatemala, prepared by the IUCN, which uses the ROAM methodology to evaluate the potential costs and returns of different restoration activities and other economic activities related to land use change; and iii. Historical information of programs financed by government entities and by private REDD+ projects that will be part of the ERP, such as the amounts provided by INAB to finance PINFOR, PINPEP and Probosque incentives.

[118]Equivalent to 10.5 million tons of carbon, in the 2020-2024 period.

[119]"In terms of environmental objectives, there is a significant difference between the different MBR zones, as shown by a deforestation rate study. In the nine active community concessions, the annual deforestation rate has been low (0.1%), while in the Core Zone (1.0%), in the three inactive community concessions (1.8%) and in the non-concession areas, it has been higher (2.2%). The highest annual deforestation rate in the MBR is seen at the Buffer Zone (5.5 %)." Stoian, D., Rodas, A., Butler, M., Monterroso, I., and Hodgdon, B. 2018. Forest concessions in Petén, Guatemala: A systematic analysis of the socioeconomic performance of community enterprises in the Maya Biosphere Reserve. CIFOR. P. 3.

[120]The difference in deforestation rates is explained by the implementation of enabling actions such as those activities aimed at strengthening forest governance. These activities have a positive effect on the mitigation of external threats, such as forest fires, expansion of livestock farming and illicit activities. Ibid.

[121]The effectiveness rate was calculated based on information provided by CONAP.

implementation of each activity would cost depending on the program's operating costs (personnel, equipment, outreach and training, consulting, transportation, etc) and taking as reference the information of other government programs being currently executed. Cost estimation is complemented, as mentioned above, by estimating opportunity costs. Opportunity costs are expected to be fully or partially covered by additional government contributions to the forestry sector in the form of new incentives, payments for environmental services or other financial mechanisms that promote private sector investments. The additional government contributions refers to the resources needed to offset the opportunity costs of private agents and thus stimulate the desired land use changes required to achieve the country's emission reductions goals. In programmatic terms, these additional government contributions should be made under activities 5.1. Development of value chains of forest products and by-products. "5.2. Promote the establishment of agroforestry systems and forest plantations, and 5.3. Promote sustainable forest management in natural forest areas. However, given its relevance and easy identification, the amount required from additional government contributions is shown at the end of table xx, after the amount calculated for the Total Cost of REDD+ Actions. Information on the necessary inputs and the costs of implementing government programs was consulted and reviewed by the technical teams of the ICG entities, who actively participated in the construction of the program's budget.

Table 30. Costs per ERP activity 2020-2024

Type of activity	Activity name	2020	2021	2022	2023	2024	Total
Strategic option 1. **Strengthening forest governance**							
Enabling	1.1. Review and update of the regulatory framework for the development and sustainable use of natural resources.	0.0	0.0	0.0	0.0	0.0	0.1
Enabling	1.2. Improve access to forest management institutional services inside and outside protected areas.	3.6	2.5	2.5	2.5	2.5	13.6
Enabling	1.3. Promote coordination and effective participation of stakeholders to reduce illegal logging.	0.3	0.3	0.3	0.3	0.3	1.7
Enabling	1.4. Improve forest information and monitoring systems	1.2	1.2	1.2	1.2	1.2	5.9
Direct	1.5. Prevention and control of illegal forestry activities	3.0	3.0	3.0	3.0	3.0	15.2
Enabling	1.6. Strengthening municipal and communal forestry	0.3	0.3	0.3	0.3	0.3	1.7
Enabling	1.7. Institutional strengthening	0.3	0.1	0.1	0.1	0.1	0.9
	Total	8.9	7.5	7.6	7.5	7.5	39.1
Strategic option 2. **Conservation, protection and sustainable management of forests**							
Direct	2.1. Set up payment mechanism for environmental services.	0.7	0.7	0.7	0.7	0.7	3.4
Enabling / Direct	2.2. Improve conservation, valuation and development of biological diversity	0.3	0.3	0.3	0.3	0.3	1.5
Direct	2.3. Protection and conservation of protected areas and biological diversity	2.4	2.4	2.4	2.4	2.4	12.1
Enabling	2.4. Effective management and administration of protected areas	0.3	0.3	0.3	0.3	0.3	1.4
Enabling / Direct	2.5. Prevention and control of forest fires	5.9	5.9	5.9	5.9	5.9	29.5
Enabling	2.6. Protection against forest pests and diseases	0.1	0.0	0.0	0.0	0.0	0.2
	Total	9.6	9.6	9.6	9.6	9.6	48.1
Strategic option 3. **Restoration of forest landscape and recovery of forest cover in areas suitable for forestry and agroforestry activities**							

Direct	3.1. Forest landscape restoration	1.4	1.4	1.4	1.4	1.4	7.0
Enabling	3.2. Promotion of sustainable cattle farming	2.1	1.4	1.4	1.4	1.4	7.8
	Total	3.5	2.8	2.8	2.8	2.8	14.8
Strategic option 4. **Reduction of the unsustainable use of firewood**							
Enabling / Direct	4.1. Promote the sustainable and efficient use of firewood.	0.2	0.1	0.1	0.1	0.1	0.6
	Total	0.2	0.1	0.1	0.1	0.1	0.6
Strategic option 5. **Promotion of competitiveness and legal development of the value chain of forest products and by-products**[122]							
Enabling / Direct	5.1. Development of value chains of forest products and by-products	0.7	0.4	0.4	0.4	0.4	2.5
Enabling / Direct	5.2. Promote the establishment of agroforestry systems and forest plantations	0.1	0.1	0.1	0.1	0.1	0.7
Direct	5.3. Promote sustainable forest management in natural forest areas	0.0	0.0	0.0	0.0	0.0	0.0
	Total	0.9	0.6	0.6	0.6	0.6	3.1
Measurement, Reporting and Verification System							
Enabling	6.1. Measurement, Reporting and Verification System	2.3	2.1	2.1	2.1	2.1	10.6
	Total	2.3	2.1	2.1	2.1	2.1	10.6
Program administration and supervision costs **(5% of the total cost of REDD+ activities)**							
Enabling	7.1. REDD+ program administration and supervision costs (5% of the total cost of REDD+)	1.3	1.1	1.1	1.1	1.1	5.8
	Total	1.3	1.1	1.1	1.1	1.1	5.8
Total: REDD+ actions cost		26.6	23.9	23.9	23.9	23.9	122.2
Total: Additional government contributions		11.2	16.4	21.1	25.5	29.8	104.0
Total: ERP cost		37.8	40.3	45.0	49.4	53.7	226.1
Total: Accumulated ERP cost		37.8	78.0	123.1	172.4	226.1	

Source: Econometría Consultores (2019) "Budget and financing plan of the Guatemala Emissions Reduction Program" for the World Bank and the Government of Guatemala.

The cost of the general ERP execution for 2020-2024 is USD 226.1 million. The actions of Strategic Option 5 - Promotion of competitiveness and legal development of the value chain of forest products and by-products - which, for programmatic purposes, include additional government contributions, account for most of the Program's costs, a total of USD 107.1 million, equivalent to 47.3% of the ERP budget. The actions of Strategic Option 2 - Conservation, protection and sustainable management of forests - and of Strategic Option 1 - Strengthening of forest governance - account for the second and third options with the highest costs for the Program, a total of USD 48.1 million and USD 39.1 million, equivalent to 21.3% and 17.3% of ERP costs, respectively. Without considering additional governmental contributions, actions 2.5 - Prevention and control of forest fires (USD 29.5 million) and 1.5 - Prevention and control of illegal forestry activities - (USD 15.2 million) are the single most costly actions of the ERP. It is estimated that the ERP administration and supervision costs will be USD 5.8 million. These costs were estimated assuming that they account for 5% of the total cost of REDD+ activities.

The following table presents the main funding sources of the 2020-2025 ERP, identified to date.

[122] The additional government contributions refers to the resources needed to offset the opportunity costs of private agents and thus stimulate the desired land use changes required to achieve the country's emission reductions goals. In programmatic terms, these additional government contributions should be made under activities 5.1. Development of value chains of forest products and by-products, 5.2. Promote the establishment of agroforestry systems and forest plantations, and 5.3. Promote sustainable forest management in natural forest areas.

Table 31. Financing sources identified to date for the ERP 2020-2025

Source name	2020	2021	2022	2023	2024	2025	Total
Government sources							
CONAP / INAB / MARN / MAGA (in-kind contributions)	4.2	4.2	4.2	4.2	4.2		21.1
INAB incentives	3.4	4.9	6.3	7.6	9.0		31.2
CONRED strategy (prevention and control of forest fires)	2.6	2.6	2.6	2.6	2.6		13.2
Total	10.2	11.8	13.2	14.5	15.8		65.5
Donations and concession resources							
World Bank - IDB (FIP)	0.6	0.6	0.6	0.6	0.6		3.2
USAID	3.6	3.6	3.6	3.6	3.6		18.0
Total	4.2	4.2	4.2	4.2	4.2		21.2
Credit resources							
World Bank - IDB (FIP)	4.2	4.2	4.2	4.2	4.2		20.9
Total	4.2	4.2	4.2	4.2	4.2		20.9
REDD+ private projects							
REDD+ private projects	1.8	1.8	1.8	1.8	1.8		9.0
Total	1.8	1.8	1.8	1.8	1.8		9.0
Income from contracted emissions reduction							
ER payments[123] (5 dollars per ton of CO_2e)			21			31.5	52.5
Total	0.0	0.0	21	0.0	0.0	31.5	52.5
Total financing sources	20.4	22.0	44.4	24.7	26.0	31.5	169.0
Total accrued financing sources	20.4	42.4	86.8	111.5	137.5	169.0	

Source: Econometría Consultores (2019) "Budget and financing plan of the Guatemala Emissions Reduction Program" for the World Bank and the Government of Guatemala.

Having identified the financing sources, the Government of Guatemala is guaranteeing 75% of the total investment required by the ERP. Government resources are the main source of financing of the Program (USD 65.5 million), equivalent to 38.8% of the total funding sources identified to date. Government contributions to the Program will be made through different programs executed by ICG institutions. Resources allocated to CONRED's fire prevention and control strategy have been identified as a significant source of funding and are part of the Government's contributions to the Program. REDD+ payments are the second most important source of financing for the Program. It is estimated that, at the end of the Program, Guatemala will be able to transfer 10.5 million tons of reduced carbon, for which it will receive payments totaling USD 52.5 million (USD 5 dollars per ton of CO_2e) which will be reinvested in financing Program actions. REDD+ payments are equivalent to 31.1% of the identified Program financing sources.

The following table shows the ERP financial gap for the 2020-2025 period. The ERP is not currently fully funded and an additional USD 57.2 million would be required to ensure its implementation during the five years of the Program. In this sense, the Government of Guatemala will make additional efforts to obtain these resources, which are expected to come from concession and non-concession international cooperation; increases in the current budget allocations to existing Government programs; and from REDD+ projects support aimed at attracting national and international private investment. It is expected that this exercise will be complete by August 31 of this year. Specific efforts currently carried out by the Government of Guatemala to ensure financing and sustainability of the Program's direct and enabling actions include: Structuring a new operation financed by the GEF-7, reactivating the Livestock

[123] REDD+ payments are the second most important source of financing for the Program. It is estimated that, with the Program, Guatemala will be able to transfer up to 10.5 million tons of CO2e to the Carbon Fund, for a total of USD 52.5 million with a price per ton of USD 5 dollars. Based on the USD 5 per ton price, it is estimated that, for each dollar increase or reduction in the price, the financial gap will increase or reduce in USD 10.5 million.

NAMA, and identifying synergies with the new loan operation for the coffee sector of USD 285 million financed by the Central American Bank for Economic Integration (BCIE).

Table 32. 2020-2025 ERP financial gap

Description	2020	2021	2022	2023	2024	2025
Total ERP cost	37.8	40.3	45.0	49.4	53.8	-
Total financing sources	20.4	22.0	44.4	24.7	26.0	31.5
Total financial gap	-17.3	-18.3	-0.6	-24.7	-27.8	31.5
Total accrued financial gap	-17.3	-35.6	-36.2	-60.9	-88.7	-57.2

Source: Econometría Consultores (2019) "Budget and financing plan of the Guatemala Emissions Reduction Program" for the World Bank and the Government of Guatemala.

It is important to point out that, during the ERP readiness process, a strong commitment from the State of Guatemala has been made evident regarding the support to the implementation of REDD+ actions. An example of such commitment is the multiple programs funded by the ICG entities. This is, as indicated earlier in this document, a position held by Guatemala in the last twenty years through different environmental policies such as the concession for sustainable forest management of protected areas and Forest Incentive Programs implementation, among others.

7. CARBON POOLS, SOURCES AND SINKS

7.1 Description of selected sources and sinks

The FREL is calculated at the subnational level for the REDD+ emission reduction program area. In this area, emissions and removals from deforestation, degradation and increase in carbon stocks were estimated. Emissions from conservation and sustainable management of forests are not included.

For the development of the FREL, the 2006 guidelines of the IPCC are used, with a focus on changes in carbon stocks at a level 2, with country-specific information at a national scale regarding activity data and emission factors, in combination with default values. The activity data is obtained from a statistical sampling of a grid of 11,369 plots nationwide, of which 10,414 are in the emission reduction program area, assessed by a visual interpretation of remote sensors to determine the change of forest cover in the selected period (GIMBUT 2018a); and the emission factors are derived from a carbon strata map, obtained from national forest inventories plots (Gómez Xutuc 2017). Increases of carbon contents by forest plantations data were obtained by re-measuring permanent sampling plots (Samudio 2017).

The sampling grids to obtain statistical forest cover data is complementary to the National Forest Inventory, as is part of the design and operation of the forest monitoring system. Both elements are part of the MRV system and are generated by the Interinstitutional Roundtable for the Monitoring of Forests and Land Use (GIMBUT) and the Technical ICG, and coordinated by the Political ICG. They are in charge of providing inputs, methods and information regarding forests, developing climate change reports, and maintaining consistency between national data and those presented to the international community through the UNFCCC (national reports, FRELs, BURs, NDCs, among others).

REDD+ activities included in the FREL

Deforestation is included in the FREL and is the main consequence of anthropogenic pressure on forests due to livestock activities (land change to pastures and areas of predominantly herbaceous vegetation) and agricultural production (crops). Perennial and woody crops such as coffee, shade-grown coffee (main agroforestry system), palm oil and rubber exert pressure similar to conventional basic grains crops (corn, beans and rice) or other non-wood

crops (e.g. sugarcane and banana) (ICG 2018a). In the program implementation area, forest cover was 3,501,883.60 ha in 2006 and 3,332,159.23 ha in 2016 with an annual change of 32,506.53 ha/year.

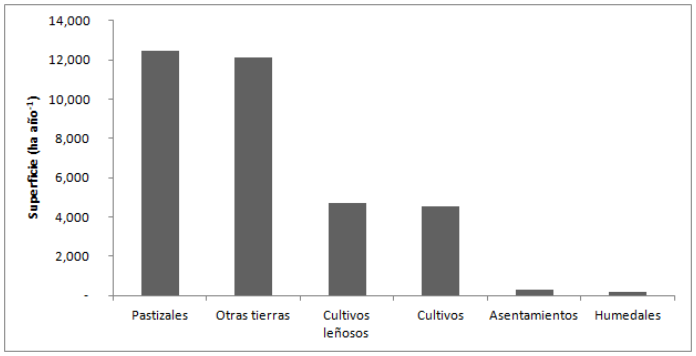


Figure 26. Loss of forest to other land uses in the 2006-2016 period

Guatemala has a high diversity of forest ecosystems coupled with diverse management practices and a large territory under conservation as protected areas (31.88% of the territory), with different levels of deforestation pressure in program areas (ICG 2018a). In the Petén department, in the north of Guatemala, almost all deforestation in the program area results from livestock farming, while in the rest of the country, the majority of forests are not converted to grazing pastures, but rather to annual intensive crops such as sugarcane and woody perennial crops like African oil palm, rubber and agroforestry systems that have even displaced livestock farmers to other less suitable regions (ICG, 2018b). The aforementioned deforestation processes cause the release of forest carbon from below-ground and above-ground tree biomass, given that most of the country's carbon is concentrated in forests.

All deforestation processes to generate pastures, croplands, human settlements, wetlands and others uses lands release forest carbon from below-ground and above-ground tree biomass, given that most of the country's carbon is concentrated in forests. This removal of the trees is done in favor of herbaceous species as fodder in other to increase production. Something similar happens with lands whose used has been changed.

Degradation is also included in the FREL and occurs in areas that remain as forests. Data from the monitored period points out to a forest degradation of 153,423.16 ha., at a rate of 15,342.32 ha per year. This happens due to the partial removal of trees, which reduced forest cover in FREL period. This process involves the loss of below-ground and above-ground tree biomass carbon, through the selective and intensive extraction of forest resources (trees for firewood, local use or commercial manufacturing) or the death of trees due to forest fires. It has been estimated that fire degradation is responsible for up to 9% of national emissions (GIMBUT, 2018b). Degradation processes have also been identified as a result of greater pressure from the non-sustainable extraction of firewood for domestic, commercial and industrial use. It is estimated that 70% of households in Guatemala use firewood for their needs. Illegal extraction activities stem from a weak governance. It is estimated that 95% of traded forest products are illegally extracted, with no control whatsoever (ICG, 2018b).

Due to the high rate of deforestation and degradation at the national level, some measures have been taken during reference level period (1998-2016), mainly with the support of communities and forest owners that receive forest incentives (PINFOR, PINPEP and PROBOSQUE). They promote REDD+ activities that **increase forest cover and carbon stocks** through forest plantations. This activity has the potential to reduce net emissions balance, with positive effects for the conservation and sustainable management of forest resources (ICG, 2018a).

This area has shown an increasing trend in the FREL period (2006 to 2016): 28,766.84 ha established and an average rate of 2,876.68 ha of plantations per year.

This progress is a result mainly from the increase of carbon pools from below-ground and above-ground tree biomass. With the long-term growth and maintenance of the trees, and a focus on forestry and sustainable forest management, the country's potential for carbon uptake will be significantly improved. This becomes more important as livestock pastures that cause deforestation have been showing an increasing trend (ICG, 2018a).

In addition to forest plantations, a reduction of degraded forest areas has been recorded, either by forest restoration activities or by the protection and conservation of degraded forests restored to similar conditions[124] as forests that have not been degraded. This activity has been included, since part of the actions that will be implemented within the ERP framework are focused on the recovery or restoration of degraded forest areas. According to the estimates for the program area, 9,684.84 ha of degraded forests are recovered per year.

Activities not included in the FREL

Sustainable forest management (SFM) is not included in the FREL accounting, but has been implemented in several areas with different levels of progress and objectives. In the SFM, the ER program is promoted in order to stop deforestation, degradation and improve the quality of forest goods and services through sustainable forest use, good practices in forest resource management and benefits obtained locally. Historically, the lack of SFM leads to the uncontrolled use of firewood, illegal logging and degradation processes (ICG, 2018a).

However, there are important SFM areas in the Maya Biosphere Reserve (Petén) under Community Forest Management (about 721,006 ha and 14 forest management units), with successful experiences of certified timber (from valuable tropical species) and territories under a carbon trade scheme with VCS and CCB standards, such as the Guatecarbon project, which is expected to reduce 37 million metric tons of CO2e in 30 years (ICG 2018a, Guatecarbon 2018). There are also areas in Sierra de las Minas and Verapaces with traditional management in the conifer timber industry that generates export by-products. In other areas of the country, there other initiatives such as the REDDES project, currently is the diagnostic and consultation phase, and includes areas with a high potential for timber production (Huehuetenango, Quiche and Alta Verapaz), however, with complex issues of illegal logging and lack forest use control (ICG 2018a, CALMECAC, 2011).

As mentioned before, currently, forest management is only sustainable locally in places with special characteristics, and in general there are still governance and regulation obstacles for the control of illegal extraction of forest resources (timber and non-timber). Therefore, it is intended to harmonize initiatives in the medium and short term and make the SFM a constant in the country (ICG, 2018a). Current conditions restrict national information on SFM, due to the lack of available data on extracted timber (forest management and forestry activities), and a national registry capable of tracing the links of the supply, manufacturing and market chains. This information is required for the carbon pool and source estimates, following the methods of the IPCC guidelines (2016) for harvested wood products or wood products. By ordering, registering and controlling this activity as it is intended for the ER program, in the medium term it will be possible to measure it as a REDD+ activity and check its contribution to direct and indirect mitigation.

The conservation of carbon pools is not included in the FREL either, but similarly to SFM, there is a history of conservation and local actions related no NPAs. This activity is important and is promoted in conservation zones through effective management of the NPAs and the increase of conservation areas considered a priority to stop deforestation and degradation. Guatemala has 32% of its territory as Natural Protected Areas (NPAs) with six management categories and no-take areas. Conservation in NPAs is generally limited by the lack of investment in management actions to guarantee protection, restoration and control and monitoring (ICG, 2018a). Despite these limitations, it has been demonstrated locally that it is possible to implement it in a complementary manner and help

[124]Similar conditions have been mentioned for canopy cover, assuming that other characteristics of forests, such as structure, carbon content and their functions, are also recovered.

stop deforestation and degradation. In the core zone of the Maya Biosphere Reserve, the Lacandón Project (2016) that covers an area of 45,288.81 ha and reduced 369,985 tCO_2 of emissions from deforestation between 2012 and 2014. The reduced emissions were traded for the benefit of local inhabitants. Likewise, projects with an emission reduction approach are often being implemented in NPAs where carbon stocks conservation activities could be developed.

Guatemala's vocation for biological conservation and its local initiatives show the importance of including this activity in the short or medium term. This requires coordination among conservation zones and the systematization of current data and research. This will show in greater detail the role of forests for carbon balance, the benefits of ecosystem services and the impact of conservation in terms of carbon and biodiversity reserves.

For the time being, the activities not accounted for in the Forest Reference Emissions Levels are considered complementary to the activities included, given their indirect effects on them. These activities could later be included, with a gradual focus in the systematization of information and methods to update the FREL and the MRV system. The goal is to develop estimates for all REDD+ activities and know their contribution to the carbon balance, as a means to design and assess national mitigation strategies.

Table 33. REDD+ activities included in the FREL.

Sources / pools	Included	Justification / explanation
SOURCES / SINKS	INCLUDED?	JUSTIFICATION / EXPLANATION
Emissions from deforestation	Yes	Emissions from deforestation are included in compliance with criterion 3 of the methodological framework. Emissions from deforestation come from forest lands that are natural forests and forest plantations that have been changed to any other category of land use.
Emissions from degradation	Yes	Degradation emissions are measured using a proxy to measure canopy cover change in areas classified as forests. Degradation caused by fires is not included to prevent double counting.
Carbon removal from increase in carbon stocks	Yes	Carbon sinks are included due to an increase in carbon stocks in the different categories of lands that became forests due to plantations maintained by good management practices during the FREL period. Degraded forest areas restored to non-degraded conditions.
Sustainable forest management	No	GHG emissions or removals associated with sustainable forest management have not been included, since there is insufficient data to estimate the pools and GHG sources associated with this REDD+ activity. However, it is expected that SFM may have an impact on reducing emissions from deforestation and degradation.
Conservation	No	Carbon removals from conservation have not been included, since there is not enough data on carbon dynamics in conservation areas. However, conservation is expected to have an impact on reducing deforestation and degradation.

7.2 Carbon pools and selected greenhouse gases

In accordance with criterion 4 of the FCPF methodological framework, carbon pools that contribute to more than 10% of emissions are included and must be accounted for.

Tree biomass (they make up 100% of the losses from deforestation and degradation accounted for in the ERPD).

1. Above-ground biomass (AGB): this pool is the most important and is quantified in deforestation and degradation processes. It is also considered the most significant carbon sink due to its annual growth rate.
2. Below-ground biomass (BGB): this pool is related to the loss of above-ground biomass in trees in deforestation and degradation processes. When trees are cut down and begin its decomposition it is assumed that it loses all its biomass. When assessing removals by carbon sinks, tree roots are also considered part of the growth of tree's biomass growth.

Dead organic matter: for accounting purposes, forest lands that remain as forests despite degradation events are considered to be balanced systems, therefore, its carbon balance value is zero. As far as deforestation goes, they are not accounted for, given their ate a stock by themselves, hence their low significance. A preliminary estimate using litter carbon data from 1,146 sampling plots (Castellanos et al., 2007, 2008) throughout the country averaged a carbon content of 3.8 tC/ha, resulting in 452,924.34 tCO2/year, resulting in 436,891.62 tCO2/year.

To estimate emissions from fallen woody material (FWM), values from other countries (Panama, Costa Rica and Mexico) were used, which averaged 4.8 tC/ha for forest areas and 0.47 tC/ha for areas outside forests, which gives us an estimate of 516,095.37 tCO2/year.

Soil organic carbon (SOC): SOC is considered balanced in forest areas that remain as such. For deforestation areas, these pools have not been included in the FREL because there is no data that adequately represents the country's forests and because its emissions are not significant; this is explained by data from 499 sampling plots (Castellanos et al., 2007, 2008) that estimated a carbon content of 29.2 tC/ha in this pool and, according to the IPCC 2006 guidelines, this carbon pool was gradually lost, until reaching equilibrium for 20 years, at a loss rate of 1.46 tC/ha/year resulting in emissions of 956,194.45 tCO2/year, averaging only the 10 years included in the FREL.

With the implementation of a National Forestry Inventory in the coming years, all carbon pools are expected to be quantified every five years, with the exception of soil organic matter (UN-REDD 2018). This will provide better information about pools, to gradually include those that are considered relevant based on the analyses. It could also provide information to include REDD+ activities not considered in the FREL. Those that have already been included should improve the level of detail regarding carbon balance dynamics in deforestation, degradation and carbon increase processes.

The following table shows the pools that were accounted for, their importance, source of information, methods used for the accounting and type of GHG gases considered.

Table 34. Carbon pools accounted for in the NREF

Greenhouse gases	Selected	Justification / explanation
Above-ground biomass	Yes	This is the most significant pool, which includes the above-ground tree biomass greater than 10 cm in diameter measured at 1.3 m (DBH). The data of this pool is modeled on the national carbon strata map, which was prepared based on 2,307 plots of forest inventories, from different projects, which were systematized, adjusted, standardized and analyzed to obtain the biomass value for each individual greater than 10 cm at DBH. Allometric equations were applied, differentiating broadleaved forests of Petén, coniferous forests, broadleaved forests and mangrove forests; for the latter, three specific equations were used per species. A factor of 0.47 was used to convert the biomass into carbon and the result was standardized by hectare, dividing the result by the size of the plot, except for the Petén forests, in

		which a 0.5 factor was used according to the study carried out by Arreaga, 2002.
Below-ground biomass (BGB)	Yes	This pool is related to the previous one and includes below-ground biomass (roots), using an equation for the Petén coniferous and broadleaf forests, which represents a relationship based on the proportion of the above-ground biomass. For mangrove forests, three specific equations were used for the species therein.
Dead organic matter	No	There is no data for the country's forests and, using partial data, it is estimated that this type of emission accounts for 5.6% of total deforestation and degradation emissions.
Soil carbon	**No**	There is no data for the country's forests and, using partial data, it is estimated that this type of emission **accounts for 5.54% of total** deforestation and degradation emissions.

In the FREL, deforestation and degradation activities take into account the carbon contained in trees' biomass and the equivalent **carbon dioxide** content (44/12) from land conversion is quantified.

Burning biomass for gases other than CO2 (CH4, CO, N2O)

The main limitation for including other gases other than CO2 is the lack of information to calculate of forest fire emissions, which have already been identified as a major disturbance and a driver of deforestation and degradation. Gases other than CO2 account for 3% of emissions (GIMBUT 2018b). In Guatemala, from 2006 to 2016, areas affected by fires have been identified and official statistics indicate that more than 90% of fires at the ground level with little effect on standing trees (less than 5% affect tree crowns) (SIFGUA 2018). The main source of emission is the forest fuel contained in the herbaceous-shrub layer and in dead organic matter (dead wood, litter and fermentation layers), which have not been quantified completely according to the type of vegetation.

The practice of slash and burn in agriculture is another source that is being excluded for CO_2 and non-CO_2 gases given that there is no information on biomass and combustion factors of each pool, nor is there data on the amount chemicals emitted per kg of biomass burned. This agricultural practice, common to all the national territory, can be a significant contribution that has not been quantified.

Both forest fires and the burning of biomass for forest land change are considered a key source emissions. In this case, the IPCC recommends the country to collect data for tier 3 or 2 methods (IPCC 2006). In that way, the implementation of the methodological protocol for fire scar mapping, complemented by agricultural burning data (this is not yet included and, if not identified, could lead to double counting together with fires and deforestation) and the National Forest Inventory that will quantify carbon stocks in different types of vegetation involved in fire combustion and biomass burning for agricultural land clearing, will all play an important role for the inclusion of other gases other than CO_2.

The following table shows the gases included in the FREL:

Table 35. Gases accounted for in the FREL

Greenhouse gases	Selected	Justification / explanation
CO_2	Yes	Emissions and removals in tons of CO2 are included for all the aforementioned activities.
Other GHG	No	For the 2006-2016 period, preliminary estimates obtained from tabular fire data point out to 24,556.51 tCO_2e/year of CH4 and N2O emissions from forest fires, which represents less than 1% of total emissions.

Gases and stocks not included

To justify the exclusion of DOM pools (litter[125] and FWM) and COS, as well as gases other than CO_2 (CH4 and N2O), partial coverage data were analyzed, considered the best available information at the moment, however, not sufficient to be considered a complete representation of the national reality.

To estimate the DOM carbon content, data from 1,146 sampling plots were used, giving an average of 3.8 tC/ha, assuming that it is completely lost in deforestation events; for FWM, data from other countries, averaging 4.8 tC/ha, were used; in the case of COS, data from 499 plots were used, which give an average estimate of 29.2 tC/ha. This value was spread over 20 years, assuming that it completely lost during this period as suggested by the IPCC with regard to soil carbon content. The total loss is assumed because there are no reference values at the national level for different types of cover other than forests, and the IPCC default values for non-forest lands are higher than the average for this type of use. In the following link, you can find the databases and calculation records http://marn.gob.gt/s/redd_/paginas/ERPD_GUATEMALA.

In the case of fires, tabular figures reported by the INAB at the national level were used in the SIFGUA portal, with the following assumptions: most fires are superficial or at ground level, which consumes mainly litter (8.08 tons of dry matter per ha). In the case of canopy fires, they can consume tree biomass (237.3 tons of dry matter per hectare) while underground fires consume the roots (47.46 tons of dry matter per hectare). The additional data used in the equation were IPCC default values.

The results are shown below:

Table 36. Emissions from different pools and other GHGs

Pool / Gas	CO2 emissions/year	Percentage (%)
Above-ground and below-ground biomass	15,301,239.53	89
COS	956,194.45	5
DOM (litter and FWM)	969,019.71	6
Other GHGs (fires)	24,556.51	0
Total	17,251,010.21	100

Although stocks and gases do not account separately for more than 10% in the methodological framework to justify their exclusion, when added together, they account for 11%, so an additional justification is required. In this sense, excluding these stocks from the overall accounting is a conservative approach, since this does not imply that emission reduction activities will not be implemented, so these stocks and gases emissions will also be reduced, therefore, their exclusion underestimates the total estimated emission reduction. This means that, if the assumptions for the estimation of emissions were maintained, for each tonne of carbon counted as reduced, there is an additional percentage of emissions being reduced by other stocks and gases, which will not be accounted for or claimed for ERPD purposes. A hypothetical example would be that, if 100% of deforestation and degradation is reduced in a year, only 15.3 million tons will be accounted for, while in fact 17.2 million tons would be reduced.

8 REFERENCE LEVEL

8.1 Reference Period

The FREL is based on subnational GHG emissions in the ERP area in 2006-2016 period, and accounts for CO_2e emissions from deforestation and degradation, and CO2 removals from carbon stocks increase. This period ends in

[125]The fallen woody material does not have default values in the IPCC guidelines and no values were found inside the country that could accurately represent the reality.

2016 in accordance with criterion 11 of the methodological framework, and covers a period of 10 years accounting for GHG emissions and removals as of 2007[126].

The data on land cover and dynamics is generated by a sampling grid distributed systematically throughout the country in a multi-temporal analysis for the 2006-2016 period using medium- and high-resolution satellite images.

In the grid analysis for the program area, during the FREL period, it is possible to verify the land use change due to forest loss, degradation from the decrease of forest cover in areas that remain as forests and forest increases in areas with commercial forest plantations on lands that were not previously forests. These have been classified according to national definitions described in the following section.

8.2 Forest definition used in the construction of the Reference Level

According to the national definition, a forest is a land surface with a predominant and continuous tree cover[127] with a minimum canopy cover of 30%, forming a land mass of at least 0.5 ha and a minimum width of 60 meters (GIMBUT 2018b). Forests and other land uses are defined below according to land representations in relation to classification criteria, to provide greater clarity in the FREL quantification, as well as in the characterization of forest land dynamics identified in REDD+ activities.

This forest definition differs from that used in the 2015 FRA, which is the following:
Forest lands or without any use that extend for more than 0.5 ha, with trees that reach a height higher than 5 m and a canopy cover greater than 10 percent. The term specifically excludes trees used in agricultural production systems, for example, fruit plantations and agroforestry systems. The term also excludes trees that grow in urban parks and gardens.

On the other hand, the GHG national inventory (INGEI) presented in the 2nd National Communication does not include a forest definition, nor does it in the material used to detect deforestation, however, it can be assumed that, operationally, the definition should be similar, given the classes of forest identified, as well as the other uses reported.

Although there could be differences, operationally speaking, the definition has remained constant, since the classes and figures reported for the amount of forest, both in the FRA and in the National Communication are similar, and differences can be attributed to the use of different inputs and methodologies, rather than to a difference in definition. in addition, the definition presented in this document will be used in the next official reports to the UNFCCC.

Classification of forest lands and other uses

Land classification in the FREL uses IPCC guidelines (2006), and their definitions. in this sense, the category of forest lands includes all the land with forest vegetation according to the thresholds mentioned above. It also includes systems with a vegetation structure currently below thresholds, but which could potentially reach the values used by the country in the definition of forest land.

The classification of forest lands, croplands, pastures, settlements, wetlands and other lands (IPCC 2006) in the FREL was updated and consolidated based on 2001-2010 forest cover, land use and forest dynamics maps, as well as the 2012 high-resolution map of forest and land use (GIMBOT, 2014). The classification system in the first hierarchical

[126]The period covers 10 years since initial forest cover was identified in 2006 and changes that generated emissions were accounted until the end of 2016.

[127] Tree: woody plant with defined stem and crown with secondary growth that, when mature, reaches a minimum height of 5 meters and a minimum diameter of 10 cm.

level takes as a general reference the guidelines of the IPCC (2006) and for the classes and subclasses of forests, and other non-forest lands, the CORINE land cover classification is used, adapted to the conditions of the forests in Guatemala. For more than a decade now, a standardization process has been gradually carried out for land cover and use classification in order to draw comparisons in when generating maps with different cartographic resolution inputs (e.g., Landsat and Rapid Eye).

The classification defined here is hierarchically based on three levels and has a higher conceptual resolution than previously generated maps for GHG inventories, which allows a better description of the forest land cover and dynamics (GIMBUT, 2018a). This classification identifies forest elements with more detail, and take advantage of inputs obtained by remote sensing data and forest inventories, in order to make general and specific classifications of forest cover and land use in other types of territory (e.g. coniferous, mangrove, dry forests, etc.).

The land categories are described as:

a) Forest lands: composed of lands that have the characteristics and thresholds of the forest definition in the FREL. These are forests (class) originated by natural regeneration and consist of coniferous, broadleaved, mangrove, dry and mixed forests (subclasses). Forest lands and forests also include plantations (class) of conifers and broadleaved forests (subclass) composed of timber species with a homogeneous structure (age and spatial distribution), developed and maintained by human intervention (management). In plantations, the most frequently established conifers are pine trees (*Pinus* spp.), cypress (*Cupressus spp.),* Guatemalan fir or *pinabete* (Abies spp.) among others. As for broadleaved, there are mahogany (Swietenia spp.), cedar (Cedrela spp.), palo blanco (*Tabebuia donnell-smithii* and *Cybistax donnell-smithii*), gmelina (*Gmelina arborea*), pink poui (*Tabebuia rosea*), teak (*Tectona grandis*), eucalyptus (Eucalyptus spp) and others.

b) Croplands: includes croplands annually or permanently managed (classes), including fields of crops not older than one year, such as sugarcane, rice, basic grains and vegetables (subclasses), and crops of perennial plants and agroforestry systems (class). In these last categories, permanent crops of agroindustrial plantations with species introduced throughout the country are included, a process that leads to deforestation from clear-cutting (Alonso-Fradejas et al, 2011, Duarte et al, 2012). Plantations are mainly of rubber (*Hevea brasilensis*), coffee and African oil palm (*Elaeis guineensis*), and non-woody plants such as bananas (subclasses) (ANACAFE 2018, https://www.anacafe.org/glifos/index.php/). Agroforestry systems are usually composed of permanent woody and non-woody crops, in a system with diverse structural arrangements and assemblies of non-timber and timber species (e.g., coffee, cardamom, banana, macadamia and rubber). This class includes coffee frown under the shade of tree species (e.g. planted species such as *Inga sp*, *Grevillea robust*, *Erytrina sp*., and also species that grow naturally, like *Alnus sp, Cedrela sp, Cordia sp, Gliricidia, Persea sp*., etc.) (ANACAFE 2018, https://www.anacafe.org/glifos/index.php?title=Sombra_en_el_cafeto). Additionally, croplands also consider areas where agricultural practices have been used recently and are currently fallow lands (class) with vegetation below forest thresholds.

c) Pastures (and bushes): This category consists of grazing lands and natural pastures that are not considered croplands or other types of land. They include systems with sparsely distributed forest vegetation and other non-tree vegetation, such as weeds below the threshold values used in the forest land category. This category considers pastures areas linked to livestock farming, whether natural or grown pastures. Like the agro-silvopastoral systems (class), which combine multipurpose trees used mainly for forage, food (fruits) and with at least 20% of timber species (for construction and firewood). In this category, lands not classified as forests include areas with scattered trees (in a continuous surface of less than 0.5 ha), natural shrubby vegetation and shrubs or guama forests, composed mainly of minor woody species (thin trunks and low height) below forest thresholds, and páramo vegetation located high altitudes in mountain areas dominated by herbaceous plants.

d) Wetlands and water bodies: this category includes peat extraction areas and land covered or saturated with water throughout the year or part of it and that is not within the categories of forest land, cropland, pasture or settlements. It includes reservoirs as a managed subdivision and natural rivers and lakes as unmanaged subdivisions. They are surfaces covered with lakes, lagoons and ponds with stagnant continental natural water and reservoirs with

artificially stagnant water. It is also made up of rivers and wetlands most of the time flooded with fresh, brackish or salty water, suitable for hydrophilic vegetation.

e) Settlements: land developed for harboring human populations, which includes their transportation infrastructure and human settlements of any size, unless they are already included in other categories. It contains areas of continuous urban fabric with residential, industrial and communication infrastructure, as well as discontinuous urban areas that generally found in rural settings characterized by groups of residential, commercial and industrial buildings not linked to a continuous urban fabric (e.g. sugar mills, shrimp farms, salt mines, coffee plants, among others).

f) Other lands: this includes bare ground, rock and all those areas that are not included in any of the other five categories. The surfaces identified coincide with the national surface data available. If data are available, it is recommended that countries classify unmanaged lands within the land use categories described above (e.g., within unmanaged forest lands, unmanaged grasslands and unmanaged wetlands). This improves transparency and the ability to track land use conversion from specific types of unmanaged lands to other types that fall within one of the above categories. Among the classes that do not include vegetation, are soils without vegetation cover, or places where vegetation cover is very scarce, such as beaches and coastlines, areas with predominant parental material (rocks) and areas with materials derived from recent volcanic activity.

Table 37. Land categories (IPCC, 2006), national classes and subclasses hierarchically used to identify the dynamics of forest cover and land use.

Level 1 Categories (IPCC)	Level 2 National class	Level 3 National subclass
Forest lands	Forest	Coniferous forest
		Broadleaved forest
		Mangrove forest
		Mixed forest
	Forest plantations	Coniferous
		Broadleaved
Croplands	Annual crops	Sugarcane
		Rice
		Basic grains and vegetables
		Others
	Permanent crops	Rubber
		African oil palm
		Coffee
		Banana
		Others
	Agroforestry systems	
Pastures	Pastures	
	Silvopastoral systems	
	Scattered trees	
	Natural shrub vegetation	
	Scrub and/or guama forests	
Wetlands and water bodies	Lake, lagoon or pond	
	River	
	Sea and/or ocean	
	Wetland	
	Dam	

Settlements	Continuous urban fabric	
	Discontinued urban areas	
Other lands	Bare soil	
	No soil	Beaches and coastlines
		Lava flows
		Sand and volcanic ash
		Quarries
		Rocky outcrops
		Rocks
	Páramos	

8.3 Average annual historical emissions over the Reference Period

Description of method used for calculating the average annual historical emissions over the Reference Period

Considering the land categories described above. The emissions and increases of forest carbon stocks are estimated for the period between 2006 and 2016 and the emissions and removals are divided by the number of years included in that period (10 years). Assuming that emissions and removals are similar over time.

Historical estimates of CO_2 emissions and sinks of the FREL are developed with a single land use focus, in the three REDD+ activities: deforestation, degradation and increases of forest carbon stocks (IPCC, 2006). CO2 emissions and removals were obtained by multiplying the activity data (forest lands changed to other types by deforestation, forest lands that remain as forests but lose cover by degradation, and other lands converted to forest plantations to increase carbon stocks) by the emission and removal factors, and the difference in carbon pools before and after conversion (Equation 1).

Eq.1:

$$\mathbf{FREL_{(Def+Deg)-(Incr)} = AD \times EF / RF}$$

Where,

FREL $_{(Def, Deg, Incr)}$= emissions from deforestation and degradation and removals due to an increase in forest carbon stocks.
AD= activity data by conversion of forest lands to other types of lands (deforestation), forest lands that remain as forests (degradation) and other lands that are changed into forest lands (increases).
EF / RF = emission factors for deforestation and degradation and removal factors for carbon increases in forest biomass.

The information used in the construction of the FREL corresponds mostly to country data and is built specifically for the ER program (Level 2). The activity data were made with a spatially explicit method using a sampling grid that quantifies the surface of the land categories and the changes in forest lands through the visual interpretation of satellite images. This was integrated with the national forest information, obtained from plots distributed throughout the country, where carbon stocks represented in a map of carbon strata were quantified to obtain the emission factors (EF). In the same way, results of the long-term measurement of permanent plots distributed in the country were used, in which the growth of carbon stocks is quantified to obtain the absorption factors (AF), for the estimation of stock increases.

The LULUCF estimation method takes the change in annual carbon stocks of a given pool, based on the difference in carbon stocks before and after the conversion, which includes annual changes in inventories and carbon increases

in below-ground and above-ground biomass, which is represented by equation 2.15 of the IPCC guidelines and suitable for the FREL in Guatemala, in Equation 2.

Eq.2:
$\Delta C_B = \Delta C_{Gi.t} + \Delta C_{CONVERSION\ i.t} - \Delta C_L$

Where:

ΔC_B = annual change in biomass carbon stocks due to land converted to other of land use categories and forest land areas that remain as such, in the reference period.

$\Delta C_{Gi.t\text{-incr}}$ =annual increase in biomass carbon stocks due to biomass contained in other uses of type i land after conversion and to carbon removals, which remain as such, after conversion, during the reference period, expressed in tC (increase in forest reserves);

$\Delta C_{CONVERSION i.t\text{-Def, Deg}}$ = initial change in biomass carbon stocks due to the conversion of type i forest land to other type i land uses (deforestation) and forest lands remaining as such in degradation modality (forest cover loss) in the reference period , in tC;

$\Delta Cli.t$ = annual decrease in biomass carbon stocks due to the removal of biomass, wood-fuel and other disturbances that occur before a deforestation event, during the reference period, in t C.

Guatemala does not consider the annual loss of biomass from forest removal (harvesting), the harvesting of wood fuel and other losses caused by disturbances, storms and insects, and forest diseases. Therefore, it is necessary to consider the variable ΔCLt of Equation 2, as zero, given that there is not enough data to account for the losses in biomass carbon stocks from the removal of biomass, wood-fuel and other disturbances.

The estimates for each activity are made separately with particular assumptions based on the information available, and their methods of obtaining activity data and their emission and removal factors. The inputs used and the specific estimation methods for each activity are described in the following sections.

Activity data and emission factors used for calculating the average annual historical emissions over the Reference Period

Activity data

The estimation of activity data in the forest sector was done using a spatially explicit method, which consists of a statistical sample of multi-temporal assessment of land cover and land use change obtained from satellite images and of high and medium resolution, for the FREL period (2006 to 2016). This method is found as an option in the updated guide of the Intergovernmental Panel on Climate Change (IPCC, 2006) and in the FCPF Methodological Framework (FCPF, 2013). Given its multi-temporal and spatially explicit nature, it is also considered useful to obtain information on deforestation and degradation drivers and therefore, include them in the planning of mitigation activities.

The statistical sampling approach has the advantage of providing accurate and timely information at the national and subnational levels, and describes the level of contribution by forest type. It also allows monitoring using the estimator and its associated level of uncertainty. As part of an improvement of the activity data, the national cartographic model of forest cover and land use change updated for 2016 is currently under developed, and the statistical sampling data will be used in a complementary way for validation. The goal is to harmonize it with the country's historical approach to forestry dynamics, which has been based on calculating the activity data for the LULUCF sector, generating land cover maps and their dynamics with cartographic models with supervised automatic classifications (GIMBOT 2014).

Development of activity data

For the design of the sampling grid and activity data collection, the Open Foris open source software was used, which serves as support for the monitoring of the land cover and land use change in forests. The software was used in the Collect Earth module which is a Google Earth and HTML-format interface for collecting geographic data, which can be adapted to each country's reality and ensure consistency with IPCC's land classification guidelines (2006) (FAO 2015). This module was sponsored by FAO-UNREDD in the National Monitoring and Information Systems project with the purpose of promoting transparent and reliable processes to build the REDD+ program.

Collect Earth satellite imagery visual interpretation system with medium- and high-resolution multi-temporal series that synchronize remote sensing collection platforms of Microsoft's Bing Maps, Google Earth and Google Engine in each geographic point and/or area of interest, for systematic sampling, training data collection, tabular data systematization, statistical analysis, construction of cartographic models and their validation, using open source technologies such as Saiku Server (database web data analysis server that prepares the inputs for the LULUCF report) and Quantum Gis (organization, processing and analysis of spatial data). Collect Earth saves the data in SQlite and PostgreeSQL, which allows multiple users to set up data collection in real time, facilitating the review by administrators responsible for quality control and data systematization (FAO 2015).

Statistical sampling of visual interpretation points to estimate land cover and land use change

Design of sampling plots and grids in the national territory

For FREL historical analyses a 3.1 X 3.1 kilometers grid was developed covering the entire country and plots were randomly established within each quadrant, resulting in a sampling grid of 11,369 nationwide. Of these, 10,414 are in the emission reduction program area (Figure 9). Stratified random sampling was done on the basis of an intensified design of National Forest Inventory plots for medium- and high-resolution remote sensing to determine forest cover and land use change (UN-REDD, 2018). This grid of points will be complemented with 715 plots of forest inventory where carbon pools and forest ecosystems dynamics will be measured directly every 5 years (GIMBUT, 2018a) (Figure 27).

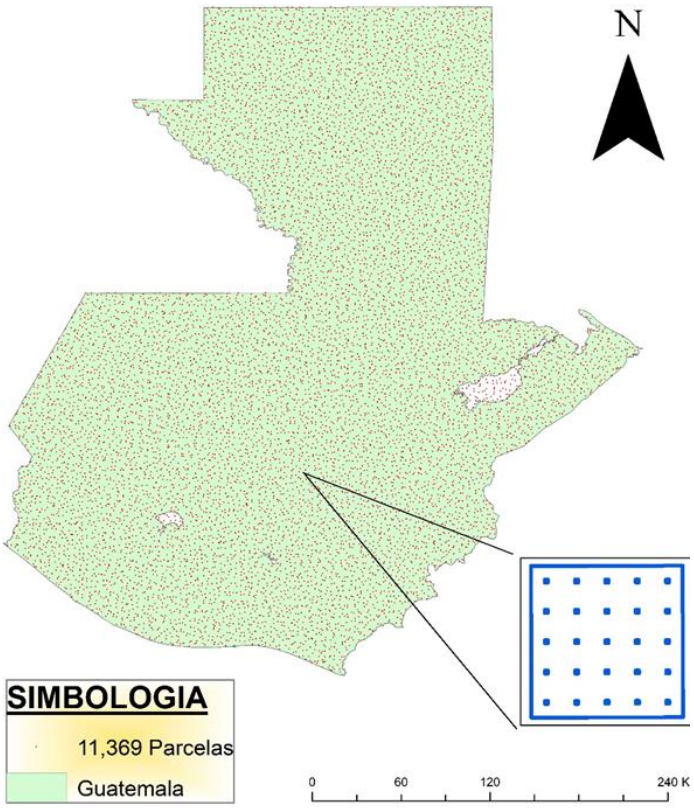


Figure 27. Sampling points grid in the program area

The objective of the intensified sampling grid is to have an comprehensive system of forests and other land uses monitoring to provide sound information to develop analyses and reports regarding the forestry sector.

Once the sampling points were defined, data was collected with the Collect Earth tool, in plots with a surface equivalent to 1 ha (3 x 3 Landsat Pixels) and with a 25-point (5 x 5), 20-meter distance internal grid to perform a multi-temporal visual assessment of land cover and its dynamics (Figure 28).

Figure 28. Sampling unit for visual interpretation of land categories and their dynamics.

Method of visual interpretation for land cover and land use change

The visual interpretation is carried out based on the sampling grid points with a form designed and programmed in Collect Earth that also synchronizes three map collection platforms (Google Earth, Google Earth Engine and Bing Maps) for multi-temporal visualization of the images from the available medium and high resolution remote sensors, and submits the interpretation data for each point. For this, criteria of interpretation, technical and operational definitions were approved by a team of 9 interpreters (e.g. classification of forest lands and other uses, definition of spectral bands for interpretation, texture, among others).

The analysis was made in the Collect Earth viewer during the 2006-2016 period for each plot, checking if there were changes of land use in forest lands or decrease – or increase - of forest cover, degradation or restoration of degraded areas. In each plot, if a change is detected, the year in which the change occurred is recorded, to identify deforestation and increases between 2006 and 2016. For the interpretation of the previous land use in the first year of the period, Landsat 5 and 7 images (RGB = 4.5 and 3) were used; in the same way, for the analysis of current use, high-resolution Google Earth images and Landsat 8 images (RGB, 5, 6 and 4) were used (Figure 30).

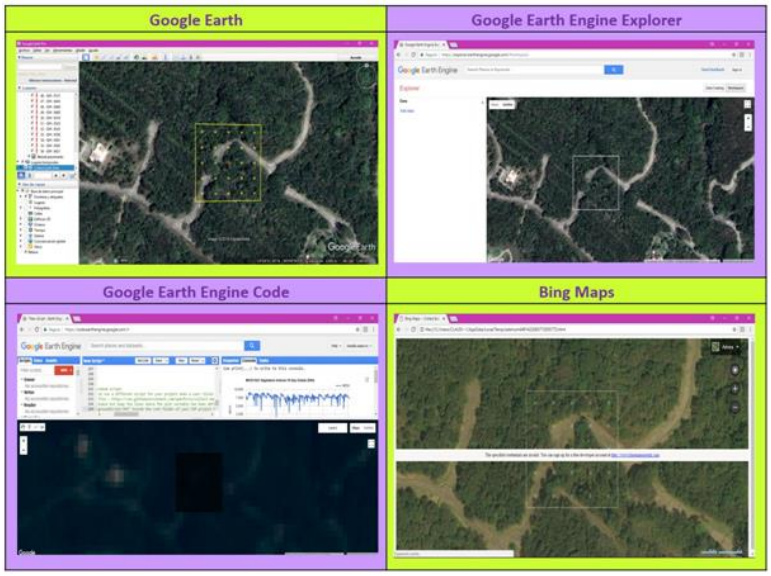


Figure 29. Multi-temporal view of Collect Earth images.

As support for the interpretation and classification of the land cover and land use change categories, the following thematic maps were used: 2003 and 2010 land cover and land use, 2012 forests and land use, 2001-2010 dynamics of forest cover, forest management units, life zones of Guatemala, climate (Thornthwaite), physiography, municipal borders and departmental and land occupation.

In order to carry out degradation or restoration of degraded forest areas, 2006 map sheets and orthophotos were used by means of a WMS service viewed on a desktop Geographic Information System (GIS), which is available on the web portal of the Presidency's Secretariat for Planning and Programming (http://ide.segeplan.gob.gt/geoportal/servicios.html)

The variables collected for the interpretation of land category and use change in each plot were:

1. Elements: Natural and anthropic components that constitute the biophysical cover that can be observed on the land surface for interpretation, i.e., trees, palms, shrubs, pastures, bare soil, crops, water and infrastructure. At each

point of the plot grid, elements are counted in order to determine the predominance of a category of land cover and use, as illustrated in Figure 12. For the analysis of forest degradation in lands that remain as forests, tree loss in current uses is detected, with respect to the 2006 orthophotos, as a reference of the initial cover, and a percentage cover loss is estimated.

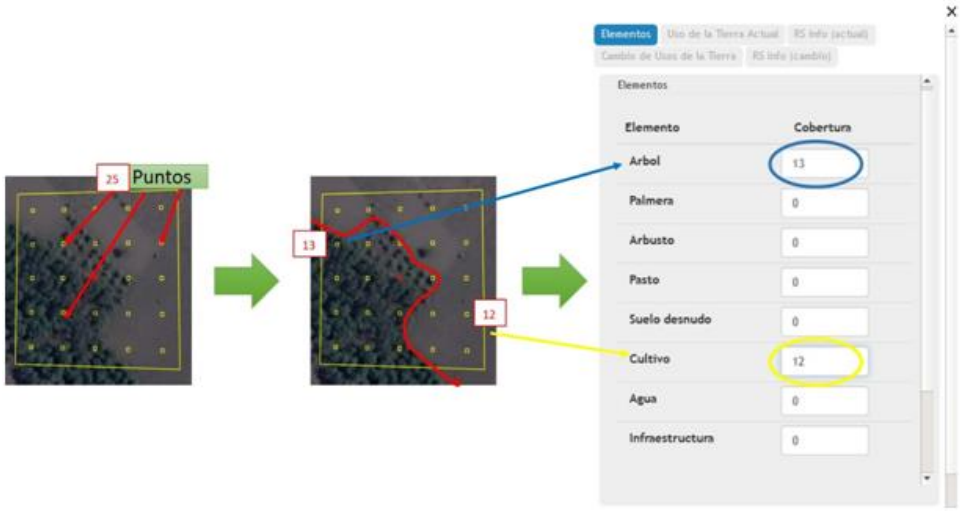


Figure 30. Determination of the predominance of elements in a sampling grid plot in a cropland that changed to forest land using high resolution images.

Operationally speaking, forest-definition thresholds are used based on a series of criteria to determine land use when carrying out the visual interpretation of the plots with the sampling tool.

Three steps were followed for decision-making regarding land use in the assessed plots:
Determine predominant cover type: each element is associated with a level-1 land use category (IPCC categories). The first form identifies which category of elements occupies the highest number of points on the plot. An example of the relationship between use and elements is presented in Table 38. However, this relationship is not conclusive.

Table 38. Relationship between land use and cover based on the main elements found on the plot.

Land use category	Related element
Forest lands	Tree
Croplands	Crop, palm, tree
Pastures	Pastures, shrubs
Wetlands and water bodies	Water
Settlements	Infrastructure
Other lands	Bare soil

Interpret the environment of the elements: the immediate surrounding of the plot is visualized to verify if it complies with the designated land use definition. Otherwise, the next major element is assessed.

For example, one of the characteristics of "forests" (subcategory level 2) is to be a continuous land mass of at least 0.5 ha. This can be assessed by Google Earth's Ruler tool, as seen in Figure 31.

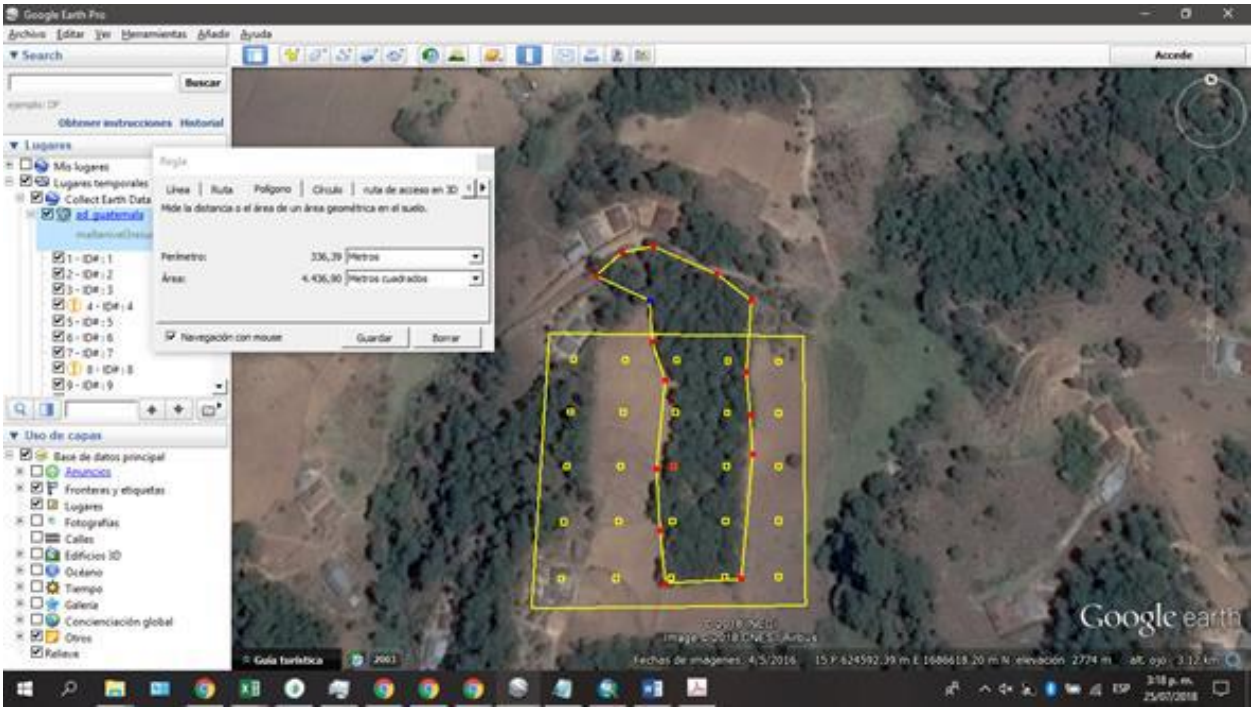


Figure 31. Checking the minimum area according to the forest definition

In the end, the main land use is determined, secondary characteristics of the elements are examined to select the most appropriate level 2 and 3 classification, and the information is entered on the form, indicating whether the interpretation is reliable.

2. Current land use and sensor information: the type of land cover and land use by 2016 is identified at the three hierarchical levels of land classification, mentioned in Section 8.2, which is observed in the multi-temporal series. Sensor information is recorded and the multi-temporal interpretation analysis is carried out. Generally, the Google Earth high-resolution sensors platform was used.

3. Change of land use and sensors used for interpretation: the date on which the change occurs is identified, as well as the general type of change according to IPCC categories (table 22), drivers (pests and fire, if present) and their initial use at the three hierarchical levels of land classification, mentioned in Section 8.2. To detect land use change, the history of the Google Engine Landsat collections with RGB compositions was analyzed: 4, 5, 3 for Landsat 5 and 7 and RGB: 5, 6, and 7 with Landsat 8. The composition of selected bands allows a better differentiation of elements to be interpreted in the vegetation, urban areas, bare soils, flooded areas and water bodies (INEGI 2010). To label or classify the initial use related to the change, the same Landsat 5 and 7 plot collections near 2006 are consulted. If no change in forest lands is registered, the same procedure is carried out.

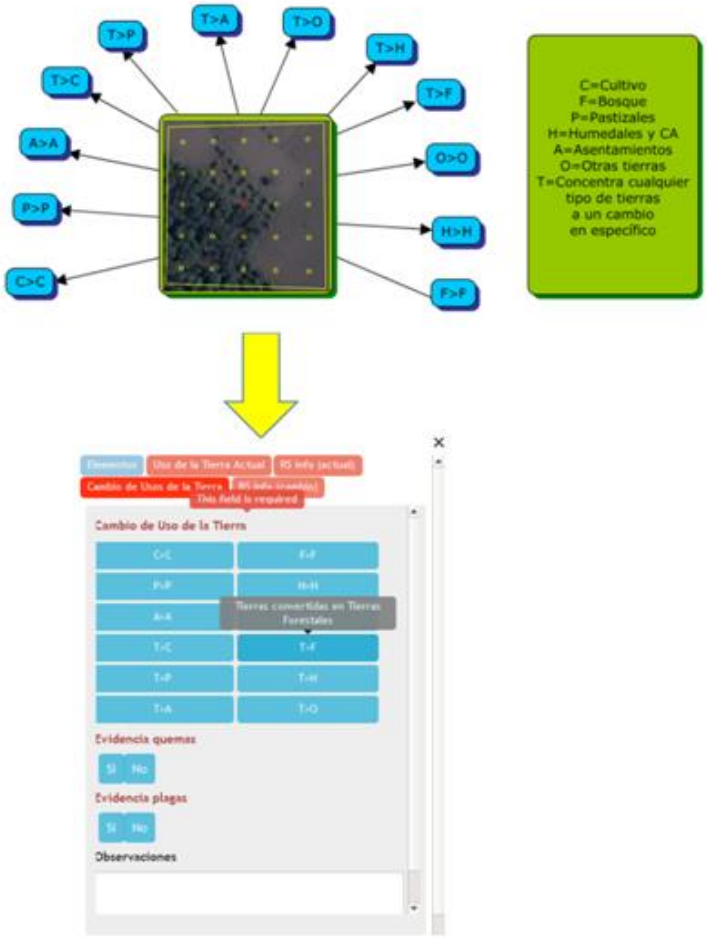


Figure 32. Variables collected to characterize the change in land use in Collect Earth.

Table 39. Types of changes labeled under the IPCC guidelines.

CHANGE TYPE CODE	DESCRIPTION
C> C	Cropland remaining as a cropland
F> F	Forests lands remaining as forest lands
P> P	Pastures remaining as pastures
H> H	Wetlands and water bodies remaining as wetlands and water bodies
A> A	Settlements remaining as settlements
O> O	Other lands remaining as other land
T> C	Lands converted to croplands
T> F	Lands converted to forest lands
T> P	Lands converted to pastures
T> H	Land converted to wetlands water bodies
T> A	Lands converted to settlements
T> O	Lands converted to other lands

Method of visual interpretation of degradation

In order to assess degradation, the same procedure was carried out, with the difference that only plots classified as forests remaining as forests (F> F) in the reference period are used. The interpretation process for change by degradation also used 2006 map sheets and orthophotos as support to detect the plots that show tree cover loss

and increase of other elements that characterize other uses. With this procedure, the percentage of coverage in each year and the reduction with respect to the initial reference year were obtained.

The collected variables are automatically systematized for each plot visually interpreted in the Collect Earth platform, with its main variables of change type, year of change, cover loss (for degradation), initial and current use as described in the Protocol for the use of the Collect Earth platform, applied to the update of gei -nref/nrf- emissions reference levels from Guatemala. Quality control of the detected changes is carried out by checking the initial and final land use labels at all their hierarchical levels of classification and they are further labeled with the REDD+ activity related to the change (deforestation, degradation or increase).

The database of the updated grid for estimating deforestation and the protocol used for its development can be downloaded from the following address: http://marn.gob.gt/s/redd_/paginas/ERPD_GUATEMALA.

REDD+ activities and analysis of land cover and land use change dynamics.

For the analysis of the activity data plots, at each point, any change in the use of forest lands (forests and forest plantations) is considered as **deforestation**. And any conversion of other lands to subcategories of forest plantations in forest lands is seen as an **increase in the carbon stock area**. **Degradation** happens in any of the subcategories of forest lands that remain as forests. To estimate them, the accounting of tree elements was carried out for the sampling plot. The base year tree count (2006) is taken as 100% cover and plots that have lost between 30% to 70% of cover throughout the period are identified. The same procedure was applied inversely to identify plots in forest lands that recovered between 30 and 70% of the forest cover, which means an increase in carbon stocks.

The analysis results of 10,414 sampling points accounts for the emission reduction program area, that is, 9,985,930 ha, for the 10-year FREL period, between 2006 and 2016. It also accounts for the total and annual areas of REDD+ activities including all kinds of forest cover and land use. These results estimate the areas from the sampling points in each stratum by their class and type of activity (deforestation, degradation and increase) and is calculated as shown below:

$A_i = n_i \times (A_{total}/N)$

Where,

A_i= area in ha per stratum *i*
n_i= number of points collected by stratum *i* in the reference period
A_{total}= total area of Guatemala in ha
N = total number of points

As an estimator of data dispersion, the standard error was calculated in % for each stratum (i):

$$Ei = \sqrt{\frac{pi(1-pi)}{N-1}}$$

P*i*= proportion of points by stratum

$$pi = \frac{ni}{N}$$

A 95% confidence interval was obtained:

$CI_{95\%,i}$ (ha) = 1.96 × E_i (%) × A_{total}
$CI_{95\%,i}$ (%) = $CI_{95\%,i}$ (ha)/A_{total}

The total forest cover calculated for the program area in 2016 points was 3,389,692.91 ha, with a total deforestation of for the 2006-2016 of 325,065.32 ha with an annual loss of 32,506.53 ha. The increase of forest land through forest plantations was 28,766.84 ha with 2,876.68 ha per year. Degradation occurred at a rate of 15,342.32 ha/year, while the restoration of degraded forest areas occurred at 9,684.84 ha/year rate. The results are summarized in the following table and the methodology can be found at: http://marn.gob.gt/s/redd_/paginas/ERPD_GUATEMALA.

Table 40. Main results regarding forest areas and their activity dynamics.

Activity	# sampling points	Area (ha)	ha / year	IC	Error %	P_i	Standard error
DEFORESTATION	339	325,065.32	32,506.53	34,038	10%	0.0326	17,366
DEGRADATION	160	153,423.16	15,342.32	23,591	15%	0.0154	12,036
INCREASE OF FOREST AREA BY PLANTATIONS	30	28,766.84	2,876.68	10,280	36%	0.0029	5,245
RESTORATION OF DEGRADED FOREST AREAS	101	96,848.37	9,684.84	18,797	19%	0.0097	9,590.39

Table 41. Summary of activity data for deforestation, degradation and increases in carbon stocks.

Description of the parameter including the period of time covered (e.g. change in vegetation cover in a period, or transitions between forest categories in a period):	The total and annual change in the cover area by classes and subclasses of forest lands (see Section 8.2) **in a period of 10 years, from 2006 to 2016, at the subnational level in the emission reduction program area.** And the change in the area of forest lands that remain as forests and that lose forest cover in a period of 10 years, from 2006 to 2016.
Explanation of sources and sinks for which the parameter was used (e.g. deforestation, degradation):	Deforestation: The entire surface of the classes and subclasses of forest land that change to other non-forest lands. Degradation: The entire surface of the classes and subclasses of forest land that remain as forests and that **lose or gain between 30 and 70% o**f forest cover. Carbon stock increases: The surface of non-forest lands converted to forest plantations. **Restoration of degraded areas: Forest land surface that remains and gains between 30% and 70% forest cover.**
Unit of measurement:	Ha, ha/year
Value for the parameters:	Activity / Total area (ha) / ha / year DEFORESTATION / 325,065.32 / 32,506.53 DEGRADATION / 153,423.16 / 15,342.32 INCREASE OF FOREST AREA BY PLANTATIONS / 28,766.84 / 2,876.68

	RESTORATION OF DEGRADED FOREST AREAS 96,848.37 9,684.84
Source of data (e.g. official statistics) or description of the method for developing data, including data processing methods from remote sensing images (including the type of sensors and the details of the images used):	The activity data for deforestation, degradation and increases are the result of a sampling of points on a systematic national grid (3.1 X 3.1 km). Within each quadrant, a plot equivalent to 1 ha (3x3 Landsat pixels) was randomly established giving **a total of 10,414 plots within the area of the emission reduction program where land cover and land use changes were assessed by multi-temporal visual interpretation, for the 2006-2016 period, with** medium and high-resolution images using the Collect Earth tool. In the analysis, inputs from the Landsat 5, 7 and 8 sensors were used as well as high-resolution sensor as orthophotos and others available in Google Earth.
Spatial scale:	Data and information obtained at national and regional level
Discussion about the key uncertainties for this parameter:	Errors in category interpretation, sample size for analyzing dynamics and quality of the images available and used for interpretation in the FREL period.
Estimation of the accuracy and/or level of confidence. Explanation of assumptions and estimation methods:	The accuracy of the data was assessed by the sampling error expressed as the percentage of the error, standard error, confidence intervals and standard error of the proportion of points and the Accounting Area used for each activity data **of the ER program. The standard error by forest stratum in each REDD+ activity is used for the propagation of the error in the estimation of uncertainty shown in Section 12.**

Activity	Error %	Standard error (Ha)	$IC_{95\%\ lim,\ inf\text{-}sup}$ (ha)
Deforestation		10%	17,366
Degradation		15%	12,036
Increase by plantations		36%	5,245
Restoration of degraded forest areas		19%	9,590.39

8.4. Emission and removal factors

For the FREL estimation, different emission (deforestation and degradation) and removal (stock increases) factors are used depending on the REDD+ activity considered. To estimate emissions from deforestation, the emission factor corresponds to the forest carbon content prior to deforestation (2006), divided into four strata at the national level, and then a carbon content value is estimated after deforestation, which corresponds to the subsequent use (2016) of the converted forest areas.

Regarding degradation, the forest carbon content is taken as a reference according to their corresponding carbon stratum and a loss of an equal percentage of carbon as the canopy cover loss is assumed.

To estimate the removal factors for carbon stocks increase activities in areas converted to forest plantations (forest lands), the country information available for forest plantation growth is used, differentiating between coniferous or broadleaved.

Emission factors for deforestation.

To estimate emissions from deforestation, the carbon content of four national forest strata are used, and a value is assigned according to the spatial location of the grid points used to estimate the activity data; the carbon values and the distribution of these four strata by type of deforested area are obtained from the potential map of carbon strata (Gómez Xutuc, 2017).

Carbon content before deforestation and carbon strata map.

The carbon strata map was developed from the collection and analysis of more than 3,000 forest inventory plots (containing more than 203,000 records of trees with their diameter at breast height) and sample unit sizes ranging from 0.02 ha to 1 ha. The information was collected in natural forests, distributed nationwide from 15 different data sources, including permanent plots, forest inventories, research sites and forest concession data.

The data obtained was adjusted, leaving only the plots that are within the national territory and located in natural forests. The result of the adjustment was 2,307 useful plots (Table 42).

Table 42. Number of plots by size (Source: Gómez Xutuc, 2017).

Fuente	0.03	0.04	0.05	0.1	0.12	0.13	0.25	1	2	Total
ASINFOR	11	6	258	67	12	3				**357**
C_UVG_AGROCYT05_06	298									**298**
C_UVG_CARE 2007	363									**363**
C_UVG_CNCG_UVG				102		25				**127**
C_UVG_FODECYT 08-2008				161						**161**
C_UVG_IFRI	42									**42**
C_UVG_TNC_2010				30						**30**
C_UVG_TRIFINIO				33						**33**
CONAP_SAN_GIL			20							**20**
Concesiones								587		**587**
FDN-LACANDON				73						**73**
IFN_INAB									24	**24**
INAB_PPM_CONIFERAS				73						**73**
INAB_PPM_MANGLE	10		14							**24**
PPM_LATIFOLIADO							95			**95**
Total	**724**	**6**	**292**	**539**	**12**	**28**	**95**	**587**	**24**	**2307**

For each plot, individuals greater than 10 cm of DBH were identified, and above-ground biomass was estimated with allometric equations for Petén forests (Tierras Bajas del Norte), coniferous forests, broadleaved forests and three species[128] from mangrove forests.

[128]The *Laguncularia racemosa and Conocarpus erectus L*. species, according to field experience, are physically very similar, so the same equation was used to calculate their biomass.

Table 43. Allometric equations used.

Species / Region	Equation	Source	r2	N	Dmax
Rhizophora mangle L.	0.178*DBH^2.47	Imbert and Rollet (1989)a	0.98	17	Unknown
Laguncularia racemosa (L.) Gaertn.f.	0.1023*DBH^2.50	Fromard et al. (1998)	0.97	70	10
Avicennia germinans (L.) L.	0.14*DBH^2.4	Fromard et al. (1998)	0.97	25-45	42.4
Conocarpus erectus L.	0.1023*DBH^2.50	Fromard et al. (1998)			
Petén	10^(-4.09992+(2.57782*LOG10(DBH)))*1000	Arreaga 2002	95	139	130
Broadleaved	0.13647 * 2.38351*DBH^2.4	UVG 2015	0.939	100	79.9
Coniferous	0.15991 * DBH^2.32764	UVG2015	0.966	80	82

To estimate the below-ground biomass, an equation of proportion of above-ground biomass was used for all the plots (Mokany, Raison & Prokushkin 2006), except for the mangrove forest plots, where another equation was used (Komiyama et al. 2008).

Table 44. Equations used for estimating below ground biomass.

Region	Equation	Source
Petén, Broadleaved and Coniferous	0.489 * (x0.89)	Mokany, Raison, & Prokushkin, 2006
Mangrove forests	$0.199 * r^{0.899} * (DBH)^{2.22}$ r^2 *Rhizophora harrisonii = 0.86* *r^2 Laguncularia racemosa = 0.762* *r2 Avicennia germinans = 0.759*	Komiyama et al. (2008) CATIE, 1994

With the biomass data for each individual, biomass tons are converted to carbon, and multiplied by 0.47 and extrapolated to the value for one hectare, according to the size of each plot. The values are added for each plot, which gives a standard value of carbon tons per ha in each of them.

Each plot has geographic location data, and these were bio-climatically stratified, as an indirect measure of primary productivity, based on the ombrothermic indices generated for Guatemala, developed with data obtained from the digital WorldClim page, using the average monthly rainfall and temperature measurements. This classification has been widely used in Guatemala as a basis for regional planning and for the integration of other variables of interest to forestry services and biological conservation (CONAP, 2015).

Plots and their carbon content were divided in 6 ombric horizon[129], and for each of them, data distribution tests were carried out, finding that none of them presented normality in data distribution. Therefore, to stratify data according to ombric type, a comparison test of k samples (Kruskal-Wallis) was carried out, where statistically differentiated groups were detected as shown in the following table.

[129]Only one plot intersects with the dry ombric horizon 5b, so it was excluded from subsequent analyzes, since using only one piece of data is statistically incorrect.

Table 45. Groups formed from the analysis of k samples (Kruskal-Wallis).

Muestra	Frecuencia	Suma de rangos	Media de rangos	Grupos		
7a. Húmedo inferior	509	510086.500	1002.135	A		
8b. Hiperhúmedo superior	43	47436.500	1103.174	A	B	
6a. Subhúmedo inferior	628	697785.000	1111.123	A	B	
6b. Subhúmedo superior	172	193961.000	1127.680	A	B	
7b. Húmedo superior	570	665047.000	1166.749		B	
8a. Hiperhúmedo inferior	384	545655.000	1420.977			C

Based on the statistical grouping, four strata were determined at a national level according to the amount of carbon and the ombric horizon zones as shown in the following table:

Table 46. Grouping of samples in different strata.

Sample	Groups			Final group
6a. Lower subhumid	A	B		I
6b. Upper subhumid	A	B		I
7a. Lower subhumid	A			II
7b. Upper humid		B		III
8a. Lower hyperhumid			C	IV
8b. Upper hyperhumid	A	B		I

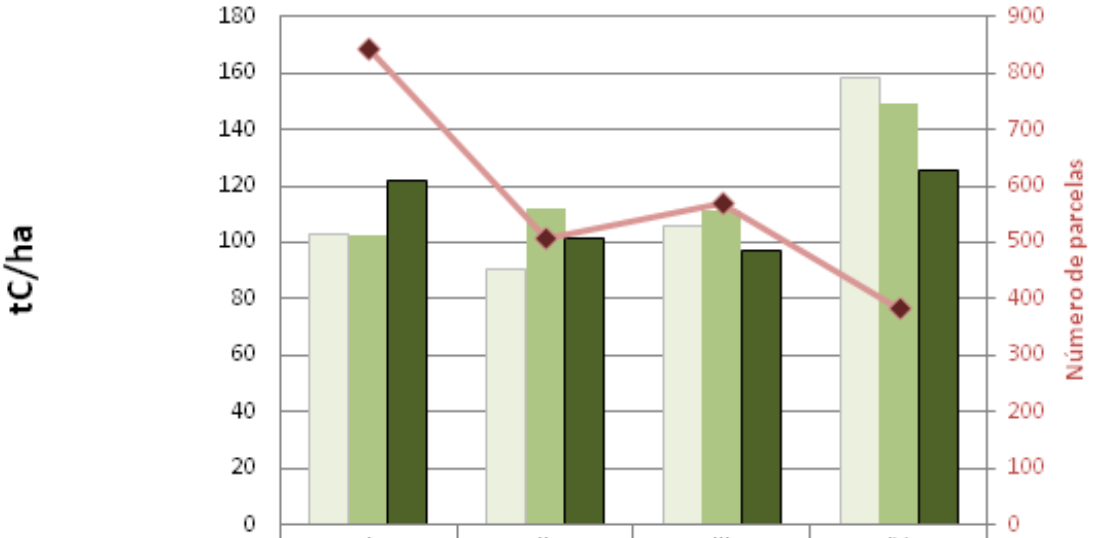
With these data, values were assigned to those areas whose ombric horizon did not have enough plots to be represented (e.g., dry). The final stratification was concluded as detailed on Table 30, thus covering the national territory.

Table 47. Strata assigned to horizons with insufficient values.

Stratum	Ombric type	Ombric horizon
I	4. Semiarid	4b. Upper semiarid
	5. Dry	5a. Lower dry
	5. Dry	5b. Upper dry
	6. Subhumid	6a. Lower subhumid
	6. Subhumid	6b. Upper subhumid
II	7. Humid	7a. Lower subhumid
III	7. Humid	7b. Upper humid
IV	8. Hyperhumid	8a. Lower hyperhumid
I	8. Hyperhumid	8b. Upper hyperhumid
	9. Ultra-hyperhumid	9. Ultra-hyperhumid

In order to have more consistent data in the estimation of tons of carbon per hectare and by stratum, descriptive statistics for each group were developed and the resulting carbon content ranges were compared. Due to the great variability of data related to plot size and sampling designs, carbon density was calculated with the median and the

weighted average of the four strata was also estimated according to the proposal of Thomas and Rennie, 1987, who state that variance is a good estimator of the average. Due to the variability of sampling designs for different purposes, data distribution (non-normal) and plot sizes, in order to calculate carbon in the cartographic model (carbon map), the Monte Carlo method was selected, given that it weighs plot size directly and identifies the probability density function (PDF) of each data by plot size and by stratum, using goodness-of-fit tests (Section 12, Table 15) (Gómez) Xutuc, 2017). Once the PDF has been identified, simulations of the carbon content per hectare are carried out to get a better estimator and its uncertainty (Figure 33). In this sense, 10,000 simulations were run truncating distributions according to the minimum and maximum value of each data (tC/ha) by plot size and by stratum, respectively. The median was used for the analysis, since the data do not have a normal distribution.



	I	II	III	IV
Mediana	102.9	90.3	105.7	158.5
Mediaponderada	102.6	112.1	111.5	149.5
Monte Carlo	122.1	101.7	97.1	125.2
Parcelas	843	509	570	384

Figure 33. Comparison of the median, weighted average and Monte Carlo estimate (tC/ha) by stratum (Gómez 2017).

To calculate the final uncertainty, a bootstrap resampling at 95% confidence was carried out with the data obtained from the simulations to obtain the confidence intervals, since the data do not present a Gaussian or normal distribution. In this way, the amount of carbon and its uncertainty by stratum were obtained nationwide (Table 48).

Table 48. Carbon values obtained for each stratum.

Strata	Median	Typical deviation	Uncertainty (%)[130]

[130]These values of uncertainty come from the methodological report for the elaboration of the carbon strata map, however, they were not used for the propagation of the error when estimating the uncertainty.

I	122.06	0.187	0.30%
II	101.73	0.553	1.07%
III	97.11	0.459	0.93%
IV	125.19	0.602	0.94%

Monte Carlo carbon estimates, as indicated above, are assigned on the ombrothermic horizons layer map, which results in the national carbon strata map.

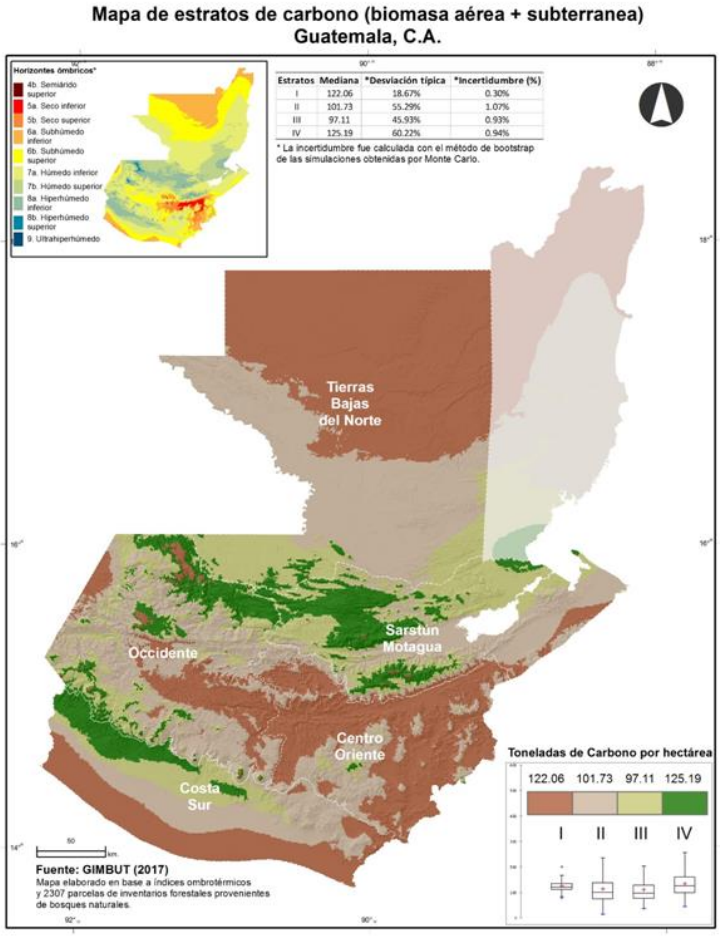


Figure 34. Carbon strata map (T/ha) (GIMBUT 2017).

From this map, the value estimated on each sampling grid point is obtained, to identify the carbon content in each one of them prior to deforestation.

The original databases and the methodology used to develop the carbon strata map can be found at: http://marn.gob.gt/s/redd_/paginas/ERPD_GUATEMALA.

Carbon content after deforestation.

In Guatemala, there is limited information and studies on the change of carbon content in deforestation processes, i.e., when forests are converted to croplands, pastures, settlements, wetlands and other lands. It is important to know these processes and their effects, since many crops are currently being expanded, such as African palm, rubber, coffee, and agroforestry systems (e.g. shade-grown coffee) (Alonso-Fradejas et al. 2016). In the country, compilations and surveys have been developed to assess the quality of the data regarding these crops. The conclusion is that there are viable data to quantify carbon stocks in agroforestry systems such as shade-grown coffee, which were analyzed at the national level with its associated uncertainty (Castillo 2016, ANACAFE 1998).

In order to have a more accurate estimate of emissions and biomass carbon stocks after deforestation, depending on the type of activity developed, in addition to the data obtained for agroforestry systems, default values were used for land converted to croplands during the year following the conversion. These values are on the 2006 IPCC guidelines for annual crops and very humid tropical perennial crops and their associated range of error is found on Table 5.9 (IPCC, 2006). The values for these categories of other non-forest uses were used as described below:

Table 49. Biomass carbon after conversion from deforestation.

Other land uses	Carbon tones/ha	Range of error and/or uncertainty	Source
Croplands (all unspecified classes) and pastures	5.00	±75%	IPCC 2006 (Table 5.9 of Chapter 5 Cropland, annual cropland)
Cropland-Coffee (intensive)	10.00	±75%	IPCC 2006 (Table 5.9 of Chapter 5 Cropland, tropical perennial very humid cropland)
Cropland-African palm	10.00	±75%	IPCC 2006 (Table 5.9 of Chapter 5 Cropland, tropical perennial very humid cropland)
Cropland-Rubber	10.00	±75%	IPCC 2006 (Table 5.9 of Chapter 5 Cropland, tropical perennial very humid cropland)
Agroforestry systems (shade-grown coffee)	28.40	1.34%	ANACAFÉ 1998, Castillo 2016.
Settlements	0.00	N/A	IPCC 2006
Wetlands	0.00	N/A	IPCC 2006
Other lands	0.00	N/A	IPCC 2006

Emission factors for degradation and restoration of degraded areas

The emission factors for degradation are based on an approximation of the carbon densities of the carbon map strata nationwide. From these densities, in the plots identified in the grid of points that originally had > 70% forest cover and lost between 30-70% cover in the FREL period, or that they had an inverse dynamic where they gained more than 70% of forest cover, a carbon loss or gain percentage of 50% was estimated, as shown in the following table:

Table 50. Criteria used to classify degraded plots.

Type of forest	Canopy cover percentage	(tC/ha)
Non-degraded forest	> 70%	I - 122.06 II - 101.73 III - 97.11

		IV - 125.19
Degraded forest	<70% >30%	I - 61.03 II - 50.87 III - 48.56 IV - 62.60

Based on the criteria described above, the emission factors for TF that are managed as TF and that lose or gain between 30% and 70% of forest cover as a result of degradation are obtained.

Removal factors for increases in carbon stocks

Removal factors used to estimate CO2 uptake in the areas converted to forest plantations, which corresponds to the carbon that is absorbed by the growth of tree biomass in these areas that have experienced forest expansion. The establishment of plantations requires a preparation of the land to eliminate competition in the initial stage of the plantation. Therefore, it is assumed that, during the conversion process, all previous biomass carbon is eliminated. Then, a sustained and uniform growth is maintained in the entire area converted to coniferous or broadleaved plantations in the 15-year FREL period.

To estimate this data, information on growth curves extracted from 28 tree species in Guatemala forest plantations (INAB 2014) was used. These results are from the sampling units assessment called Permanent Forest Measurement Plots, distributed in 90 municipalities in the 22 Departments of Guatemala. The assessed locations correspond to the geographical distribution of forest plantations established by the benefits from INAB's PINFOR since 1998. The absorption factors described here were developed in the Methodological Protocol for Baseline Carbon Stock Increases developed by INAB.

The Mean Annual Increments (MAI) were obtained by dividing the forest species by forest type (broadleaved and coniferous), identifying which type of forest each species belongs to. Robust MAI estimates of broadleaved and coniferous forests were generated from the Permanent Forest Measurement Plots database. The functions best adjusted to the probability density data (PDF) are lognormal for broadleaved and gamma for coniferous forests. On these distributions, Monte Carlo simulations were performed to make more precise estimations and the final MAI values were calculated with the medians of the final distributions of the simulations.

Table 51. MAI for each type of forest plantation.

Uptake factor	Median ($m^3\ ha^{-1}\ year^{-1}$)
MAI in broadleaved forest	3.43
MAI in coniferous forest	7.88

When selecting wood densities, the document called "Wood Densities of Tropical Tree Species" was used, which contains a scientific study of the densities by trees in tropical forests in America. Also, as a support and for comparative purposes, the "Coniferous of Guatemala" document was used to check the densities of tree species in coniferous forests (DATAFORG 2000, Reyes et al. 1992)

With the basic densities data organized, the average wood density was obtained for broadleaved and coniferous forest. To do that, for each type of forest, the species in each community of trees were identified and the arithmetic mean was calculated.

Table 52. Wood density according to the different types of plantations.

Type of forest	Density gr/cm^3
Broadleaved forests	0.62

Coniferous forests	0.61

The biomass expansion factors (BEF) was added to these values. The BEF is the relationship between the above-ground and below-ground biomass and the carbon fraction (CF), with IPCC default values as shown below.

Table 53. Expansion factors, above-ground and below-ground biomass ratio for forest plantations.

	BEF	AGB:BGB	CF
BROADLEAVED FOREST	1.50	0.2	0.47
CONIFEROUS FOREST	1.20	0.2	0.47

Finally, carbon data per hectare per year is converted to a CO2 removal factor by multiplying them by the IPCC default factor of 44/12. Once all the calculations have been made, the values for broadleaved and coniferous forests plantations are obtained.

Table 54. Removal factors for forest plantations.

	RF (tC/ha)	RF (tCO2 / ha)
BROADLEAVED FOREST	1.8	6.60
CONIFEROUS FOREST	3.25	11.93

Table 55. Forest emission factors and other land uses.

<table>
<tr><td>Description of the parameter, including, if applicable, the classification of vegetation types:</td><td>Forest emission factors (biomass stocks prior to conversion): Above-ground and below-ground biomass carbon for four strata of georeferenced forests in a national carbon map, estimated for the point of the activity data where deforestation occurs.

Emission factors of other land uses (biomass stocks after conversion to other land uses by deforestation): Above-ground and below-ground biomass carbon in the general categories of cropland, pastures, settlements, wetlands and other lands. And for the classes and subclasses of perennial crops of agroforestry systems, coffee, African palm and rubber.</td></tr>
<tr><td>Units (e.g. t CO_2/ha):</td><td>Ton C/ha</td></tr>
<tr><td>Parameter values:</td><td>Forest emission factors
<table><tr><td>Forest stratum</td><td>Ombric type</td><td>Median (Ton C/ha)</td></tr><tr><td>I</td><td>Semiarid, Dry and subhumid, Hyperhumid, Ultra-hyperhumid</td><td>122.06</td></tr><tr><td>II</td><td>Lower subhumid</td><td>101.73</td></tr><tr><td>III</td><td>Upper humid</td><td>97.11</td></tr><tr><td>IV</td><td>Lower Hyperhumid</td><td>125.19</td></tr></table>Emission factors in other uses<table><tr><td>Other land uses</td><td>Carbon tones/ha</td></tr><tr><td>Croplands (all unspecified classes) and pastures</td><td>5.00</td></tr><tr><td>Cropland-Coffee (intensive)</td><td>10.00</td></tr><tr><td>Cropland-African palm</td><td>10.00</td></tr><tr><td>Cropland-Rubber</td><td>10.00</td></tr></table></td></tr>
</table>

	Agroforestry systems (shade-grown coffee) 28.40 Settlements 0.00 Wetlands 0.00 Other lands 0.00
Source of data (e.g. IPCC official statistics, scientific literature) or description of the assumptions, methods and results of any study used to determine the parameter:	Main sources of data -Adjusted and standardized data base of 2,307 plots of forest inventories for different purposes developed by the National Forestry Institute, Universidad del Valle de Guatemala (UVG) and of Forest Concessions (CEMEC and Association of Forest Engineers). -Allometric models developed for the country for warm humid and very humid forests, Petén (Arreaga 2002), broadleaved and coniferous forest communities (UVG 2005) and mangrove forests by species (Imbert and Rollet 1989 and Fromad et al. 1998). For the below-ground biomass the Komiyama 2008 allometric model was used, which includes specific species variables. The default IPCC carbon fraction (2006) was applied to the calculated biomass. The total tree carbon was estimated for each plot (Goméz Xutuc 2016) -Carbon strata map developed by GIMBUT (2017) based on climatic (WorldClim) and carbon variables from the plots, collected at the national level (Gómez Xutuc 2017). Carbon strata were estimated with Monte Carlo iterations and the median carbon density was obtained. -Data from regions of shade-grown coffee agroforestry systems, used to estimate biomass stocks after conversion to agroforestry systems (Castillo 2016, ANACAFÉ 1998). And IPCC (2006) default data for other identified uses.
Spatial scale (local, regional, national or international):	National
Discussion of the key uncertainty associated with this parameter:	Forest emission factors -Plots sampling errors -Errors associated with applied allometric models -Lack of representation of all types of forest vegetation in the carbon estimation plots available to build the carbon strata map (e.g. dry forests) Emission factors of other uses -Default data range of error of the values for annual crops and of perennial species reported by the IPCC (2006) -Range of error in coffee agroforestry systems obtained from standard deviations of the carbon contents of the above-ground and below-ground biomass
Estimation of the accuracy and/or level of confidence.	See Section 12

Table 56. Emission factors and degradation

Description of the parameter, including, if applicable, the classification of vegetation types:	**Emission factors for degradation and degraded areas that are restored:** It is the loss or gain of carbon content for each carbon stratum at the national level in relation to the reduction or increase of the canopy cover detected in the activity data from 2006 to 2016 for the forest lands that remained as forests. They are the non-degraded forests in 2006 that had more than 70% cover and whose canopy cover was reduced by 30% to 70% or inversely for the case of recovered degraded areas.
Units (e.g. t CO_2/ha):	Ton C/ha
Parameter values:	Degradation emission factors by carbon stratum. Degraded forest Lost between 30-70% of original coverage. — Carbon strata (TonC/ha): I - 61.03; II - 50.87; III - 48.56; IV - 62.60
Source of data (e.g. IPCC official statistics, scientific literature) or description of the assumptions, methods and results of any study used to determine the parameter:	Main sources of data -Adjusted and standardized data base of 2,307 plots of forest inventories for different purposes developed by the National Forestry Institute, Universidad del Valle de Guatemala (UVG) and of Forest Concessions (CEMEC and Association of Forest Engineers). -Allometric models developed for the country for warm humid and very humid forests, Petén (Arreaga 2002), broadleaved and coniferous forest communities (UVG 2005) and mangrove forests by species (Imbert and Rollet 1989 and Fromad et al. 1998). For the below-ground biomass the Komiyama 2008 allometric model was used, which includes specific species variables. The default IPCC carbon fraction (2006) was applied to the calculated biomass. The total tree carbon was estimated for each plot (Goméz 2016) -Carbon strata map developed by GIMBUT (2017) based on climatic (WorldClim) and carbon variables from the plots, collected at the national level (Gómez Xutuc 2017). Carbon strata were estimated iterations Carlo iterations and the median carbon density was obtained. -Detection of forest cover reduction by type of degradation in forest lands that remained as forests (3,621 sampling points).
Spatial scale (local, regional, national or international):	National
Discussion of the key uncertainty associated with this parameter:	-Plots sampling errors -Lack of representation of all types of forest vegetation in the carbon estimation plots available to build the carbon strata map (e.g. dry forests) -Errors in interpreting forest cover reduction and quality of remote sensor inputs
Estimation of the accuracy and/or level of confidence.	See Section 12

Table 57. Removal factors for of forest plantations.

Description of the parameter, including, if applicable, the classification of vegetation types:	Forest removal factors (biomass stocks prior to conversion): Carbon increases in stored biomass as a result of the increase coniferous and broadleaved forest plantations
Units (e.g. t CO_2/ha):	m^3/ha/year, Ton C/ha/year, Ton CO_2/ha/year
Parameter values:	Forest emission factors Plantation — MAI (m^3 ha^{-1} $year^{-1}$) — Ton C ha^{-1} $year^{-1}$ — Ton$CO_2$$ha^{-1}$ $year^{-1}$ Broadleaved — 3.43 — 1.8 — 6.60 Coniferous — 7.88 — 3.25 — 11.93
Source of data (e.g. IPCC official statistics, scientific literature) or description of the assumptions, methods and results of any study used to determine the parameter:	Main sources of data -Analysis of the Mean Annual Increments of 28 species of forest plantations, measured in INAB's permanent plots for the analysis of the increase in plantations. The plots are distributed in the 22 departments of Guatemala within areas supported by the forest incentive programs implemented in the country (INAB, 2015). -Grouping of species (28) in coniferous and broadleaved communities with their respective MAIs, and, for each group, an IMA value was estimated with the Monte Carlo simulation method. -To convert the biomass MAI, the average wood density for each group was obtained from a species database used in the analysis (DATAFORG 2000, Reyes et al. 1992) - In the calculation of the final removal factor, the biomass was converted to carbon and CO_2 with the IPCC (2006) default carbon fraction (0.47) and CO_2 (44/12) values.
Spatial scale (local, regional, national or international):	National
Discussion of the key uncertainty associated with this parameter:	-Sampling errors in the plots to obtain the MAIs -Lack of national wood density and carbon content data by species.
Estimation of the precision and/or level of confidence.	See Section 12

Calculation of the average annual historical emissions over the Reference Period

The estimation of emissions is made separately for each of the three activities considered (deforestation, degradation and increases in forest carbon pools). The IPCC (2006) guidelines on land use and land use change were used as indicated in Section 8.3, as well as for the estimation of their uncertainty.

Reference level of forest emissions due to deforestation

In the estimation of emissions by deforestation, the activity data and the carbon strata map were combined with geographical reference data and the respective land cover and dynamics variables by interpreting biomass density estimators and their associated uncertainties respectively (see Annex section). This was done with the aim of determining carbon density of each forest type before conversion and land use after conversion.

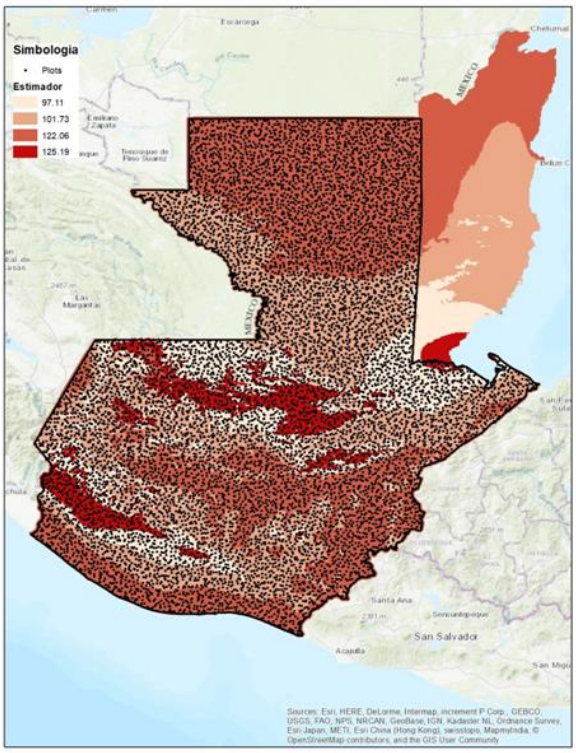


Figure 35. Point grid of the activity data and estimated carbon stratum.

At each point, after interpreting the land change variables collected, the final land use was identified (2016), as well as the deforestation period (2006-2016). The emission factor was also estimated in relation to the carbon stock immediately after conversion.

In this way, for each deforestation point identified on the grid, a deforestation value was added($\Delta C_{CONVERSIONi.t\text{-}Def}$,), Equation 2), which consists of the difference between the emission factor (existence of carbon before conversion) and the emission factor of other uses (carbon stock after conversion). The result is the carbon emitted (final emission factor) and the relation to the converted area, quantified by the grid points of the activity data (2001-2016).

Equation 3, adapted from equation 2.16 of the IPCC (2006)

$$\Delta C_{CONVERSIONt} = \sum_{i} \{(Carbono_{antes\ i} - Carbono_{despues\ i}) * \Delta A_{a\ otros\ usos\ i\ t}$$

Where:

$\Delta C_{CONVERSIONi.t\text{-}Def}$= Change of biomass carbon stocks in forest lands converted to non-forest, in ton C year^{-1}

Carbon $_{before\ i}$= carbon stock in forest carbon stratum *i* before conversion, in tons of carbon per hectare (forest emission factor)

Carbon $_{after\ i}$= carbon stock in the type of land use after conversion (emission factor of other uses), in tons of carbon per hectare

$\Delta A_{\text{to other uses}}$= forest area by type of emission factor in forest lands *i* converted to non-forest (emission factors of other uses) in year to, in ha

It is assumed that the carbon content of the final use remains balanced for the entire period (without loss or gain). In the same way, forest lands that remain as forests and are not degraded are balanced and do not lose or gain carbon during the FREL period. Only conversion to coniferous and broadleaved forest plantations are considered other uses that increase carbon stocks.

For the conversion process, it is assumed that all the original biomass is removed in conversion by deforestation and occupation by another use.

The resulting carbon tons are annualized for a period of 10 years and the default value of 44/12 is used to convert the carbon to CO_2. Finally, the emissions for each conversion are stratified by each activity data point and its area in order to obtain the national and regional FREL for deforestation.
Databases and procedures for estimating emissions from deforestation and degradation by carbon stratum in forests and change of land use in the program area.

Degradation reference level

Degradation was estimated for the FREL in its historical period as a proxy of the reduction in forest land cover in areas that remained as forests, using calculation methods similar to those related to deforestation (Equation 3) and was integrated using the same general approach and assumptions (Equation 2). The land change value was calculated ($\Delta C_{CONVERSIONi.t\text{-Degradation}}$) for the type of biomass loss due to degradation, using carbon stock values before and after degradation, attributed to its area of activity data to quantify emissions by region and nationally.

Degradation turns out to be quite significant, accounting for more than 10% of the total emissions, which indicates a great reduction potential due to various causes such as the unsustainable and uncontrolled use of the forest, illegal logging and forest fires.

Table 58. Summary of emissions from deforestation and degradation in the 2006-2016 period in emission reduction program area.

Activity	Area (ha)	ha / year	TonC	$TonCO_2e$	TonCO2 / year
Deforestation	325,065.32	32,506.53	33,520,265.67	122,907,640.79	12,290,764.08
Degradation	153,423.16	15,342.32	8,210,387.60	30,104,754.52	3,010,475.45

Reference level of carbon stock increases
Degraded areas that are restored.
The FREL for carbon stock increase is composed of two activities that are accounted for separately, the first corresponds to degraded areas recovered, which are estimated in the same way as the degradation, by replacing emission factors with absorption factors. The following table shows the main results:

Table 59. Increase in recovered degraded forest lands

Activity	Area (ha)	ha/year	TonC	$TonCO_2e$	TonCO2/year
Increase in recovered degraded forest lands	96,848.37	9,684.84	-5,302,807.78	-19,443,628.54	-1,944,362.85

Forest plantations

Historical removals in the reference period were accounted for coniferous and broadleaved forest plantations assumed to have been established by the country's forest incentive programs. For this purpose, activity data regarding conversion from other uses to forest lands (coniferous and broadleaved subclasses) were identified in the sampling points. A removal factor was assigned to these areas to calculate the annual increase in carbon stocks due to the growth in land converted to forest plantations ($\Delta C_{Gi.t\text{-incr}}$)which is included as a variable in Equation 2 used for the calculation of the reference level. Its carbon removal is quantified by calculation the total cumulative growth of lands that remain as forests, using IPCC's 2006 Equation 2.9, as shown below.

Equation 5

$$\Delta C_{G\ incr} = \sum_i \sum_x (A_{i\,x} * G_{TOTAL\ i})$$

$\Delta C_{G,\ \text{incr}}$ =Increase in carbon stocks in year t, due to the growth of land with other uses converted to coniferous or broadleaved plantations.

$A_{i,x}$= area converted to plantations *i* in year *x* of the reference period

G_{TOTAL}= removal factors of coniferous and broadleaved plantations or annual average carbon growth in other uses converted to plantations.

It is assumed that the process of plantations eliminates all the biomass from initial uses and that its growth is sustained throughout the period (10 years). Annual uptakes from theses converted areas are added, plus uptakes since the initial year. The FREL for this increase is:

Table 60. Increase in stocks of C and CO_2 per year in the period of the FREL.

Year	Ha/year	TonC / year	TonCO2/year
2007	2,876.68	-74026.67404	-271431.1382
2008	5,753.37	-148,053.35	-542,862.28
2009	8,630.05	-222,080.02	-814,293.41
2010	11,506.74	-296,106.70	-1,085,724.55
2011	14,383.42	-370,133.37	-1,357,155.69
2012	17,260.11	-444,160.04	-1,628,586.83
2013	20,136.79	-518,186.72	-1,900,017.97
2014	23,013.47	-592,213.39	-2,171,449.11
2015	25,890.16	-666,240.07	-2,442,880.24
2016	28,766.84	-740,266.74	-2,714,311.38

Upward or downward adjustments to the average annual historical emissions over the Reference Period (if applicable)

The presented FREL corresponds to the annual historical average of emissions and does not consider that the country's situation has changed in such a way that the deforestation and forest degradation rates registered during the historical reference period are likely to lead to an underestimation of future rates throughout the ERPA term. Therefore, no adjustments are proposed to the historical FREL record.

8.5. Estimated Reference Level

The following table estimates the FREL for the entire Accounting Area of the ER program in Guatemala, considering deforestation, degradation and increased carbon stocks. The program does not include emissions from sustainable forest management and conservation of carbon pools.

The methodology for estimating emissions and removals can be found at: http://marn.gob.gt/s/redd_/paginas/ERPD_GUATEMALA.

ER Program Reference level

Table 61. Forest reference emissions level.

ERPA term year *t*	**Average annual historical emissions from deforestation over the Reference Period (tCO_{2-e}/ yr) (Deforestation)**	**Average annual historical emissions from forest degradation over the Reference Period (tCO_{2-e}/yr) (Degradation)**	**Average annual historical removals by sinks over the Reference Period (tCO_{2-e}/yr) (Forest plantations)**	**Average annual historical removals by sinks over the Reference Period (tCO2-e/yr) (Restauración de áreas forestales degradadas)**	**Reference level (tCO_{2-e}/yr)**
1	12,290,764.08	3,010,475.45	-271,431.14	-1,944,362.85	13,085,445.54
2	12,290,764.08	3,010,475.45	-271,431.14	-1,944,362.85	13,085,445.54
3	12,290,764.08	3,010,475.45	-271,431.14	-1,944,362.85	13,085,445.54
4	12,290,764.08	3,010,475.45	-271,431.14	-1,944,362.85	13,085,445.54
5	12,290,764.08	3,010,475.45	-271,431.14	-1,944,362.85	13,085,445.54

Relation between the Reference Level, the development of a FREL/FRL for the UNFCCC and the country's existing or emerging greenhouse gas inventory

The Second National Communication based on the 1996 IPCC guidelines and the 2003 LULUCF best practice guidelines, also established areas of improvement given the limitations of GHG inventories. These addressed mainly the available inputs for the activity data, which, in all sectors, did not present information generated in a consistent manner and uncertainties could be accurately reported (MARN 2015). Therefore, it was decided to carry out efforts to collect and generate LULUCF activity data, and update information in accordance to the 2006 IPCC guidelines.

In both communications, the LULUCF sector in Guatemala is identified as the main contributor of greenhouse gas emissions (33%), mainly from the conversion of forests to other uses (deforestation), motivated by the national development model that promotes the increase of extensive agriculture. As a mitigation measure, the second communication established the goal of reducing 36.5% of the net annual emissions estimated for the LULUCF sector in the 2016-2020 period. Therefore, the REDD+ strategy at all levels and the generated reports address the methodological requirements of the UNFCCC, the FCPF and the Carbon Fund.

The Second National Communication also details areas that need to be improved with regards to the lack of information from GHG inventories. These addressed mainly the available inputs for the activity data, which, in all sectors, did not present information generated in a consistent manner and uncertainties could be accurately reported. Therefore, it was decided to carry out efforts to collect and generate LULUCF activity data (MARN 2015).

The FREL in the FCPF's emissions reduction program, as part of the country's mitigation strategy, also addressed methodological improvements such as those mentioned above. As part of the FREL development for the ERPD, a national grid of intensive territorial monitoring through remote sensing was developed with the aim of improving the soundness and accuracy of the activity data and linking them with forest inventories and emission factors. This will be the main inputs for the GHG MRV system, which is currently in the design and implementation stage, as mentioned in more detail in Section 9. Due to the recent publication of the 2016 Forest Cover MAP and the Forest Cover Dynamics Map (2000-2016), the deforestation reference levels for the 2000-2016 period are being updated using cartographic inputs (Wall to Wall maps), as well as the reference levels of degradation due to forest fires and carbon stock increases. For this reason, it is clear that reference levels can be updated as a result of continuous improvement.

This is also a key element for developing the third communication and the first BUR, currently being prepared to comply with the agreements with the UNFCCC, and in accordance with paragraph 105 of the Paris Decision and Article 13 of the Paris Agreement. This is done in order to update the GHG inventories in accordance with the 2006 IPCC guidelines and to present the national FREL in the short term, using the same technical and scientific bases (MARN 2018).

9. APPROACH FOR MEASUREMENT, MONITORING AND REPORTING

The Guatemala MRV system is based on technical and institutional documents that have compiled the information in recent years and are the main source of the data presented in the following chapters.

9.1. Measurement, monitoring and reporting approach for estimating emissions occurring under the ER Program within the Accounting Area

In order to include all the criteria of the FCPF Methodological Framework, Guatemala is designing a system to monitor REDD+ GHG emissions, multiple benefits, other impacts, management and safeguards (SIREDD+). This will integrate forest-related monitoring of the estimated carbon emissions, as well as variables other than carbon, related to social and environmental safeguards, and social participation through community monitoring (Figure 36). The system has a wide scope given the need to fill information gaps on the characteristics and dynamics of forests (temporal and spatial), provide forest management information for multiple purposes (sustainable forest production and environmental services, conservation and restoration) help mitigation and adaptation to climate change (CEAB-UVG, 2016).

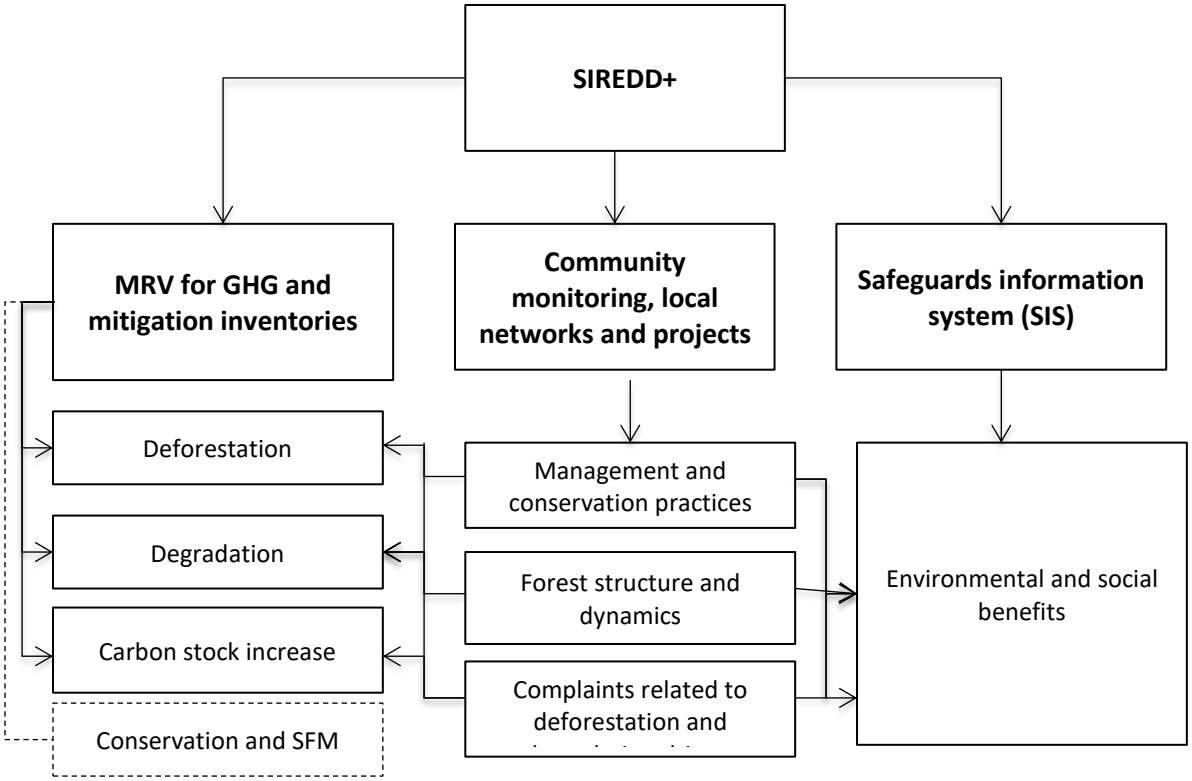


Figure 36. National information system for REDD+ GHG Emissions, multiple benefits, other impacts and management and safeguards (SIREDD+)within the monitoring framework (see that the institutional responsibilities are the same as those raised in the R-Package, therefore, in the ERPD)

The unified SIREDD+ system is part of the National Climate Change Information System (SNICC) within the mitigation component for the LULUCF sector, in which the MRV system for GHG is responsible for compiling, integrating, analyzing, reporting and documenting the process of REDD+ activities verification, as shown in Figure 37 where all the processes of the system are shown.

Figure 37. Relationship of SIREDD+ and the MRV System for GHG (Source: FCPF-REDD+ Preparation Package, 2018).

In this chapter, we will refer exclusively to the operative and technical elements related to biomass and forest carbon used for the GHG emissions and reductions report submitted to the Carbon Fund. In general, the MRV information respond to official methods and inputs (base information), emissions and removals estimates and additional relevant information related to carbon accounting for LULUCF (GCI, 2017 doc. SIREDD).

The main objective of Guatemala's MRV system's monitoring component is to generate verifiable information on GHG emissions related to deforestation and forest degradation, as well as their removal as a result of the increase in carbon stocks in forest plantations. This this information was developed with consistent methodologies, in order to be compared against the FREL and determine if REDD+ activities are reducing GHG emissions.

In this sense, the proposed activities within the monitoring phase will follow the requirements of the IPCC Guidelines (2006) as well as the decisions of the United Nations Framework Convention on Climate Change (UNFCCC), and the methodological requirements of the Forest Carbon Partnership Facility (FCPF) and the Carbon Fund Methodological Framework (CF). In addition to the Jurisdictional Nested REDD+ of the Verified Carbon Standard (JNR / VCS) methodological approach complements and is aligned with the requirements mentioned above, and are also used in the country's mitigation projects.

The implementation of the MRV system during the ER program will be carried out by the ICG with the technical support of GIMBUT. The system will be responsible for the generation of activity data, emission factors, emissions estimation, reporting and technical support for verification, with inputs and robust methodological protocols well defined and documented and based on the national reality and capacities. These methods have also been used for the preparation of the FREL, with the purpose of having transparency, coherence, consistency in methods and, when possible, reduce the uncertainty of the estimates.

Its design and operation is done according to Guatemala's legal framework on forestry and environmental matters and to the guidelines and requirements of international agreements, for which the MRV system is used. The UNFCCC and FCPF guidelines are also used which ensures consistency and transparency in the reports. Verification will be carried out through technical supervision of the government (MARN) and the verifying party, either technical evaluators FCPF or the UNFCCC (Figure 38).

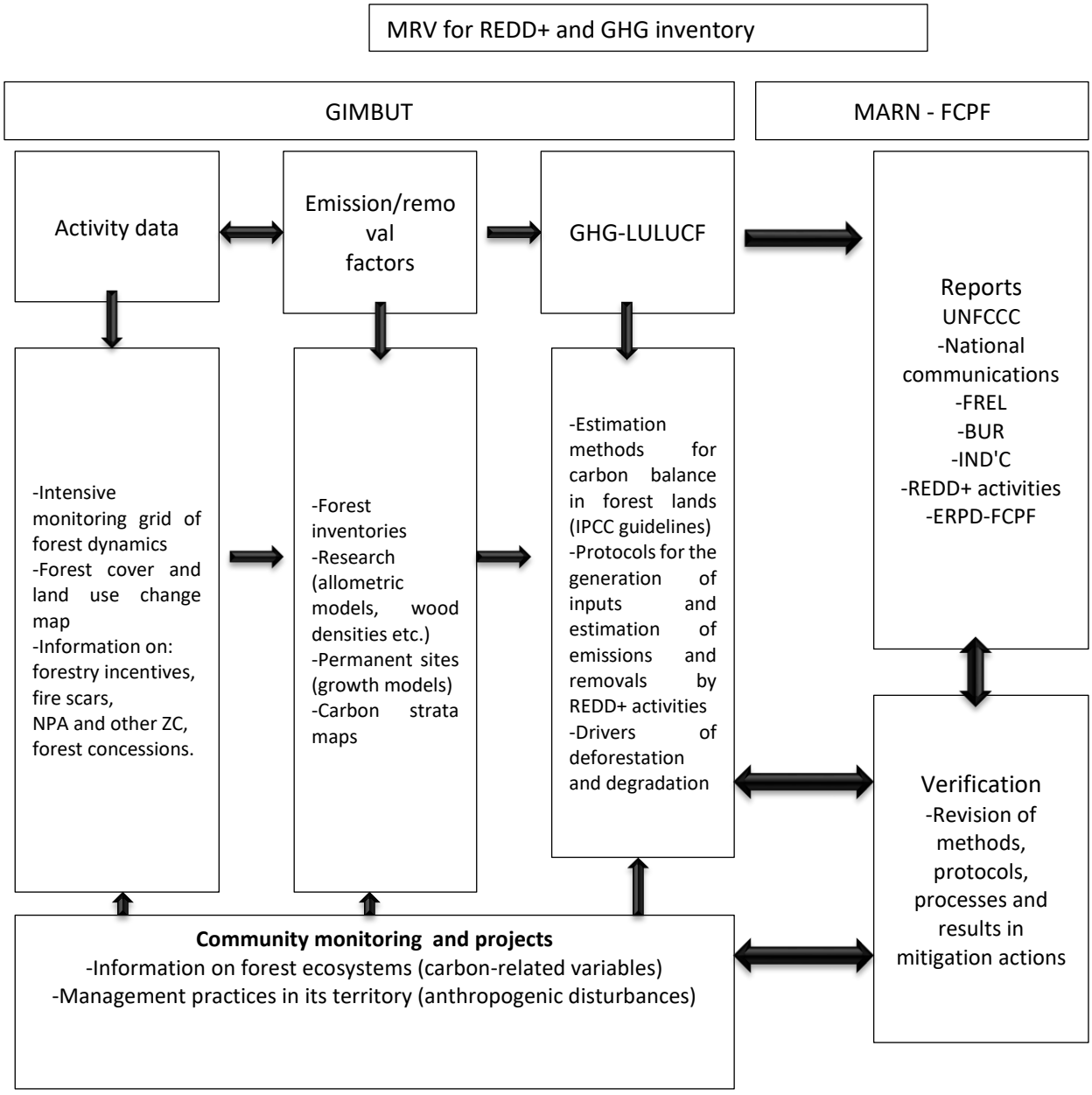


Figure 38. Components of the MRV System for GHG inventories.

Monitoring

As a main input of GIMBUT, the monitoring approach bases its activity data on a georeferenced statistical sampling of the territory by remote high and medium resolution sensors that we have previously mentioned for the preparation of the FREL. This is an integral approach with a multi-temporal monitoring of forests and other land uses designed and implemented by GIMBUT, which will provide a timely and geographically explicit analysis of the changes in the areas caused by deforestation, degradation and increases in carbon stocks.

This input is complementary to the different purposes of forest monitoring, and the objective is to know the current and historical state of national forests, with multipurpose assessments that are replicable and that provide strategic information to the country. The sampling can intensified if necessary to analyze the subnational scales. Currently, the sample for monitoring is 11,369 points.

The grid is part of a comprehensive integrated monitoring system of forests and other land uses, which complements the cartography generated every five years and improves the cartographic models, the thematic accuracy and detection of land changes (reduces uncertainty) to provide national statistics and international reports such as the FCPF's.

In the ER program period, the data obtained from the sampling grid will be monitored and reported and will address **activity data** on deforestation, degradation and carbon stock increases. This will also ensure consistency with the FREL, for the calculation of the activity data using the multi-temporal analysis with the Collect Earth platform (See Section 8.1) obtained with Landsat images of medium resolution and/or high resolution images available (Digital Globe, Planet, Aster, Sentinel, etc.). To carry out the monitoring, the activity data of the last year of the FREL (2016) and the final year of the monitoring periods defined in the FCPF reports will be taken as reference.

The activity data on the sampling grid will be generated every two years because various reports issued by the country need updated data (ICG, 2018), which will also speed up the production of forest cover and land use change maps.

Table 62. Main inputs of activity data from the MRV system for deforestation, degradation and carbon stock increases.

Inputs	Type of information	Scale / resolution / sampling unit	Frequency	Source / protocols
Sampling grid of points for forest monitoring	Geodatabase with variables of forest cover and land use dynamics	3.1 X 3.1 km national grid for visual interpretation in medium and high-resolution images (11,369 sampling points)	Multi-temporal assessment of land cover and land use change every 2 years	GIMBUT, 2018
	Collection of remote sensing images (Digital Globe, Airbus, INEGI, AfriGIS, CNES)	Medium resolution: 30 m (Landsat, 5,7 and 8) High resolution: 1.24 m to 5 m (Spot, WorldView, Rapid eye, Quick Bird, Sentinel, etc.)	Interval of 15 days, monthly, annual	Google Earth, Engine and Bing Maps with the use of the Collect Earth platform (FAO, 2015)

Table 63 Complementary inputs for AD generation in the MRV system for deforestation, degradation and carbon stock increases

Inputs	Type of information	Scale / resolution / sampling unit	Frequency	Source / protocols
Forest cover and land use map	Raster and Vector Godatabases	1 ha (Landsat 5, 7 and 8, 30 m)	From 5 to 4 years (2001, 2006, 2010 and 2014)	UVG-INAB-CONAP, 2006; UVG-INAB-CONAP, 2011; MAGA, UVG-INAB-CONAP-URL, 2012
Forest dynamics map	Raster Geodatabases	1 ha (Landsat 5, 7 and 8, 30 m)	From 5 to 4 years (2001, 2006, 2006 and 2010)	GIMBUT, 2012
Fire scars	Geodatabases	1 ha (Landsat 5, 7 and 8, 30 m)	Annual	CONAP, 2018
Forestry incentives map (PINFOR, PINPEP and PROBOSQUE)	Vector Geodatabases	0.0035 ha, minimum mapped area (PINPEP) 0.25 ha, minimum mapped area (PINPEP)	Annual	INAB, 1999-2010; Samudio 2017;

As an improvement in the activity data monitoring, the grid will complement the development and assessment of the thematic accuracy of the wall-to-wall land cover maps that have been generated since 2001 (2001, 2006, 2010 and 2014) and maps pf forest gain and loss dynamics (2001-2006 and 2006-2010). This is focused on meeting the requirements to prepare GHG inventory maps for the LULUCF sector according to IPCC guidelines and the FCPF methodological framework. Both methods are compatible and use the IPCC land classification criteria and will define, for each category, classes and subclasses (see Section 8), which could generate better wall-to-wall maps as of 2016 (FAO, 2015). However, the monitoring report will continue to use the sampling grid to ensure consistency with the FEEL presented in this document.

For activity data on degradation and deforestation there are also inputs from forest fire areas that can be integrated to wall-to-wall maps and point grids using CONAP's SIGMAI (Geospatial Information System for Fire Management in the Republic of Guatemala) and making the data compatible. On the other hand, it will also be assessed if the areas mapped and supported by INAB are captured in the grid to have data for evaluating and validating forestry incentives programs as of 2016. This would be important to develop during the monitoring program in the implementation of the new PROBOSQUE forest incentive programs or in the REDD+ Projects.

Monitoring this detail could imply an increase in the sampling intensity of the grid to capture higher-resolution subnational data, not only on carbon increases but in the assessment of all REDD+ actions by regions. For this purpose, there is already a proposal by INAB to increase monitoring to a 1.55 x 1.55 km grid or quadrants with 45,426 sampling points (INAB / ONU-REDD 2018).

There are also national efforts by INAB and CONAP to monitor degradation areas where the use of uncontrolled firewood and illegal logging is carried out and to integrate annual statistics of these activities and provide more information to improve the estimation of degradation (ICG, 2018).

The emission factors used in the FREL are also the main input of the MRV system that is based on the carbon strata map, where the best national data on biomass carbon in forests is collected and analyzed, in an effort to systematize and analyze forest inventories for different purposes, allometric models and bioclimatic variables, as described in Section 8.2. From this base information, emission factors for degradation were obtained as a proxy for degradation based on the loss of coverage. In conjunction with MAGA's data on land use factors after conversion to agroforestry crops, activity data regarding emissions from detected deforestation were estimated.

The **removal factors** used for MRV are the same used for increases in carbon stocks from permanent forestry plantations in forest incentive programs (INAB) with growth models for different species and that are used for the estimation of emissions in areas where a change from other lands to planted forests is detected.

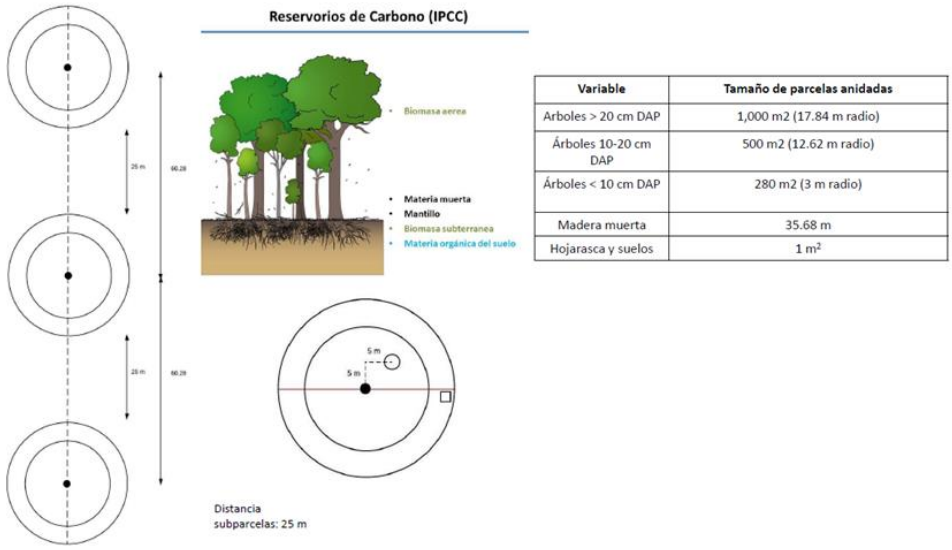
The main inputs for the MRV system and its characteristics are described in Table 64.

Table 64. Main MRV system inputs of emission and removal factors from deforestation, degradation and carbon stock increases.

Inputs	Type of information	resolution / sampling unit	Frequency	Source / protocols	
Emission factors	Carbon strata map	Raster and Vector Geodatabases.	1 ha	Dependence on inventory availability	GIMBUT, 2017; Gómez Xutuc, 2017.
	Plots of forest inventories	Integrated and standardized databases	National	Variable availability	
	Allometric equations	Models	Species and plant communities	Availability based on analysis publication	UVG 2015; Arreaga 2002, Imbert and Rollet 1989 and Fromad et al. 1998

	Land use carbon density in agriculture, livestock use and agroforestry systems	Databases and estimation process in carbon quantification. Specific studies	Districts of crop producers and agroforestry systems	Availability based on analysis publication	ANACAFÉ 1998, Castillo 2006
Removal factors	Permanent plots	Databases	Plots in forest plantations	Annual	INAB, 2012; Samudio 2017.
	Growth models	Annual average increases and removal factors	National (forest plantations)	Availability based on analysis publication	INAB, 2012; Samudio 2017.
Emission/removal factors	National Forest Inventory (in design phase)	Tabular georeferenced databases	National	Every 5 years	INAB, 2018

However, although carbon strata maps are an essential input, they are limited for not being dynamic and depend on the availability of updating new plots of forest measurement or re-measurements of the analyzed plots, which makes them very complex to use as a long-term input. Therefore, a substantial improvement in the MRV for emission and absorption factors in the medium term is the plan to start up a National Forest Inventory for multiple purposes where a network of 715 inventory sites will be established to collect variables related to the content of carbon from biomass above ground, below ground and from dead organic matter, with a design of three secondary sampling units as shown in Figure 39.



Variable	Tamaño de parcelas anidadas
Arboles > 20 cm DAP	1,000 m2 (17.84 m radio)
Árboles 10-20 cm DAP	500 m2 (12.62 m radio)
Árboles < 10 cm DAP	280 m2 (3 m radio)
Madera muerta	35.68 m
Hojarasca y suelos	1 m²

Figure 39. Design of sampling units of the National Forest Inventory and measurement of variables.

The National Forest Inventory will be measured with a frequency of 5 years with 1/5 of sample each year. This will provide more accurate estimates of the most dynamic carbon pools in the processes of deforestation, degradation and stock increases. The NFI plots are in the same points of the grid, which harmonizes carbon density with the activity data or the deforestation, degradation and increases areas.

Monitoring and reporting frequency during the emission reduction program

The emission reduction program plans to update the monitoring considering the end of the FREL until the signing of the ERPA and two during the program, as follows:

- FREL update until the signing of ERPA, tentatively from 2016 to 2019

- First monitoring in the middle of the program from 2019 to 2021
- Second monitoring from 2021 to 2023

The GIMBUT will process the information and results of the estimates during the period of the ER program and MARN will be responsible for integrating the report of the REDD+ activities for the FCPF in the last year of the program to begin the verification process and follow up the process.

Table 65. Summary of parameters and operations of the MRV system.

Parameter	**AD: area (ha) where deforestation, degradation, restoration of degraded forest areas or forest plantations occur.** **EF: carbon content and change in carbon content for each stratum of the carbon map or type of plantation.** GHG emissions and reductions from deforestation, degradation, **restoration of degraded forest areas** and increases in carbon stocks.
Description	**Quantification of the number of points of the 11,369[131]-point grid where deforestation, degradation, restoration of degraded forest areas or forest plantations occur.** **The EF data reported in the corresponding section will be used, methodological improvements can be included in the future by making the corresponding recalculations in the FREL.** **CO2 emissions are monitored and reported for separate deforestation and degradation for each activity, as well as emissions reductions due to increases in carbon stocks in forest plantations and restoration of degraded forest areas.**
Data unit	**Ha, tC/ha, tC/ha/year,** tCO_2
Source of data or measurement/calculation methods and procedures to be applied (e.g. field measurements, remote sensing data, national data, official statistics, IPCC Guidelines, commercial and scientific literature), including the spatial level of the data (local, regional, national, international) and if and how the data or methods will be approved during the Term of the ERPA	Data is used at a national level with a combination of remote sensing of activity data with field data used to estimate emission and removal factors. Auxiliary data from national databases can be used to improve estimates. For ADs, the different land forest cover and change maps, maps or polygons related to field activities or drivers of deforestation and degradation and the point sampling grid for forest monitoring will be used. For EF, field data, forest inventory plots, permanent sites and scientific research data are used. For data processing, the 2006 IPCC guidelines are followed.
Frequency of monitoring / recording:	2 years
Monitoring equipment:	AD gathers information from different medium and high resolution remote sensors, computer equipment, specialized software for the processing of satellite images and for the survey of the sampling grid.

[131]All points will be monitored to ensure that there are no leaks to areas outside the program.

	Forestry inventory equipment, calculation equipment and statistical software are used for the EFs. For the estimation of emissions, Excel and statistical software databases are used.
Quality Assurance/Quality Control procedures to be applied:	-Adjustment and standardization of databases used for estimates. -Continuous approval of criteria for the interpretation of the different high and medium resolution remote sensors used for interpretation. -Cross-review of interpreters with the reinterpretation of 5% of the sampling plots in the grid. -Review of logical errors in changes interpreted in images analyzing the dynamics of deforestation, degradation and carbon stock increases. -Control of forest inventory data use -Detection of atypical data and its exclusion from the analysis regarding variables that are used for the estimation of biomass by allometric equations in the databases of forest inventories
Identification of sources of uncertainty for this parameter	-Errors of interpretation of the categories. -Size of the sample for the analysis of the dynamics of change (deforestation, degradation and increases) -Quality of images available and used for interpretation -Plots sampling errors -Errors associated with applied allometric models -Lack of representation of all types of forest vegetation in the carbon estimation plots available to build the carbon strata map (e.g. dry forests) -Lack of information on carbon content **estimated at the national level** for most types of land use after conversion (crops, pastures and agroforestry systems)
Process for managing and reducing uncertainty associated with this parameter	-Increase of sampling intensity in the national grid to have better representation at the subnational level **in areas of interest.** -Implementation of a National Forest Inventory that will provide more information every 5 years of the most dynamic carbon pools and carbon densities and their dynamics in most of the diverse forest ecosystems in Guatemala. -Generation of cartographic wall-to-wall models of land cover and change for monitoring every two years with a cartographic assessment and validation process generated from the point sampling grid. -Studies for the investigation of carbon dynamics in non-forest land uses, such as crops, pastures and agroforestry systems.

9.2. Organizational structure for measurement, monitoring and reporting

The MRV system has been built according to the country's capacities, and from existing platforms, studies, data and processes, taking into account a variety of governmental, non-governmental institutions, including academia, research centers and Civil society organizations. In addition, it is based on the current legal framework: Forestry Law (Decree 101-96), Protected Areas Law (Decree 4-89), Framework Law for the Regulation of Vulnerability Reduction, Compulsory Adaptation to Climate Change Impacts and Mitigation of Greenhouse Gases (Decree 7 -2013). These laws establish mandates for different governmental institutions to collect and process information according to their scope of action.

For the implementation of the MRV System, it is considered that it will be formed as an interinstitutional collaborative system that maintains close coordination with multiple stakeholders of the REDD+ process. For this, there is a steering committee, in charge of the Interinstitutional Coordination Group (ICG), which has a political and a technical component. The ICG is made up of the Ministry of Environment and Natural Resources (MARN), the National Forest Institute (INAB), the National Council of Protected Areas (CONAP) and the Ministry of Agriculture, Livestock and Food Supply (MAGA). This group was officially formed through a technical cooperation agreement for the conservation and sustainable management of natural resources.

In this sense, the technical part of the ICG is operationally supported by the Interinstitutional Roundtable for the Monitoring of Forests and Land Use (GIMBUT), created by the signing of a technical cooperation agreement between the Ministry of Environment and Natural Resources (MARN), Ministry of Agriculture, Livestock and Food Supply (MAGA), the National Forestry Institute (INAB), the National Council of Protected Areas (CONAP), the Presidency's Secretariat for Planning and Programming (SEGEPLAN), the National Geography Institute (IGN), the University of San Carlos de Guatemala (USAC), the Rafael Landívar University (URL) and Universidad del Valle de Guatemala (UVG).
The agreement has the aim to establish a framework of interinstitutional and technical coordination for the generation and harmonization of digital national information on forest cover, other land uses and related topics (Objective B, GIMBUT creation agreement). One of the main GIMBUT commitments is to generate and systematize the information produced in the institutions regarding monitoring of forests and land use and other related topics, within the framework of the competencies and capacities of each institution, harmonizing the information among GIMBUT members.

This group receives contributions from other non-governmental organizations, communities, indigenous peoples and others, which are considered supporting organizations.

All the information of the MRV system is integrated and systematized by MARN, which serves as the integrating unit and reports generator; this ensures consistency between the information generated within the REDD+ framework and what is reported to other institutions such as the UNFCCC, including GHG inventories for the LULUCF sector (Figure 40).

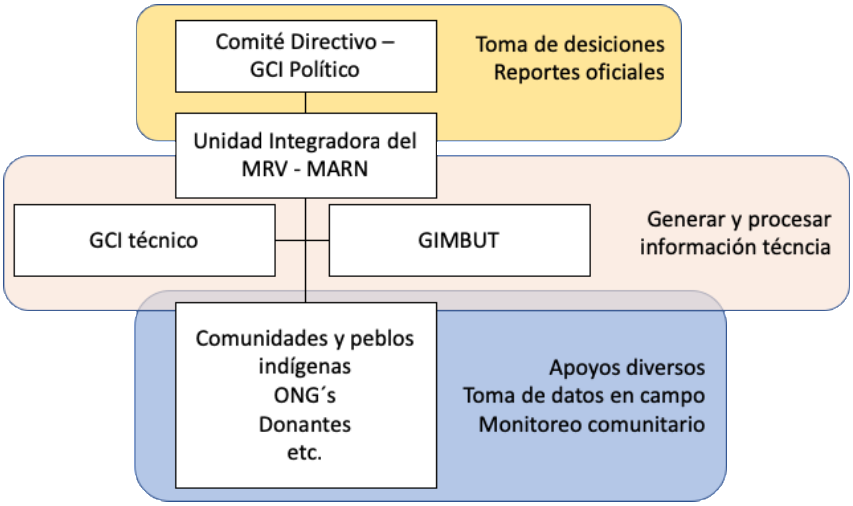


Figure 40. Institutional arrangements for the operation of the national MRV system.

Each of the groups has roles and responsibilities within the institutional organization, although there may be some activities that can be implemented jointly. Moreover, the role of MARN's integrating unit integrating unit requires that it should be in contact with the technical and political groups.

Table 66. Roles and responsibilities of the groups and institutions that implement the MRV system.

Group	Roles / Responsibilities regarding the MRV system
Steering Committee - Political ICG	Direct, at the highest level, the activities of the system. Make management decisions regarding the system. Define the policies for its development, operation and financing. Establish and develop a long-term vision. Ensure the sustainability and institutionality of the system.
MRV system's integrating unit - MARN	Compile, integrate and systematize the information generated and already absorbed by the institutions. In charge of the MRV System reporting phase. Keep methodological homogeneity. Define information exchange protocols. Ensure the consistency of the different national and international reports.
Information generating institutions group (Technical ICG, GIMBUT)	Generate technical information ensuring its quality. Document technical procedures. Generate methodologies and research. Image processing. Field verifications. Coordinate and implement data collection of forest and carbon inventories. Give continuity and credibility to the generated information.
Group of support organizations - communities, indigenous peoples, national and international NGOs, CNSAS and fund donors .	These organizations can support the forest monitoring process, through: Financial and logistic support. Field verifications. Data collection of forest and carbon inventories. Community monitoring of variables in their territories.

It is important to note that each participating government institution of the different groups will have different roles according to their responsibilities in activities and in the territory. In this sense, the existing systems, data, inputs, processes and capacities will be taken as a basis, and will be complemented or strengthened in order to develop the

processes required in the implementation of the MRV system. It also describes a series of inputs that should be available in the medium and long term in order to include all REDD+ activities into the MRV system (Table 67).

Table 67. Institutions participating in the MRV system and the inputs or activities that receive their contribution.

Institution	Inputs or activities that receive their contribution	Support relationship
INAB	Forest cover maps (in collaboration with CONAP). National Forest Inventory. List with information and maps/polygons on the areas incentivized by PINPEP, PINFOR, and PROBOSQUE. Data, maps and/or polygons linked to the use of firewood and legal and illegal selective logging. Estimation of mean annual increments (MAI), and removals by increase of carbon stocks at national level, through forest management and reforestation (management of natural forest, plantations, AFSs, forest incentives) and natural regeneration. Removal factors for increases in carbon stocks Emission factors from degradation linked to wood extraction and selective logging.	Nine regional offices and 33 subregional offices that cover the entire national territory.
CONAP	Forest cover maps (in collaboration with INAB). Carbon densities map at the national level for the three REDD+ modalities, based on the stratification of forest cover. Estimates of the carbon content from the deforestation linked to the change of land use and the loss of forest cover. Estimates of the carbon content from degradation at the national level, linked to fires, for which it will generate data on fire scars.	Regional offices that it owns in the following regions: Altiplano Central, Altiplano Occidental, Verapaces, Costa Sur, Nor-Oriente, Oriente, Nor-Occidente, Petén and Sur-Oriente; likewise, in the Monitoring and Evaluation Center (CEMEC) located in Petén.
MAGA	Land use and post-deforestation uses maps.	Support to departmental offices at national level and to the National Rural Extension System (SNER) that has offices in all municipalities of the country.
MARN	Information integration and systematization Elaboration of reports GHG emissions and removals from deforestation, degradation and carbon stock increases in forests. Forest reference emissions level. Provide assistance to all the technical activities carried out by the other institutions of the ICG, with the purpose of being familiar with the generated technical data that must be integrated for the report. Approve and ensure consistency in the data presented in the GHG inventories, the emission baselines for the LULUCF sector, the National Communications and the Carbon Market Projects Registry. As the governing body of the climate change legislation, it must ensure compliance with articles 19, 20 and 22 of the Framework Law on Climate Change. The MARN must have the technical capabilities to manage the data of each institution specialized in monitoring activities.	Support in the Department of Science and Metrics and the Mitigation Department of the Climate Change Unit, as well as in the Environmental Information and Climate Change Unit.

GIMBUT	In charge of discussing, reviewing and agreeing on the results generated by each one of the ICG institutions for the monitoring activities under its responsibility, in accordance with what was presented previously.	Technical support from universities and consultants
Other stakeholders	Data on REDD+ projects, polygons, activities, emissions, reduced emissions, etc. Community monitoring data. Relevant scientific studies and research. Forestry concession polygons maps. Maps and polygons of protected areas and other conservation areas. Reports of drivers of deforestation and forest degradation.	They act according to their abilities.

Currently, options for the formalization of SIREDD+ through a ministerial agreement are being analyzed considering the essential elements that should be regulated for the operational and technological functioning of the system, which can facilitate the necessary legal certainty and provide institutional and financial sustainability.

Community monitoring

Given the importance of community monitoring, it is considered a complementary source of information for the MRV since it provides local information on forests, the dynamics of forest cover change, the natural resources associated with the ecosystem and the social and economic conditions of the communities that directly and indirectly use and exploit forest resources. In addition, it brings with it a series of benefits for the community given that it is a form of social participation that allows covering local information needs, improves transparency in the management of natural resources, and identifies existing resources and their state of conservation.

Community monitoring seeks to generate relevant information for communities, increase their technical knowledge and generate exchange of experiences to improve the capacities of people who manage natural resources.

Integration of community monitoring to the technical monitoring of emissions and non-carbon variables is recommended in accordance with a classification of the communities in various categories corresponding to the capacities and strengths of each one. There are some models that can be taken as an example, and depending on the characteristics of each community, they would monitor a certain carbon or non-carbon variable in the field. The strengthening and inclusion of community monitoring will be addressed in the future once the actions in which they have an interest in participating are clearly defined.

Table 68. Characteristics of local communities and monitoring activities that can be implemented.

Category	Characteristics	Activities related to MRV
Model similar to forest concessions	Community in forest concessions. Decision-making based on governance, with norms and guidelines established in agreement by the community. Experience of at least 20 years in forest management and commercial forestry. Knowledge in the use of forest measurement instruments. Knowledge in the use of instruments for water quality monitoring.	Mapping forest cover. Identifying permanent plots in the field: forest inventories and carbon inventories. In-field verification with GPS coordinates regarding forest loss and gain dynamics, by fire, illegal logging, invasions and land use change. Volumes of traded timber and income from the sale of timber products. Functioning of forest governance structures with community participation.

	Knowledge of characteristics of flora and fauna species in the area. Easy access and knowledge of technology (use of computers, GIS software and remote sensors). High interference in political processes. Coordination with governmental institutions in charge of managing natural resources	Technical assistance provided by the ICG to strengthen forest management processes. Incorporation of communities to forestry activity. Complaints of cases of non-compliance with the law (illegal hunting and logging). Underlying attitudes on forest management, through surveys.
Similar model to the 48 Cantones Totonicapán and El Chilar	Decision-making based on governance, with norms and guidelines established in agreement by the community. Experience of at least 20 years in forest management. Knowledge in the use of forest measurement instruments. Knowledge in the use of instruments for water quality monitoring. Knowledge of characteristics of flora and fauna species in the area. High interference in political processes. Coordination with governmental institutions in charge of managing natural resources	Integration of the community in decision-making and forest management inside and outside protected areas through processes and structures that promote participatory democracy. Involvement of community leaders in collective forest management, policy making, decision-making and training on forest management. Identifying plots in the field: forest and carbon measurement. In-field verification with GPS coordinates regarding forest loss and gain dynamics, by fire, illegal logging, invasions and land use change. Complaints of cases of non-compliance with the law. Underlying attitudes on forest management, through surveys.
Model of communities with a lower level of organization	There is no decision-making based on governance, with norms and guidelines established in agreement by the community. With limited experience in forest management collectively. Knowledge in the use of forest measurement instruments. Knowledge in the use of instruments for water quality monitoring. Knowledge of characteristics of flora and fauna species in the area.	Identifying plots in the field: forest and carbon measurement. In-field verification with GPS coordinates regarding forest loss and gain dynamics, by fire, illegal logging, invasions and land use change. Complaints of cases of non-compliance with the law. Underlying attitudes on forest management, through surveys.

Finally, it is important to mention that community monitoring activities also have a big opportunity regarding the monitoring of social and environmental safeguards, so once it starts implementing actions, it will be possible to deal with the issue as a whole.

9.3. Relation and consistency with the National Forest Monitoring System

The MRV system for carbon components and emissions in the LULUCF sector is part of the SIREDD+, which is the institutional proposal within the framework of the National Strategy for the Reduction of Deforestation and Forest Degradation in Guatemala (ENDDBG) under the REDD+ mechanism. Therefore, it is part of the national system and will be reported with the information generated in this system.

However, it is important to consider the following aspects for the aforementioned political and institutional sustainability of SIREDD+:

- The strengthening of national and subnational of capacities for the process of generation, compilation and reporting of primary information, to standardize the capacities for collecting information.
- Mechanisms for harmonizing processes of generation, compilation and reporting of primary information in information generation nodes.
- Necessary provision of human resources and equipment for achieving SIREDD+ objectives and fulfilling institutional functions.
- Linking "community monitoring" to the MRV structure in Guatemala is a challenge. As well as linking the information generated from community monitoring with the government's systems.
- An interinstitutional coordination of the technological units of government entities must be established for information exchange (technological theme).
- *There is an intention to implement an outreach process with stakeholders in the SIREDD+ territory, from objectives and functions to the mechanisms for raising, processing and disseminating information.*

10. DISPLACEMENTS

10.1. Identifying the risk of displacement

Displacement (or leakage) is the GHG emissions that happen outside the Accounting Area of the ER Program as a result of land use activities that have been moved from an area in the Accounting Area to somewhere outside it. This can be caused by the change of an activity or market effects[132].

As a reference, according to the reference levels of Guatemala, during the 2006-2016 period, each year, 36,893.66 ha (368,936.59 ha of accumulated deforestation) were deforested, of which 67.29% took place in the REDD+ Tierras Bajas del Norte area, 12.08% in Occidente, 11.15% in Sarstún-Motagua, 5.39% in Costa Sur and 4.09% in Centro-Oriente. This deforestation has occurred due to the change in land use, that is, the change of forest lands to other types of land, mainly due to: livestock pasture and shrublands (71%), woody crops (13%), crops (14%), other lands (2.6%), settlements (0.3%)[133].

On the other hand, according to reference levels for 2006-2016, 19,932.16 ha of forest were degraded annually due to forest fires (199,321.59 ha of accumulated degradation), of which 34.70% occurs in the REDD+ Occidente region, 25.51% in Tierras Bajas del Norte, 22.45% in Sarstún-Motagua, 11.22% in Oriente and 6.12% in Costa Sur[134].

The drivers of deforestation and forest degradation were analyzed to identify the risk of displacement mentioned in the previous paragraphs that could be impacted by the measures in the ER Program, and the risk of displacement associated with these driving factors was assessed:

A. Risk of displacement from areas outside the accounting area to the ER Program:

[132]Methodological framework of the FCPF's Carbon Fund https://www.forestcarbonpartnership.org/sites/fcp/files/2017/Jan/Marco%20metodológico%20del%20Fondo%20del%20Carbono%20del%20FCPF%20final_0.pdf

133GIMBUT, 2019, Reference Levels 2006-2016

[134] GIMBUT, 2019, Reference Levels 2006-2016

a. There is a **low risk** of emission displacement **from the Laguna del Tigre National Park** towards the ER Program area, that is, the displacement of deforestation/degradation due to livestock farming and forest fires, given that:
    i. Public policy instruments for sustainable development are implemented around the Laguna del Tigre Park, such as: community forest concessions (GuateCarbon REDD+ project), the Lacandón REDD+ project and the forest incentive programs (PINPEP and PROBOSQUE) in the Multiple Use Zone, among others; which have served for decades as a barrier or shield preventing deforestation and degradation in the Laguna del Tigre Park from moving to these other territories that are part of the ER Program.

    ii. For more than 20 years in the Maya Biosphere Reserve, CONAP (through the CEMEC Monitoring Center) together with WCS (Wildlife Conservation Society)[135] carry out daily monitoring of the governance in the reserve and, although REDD+ projects are not planned for this area in the short term, this monitoring is maintained throughout the Reserve with daily data update and open public access, in which 21 indicators distributed in 4 sections are followed up: Institutional presence and law enforcement; Territorial planning, management and co-administration, finance, income, infrastructure and demography, and ecological integrity. This monitoring is a key mechanism for detection and early preventive actions.

b. In the case of the **Costa de la Conservación project (in the Sarstún-Motagua region)**, the second largest territory outside the ER Program accounting area, there is a **low risk** of displacement from this area to the REDD+ Program given that: i) it is a REDD+ project that has been implemented for more than four years, ii) the entire territory has been co-managed by CONAP and FUNDAECO for more than 25 years without an expiration date because it is established by the Protected Areas Law and other laws that establish specific protected areas in Izabal; and iii) forest remnants outside the project area are very fragmented and minimal.

B. Risks of international displacements from Mexico, Belize, Honduras and El Salvador to the ER Program:

a. In the border area with **Mexico,** the greatest deforestation occurs in the La Candelaria triangle in the State of Campeche in the Yucatan Peninsula[136] (see figure X), but there is a **low risk** of displacement of deforestation/degradation from Mexico to the ER Program area given that forest concessions and the Lacandón REDD+ project have served as a barrier for decades preventing threats in that area from moving to these territories or other ER Program areas.

[135] Information provided by CONAP

[136] Strategy for Reducing Emissions from Deforestation and Forest Degradation in the State of Campeche http://www.ccpy.gob.mx/pdf/agenda-campeche/redd /EstrategiaREDDCampeche.pdf page 50

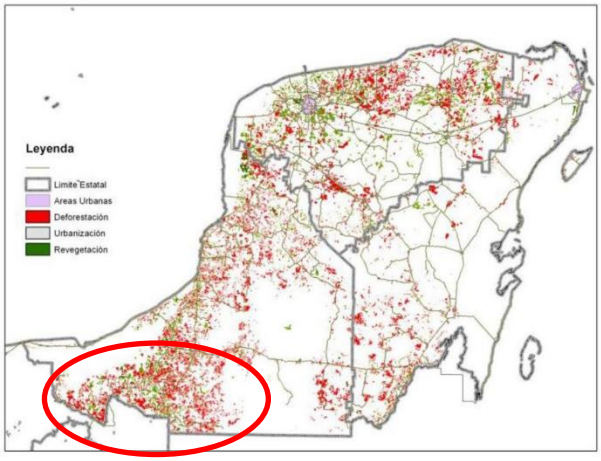


Figure 41. Land change use in the 2000-2007 period in the Yucatan Peninsula (EREDD+CAM)

b. In the case of the **Belize** border, deforestation occurs mainly due to agriculture, the presence of roads and the absence of management[137], however, there is a **low risk** of displacement of deforestation towards the ER Program area (especially in Melchor de Mencos, San Luis, Poptún and Dolores in Petén) given that, for decades, community forest concessions in Yaloch, El Pilar, Río Chanchich and Chosquitán have been a barrier that prevents deforestation in Belize from moving towards the Maya Biosphere Reserve.[138]

Area adjacent to forest concessions

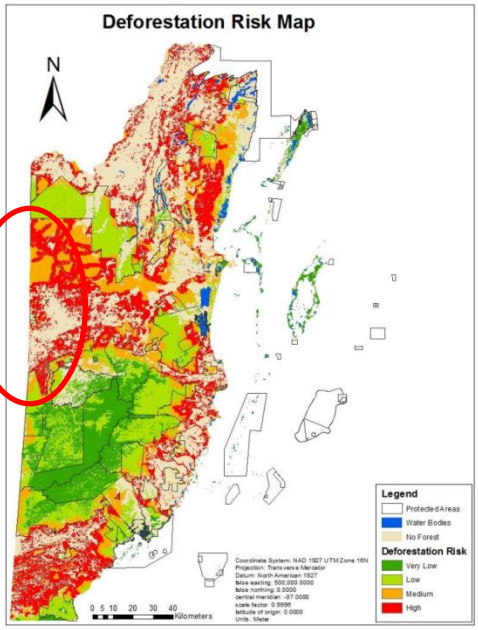


Figure 42. Deforestation risk in the zone adjacent to Belize

c. In the case of **Honduras**, deforestation in recent years has been mainly driven by the pine weevil plague, which, in three years, has destroyed 25% of forests and 488,000 ha of pines. The risk of

[137] Identification of deforestation and Forest Degradation drivers in Belize http://www.reddccadgiz.org/documentos/doc_730023421.pdf page 26

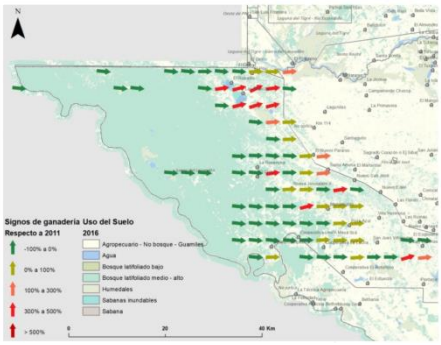
[138] VI Report on Governance in the Maya Biosphere Reserve. CONAP and WCS, 2018 http://www.conap.gob.gt/images/slide/GOBERNA

displacement of this deforestation towards the ER Program area is considered low, given that, in Guatemala, pine forests are less than 5% of the total cover and the biophysical conditions are different from the place where the plague appeared in Honduras. On the other hand, the expansion of African oil palm crops in Honduras threatens the country and poses a medium risk of displacement to the ER Program area (especially in Izabal and Petén) given that Honduras still has forest areas where African oil palm crops be planted.

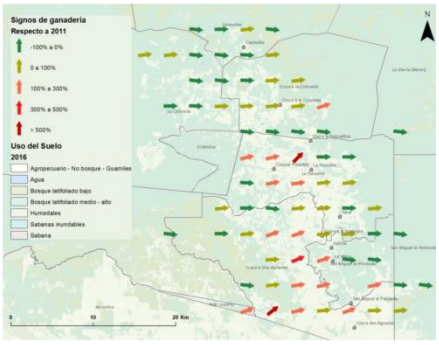
d. In **El Salvador**, in the binational Lempa River water basin, deforestation is mainly driven by the expansion of agriculture and livestock farming, overgrazing, logging and firewood extraction systems. However, the risk of displacement to the ER Program area is low because forest areas in the binational basin are limited, that is, there is not a large area to deforest, and the biophysical conditions on the Guatemalan side are not suitable for agriculture and livestock, since most of it is dry forest.

C. Risk of displacement from the ER Program to areas outside the accounting area:

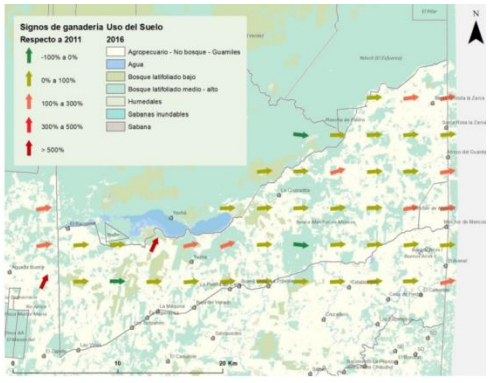
a. There is a **high risk** of deforestation displacement from the ER Program area **towards the Laguna del Tigre National Park,** since this is an area prone to livestock activities and with a high incidence of forest fires. The risk of displacement from livestock activities could come from both the Lacandón National Park, specifically the areas outside the REDD+ Lacandón project; from the Carmelita Route area in the Multiple Use Zone, which is a canceled concession (out of operation); and from the Melchor de Mencos area.



a) Livestock farming in the Lacandón National Park



b) Livestock farming in the Carmelita Route



c) Livestock farming in Melchor de Mencos

Figure 43. Livestock farming in the Maya Biosphere Reserve (MBR)

This displacement can be mitigated through the promotion of silvopastoral systems in existing paddocks through the PINPEP and PROBOSQUE forest incentive programs and the implementation of the National Sustainable Low-Emission Livestock Strategy implemented as of 2018, as well as the promotion of agroforestry systems with strategic crops (basic grains) through the Family Farming Policy[139].

a. Also, there is a **high risk** of deforestation displacement **towards the REDD+ Costa de la Conservación project** (directed by Fundaeco), given that this area has biophysical conditions and infrastructure suitable for productive activities. On the other hand, in the case of degradation by forest fires, the risk is low, since the project area is a tropical rainforest with ten months of rainfall.

   In the case of risk from livestock farming, governance should be strengthened in the territory as a mitigation measure, as well as increasing control and surveillance, that is, reinforcing institutional presence (CONAP, DIPRONA, Army and local communities) and implementing control infrastructure at strategic points. Moreover, the promotion of silvopastoral and agroforestry systems in existing pastures and basic crops areas, through the PINPEP / PROBOSQUE forest incentive programs as well as MAGA policy instruments: National Sustainable Low-Emission Livestock Strategy implemented since 2018 and the Family Farming Policy.

b. Also, there is a **low risk** of deforestation displacement (driven by livestock) from the ER Program **to Belize**, since the country does not have a livestock tradition, nor does it have a policy framework that encourages livestock farming and there are also biophysical restrictions to this activity (they are not attractive areas in terms of production). In the case of forest fires, the risk is also considered low given that Belize is a rainy country. Moreover, Belize has more stable governance conditions than Guatemala, that is, a higher institutional presence and control of the territory.

c. As for deforestation displacement towards **Mexico**, the **risk is low** given that the ER Program area on the border is composed of community forest concessions with the highest concentration of forests in the country and it also adjacent to the Calakmul Biosphere Reserve in Mexico.

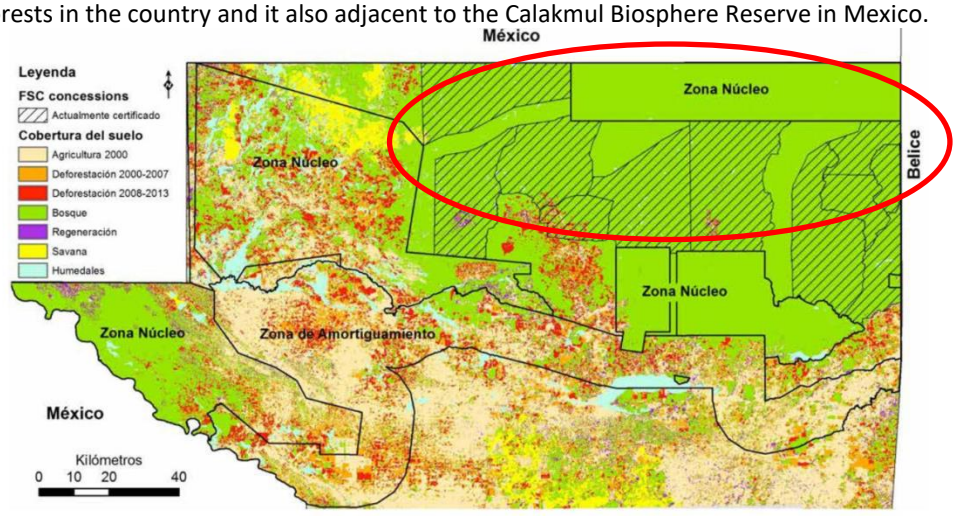


Figure 44. Forest cover change map from 2000 to 2013 in the MBR

a. Also, there is a **low risk** of deforestation displacement towards **Honduras**, because the forest areas suitable for livestock farming in Izabal and Petén are too far (East region of Honduras and border

with Nicaragua), so there is a physical barrier that would discourage the movement from the ER Program area to that country.

b. Given **El Salvador's** low forest cover, there is a **low risk** of displacement from the ER Program area to this country. In addition, other factors such as a high land opportunity cost limit the expansion of extensive activities such as livestock farming or monocultures, like African oil palm. Also, certain biophysical barriers such as a drier climate are not as attractive for activities such as livestock farming or African oil palm.

   In addition to this, there is a formal mechanism for coordinating state agencies through the Trifinio-Fraternidad Trinational Protected Area, which is a polygon composed of forest cover, communities and protected water resource areas for communities. This area is management in a coordinated manner by the Vice Presidencies of Guatemala, Honduras and El Salvador. This area is recognized by UNESCO as a Strategic Biosphere zone and there are trinational commitments for having an exclusive budget independent from biodiversity, forestry and/or protected areas authorities. Within this trinational work, which includes all forest corridors between countries, strategies are developed to reduce firewood consumption, implement sustainable livestock farming, provide forest incentives for conservation, and organize municipal timber storehouses.

Table 69. Drivers of deforestation and degradation in the ER Program

Drivers of deforestation or degradation	Risk of displacement (high, medium, low)	Justification of the risk assessment
Change of use to pastures	Medium	*Although this represents the main driver of deforestation (36% of the total change in land use, of which 85% occurs in the REDD+ Tierras Bajas del Norte region), there is a significant effect of the delimited protected areas run by community forest concessions in mitigating this expansion in areas where there are still forests[140], so it is considered a medium risk.* *In Tierras Bajas del Norte, the areas where this expansion has occurred have been mainly the Melchor de Mencos (area with the largest relative amount of pastures-31% -[141]), followed by the Laguna del Tigre National Park (19% of its area covered with pastures), the Sierra Lacandón National Park (with 13% os pastures) and the Multiple Use Zones (especially in the management unit concession of Carmelita, with an estimate of 9% of pastures). Historically, these areas i) are not co-administered[142] (only by CONAP that has a weak budgetary and personal*

[140]Figures No. 51-54 "Changes in observations of livestock evidence" of the VI Report on Governance in the Maya Biosphere Reserve. CONAP and WCS, 2018 http://www.conap.gob.gt/images/slide/GOBERNABILIDAD_20180906.pdf

[141] CEMEC; WCS. 2015. Livestock signs in four areas of the Maya Biosphere Reserve during 2011, 2012, 2013 and 2015. San Benito, Petén. Technical report.

[142] Figure Nº. 26 "Management units co-administered in the MR" of the VI Report on Governance in the Maya Biosphere Reserve. CONAP and WCS, 2018 http://www.conap.gob.gt/images/slide/GOBERNABILIDAD_20180906.pdf

Drivers of deforestation or degradation	Risk of displacement (high, medium, low)	Justification of the risk assessment
		capacity for this), and ii) there is little institutional presence[143] of CONAP, MAGA, INAB, MINGOB, OJ, MARN, MINDEF, and CONAP is one of the institutions with the lowest budget[144] and less assigned personnel[145]. According to the Maya Biosphere Reserve Master Plan[146] and the previous plans, the greater presence of livestock in these areas is illegal, since only one to two heads of cattle per family are allowed considering the populations there prior to the declaration of the protected areas.[147] However, in some years, the amount of livestock decreased, for example, in 2016 there was an increase in the institutional presence that reduced the amount of illegal activities, including a lower percentage of grazing pastures and livestock; according to the most recent Monitoring of Governance in the Maya Biosphere Reserve carried out by CONAP, a council in which MAGA is also member[148]. *In addition to the model of community forest concessions and the delimitation of protected areas that mitigate the expansion of livestock, the PINPEP and PROBOSQUE laws[149] encourage agro-silvopastoral systems as part of the agroforestry systems modality. During the 2007-2017 period, through the PINPEP program, 270 silvopastoral systems projects were promoted, covering an area of 2,238.90 ha throughout the national territory. This has a beneficial impact on what happens in Tierras Bajas del Norte, since, according to SEGEPLAN, the opportunities for small-scale forest incentive programs within the national territory reduces the pressure on natural resources in Petén[150]. In the case of PROBOSQUE, in 2017, there was a demand for 10 silvopastoral systems projects with a total extension of 347 ha, of which 2 projects with an extension of 16 ha have already been approved and certified; in 2018, there was a demand for 40 silvopastoral systems projects with a total*

[143] Figure Nº. 1 "Map of the historical evolution of sites with institutional presence" of the VI Report on Governance in the Maya Biosphere Reserve. CONAP and WCS, 2018 http://www.conap.gob.gt/images/slide/GOBERNABILIDAD_20180906.pdf

[144] Figure Nº. 28 "Evolution of the budgets of institutions linked to conservation, environment, agriculture, security and law enforcement" of the VI Report on Governance in the Maya Biosphere Reserve. CONAP and WCS, 2018 http://www.conap.gob.gt/images/slide/GOBERNABILIDAD_20180906.pdf

[145] Figure Nº. 2 "Evolution of the number of people per institution in sites with institutional presence" of the VI Report on Governance in the Maya Biosphere Reserve. CONAP and WCS, 2018 http://www.conap.gob.gt/images/slide/GOBERNABILIDAD_20180906.pdf

[146] MBR Master Plan, Second Update of December 2015. Volume IV http://www.conap.gob.gt/Documentos/SIGAP/PMR/RBM/ZAM_Tomo%202.pdf

[147] Maya Biosphere Reserve Governance Monitoring V Report http://conap.gob.gt/Documentos/Gobernabilidad.pdf

[148] Maya Biosphere Reserve Governance Monitoring V Report http://conap.gob.gt/Documentos/Gobernabilidad.pdf

[149] Law for the Promotion of the Establishment, Recovery, Restoration, Management, Production and Protection of Forests in Guatemala (PROBOSQUE) http://186.151.231.170/inab/images/descargas/legislacion/LEY%20PROBOSQUE.pdf

[150] Territorial Diagnostics of Petén, VOLUME 1, SEGEPLAN 2012. http://www.segeplan.gob.gt/downloads/PDI%20Pet%C3%A9n%202032%20Diagn%C3%B3stico.pdf

Drivers of deforestation or degradation	Risk of displacement (high, medium, low)	Justification of the risk assessment
		extension of 1.675 ha, of which 24 projects with an extension of 828 ha have already been approved and certified. [151] *Likewise, in 2016 and 2017, the number of reported patrols was doubled, which was attributed to the government's adoption, through CONAP, of the Spatial Monitoring and Reporting Tool (SMART) as a registration system. Also air patrols and monitoring within the Maya Biosphere Reserve, in Petén, have also doubled.*[152]
Change of land use to croplands and other lands (basic grains, small-scale livestock)	Medium	*This driver is associated with the previous one and precedes it because, according to the dynamic of land use change, the forest is first used as a guama forest (secondary forest) with basic grains or small-scale livestock, which is then converted to pastures*[153]. *Institutional strengthening and monitoring of protected areas (mainly CONAP, the justice sector and forest concessions) would help reduce the displacement of this driver, given that the change in use is occurring in the same territory as the previous driver (livestock). It has been shown that a greater number of personnel of institutions present in the territory, especially in the protected areas, as in the case of the Maya Biosphere Reserve, reduces the pressure for land use change; for example, between 2008 and 2017, the number of control posts in the MBR increased from 54 to 67, increasing from 600 to 1200 people during this period*[154].
Forest fires	Medium	Forest fires usually occur in specific territories that show recurrence associated with anthropogenic drivers, directly related to the change in land use, as is the case of the Laguna del Tigre National Park and in the central Petén area that is not a protected area (mainly San Francisco and Santa Ana)[155], as well as other areas that could be susceptible in Occidente, given that it is the area most impacted by forest fire degradation (map degradation by fire according to reference levels)[156].

[151] INAB's PINPEP database, 2018
[152] Maya Biosphere Reserve Governance Monitoring V Report http://conap.gob.gt/Documentos/Gobernabilidad.pdf

[153] Maya Biosphere Reserve Governance Monitoring V Report http://conap.gob.gt/Documentos/Gobernabilidad.pdf
[154] VI Report on Governance in the Maya Biosphere Reserve. CONAP and WCS, 2018 http://www.conap.gob.gt/images/slide/GOBERNABILIDAD_20180906.pdf
[155] MAP No. 66 Recurrence of areas affected by fire, VI Report on Governance in the Maya Biosphere Reserve. CONAP and WCS, 2018 http://www.conap.gob.gt/images/slide/GOBERNABILIDAD_20180906.pdf
[156] MAP No. 66 Recurrence of areas affected by fire, VI Report on Governance in the Maya Biosphere Reserve. CONAP and WCS, 2018 http://www.conap.gob.gt/images/slide/GOBERNABILIDAD_20180906.pdf

Drivers of deforestation or degradation	Risk of displacement (high, medium, low)	Justification of the risk assessment
		However, it is considered a medium risk of displacement given that forest areas have actions that limit their expansion, for example: forest management areas (forest concessions[157] and other co-administrators), forests under community or municipal management in Occidente or areas with high rainfall such as Sarstún-Motagua.
Change of use to settlements	***Low***	This change in use in the last 20 years has represented 1% of deforestation, so it is not considered a significant risk[158].

10.2 Elements of the ER Program to prevent and minimize the potential of displacements

Table 70. Elements to prevent and minimize the potential of displacements

Drivers of deforestation or degradation	Displacement mitigation plan
Change of use to pastures **Change of land use to croplands and other lands (basic grains, small-scale livestock)**	• Strengthen the harmonization of the policy framework of the agricultural sector (regulatory framework) linked to agricultural economic activities (financing), according to the policy instruments generated by the decisions reported by CONAP, who chairs the Coordinating Committee of the Maya Reserve[159]. • Strengthen the institutional presence, control and monitoring in protected areas through different mechanisms (control and monitoring infrastructure, remote monitoring), especially in the Melchor de Mencos route, the Laguna del Tigre National Park and the Sierra Lacandón National Park[160]. • Strengthen the justice system for the application of the legal framework against crimes, which will reduce the change in land use. • Strengthen control and monitoring capacities in community forest concessions. • Promote the co-administration model in pending protected areas, especially those where there is a greater recurrence of land use change to livestock or crops. • Diversification of productive activities and livelihoods.

[157] CIFOR, 2005, https://www.cifor.org/acm/download/pub/grassroot/Peten_Spanish%20all.pdf
[158] GIMBUT, 2019 Reference Levels
[159] CONAP
[160] CONAP

Drivers of deforestation or degradation	Displacement mitigation plan
	• Promote sustainable agro-silvopastoral systems, especially in areas such as the Multiple Use Zone, through various actions, including the PROBOSQUE incentive program.
Forest fires	• Strengthen institutional presence, control and monitoring (infrastructure, remote monitoring, etc.) of forest fires, in areas of high incidence that affect the program area such as in the Laguna del Tigre National Park and in the central area of Petén that is not a protected area (mainly San Francisco and Santa Ana municipalities). • Strengthen community monitoring of forest concessions and co-administrations such as Sierra Lacandón National Park, linked to the prevention, control and monitoring of forest fires. • Strengthen technical assistance to users to promote the controlled use of fire in productive activities in Occidente. • Strengthen interinstitutional coordination and capacity among CONAP, INAB, MARN, MINDEF, ANAM, CONRED and others for the prevention, control and surveillance of forest fires, especially in Tierras Bajas del Norte and Occidente.
Change of use to settlements	There is little likelihood of change of use to settlements so it is not necessary to take measures to mitigate displacements[161].

11. REVERSALS

11.1. Identifying the risk of reversals

A reversal occurs if one or several disturbance events cause a decrease in the aggregate amount of emissions reductions quantified and verified in the area considered for a reporting period with respect to the aggregate amount of emission reductions quantified and verified in the area considered in previous reporting periods[162].

Reversals may be due to natural disturbances and human activities, which may be triggered by a series of factors both internal and external to the ER Program.

Guatemala is a country with at least 30 years of experience in managing forest resources through public entities. The Ministry of Environment and Natural Resources has been the focal point for the UNFCCC since 1996, which is in charge of coordinating matters with other institutions. All this makes that the emissions reduction disturbances a matter of national interest, beyond the FCPF ERP.

Government institutions, and other stakeholders interested in sustainable forest management, are currently carrying out actions aimed at addressing the causes of deforestation and forest degradation given the deep interest in the social, economic and environmental aspects of society. INAB, through forest incentive programs like PINFOR, PINPEP and PROBOSQUE has channeled around USD 400 million from State funds over a period of 22 years[163]. The

[161] Guatemala, 2014. National Council for Urban and Rural Development . National K'atun Development Plan: our Guatemala 2032 http://www.undp.org/content/dam/guatemala/docs/publications/undp_gt_PND_Katun2032.pdf

[162] FCPF, 2015. Buffer Guidelines for the ER program https://www.forestcarbonpartnership.org/sites/fcp/files/2017/June/FCPF%20ER%20Program%20Buffer%20Guidelines_EN.pdf

[163] Guatemala, 2012. ER-PIN. Page 43.

Government of Guatemala guarantees 71% of the total investment required by the ER Program. Almost 75% of that amount is provided by PINFOR, PINPEP and PROBOSQUE. The remaining 25% is related to the institutional budget of INAB and CONAP. It is important to point out that the strong commitment of the Guatemalan people is demonstrated by the significant amount of the national budget dedicated to general policies in support of REDD+ implementation. This behavior has been constant in Guatemala for the last 30 years of the implementation of forest incentives and the conservation of protected areas.

MAGA has also put forward important actions for limiting and reversing emissions, such as the National Sustainable Low-Emission Livestock Strategy implemented since 2018 and the Family Farming Policy[164]. Together with these government actions, early action REDD+ projects implement carry out field activity.

Considering the above, actions implemented by the ERP should have a continuity of at least 30 years, because they are already part of the institutional forestry programs, such as the recent Probosque Law and CONAP's work plan for the renovation of forest concessions, which ensures that there will not be a high risk of reversals of ERP results. This risk should be kept as medium.

Reversal risk is low for the period after the ERPA given INAB's and CONAP's successful experience of at least 30 years managing forest resources, supported by a policy framework that also includes the allocation Ordinary State Budget aimed at forest incentives in accordance with the PINPEP and PROBOSQUE Laws (whose duration is 30 years) and the Protected Areas Law, which is a sign of technical, administrative, political and financial sustainability. Also, the Ministry of Environment and Natural Resources, as a focal point for the UNFCCC since 1996, has been committed to the Paris Agreement and is working to reduce GHG emissions in strategic sectors including land use change and forestry activities, establishing REDD+ as one of the key instruments to achieve its goals. In addition, for the period after the ERPA, the country must put in place reversal risk mitigation mechanisms similar to those used during the ERPA.

The ICG, together with other stakeholders in sustainable forest management, has been carrying out activities for the protection and sustainable management of forest and agroforestry resources for more than 25 years, generating economic, social and environmental benefits of common interest. This is done within the legal framework, inside and outside protected areas, that is, through forest incentive programs, the implementation of the Guatemalan System of Protected Areas, among others. Thus, the Government of Guatemala has secured 71% of the total investment required for the implementation of the Emissions Reduction Program with the State's own resources, of which almost 75% comes from the annual budget allocation granted through the forest incentive programs (PINPEP and PROBOSQUE); and the remaining 25% comes from the institutional budget of INAB and CONAP, as well as the resources of existing REDD+ projects which have been operating for more than 9 years.

It is important to point out that the strong commitment of the people of Guatemala is demonstrated by financing a significant amount of the general policies of the agroforestry sector and on which the Emissions Reduction Program is based, including the actions that are promoted through of the Ministry of Agriculture, Livestock and Food Supply (MAGA), the National Sustainable Low-Emission Livestock Strategy (implemented in 2018) and the Family Farming Policy[165] which also uses State resources.

Considering the above, ERP actions will continue for at least 30 years, mainly because it is based on institutional forestry and agroforestry programs and actions linked to sustainable low-emission livestock and family farming. These policies are complemented by CONAP's work plan to renew community forest concessions[166], ensuring the continuity of emission reductions and keeping reversal risks at a medium or low level.

[164]National Sustainable Low-Emission Livestock Strategy.

[166]Information provided by CONAP's Directorate for Technical Affairs, March 2019

Table 71. Internal and external factors that influence the ER Program reversals

Risk factor	Description	Level of risk of causing reversals	Assessment justification
Default risk	Fixed minimum quantity	10%	Does not apply
A. Lack of wide and sustainable support from stakeholders	Do stakeholders know or have positive experience with the FGRM, benefit sharing plans, etc. or similar instruments in other contexts? • Have conflicts over resources and land been addressed?	Medium - 5%	Guatemala has more than 15 years of experience in the distribution of economic benefits through forest incentive programs (PINFOR, PINPEP Law and PROBOSQUE Law).[167] To date, granted incentives add up to approximately US$ 400 million directly to more than 525,000 users[168], with a mechanism that highlights the transparency of the process: **i)** INAB certifies the compliance of the forest management plans by the users (beneficiaries), **ii)** The Ministry of Public Finance reviews and approves the files sent by INAB, and issues bank deposits directly to users and pays the administrative expenses of INAB, and **iii)** The Comptroller General of Accounts, as an external entity, performs external audits in INAB to guarantee the transparency of the processes. This benefit sharing process will continue for at least 30 years for PROBOSQUE and indefinitely for PINPEP (this program does not have an expiration date). In the Lacandón Project, the Defensores de la Naturaleza Foundation (FDN), the Unión Maya Itzá, La Lucha and La Técnica Agropecuaria cooperatives own the territories they occupy and are bound by legal agreements to be part of a REDD+ project; at the same time, they have a governance committee[169] and it is duly established that the GoG can sign

[167]Guatemala R-Package, 2018 https://www.forestcarbonpartnership.org/sites/fcp/files/2018/February/GUATEMALA_R-Package_v.final1rev_13feb18_ESPAÑOL_Limpio%20%281%29.pdf

[168]The typology of beneficiaries varies from associations, committees, communities, cooperatives, companies, foundations, individuals, municipalities, governmental organizations, COCODES and groups. Source: INAB Statistical Report, 2017

[169]Regulation of the Governance Committee of the REDD+ Lacandón Project, in the Sierra Lacandón National Park of the Maya Biosphere Reserve, November 11, 2015

Risk factor	Description	Level of risk of causing reversals	Assessment justification
			agreements with FDN on transferring ERs to MINFIN and to the benefit sharing system, in a legal order in which all involved parties approve and remain informed.[170] In the case of the beneficiary cooperatives of the REDD+ Lacandón Project, they have jointly agreed with the Defensores de la Naturaleza Foundation on the modality and rules of benefits allocation for payment of the results of the project. The beneficiary cooperatives will receive the equivalent of 55% of the benefits as projects' results-based payments, of which 47% are for incentives, 4% from support received from the agriculture program and 4% in wages through the support received for forest protection. Each of the 172 members of the cooperatives will receive a direct incentive to conserve the forest in an area of 13 ha. Likewise, the cooperatives will carry out agricultural support activities for their members to promote agricultural conservation practices and increase productivity, which are considered non-monetary benefits. Finally, cooperatives will carry out forest protection activities through 500 daily wages that will be paid to their members. The designation and eligibility criteria for the members of the cooperative to receive these benefits will be defined by each cooperative. The allocation among the cooperatives will be made according to the area that they commit to work in the project. In case the Lacandón REDD+ project does not receive the payments for expected benefits, the allocation and items presented will continue as established. (Reference, Chapter 15 of the ERPD draft, 2019) In the case of forest concessions represented by ACOFOP for the Guatecarbon project in which they participate together with CONAP, there is an agreement in which CONAP recognizes it as co-proponent.

[170]The three cooperatives are aware of the possibility of including the project in the ER-PD in order to sell ERs to the FCPF

Risk factor	Description	Level of risk of causing reversals	Assessment justification
			CONAP by law is the representative of the project[171]. **A possible conflict that has been addressed and considered complex in terms of management is the renewal of concession contracts. In the case of the ERP, two community concession contracts should be renewed, which does not involve a high risk, due to the series of measures carried out by CONAP and also jointly by ACOFOP-CONAP aimed at the renewal of concession contracts without interrupting or delaying the forest management and renewable natural resources measures which are rights granted to beneficiary community groups.** In the case of communities and concessionaire companies that benefit from the Guatecarbon REDD+ project, there is a proposal for a percentage of the benefits for results-based payments that still needs validation. In contrast, communities and companies will carry out monitoring and internal control activities for the prevention of fires and illegal logging. For all these activities, the concessionaires have an established plan that will allow the allocation of funds in kind depending on their requirements and possibilities. Likewise, they will carry out activities of productive strengthening and diversification for the support of timber and non-timber value chains and social development activities to enhance educational activities, health centers and projects to improve basic services. These activities of productive strengthening and diversification represent non-monetary benefits. (Reference, Chapter 15 of the ERPD draft, 2019) In the case of the REDDES Project coordinated by CALMECAC, the benefit sharing mechanism is under construction as part of the general project. Participation of key stakeholders: During the readiness phase of the National REDD+ Strategy, at least 4,000 interested parties participated through outreach processes and dialogues with 661 stakeholders (36%

[171]This benefit sharing agreement is still under negotiation to set the percentage that each one will receive and there is already a proposal prepared by CONAP and ACOFOP which will be submitted to consensus and final decision in 2019

Risk factor	Description	Level of risk of causing reversals	Assessment justification
			women and 59% indigenous population) from 240 local grassroots organizations. These stakeholders are part of national forest governance platforms that participate in the different national forest programs / strategies / plans on which the ER Program has been designed (i.e., forest incentive programs, the Guatemalan Protected Areas System, REDD+ projects, etc.), including: PINPEP's network of beneficiaries, the National Alliance of Community Forest Organizations of Guatemala, the REDD+ Implementers Group, GIMBUT, local governments, academia, among others. These stakeholders continue to be involved in dialogues for the design of FIP projects and will continue as Readiness resources for the FCPF.[172] Complaint mechanisms at the level of REDD+ and ER Program projects: the Information and Attention to Complaints Mechanism (MIAQ) prepared during the REDD+ Readiness phase is based on the existing mechanisms of the ICG and REDD+ projects (each project has a mechanism for dealing with complaints regarding implementation). It is necessary to strengthen the ICG in the implementation of the MIAQ, to be coordinated by the organization responsible for the management of the program, especially at the level of regional offices, as well as the disseminate and outreach this information to stakeholders. (Guatemala R-Package, 2018) Land conflicts: According to the records of the Ministry of the Interior, from 2016 to 2018, 84 land conflicts were registered[173] mainly of small and medium scale, mainly in: Quiché, Alta Verapaz, Izabal, Huehuetenango, Petén, Baja Verapaz and Sololá[174].

[172] Guatemala R-Package, 2018 https://www.forestcarbonpartnership.org/sites/fcp/files/2018/February/GUATEMALA_R-Package_v.final1rev_13feb18_ESPAÑOL_Limpio%20%281%29.pdf
[173]This is the consequence of many conflict causes recorded daily in databases of the Ministry of the Interior with open public access, making the corresponding discriminations within the database
[174]Ministry of the Interior's conflict database, 2018

Risk factor	Description	Level of risk of causing reversals	Assessment justification
			Although Guatemala has successful forest governance experiences, benefit sharing and wide involvement in REDD+ stakeholders; it has been considered a "medium" risk due to the recent discussions and decisions to change the focus of the ER Program to a subnational level given that: i) In the framework of the preparatory meetings FUNDAECO has indicated its intention not to participate in the ER Program with the FCPF Carbon Fund, due to commitments made prior to the signing of the Letter of Intent, and ii) the social conflict related to evictions in the Laguna del Tigre National Park and the Candelaria Zone. It is important to note that they occurred outside the national REDD+ process, areas that are not part of the ERP... This risk can be mitigated by: **1.** The Presidential Dialogue Commission (CPD) through which government institutions will coordinate political and social approaches to contribute, prevent, manage and transform social conflict through dialogue and follow-up on reached agreements. **2.** As part of the national REDD+ strategy consolidation, the ICG will ask FUNDAECO for information and reports on the implementation of the Costa de la Conservación project in accordance with the provisions of the Protected Areas Law[175], the Policy of Joint Administration and Shared Management of SIGAP[176], and the Regulation of Support in the Joint Administration, Co-adminstration and Shared Management of

Risk factor	Description	Level of risk of causing reversals	Assessment justification
			the SIGAP[177], which establish that "the institution, individual or legal entity in charge managing a legally declared protected area, must send CONAP an annual report, in the month of February of each year, regarding the main activities of the approved operational plan, developed in that area; and must also submit the reports that CONAP, as its Executive Secretariat, shall request." **3.** The national REDD+ registry should be designed and articulated with the national climate change registry established in Article 22 of the Framework Law on Climate Change[178] through which FUNDAECO must record REDD+ project information for disclosure, promotion, registration, validation, monitoring and verification of projects.
B. Lack of institutional capacities or intersectoral/inefficient vertical coordination	Is there a tracking record of key institutions that implement programs and policies? Is there experience of intersectoral cooperation? • Is there collaboration experience between different levels of government?	Low – 0%	Guatemala has more than 15 years of experience in interinstitutional coordination in the forestry sector, which is comprised of two main governance platforms that have allowed coordination between institutions and sectors (public, private, municipalities, academia, NGOs, etc.) for the design and implementation of public policies, which are: i) the Board of Directors of INAB conformed by representatives of the public sector (MAGA and Ministry of Public Finance), private sector (Chamber of Industry and Forest Union), local governments (ANAM), NGOs and academia (National Central School of Agriculture and universities that provide forestry and forest-related studies), and ii) the National Council of Protected Areas (CONAP) with central government representation (MARN, MAGA, MICUDE / IDAEH, INGUAT), local governments (National Association of Municipalities - ANAM-) and NGOs. Both INAB and CONAP

[178] Framework Law on Climate Change http://www.marn.gob.gt/Multimedios/2682.pdf

Risk factor	Description	Level of risk of causing reversals	Assessment justification
			have regional offices (9 and 10 respectively) to meet their mandate in accordance with the administrative structure of the State and in coordination with its different partners[179]. It is important to mention that these coordination instances have generated more than 200 thousand ha of conserved natural forest, 126,000 ha of forest plantations and 21,000 ha of land under productive forest management, which improve the protection of water and soil resources, benefiting more than 3.9 million people and improving the rural economy[180]. Also, the ICG, active since 2012[181] (MARN, MAGA, INAB and CONAP) has been the interinstitutional platform that has facilitated REDD+ coordination and which is based on an interinstitutional agreement signed in May 2015. This agreement allows joint efforts of the institutions that, according to Article 20 of the Framework Law on Climate Change, have the mandate to adjust and design policies, strategies, programs, plans and projects to reduce emissions in the forest and land use change sector.[182] This platform has allowed the articulation of the institutions, from ICG and external, for the implementation of projects such as the ER-PIN and the proposal of projects to NAMA Facility. Additionally, there are multisectoral platforms for coordinating actions such as: a) the roundtable for the prevention and reduction of illegal logging, b) the firewood roundtable in which the Strategy for Sustainable Production and Efficient Use of Firewood is coordinated183 and c) the

[179] Guatemala R-Package, 2018 https://www.forestcarbonpartnership.org/sites/fcp/files/2018/February/GUATEMALA_R-Package_v.final1rev_13feb18_ESPAÑOL_Limpio%20%281%29.pdf

[180] Information from INAB presenting the results of forest incentives in the introduction of the new manager of the National Forestry Institute, March 2016

[181] http://www.marn.gob.gt/Multimedios/410.pdf

[182] Guatemala R-Package, 2018 https://www.forestcarbonpartnership.org/sites/fcp/files/2018/February/GUATEMALA_R-Package_v.final1rev_13feb18_ESPAÑOL_Limpio%20%281%29.pdf

[183]Strategy for the sustainable production and efficient use of firewood http://www.usaid-cncg.org/wp-content/uploads/2015/07/Estrategia-produc-y-uso-le%C3%B1a-v6.pdf

Risk factor	Description	Level of risk of causing reversals	Assessment justification
			Restoration Roundtable, in which the National Forest Landscape Restoration Strategy is coordinated[184]. The participation of the Ministry of Public Finance leading the ER Program has been strategic both at the level of interinstitutional and sectoral coordination, and for the alignment of the program with the public policy priorities of the country[185].
C. Lack of long-term effectiveness to solve underlying drivers	Is there experience in the separation of deforestation and degradation from economic activities? • Does the relevant regulatory and legal environment lead to REDD+ objectives?	Medium - 3%	The Protected Areas Law and its regulations[186] creates the SIGAP, which houses 340 protected areas that cover just over 32% of the national territory. This fosters, among other things, the conservation, the rational management and the restoration of flora and fauna, related resources and their natural and cultural interactions, as well as guidelines for developing management plans that articulate Annual Operating Plans and subzoning. Likewise, through Decree 5-90187 for the creation and establishment of limits of the Maya Reserve in Petén, which establishes a Coordinating Committee of the Maya Reserve, CONAP leads other government bodies that co-manage and participate in civil society, in the monitoring, and in strategies to analyze the strategies for the best possible management of Forest Concessions, and to install early warning systems against forest fires in communities within the reserve, as well as joint patrols to identify threats for the integrity of natural resources. The Forestry Law[188] includes policy instruments for the harmonization between the management and protection of the forest and economic activities linked to drivers, for example, livestock, basic grains and other crops such as coffee, among others. Under this framework, the Forest Incentives Program (PINFOR) was finalized in 2016, as well as the PINPEP

[184]National Forest Landscape Restoration Strategy: Mechanism for rural development in Guatemala. http://www.fao.org/forestry/43244-0d7675c1321e62fbaa45f9e3d339c77c8.pdf
[185] Guatemala R-Package, 2018 https://www.forestcarbonpartnership.org/sites/fcp/files/2018/February/GUATEMALA_R-Package_v.final1rev_13feb18_ESPAÑOL_Limpio%20%281%29.pdf
[186]Protected Areas Law http://www.conap.gob.gt/Documentos/ley.pdf
[187]Declaration of the Mayan Reserve Law https://www.congreso.gob.gt/wp-content/plugins/decretos/includes/uploads/docs/1990/gtdcx05-1990.pdf
[188]Forestry Law http://186.151.231.170/inab/images/publicaciones/ley_forestal.PDF

Risk factor	Description	Level of risk of causing reversals	Assessment justification
			Law[189] which is the Forest Incentives program for owners of small areas of forest or agroforestry land (aimed at people who own land of less than 15 ha paying for the planting of trees or managing natural forests)[190] . And, in 2017, the PROBOSQUE Law[191] that continues the PINFOR incentive program and also expands the typology of beneficiaries, ensuring the granting of forest incentives for another 30 years and thereby contributes to the management and conservation of forest resources with the participation of municipalities, indigenous communities, associations, private sector, among others. Through the PINFOR, from 1998 to 2016, Guatemala paid Q 1,942,907,687 (about US$ 255 million) for forest incentives, for a total of 10,418 projects, equivalent to 383,568 ha of reforestation (36%) and management of natural forests (64%), whose beneficiaries are divided into nine groups called "types of owners", which are: i) Associations, ii) Committees, iii) Communities, iv) Cooperatives, v) Companies, vi) Foundations, vii) Individuals, viii) Municipalities and ix) Government Organization192. This, in addition to revitalizing local economies, has generated an economic spillover effect in vulnerable areas of Guatemala, which leads to a reduction in the pressure exerted on forests and an increase in their value[193]. With the PINPEP Law, from 2007 to 2016, Guatemala paid Q 634,804,592.45 (about US$ 85.5 million) for forest incentives, for a total of 25,745 projects, equivalent to 91,641.54 ha of reforestation (15%) and management of natural forests (85%), whose beneficiaries are divided into nine groups called "types of owners", which are: i) Associations, ii) Committees, iii) Communities, iv) Cooperatives, v) Companies, vi)

[189]PINPEP Law http://186.151.231.170/inab/images/publicaciones/Ley%20PINPEP0001.pdf
[190] http://inab.gob.gt/
[191]PROBOSQUE Law http://186.151.231.170/inab/images/descargas/legislacion/LEY%20PROBOSQUE.pdf
[192]Statistical Report 1998-2016 of INAB's Forest Incentives Department
[193]Systemic analysis of deforestation in Guatemala and proposed policies to reverse it https://www.url.edu.gt/publicacionesurl / FileCS.ashx? Id = 40402

Risk factor	Description	Level of risk of causing reversals	Assessment justification
			Foundations, vii) Individuals, viii) Municipalities and ix) Government Organization.[194] With the PROBOSQUE Law, between 2017 and 2046, the following achievements are expected:[195] • Establishment of 200.000 ha of forest plantations for industrial purposes • Establishment and maintenance of 100,000 ha of forest plantations for energy • Establishment and maintenance of 300,000 ha of agroforestry systems • Management of 125,000 ha of natural forest for production purposes • 375,000 ha of natural forest for protection and provision of environmental services • Restoration of 200,000 ha of degraded forest lands. • Despite these achievements, the drivers of deforestation and forest degradation have not yet been fully addressed, since these forest incentive programs, inside and outside protected areas, have a maximum duration of 10 years, but after this period, there is no incentive for users to avoid changing the use of the forest. However, this is being addressed through the FIP Forest Investment Program, which is part of the ER program.
D. Exposure and vulnerability to natural disturbances	Is the considered area vulnerable to fires, storms, droughts, etc.?	High - 5%	In the case of effective prevention of natural disturbances or mitigation of their impacts, even though Guatemala has a National Response Plan[196], a National Protocol for the Comprehensive Risk Management of Disasters

[194] Statistical Report 1998-2016 of INAB's Forest Incentives Department
[195] Guatemala 2016 Mid-Term Report https://www.forestcarbonpartnership.org/sites/fcp/files/2016/Mar/MTR%20Guatemala_2016_Spanish.pdf
[196] Guatemala National Response Plan https://conred.gob.gt/site/documentos/planes/Plan-Nacional-de-Respuesta.pdf?1806.1

Risk factor	Description	Level of risk of causing reversals	Assessment justification
	• Are there capacities and experiences in the effective prevention of natural disturbances or in the mitigation of their impacts?		by Extended Heat Waves in the Republic of Guatemala[197] and a National Protocol for the Temperature Drop Season for the Republic of Guatemala 2018-2019[198], the country has not shown sufficient capacity for effective prevention and mitigation of impacts associated with natural phenomena. This is reflected in the economic losses that the country has suffered in strategic sectors due to floods and droughts associated with climate change. According to ECLAC (2012)[199] in the last 3 decades, the economic impacts associated with hydrometeorological phenomena amount to almost US$ 3.5 billion dollars, impacting mainly the agriculture and infrastructure sectors. If it does not establish and achieve ambitious and immediate goals, ECLAC (2018)[200] estimates that the economic cost by 2030 would be equivalent to 5.8% of GDP (annual average). The natural disturbances that have some influence on the vulnerability of forests are mainly droughts in some territories, which generate conditions for forest fires, of which only 10% are associated with natural disturbances.[201] Although Guatemala has a legal framework for the protection against forest fires, the country does not have sufficient capacity to effectively prevent and mitigate them. This legal framework contains:

[197] National Protocol for the Comprehensive Risk Management of Disasters by Extended Heat Waves in the Republic of Guatemala https://conred.gob.gt/site/documentos/Protocolo_Canicula_Final_HighRes.pdf

[198] National Protocol for the Temperature Drop Season for the Republic of Guatemala 2018-2019 https://conred.gob.gt/site/documentos/Protocolo_Nacional_Temporada_Descenso_Temperatura_2018_2019.pdf

[199] ECLAC. 2012. Climate change in Central America. Potential impacts and policy options. https://www.cepal.org/es/publicaciones/39149-cambio-climatico-centroamerica-impactos-potenciales-opciones-politica-publica

[200] ECLAC. 2018. The economy of climate change in Guatemala. Technical document 2018. https://www.cepal.org/es/publicaciones/43725-la-economia-cambio-climatico-guatemala-documento-tecnico-2018

[201] Database of the national forest registry related to forest fires.

Risk factor	Description	Level of risk of causing reversals	Assessment justification
			• Constitution of the Republic (Articles 64, 97, 119 and 126), the Law of the Executive Body (Decree 114-97, Articles 29, 29 bis, 37 and 47), • the Framework Law on Climate Change (Articles 1, 2, 3, 4, 5, 6, 7, 9, 13, 14, 15 and 23), • the Constitutional Law of the Guatemala Army (Decree 72-90, Article 4), • the Municipal Code (Decree 12-2002, Articles 33, 35, 58, 67, 68 and 96), • the Forestry Law (Decree 101-96, Articles 1, 4, 6, 8, 36, 37, 38 and 93), • the PROBOSQUE Law (Decree 2-2015), • the PINPEP Law (Decree 51-2010), • the Protected Areas Law (Decree 4-89, Articles 1 and 4), • the Law of the National Coordinator for the Reduction of Natural or Provoked Disasters (Decree 109-96, Articles 1, 3, 4, 6, 9, 10 and 21) • the Government Agreement Law (Decree 156-2017, Articles 1, 4, 6, 8, 36, 37, 38 and 93) • Forest Law Regulations, Board of Directors Resolution 01.43.2005 (Articles 33, 37, 38, 39, 52 and 88) Likewise, the National Protocol for the Forest Fire Season 2018-2019 of the National Coordinator for Disaster Reduction (CONRED) was recently approved, [202] which establishes guidelines for the prevention, preparation and control against forest fires, as part of public policy

[202] National protocol on forest fires season 2018-2019 se-conred https://conred.gob.gt/site/documentos/Protocolo_Nac_Temporada_Incendios_2018_2019.pdf?3.0

Risk factor	Description	Level of risk of causing reversals	Assessment justification
			instruments and which is applicable to all centralized and decentralized government institutions. In addition, in its preparation section, it establishes strategies and tactics regarding the fire season. In the area of forest concessions there are positive experiences that demonstrate the effectiveness in the control of forest fires (this is regulated in each concession contract). It is necessary to reinforce the control and monitoring of forest fires in some territories, but mainly those associated with anthropogenic origins.
Percentage of the risk of real reversal: 10 + (Result A+ Result B+ Result C+ Result D) = 23%			

11.2 Elements of the ER Program to prevent and minimize the reversal potential

To combat the risk factors indicated in the previous section on reversals, the following measures are proposed below:

1. **Lack of wide and sustainable support from stakeholders:**
    - Ensure the inclusion of current REDD+ projects in the ERP.
    - Focus the PINPEP and PROBOSQUE outreach campaigns on stakeholders that may be against these programs due to misconception, for example, those that question the use of timber because they do not know that it comes from sustainable production.
    - Continue dialogues within the framework of the National REDD+ Strategy through the methodologies developed for it, ensuring the involvement of stakeholders with little access to information.
    - Strengthen government capacities for the implementation of the Information and Attention to Complaints Mechanism (MIAQ), especially at the level of regional offices and involving REDD+ project implementers.

2. **Lack of institutional capacities or intersectoral/inefficient vertical coordination:**
    - Maintain, strengthen and harmonize the interinstitutional coordination (ICG and MINFIN), and involve stakeholders such as implementers of existing REDD+ projects, as well as those that have had a low level of participation, for example, some forest governance platforms.
    - Outreach information to forest governance platforms in the territories.

3. **Lack of long-term effectiveness to solve underlying drivers:**
    - Prioritize programs that encourage deforestation reduction, increase of forest cover and forest restoration in areas where deforestation and forest degradation drivers are focused.
    - Increase coverage of incentive programs, especially in strategic areas for the production of environmental goods and services, such as water, food, firewood, etc., and areas with a high potential for increasing carbon stocks.
    - Strengthen the institutional presence for the prevention and management of threats, especially in protected areas.
    - Strengthen the harmonization of the policy framework inside and outside protected areas to avoid any conflict between them.
    - Promote other alternatives of economic incentives that encourage the conservation of protected areas with a biodiversity and carbon approach. For example, the work that is being planned by the Certifier of Plantations and Processing Plants of African Oil Palm (Roundtable on Sustainable Palm Oil)[203] with palm companies in Guatemala and some conservation NGOs.
    - Develop alternatives of additional economic incentives that promote conservation, sustainable forest management and increased forest cover, such as compensation mechanisms for ecosystem services.

4. **Exposure and vulnerability to natural disturbances**
    - Replicate the model of forest concessions to other territories inside and outside protected areas, given that is has been effective in addressing threats such as forest fires. Strengthen and promote the participation of local actors in the prevention of this type of disturbances.
    - Improve access to early warning systems to anticipate periods when the risks of forest fires are greater (for example, ENSO[204]).
    - Promote the adoption an interinstitutional governance platform within a specific government entity that facilitates prevention and actions against forest fires[205], and allocate a specific budget for it.

[203]World's largest certifier, which gathers 19% of the global oil palm production in the world
[204]ENSO: El Niño-Southern Oscillation
[205]The National System for the Prevention and Control of Forest Fires (SIPECIF) could be taken as a reference

11.3 Mechanisms for managing reversals in the ER Program

Reversal management mechanism	Selected (Yes/No)
Option 1: **The ER Program has in place a Reversal management mechanism that is substantially equivalent to the Reversal risk mitigation assurance provided by the ER Program CF Buffer approach**	NO
Option 2: **ERs from the ER Program are deposited in an ER Program -specific buffer, managed by the Carbon Fund (ER Program CF Buffer), based on a Reversal risk assessment**.	YES

It is proposed that the emission reductions associated with the risk of uncertainties and reversals be deposited in the ER Program CF Buffer. The amount or portion of emissions reductions to be assigned to the uncertainty buffer will be determined in accordance with the FCPF's ER Program Buffer Guidelines. Section 11.1 presents the risk assessment tool that establishes the percentages that should be set aside for each of the identified risk factors and which amount to a total of 23% discount

Likewise, the Government of Guatemala, through MARN, is designing the Registry of Projects for GHG Emissions Removal and Reduction, required by the Framework Law on Climate Change (Article 22). This platform will harbor the national REDD+ registry that will be designed National REDD+ Strategy[206] readiness phase to prevent double counting between REDD+ activities subject to results-based payment and, in this way, ensure that the credits placed in the ER Program CF Buffer are not committed to another program.

11.4 Monitoring and reporting of emissions associated with reversals

The National REDD+ Information System (SIREDD+) is the mechanism or system that Guatemala will use to monitor and report GHG emissions and removals derived from the ER Program, including those associated with reversals. The monitoring methodology is described in Sections 8 and 9 (reference levels and MRV systems) and will be carried out biannually allowing the early-stage detection of reversals. This system will be strengthened by additional readiness funds for the reporting of emissions including reversals. Likewise, as part of the ERP, several updating monitorings are planned for the following periods:

1. Prior to signing the ERPA
2. During the intermediate stage of the ERP implementation, that is, from 2019 to 2021, and
3. At the end of the program, that is, from 2021 to 2023

For the period after the ERP and for subsequent years, the ICG, with the technical support of GIMBUT, will carry out monitoring as a follow-up commitment not only for the ERP but also under the Paris Agreement commitments, also as part of creating permanent institutions for monitoring emission reductions and reversals.

The ERP has scheduled plans to make an update monitoring, from the end of the reference level period until the signing of the ERPA and two during the program as follows:
• First monitoring in the middle of the program between 2019 to 2021
• Second monitoring between 2021 to 2023

For the 2023-2025 period, the ICG, with the technical support of GIMBUT, will carry out the monitoring, as a follow-up commitment to the ERP and for the implementation of permanent ER monitoring.

[206]Second grant for readiness for an amount of $ 5,000,000 approved by the FCFP according to Resolution PC/21/2016/2 and managed by the Inter-American Development Bank

SIREDD+ is based on the existing forestry information mechanisms managed by INAB, CONAP, MAGA and MARN, through which they report information related to forest cover and land uses[207]:

Table 72. Bases of the SIREDD+

Existing information system	Responsible institution	Objective
Forest Statistical Information System of Guatemala (SIFGUA)	INAB	IT platform that consolidates, analyzes and disseminates information generated from the country's main forestry activities on the marketing, trade and transparency of the sector's activities, and collaborates to decision-making related to forests http://www.sifgua.org.gt/
Electronic Forest Companies Information System (SEINEF)	INAB	Platform to improve efficiency in forest management to guarantee the legal origin of forest products from the registered companies, enhancing competitiveness and protecting lawful companies, with the use of documents with high-security measures and state-of-the-art technology. The SEINEF is a tool that will reinforce the fight against illegal logging and trade of the country's forest products http://seinef.inab.gob.gt/
Forest management system (SEGEFOR)	INAB	Online platform for users of the different instruments of the forestry law (forest management licenses, change of use, forest incentives, etc.), to replace the use of paper through this platform in which users can check the status of their respective processes. http://segefor.inab.gob.gt/
Electronic National Forest Monitoring System (SERNAF)	INAB	System that automates the information of individuals or legal entities that carry out activities in the forestry sector. Use restricted to the public http://registro.inab.gob.gt/
Portal of the Guatemalan System of Protected Areas (SIGAP)	CONAP	Electronic platform with information regarding the protected areas of the country such as master plans, management categories and others http://www.conap.gob.gt/index.php/sigap.html
Clearing House Mechanism (CHM)	CONAP	Mechanism of Exchange of Information on Biological Diversity http://www.chmguatemala.gob.gt/
Monitoring and Evaluation Center of Petén (CEMEC)	CONAP	Specific monitoring and assessment center for Petén.
Specific web portal of the Directorate of Geographic Strategic and Risk Management Information (DIGEGR)	MAGA	Electronic portal for the exchange of basic cartographic information and digital themes, as well as documents generated by MAGA's Geographical Information Laboratory http://web.maga.gob.gt/sigmaga/
National Climate Change Information System (SNICC)	MARN	Monitoring system created under Article 9 of the Framework Law on Climate Change. It is expected that, as far as REDD+ goes, it will be fed by the other ICG information systems http://www.sia.marn.gob.gt/About.aspx

Source: Mid-Term Report, 2016

The SIREDD+ information mechanism will provide relevant information for the purpose of monitoring reversals. Since 1988, the Government of Guatemala, through the Interinstitutional Roundtable for Forest Mapping and other Land Uses (GIMBUT), monitors forest cover and land uses[208]:

[207]Guatemala R-Package, 2018 https://www.forestcarbonpartnership.org/sites/fcp/files/2018/February/GUATEMALA_R-Package_v.final1rev_13feb18_ESPAÑOL_Limpio%20%281%29.pdf

[208]Guatemala R-Package, 2018 https://www.forestcarbonpartnership.org/sites/fcp/files/2018/February/GUATEMALA_R-Package_v.final1rev_13feb18_ESPAÑOL_Limpio%20%281%29.pdf

Table 73. Monitoring performed by GIMBUT

Monitoring performed by GIMBUT	Year	Institutions
Map of the forest in Guatemala with support from FAO through the forest project plan in Guatemala (PAFG- Forest Action Plan for Guatemala)	1988	INAB
Ecosystems map (forest + associations) and land use map	1999	INAB and MAGA
Forest cover dynamics 1991-1996-2001	2006	UVG, INAB, CONAP
Forest cover dynamics in Guatemala: Estimation of forest cover and changes in Guatemala 2001-2006	2011	UVG, INAB, CONAP, URL, MARN
Forest cover dynamics in Guatemala: Estimation of forest cover and forest change in Guatemala 2006-2010	2012	UVG, INAB, CONAP, URL, MARN
2012 forest and land use map, 2001-2010 land use changes map for the estimation of greenhouse gas emissions.	2014	INAB, CONAP, MARN, MAGA, SEGEPLAN, IGN, URL, FAUSAC, UVG,
Forest cover map by type and subtype of forest in Guatemala.	2015	GIMBUT, under the leadership of INAB
Land use map at 1:50,000 scale in Guatemala, 2010	2015	MAGA
Map of forest carbon content strata (average)	2016	GIMBUT
Deforestation dynamics map 2001-2010	2016-2017	GIMBUT
Degradation map (forest fires) 2001-2010	2016-2017	GIMBUT
Carbon stocks increase map 2001-2010	2016-2017	GIMBUT

Source: GIMBUT, 2018

The distribution of monitoring responsibilities for GHG emissions and removals to be generated by the ER Program has been agreed in accordance with the thematic competence and legal direction of each GIMBUT member institution[209].

Some inputs that should be available in the medium and long term in order to include all REDD+ activities into the MRV system (66). They are described below:

Table 74. Distribution of monitoring responsibilities for GHG emissions and removals

Institution	Activities at the national level	Links at the national level

[209] Guatemala R-Package, 2018 https://www.forestcarbonpartnership.org/sites/fcp/files/2018/February/GUATEMALA_R-Package_v.final1rev_13feb18_ESPAÑOL_Limpio%20%281%29.pdf

INAB	• National forest cover maps, except for Tierras Bajas del Norte (TBN) and Sarstún Motagua (SM). • National Forest Inventory • Estimations of the carbon content for the measurement of degradation at the national level related to the use of firewood and the legal and illegal selective logging. INAB should coordinate with CONAP to support estimates on the carbon density map. • Estimation of removals by increase of carbon stocks at national level, through forest management and reforestation (management of natural forest, plantations, AFSs, forest incentives) and natural regeneration.	Nine regional offices and 33 subregional offices that cover the entire national territory.
CONAP	• Carbon densities map at the national level for the three REDD+ modalities, based on the stratification of forest cover in areas with a homogeneous carbon content. • Estimates of the carbon content from the deforestation linked to the change of land use and the loss of forest cover. • Estimates of the carbon content from degradation at the national level, linked to fires, for which it will generate data on fire scars and information by emission factors. • Forest cover maps for Tierras Bajas del Norte and Sarstún Motagua. CONAP will be in charge of transferring the information to INAB to compile a national mosaic.	Regional offices that it owns in the following regions: Altiplano Central, Altiplano Occidental, Verapaces, Costa Sur, Nororiente, Oriente, Nor-Occidente, Petén and Suroriente; likewise, in the Monitoring and Evaluation Center (CEMEC) located in Petén.
MAGA	• Land use and post-deforestation uses map, taking into account carbon data in croplands and agroforestry systems, which will serve as an input for the construction of emission factors.	It would be based on departmental offices at national level and to the National Rural Extension System (SNER) that has offices in all municipalities of the country.
MARN	• The INAB, CONAP and MAGA integrate all the information of the REDD+ activities under their responsibility according to their thematic competence. • All the processed information will be transferred to MARN and will be integrated it and systematized in a report and submitted to the UNFCCC. • In addition, MARN must: • Provide assistance to all the technical activities carried out by the other institutions of the ICG, with the purpose of being familiar with the generated technical data that must be integrated for the report. • Approve and ensure consistency in the data presented in the GHG inventories, the emission baselines for the LULUCF sector, the National Communications and the Carbon Market Projects Registry. • As the governing body of the climate change legislation, it must ensure compliance with articles 19, 20 and 22 of the Framework Law on Climate Change. • The MARN must have the technical capabilities to manage the data of each institution specialized in monitoring activities.	It would be supported by the Department of Science and Metrics and the Mitigation Department of the Climate Change Unit, as well as in the Environmental Information and Climate Change Unit.
GIMBUT	IGN GIS directorates, INAB, CONAP, MAGA, MARN and universities will be in charge of discussing, reviewing and agreeing on the results generated by each one of the ICG institutions for the monitoring activities under its responsibility, in accordance with what was presented previously.	

Source: Guatemala R-Package, 2018

Through the FCPF's readiness resources and the Forest Investment Program (FIP), the SIREDD+ and other existing forest information systems will be strengthened to facilitate the automation and exchange of information between

existing forest monitoring systems, and the SIREDD+ will be linked to the National Information System on Climate Change (SNICC)[210] which under development by MARN according to Article 6 of the Framework Law on Climate Change.
The details of the MRV approach for the ER Program are described in Sections 9.1 and 9.2.

12. UNCERTAINTIES OF THE CALCULATION OF EMISSION REDUCTIONS

12.1 Identification and assessment of sources of uncertainty

The sources of uncertainty identified during the estimation of GHG emissions are manifold, and are associated with the origin of the information, the emission and removal factors originated by forest inventories data, which are combined with allometric models to go from data on diameters and heights to data on volume and biomass. In this sense, there are sources of error associated with the measurement (for example, personal biases in the use of measurement instruments), allometric models (due to variations in observations, non-significant samples, imperfect measurements of environmental conditions that affect the process etc.), the sampled area (limited resolution in instruments and spatial and temporal thresholds to capture the phenomenon) and sampling error (variations in observations).

Of these possible sources of uncertainty, measurement errors are random errors and are usually limited compared to other sources. Measurement errors are associated with the measurement of DBH and are averaged at the plot level, so they are considered low. The use of default conversion values (from biomass to carbon and to CO2), for example, they are considered as random errors and will remain constant during the measurement and reporting process; the use of allometric equations has an intrinsic value to the model, which is difficult to integrate in the quantification of global uncertainty, however some exercises were done such as comparing different equations, and selecting those that met criteria such as those developed in DBH ranges similar to those in the data of the inventory plots. To minimize this type of errors, decision trees can be generated for the automated selection of the best equation according to the defined characteristics. Another way to minimize them is to promote the generation of local equations to avoid the use of global equations.

The other possible errors are associated to the sampling, both the sampled area and the sampling error are two errors that are being quantified in the uncertainty of the emission factors. The use of plots of different origins and sizes leads to considerable errors, besides the fact that each group of plots have different purposes and therefore different types of sampling. This gives us an idea that EFs are one of the main sources of uncertainty in the estimation of emissions and removals. In this case, data was weighted according to the size of the different plots and the values were used to generate a carbon strata map. In this process Monte Carlo and Bootstrap modeling methods were used to better represent the distribution functions of the sample, which means that the errors of each reported EF on the map become considerably lower (see EF section and carbon strata map protocol). During the process for the propagation of the EF error, the values of the parameters of the different distributions originally obtained from the plots were used (Section 12.1).

To reduce the sampling error, National Forestry Inventory is being planned with a sampling design that meets the specific objective of characterizing and quantifying the country's forest resources. Samples can also be analyzed according to the different types of existing ecosystems to have EFs for each type of forest and other uses.

In the same way, for the activity data, there are errors associated with the sampled area and the used classification, but, in the case of Guatemala, depending on the input (usually maps or cartographic models) and the sampling used for the generation of AD, there may be sources of error associated with the quality and resolution of the satellite images, the visual interpretation of the samples and the sampling design. The error associated with the quality and resolution of the images could be considered low, since medium and high resolution images have been used and the size of the analyzed plot (1 ha) allows a correct visual interpretation of the images. In addition, the use of the Collect

[210] Article 9 of the Framework Law on Climate Change mandates that *all public and private entities must provide information directly related to climate change, especially in terms of emissions and reduction of greenhouse gases, vulnerability and adaptation to climate change requested by the Ministry of Environment and Natural Resources, necessary for national communications committed by the country*.

Earth tool allows visualizing the best images available on the dates of interest, ensuring that there are no clouds and with the requirements for their proper interpretation, has been decreasing possible uncertainties.

Another source of uncertainty comes from the main process for estimating ADs, that is, the visual interpretation of each of the grid points. In this sense, there has been a series of processes to minimize errors, like the selection of professional interpreters, who have been trained on the use of tools, and the development of an interpretation protocol which is the basis for the definition of classes. In addition, some scripts have been programmed to facilitate interpretation and avoid making mistakes during this process; and confidence values are assigned to each of the data collected at each point of the grid. Finally, a review of 5% of the samples is made by 3 interpreters and a comparative matrix of each assessed point is developed and a percentage error of interpretation of each original interpreter is obtained.

Regarding sampling, this is the type of error that is quantified for its propagation in the uncertainty, the sampling design is systematic with a grid of 3.1 km x 3.1 km with a site located inside each of the quadrants of the grid. The density obtained for the sample is enough to capture the dynamics of the forests with an acceptable error. However, if a smaller area is to be estimated, or a specific type of change, the grid would have to be densified in those areas of interest.

To quantify the uncertainty associated with the estimation of emissions and emission reduction, the focus has been placed on the estimation of the sampling error, based on the AD and EF, since this uncertainty is the one that can be quantified with the available data. The estimation of the uncertainty was made through the Monte Carlo simulation method, first for the EF and RF, and the AD, each separately, and later for the emission and removal estimates for the program area.

The sources of error of reference levels for deforestation, degradation and increase of carbon stocks are estimated separately for each activity to calculate uncertainty and reported at the 90% confidence level of two tails.

The Monte Carlo method was applied as follows:

Data of origin.
To simulate the values of the carbon content in the forests to estimate the uncertainty in the emissions from deforestation and degradation, the descriptive parameters of the distributions that best fit the size of each plot where they were used were taken as inputs to elaborate the carbon density map, obtained from at least 10,000 simulations (Gómez Xutuc, 2017[211]).

Table 75. Parameters used for the simulation of carbon contents in forests by stratum and by plot size

Stratum	Plot size (ha)	Default value of the cell	Type of data	Distributions	Parameters
I	0.03	165,356	Continuous	Gamma (2)	k = 1,553; beta = 106,475
	0.04	220,867	Continuous	Normal	μ = 220,867; sigma = 30.44
	0.05	13,831	Continuous	Weibull (3)	gamma (82,476; beta = 1,647; μ = 12,195
	0.1	2,318	Continuous	Weibull (2)	gamma = 124,079; beta = 2,329
	0.13	346,731	Continuous	Normal	μ = 346,731; sigma = 30,352
	0.25	116,878	Continuous	Logistics	μ = 116,878; s = 16,518
	1	101,778	Continuous	Logistics	μ = 101,778; s = 12,542
	2	34,974	Continuous	Beta4	alpha = 0.432; beta = 0,641; c = 7,854; d = 75,214
II	0.03	133,769	Continuous	Log-normal	μ = 4,329; sigma = 1,065

[211]Methodological report for the elaboration of carbon stocks maps

	0.05	180,693	Continuous	Log-normal	μ = 4,656; sigma = 1.04
	0.1	-0.001	Continuous	GEV	Gamma = -0.071beta = 53,543; μ = 73,854
	0.25	137,184	Continuous	Log-normal	μ = 4,566; sigma = 0,843
	2	36,376	Continuous	Gamma (2)	k = 0.42; beta = 86,609
III	0.03	230,494	Continuous	Log-normal	μ = 4,787; sigma = 1,143
	0.05	18,171	Continuous	Weibull (3)	gamma = 85,775; beta = 1.08; μ = 17,098
	0.1	162,855	Continuous	Log-normal	μ = 4,735; sigma = 0.846
	0.13	-0.002	Continuous	GEV	Gamma = -0.05beta = 28,323; μ = 75,046
	0.25	-0.006	Continuous	GEV	Gamma = -0.164beta = 29.65; μ = 108,335
	2	53,841	Continuous	Normal	μ = 53,841; sigma = 36,152
IV	0.03	294,747	Continuous	Gamma (2)	k = 1,368; beta = 215,458
	0.04	20,408	Continuous	Weibull (2)	gamma = 204,913; beta = 20,465
	0.05	82,773	Continuous	Log-normal	μ = 4,169; sigma = 0,703
	0.1	300,756	Continuous	Log-normal	μ = 5,154; sigma = 1,051
	0.12	140,592	Continuous	Beta4	alpha = 0.515; beta = 0.722; c = 109,721; d = 183,871
	0.13	121,567	Continuous	Beta4	alpha = 0.327; beta = 0.246; c = 69,965; d = 160,387
	2	50,568	Continuous	Gamma (2)	k = 1,518; beta = 33,312

For the increases in carbon stocks by plantations, the descriptive parameters of the MAI data for coniferous and broadleaved plantations obtained from the analysis of field plots were used.

Table 76. Parameters used for the simulation of carbon contents in forest plantations.

Increase	MAI broadleaved	MAI coniferous
Lognormal (mu)	1.2466	
Lognormal (sigma)	1.1971	
Gamma2 (k)		2.5972
Gamma2 (beta)		3.4678
Density (t m-3)	0.62	0.61
BEF (m3 m-3)	1.5	1.2

For the Activity Data, a normal distribution was assumed and the values of area (ha), standard error each possible transition by region were used; that is, forest of each of the strata, I, II, III and IV that are converted to each of the categories of non-forest, seasonal agriculture, coffee, palm oil, rubber, agroforestry systems, pasture, settlements, other lands and wetlands; forests converted to degraded forests, forests converted to very degraded forests and degraded forests that become very degraded forests; and coniferous and broadleaved plantations. (Annex XX).

Table 77 Values of the AD parameters for deforestation and degradation used for the MMC

	Stratum I	Stratum II	Stratum III	Stratum IV
Parameter	**Annual agriculture**			
mean	9588.95	21095.68	10547.84	6712.26
stddev	3030.98	4493.08	3178.77	2536.27
Parameter	**Coffee**			
mean		2876.68		958.89
stddev		1660.69		958.89
Parameter	**African oil palm**			
mean	1917.79	10547.84	1917.79	
stddev	1356.02	3178.77	1356.02	
Parameter	**Rubber**			
mean		958.89	1917.79	958.89
stddev		958.89	1356.02	958.89
Parameter	**Agroforestry systems**			
mean	1917.79	6712.26	2876.68	3835.58
stddev	1356.02	2536.26	1660.69	1917.51
Parameter	**Pastures and shrubs**			
mean	92053.90	92053.90	36438.00	8630.05
stddev	9352.25	9352.25	5900.51	2875.57
Parameter	**Settlements**			
mean	958.89	958.89		958.89
stddev	958.89	958.89		958.89
Parameter	**Other lands**			

mean		3835.58	958.89	1917.79
stddev		1917.51	958.89	1356.02
Parameter	**Degradation**			
mean	25890.16	61369.26	45068.05	21095.68
stddev	4976.34	7647.92	6559.31	4493.08
Parámetro	Retauración de Áreas Degradadas			
media	28766.84225	28766.84225	26849.05276	12465.63164
stddev	5244.764229	5244.764229	5067.411558	3455.351453

Table 78 Values of the AD parameters for increases in forest plantations for the MMC

Parameter	Broadleaved	Coniferous
mean	13424.53	15342.32
stddev	3585.62	3832.82

12.2 Quantification of uncertainty in Reference Level setting

Procedure

From the previous data, 1,000 repetitions were made for each plot size for each stratum; a similar process was carried out for carbon data in non-forest areas assuming normal distributions since they are mostly data from the IPCC.

With this, 1,000 simulated carbon content values were obtained for each plot size in each stratum, and 1,000 values of carbon content for each type of cover in non-forest lands (agricultural land, coffee, African palm, rubber and agroforestry systems). These data were combined according to all possible transitions in each stratum, thus obtaining 1,000 pieces of data of simulated values for the emission factors by stratum by possible type of change; the same procedure was carried out for the increase data in plantations separating broadleaved and conifers.

For the simulation of deforestation, degradation and carbon stock increases activity data, 1,000 repetitions were carried out for each land change class using the data of the area and the standard deviation obtained as indicated in the activity data section. For this process, normal distributions were assumed in all cases. At the end of this procedure, 1,000 pieces of data corresponding to AD (deforestation, degradation and carbon stock increases) were obtained for each of the possible conversions per stratum.

The next step was to combine the simulated DAs with simulated EFs by multiplying the simulated values for each conversion, and adding them up by differentiating each of the included REDD+ activities, as well as adding the three activities to obtain an overall value of uncertainty for the entire FREL.

With this data, a sample of 1,000 carbon loss data is obtained with which the parameters used to describe the sample are estimated: median, confidence intervals and the percentage associated with the confidence interval. This last data is the one that represents the range in which the percentage of error or uncertainty of the estimates is.

When observing the amplitude in the error ranges, the number of repetitions was increased to 10,000, however, the results were similar. A bootstrap-type resampling with 10,000 repetitions was also made, resulting in similar ranges; so it was decided to present the results obtained originally with the 1,000 repetitions.

Results

The results presented below in tables 79-84) correspond to the values obtained in each of the steps described above as a result of the analysis of the 1,000 repetitions, which represents the contribution of each element analyzed and

their propagation up to the estimation of the FREL. The data are presented with their respective values of 90% confidence intervals and the percentage of associated error calculated with the following equation:

$$\%\ de\ incertidumbre\ = \frac{\frac{1}{2} * (amplitud\ del\ intervalo\ de\ confianza)}{Mediana\ (Carbono, o\ ha)} * 100$$

Table 79 Uncertainty of forest carbon contents for each stratum

Stratum	I	II	III	IV
Median	144.00	96.90	108.66	154.86
Average	147.40	113.90	124.88	169.74
Variance	390.66	4114.93	5049.71	5123.45
Weighted average	107.52	120.02	166.59	246.17
Lower CI (5%)	120.33	44.27	65.53	98.49
Higher CI (95%)	184.64	235.91	234.54	289.36
% Uncertainty (90%)	22	99	78	62

Table 80 uncertainty of forest carbon contents for each stratum

Class	Agriculture / Pasture	Coffee	African oil palm	Rubber	Agroforestry systems
Median	4.89	9.83	10.25	10.07	28.69
Average	4.97	9.84	10.01	10.11	28.70
Variance	3.58	15.41	13.19	14.65	124.42
Lower CI (5%)	2.10	3.51	4.15	3.86	10.35
Higher CI (95%)	8.22	16.22	15.98	16.36	46.56
% Uncertainty (90%)	63	65	58	62	63

Table 81 Uncertainty of emission and removal factors

Class	Deforestation	Increases	Degradation	Rest. Degr. areas
Median	138.82	5.08	70.58	65.80
Average	155.77	6.24	82.15	78.07
Variance	4625.25	23.05	2397.38	1983.46
Lower CI (5%)	82.01	1.88	34.13	33.30
Higher CI (95%)	279.33	14.16	167.25	161.35
% Uncertainty (90%)	71	121	94	97

Table 82 Uncertainty of Activity Data

Class	Deforestation	Increases	Degradation	Rest. Degr. areas
Median	325286.62	28634.07	152775.75	152775.75
Average	325005.80	28689.48	153528.68	153528.68
Variance	300666646.14	28534634.26	146719492.85	146719492.85
Lower CI (5%)	297578.61	19921.67	133762.78	133762.78
Higher CI (95%)	352712.55	37361.63	173804.51	173804.51
% Uncertainty (90%)	8	30	13	13

Table 83 Uncertainty of emitted or removed carbon

Class	Deforestation	Increases	Degradation	Rest. Degr. areas
Median	37606245.69	154877.10	9710686.18	6077551.74
Average	42058583.75	192523.07	11605874.00	7202057.91
Variance	386171314439522.00	23024087021.91	74929847736966.40	32208588377208.50
Lower CI (5%)	20797120.01	49890.98	4480395.45	3054019.59
Higher CI (95%)	78345829.57	469352.62	24477800.54	14994285.89
% Uncertainty (90%)	76	135	103	98

Finally, the uncertainty was combined by adding the total emissions and removals and a single associated error of 90% was estimated, calculations can be found at: http://marn.gob.gt/s/redd_/paginas/ERPD_GUATEMALA

Table 84 Total uncertainty of the obtained FREL by the MMC

	FREL
Carbon	39880411.92
CO_2/year	14,622,817.70
Lower CI (5%)	21052055.93
Higher CI (95%)	85260311.45
Uncertainty (90%)	**74%**

13. CALCULATION OF EMISSION REDUCTIONS

13.1 Ex-ante estimation of the Emission Reductions

In order to estimate the emission reductions potential during the implementation of the ERPD actions, the FREL was based on the maximum emission reduction potential, that is, no more emissions can be reduced than those currently emitted annually from deforestation and degradation. On the other hand, exercises were carried out to estimate historical emissions for the same period covered by the FREL (2006-2016) in the projects areas with a focus on reducing emissions and in the area of the municipalities where FIP actions will be implemented, which can give us an approximate idea of the relationship that exists between emissions that can be reduced by implementing actions in those areas against total emissions in the program areas.

Because REDD+ projects areas and FIP municipalities areas overlap, they were only counted once to prevent double counting.

Table 85. Historical emissions in the areas of the projects and the FIP.

	Deforestation	Increase	Degradation	Rest. Degrad. Areas	Potencial
Total implementation	5,926,385.98	-95,106.38	1,190,821.49	-1,050,921.95	8,263,235.80
Potential outside the implementation area	6,364,378.10	-176,324.76	1,819,653.96	-893,440.91	9,253,797.72
Todo el Programa	12,290,764.08	-271,431.14	3,010,475.45	-1,944,362.85	17,517,033.52

From these data, we have a first approximation of the potential of emission reductions during the implementation of the ERP. With this maximum potential, the following assumptions were made to reach the potential ex-ante reductions: in the area where there are projects or FIPs, for deforestation and degradation, emissions will be reduced by 10% every year, an additional 10% of degraded areas will be recovered and the number of additional plantations implemented annually will be similar to the number of plantations historically planted in the areas previously mentioned; outside the project and FIP areas, emissions will be reduced by 2% every year, degraded forest areas will

be recovered at the same percentage and half of the additional plantations will be implemented compared to the historical figures.

The emissions that would be placed in the reserve due to uncertainty were also reduced (12% for deforestation and 15% for degradation and increases) and for the risk of reversion (23%).

The results for each activity and a total concentrate are presented below.

Table 86. Possibility of emission reductions due to deforestation.

Deforestation in activity area						
ERPA year	**Estimation of the potential for emission reductions (tCO2-e/yr)**	**Estimation of emission reductions by implementation of actions. (tCO2-e/yr)**	**Estimation of expected set-aside to reflect the level of uncertainty associated with the estimation of ERs during the Term of the ERPA (tCO_{2-e}/yr)**	**Result subtracting the percentage associated with uncertainty (12%)**	**Estimation of expected set-aside to reflect the risk of reversal during the Term of the ERPA (tCO_{2-e}/yr)**	**Estimated Emission Reductions (tCO_{2-e}/yr) Deforestation**
1	5,926,385.98	592,638.60	71,116.63	424,001.60	97,520.37	424,001.60
2	5,926,385.98	1,185,277.20	142,233.26	848,003.20	195,040.74	848,003.20
3	5,926,385.98	1,777,915.79	213,349.90	1,272,004.80	292,561.10	1,272,004.80
4	5,926,385.98	2,370,554.39	284,466.53	1,696,006.39	390,081.47	1,696,006.39
5	5,926,385.98	2,963,192.99	355,583.16	2,120,007.99	487,601.84	2,120,007.99
						6,360,023.98
Deforestation in other areas						
ERPA year	**Estimation of the potential for emission reductions (tCO2-e/yr)**	**Estimation of emission reductions by implementation of actions. (tCO2-e/yr)**	**Estimation of expected set-aside to reflect the level of uncertainty associated with the estimation of ERs during the Term of the ERPA (tCO_{2-e}/yr)**	**Result subtracting the percentage associated with uncertainty (12%)**	**Estimation of expected set-aside to reflect the risk of reversal during the Term of the ERPA (tCO_{2-e}/yr)**	**Estimated Emission Reductions (tCO_{2-e}/yr) Deforestation**
1	6,364,378.10	127,287.56	15,274.51	91,067.52	20,945.53	91,067.52

2	6,364,378.10	254,575.12	30,549.01	182,135.05	41,891.06	182,135.05
3	6,364,378.10	381,862.69	45,823.52	273,202.57	62,836.59	273,202.57
4	6,364,378.10	509,150.25	61,098.03	364,270.10	83,782.12	364,270.10
5	6,364,378.10	636,437.81	76,372.54	455,337.62	104,727.65	455,337.62
						1,366,012.86

Table 87. Possibility of emission reductions from degradation.

Degradation in activity area						
ERPA year	**Estimation of the potential for emission reductions (tCO2-e/yr)**	**Estimation of emission reductions by implementation of actions. (tCO2-e/yr)**	**Estimation of expected set-aside to reflect the level of uncertainty associated with the estimation of ERs during the Term of the ERPA (tCO_{2-e}/yr)**	**Result subtracting the percentage associated with uncertainty (15%)**	**Estimation of expected set-aside to reflect the risk of reversal during the Term of the ERPA (tCO_{2-e}/yr)**	**Estimated Emission Reductions (tCO_{2-e}/yr) Degradation**
1	1,190,821.49	119,082.15	17,862.32	82,292.54	18,927.28	82,292.54
2	1,190,821.49	238,164.30	35,724.64	164,585.08	37,854.57	164,585.08
3	1,190,821.49	357,246.45	53,586.97	246,877.63	56,781.85	246,877.63
4	1,190,821.49	476,328.60	71,449.29	329,170.17	75,709.14	329,170.17
5	1,190,821.49	595,410.75	89,311.61	411,462.71	94,636.42	411,462.71
						1,234,388.13
Degradation other areas						
ERPA year	**Estimation of the potential for emission reductions (tCO2-e/yr)**	**Estimation of emission reductions by implementation of actions. (tCO2-e/yr)**	**Estimation of expected set-aside to reflect the level of uncertainty associated with the estimation of ERs during the Term of the ERPA (tCO_{2-e}/yr)**	**Result subtracting the percentage associated with uncertainty (15%)**	**Estimation of expected set-aside to reflect the risk of reversal during the Term of the ERPA (tCO_{2-e}/yr)**	**Estimated Emission Reductions (tCO_{2-e}/yr) Degradation**

1	1,819,653.96	36,393.08	5,458.96	25,149.69	5,784.43	25,149.69
2	1,819,653.96	72,786.16	10,917.92	50,299.38	11,568.86	50,299.38
3	1,819,653.96	109,179.24	16,376.89	75,449.07	17,353.29	75,449.07
4	1,819,653.96	145,572.32	21,835.85	100,598.76	23,137.71	100,598.76
5	1,819,653.96	181,965.40	27,294.81	125,748.44	28,922.14	125,748.44
						377,245.33

Table 88. Potential increase in carbon uptake by forest plantations.

Increases in activity area from forest plantations

ERPA year	Estimation of the potential for emission reductions (tCO2-e/yr)	Estimation of emission reductions by implementation of actions. (tCO2-e/yr)	Estimación de reducciones de emisión descontadas para reflejar el nivel de incertidumbre asociado a la estimación de REs durante el término del ERPA (tCO_{2-e}/año)	Result subtracting the percentage associated with uncertainty (15%)	Estimación de reducciones de emisión descontadas para reflejar el riesgo de reversiones durante el término del ERPA (tCO_{2-e}/año)	Reducciones de Emisión Estimadas (tCO_{2-e}/año) Incrementos
1	-95,106.38	-95,106.38	-14,265.96	-65,723.92	-15,116.50	-65,723.92
2	-95,106.38	-190,212.75	-28,531.91	-131,447.84	-30,233.00	-131,447.84
3	-95,106.38	-285,319.13	-42,797.87	-197,171.76	-45,349.50	-197,171.76
4	-95,106.38	-380,425.51	-57,063.83	-262,895.68	-60,466.01	-262,895.68
5	-95,106.38	-475,531.88	-71,329.78	-328,619.59	-75,582.51	-328,619.59
						-985,858.78
Increases in other areas from forest plantations						
ERPA year	**Estimation of the potential for emission reductions (tCO2-e/yr)**	**Estimation of emission reductions by implementation of actions. (tCO2-e/yr)**	**Estimation of emission reductions discounted to reflect the level of uncertainty associated with the estimation of ERs during the term of the ERPA (tCO_{2-e}/year)**	**Result subtracting the percentage associated with uncertainty (15%)**	**Estimation of emission reductions discounted to reflect the risk or reversals during the term of the ERPA (tCO2-e/year)**	**Estimated Emission Reductions (tCO_{2-e}/ year) Increases**
1	-176,324.76	-88,162.38	-13,224.36	-60,925.22	-14,012.80	-60,925.22
2	-176,324.76	-176,324.76	-26,448.71	-121,850.44	-28,025.60	-121,850.44
3	-176,324.76	-264,487.14	-39,673.07	-182,775.67	-42,038.40	-182,775.67
4	-176,324.76	-352,649.52	-52,897.43	-243,700.89	-56,051.20	-243,700.89
5	-176,324.76	-440,811.90	-66,121.79	-304,626.11	-70,064.01	-304,626.11
						-913,878.34

Table 89. Restoration of degraded areas in activity areas

Restoration of degraded areas in activity areas						
ERPA year	**Estimation of the potential for emission reductions (tCO2-e/yr)**	**Estimation of emission reductions by implementation of actions. (tCO2-e/yr)**	**Estimation of expected set-aside to reflect the level of uncertainty associated with the estimation of ERs during the Term of the ERPA (tCO_{2-e}/yr)**	**Result subtracting the percentage associated with uncertainty (15%)**	**Estimation of expected set-aside to reflect the risk of reversal during the Term of the ERPA (tCO_{2-e}/yr)**	**Estimated Emission Reductions (tCO_{2-e}/yr) Increases**
1	-1,050,921.95	-105,092.19	-15,763.83	-72,624.69	-16,703.68	-72,624.69
2	-1,050,921.95	-210,184.39	-31,527.66	-145,249.37	-33,407.36	-145,249.37
3	-1,050,921.95	-315,276.58	-47,291.49	-217,874.06	-50,111.03	-217,874.06
4	-1,050,921.95	-420,368.78	-63,055.32	-290,498.75	-66,814.71	-290,498.75
5	-1,050,921.95	-525,460.97	-78,819.15	-363,123.44	-83,518.39	-363,123.44
						-1,089,370.31

Restoration of degraded areas in other areas						
ERPA year	**Estimation of the potential for emission reductions (tCO2-e/yr)**	**Estimation of emission reductions by implementation of actions. (tCO2-e/yr)**	**Estimation of expected set-aside to reflect the level of uncertainty associated with the estimation of ERs during the Term of the ERPA (tCO_{2-e}/yr)**	**Result subtracting the percentage associated with uncertainty (15%)**	**Estimation of expected set-aside to reflect the risk of reversal during the Term of the ERPA (tCO_{2-e}/yr)**	**Estimated Emission Reductions (tCO_{2-e}/yr) Increases**
1	-893,440.91	-17,868.82	-2,680.32	-12,348.37	-2,840.13	-12,348.37
2	-893,440.91	-35,737.64	-5,360.65	-24,696.74	-5,680.25	-24,696.74
3	-893,440.91	-53,606.45	-8,040.97	-37,045.11	-8,520.38	-37,045.11
4	-893,440.91	-71,475.27	-10,721.29	-49,393.48	-11,360.50	-49,393.48
5	-893,440.91	-89,344.09	-13,401.61	-61,741.85	-14,200.63	-61,741.85
						-185,225.55

ERPA year	**Estimation of the potential for emission reductions (tCO2-e/yr)**	**Estimation of emission reductions by implementation of actions. (tCO2-e/yr)**	**Estimation of expected set-aside to reflect the level of uncertainty associated with the estimation of ERs during the Term of the ERPA (tCO_{2-e}/yr)**	**Result subtracting the percentage associated with uncertainty (15%)**	**Estimation of expected set-aside to reflect the risk of reversal during the Term of the ERPA (tCO_{2-e}/yr)**	**Estimated Emission Reductions (tCO_{2-e}/yr) Increases**
1	17,517,033.52	1,181,631.16	155,646.89	834,133.55	191,850.72	834,133.55
2	17,517,033.52	2,363,262.32	311,293.78	1,668,267.11	383,701.43	1,668,267.11
3	17,517,033.52	3,544,893.48	466,940.67	2,502,400.66	575,552.15	2,502,400.66
4	17,517,033.52	4,726,524.64	622,587.56	3,336,534.21	767,402.87	3,336,534.21
5	17,517,033.52	5,908,155.80	778,234.45	4,170,667.76	959,253.59	4,170,667.76

						12,512,003.29

According to the above assumptions, there is a potential for reduction of 12.51 million tons of CO2 during the 5 years of implementation of the emission reduction program. A record of the estimate calculation can be found at: http://marn.gob.gt/s/redd_/paginas/ERPD_GUATEMALA. This level of ambition could be increased in case of expanding the areas of implementation, increasing the percentage of emissions reduction that can be achieved annually or increasing the area with forest plantations.

14 SAFEGUARDS

14.1 Description of how the ER Program meets the World Bank social and environmental safeguards and promotes and supports the safeguards included in UNFCCC guidance related to REDD+

In response to the provisions of the Framework Law on Climate Change (Decree 7-2013), among the international commitments that Guatemala has assumed before the United Nations Framework Convention on Climate Change (UNFCCC) for the REDD+ Strategy, is the focus, respect and compliance of safeguards. Within the readiness framework and with the objective of accessing REDD+ results-based payments, Guatemala has developed a National REDD+ Safeguards Approach (ENS REDD+) to comply REDD+ safeguards requirements, with the following objective:

i) defining the way to ensure compliance with REDD+ safeguards,
ii) the political-legal framework and institutions responsible for implementation, and
iii) Compliance aspects that allow the resolution of conflicts, follow-up mechanisms to reduce non-compliance and report the generated information.

The Framework Law on Climate Change (Decree 7-2013) establishes in Article 20 that the Ministry of Environment and Natural Resources (MARN), the Ministry of Agriculture, Livestock and Food Supply (MAGA), the National Forestry Institute (INAB) and the National Council of Protected Areas (CONAP) must "adjust and design policies, strategies, programs, plans and projects for the development and sustainable use and management of forest resources, including environmental services that reduce GHG emissions and the conservation of forest ecosystems." It should be noted that there is also an Interinstitutional Coordination Group (ICG), whose objective is to jointly coordinate conservation efforts and sustainable management of natural resources.

Regarding the legal framework, Guatemala has identified the set of laws, policies and regulations, as well as relevant plans and programs, conventions and international treaties to guide and guarantee the safeguards approach, which includes, at an international level: United Nations Framework Convention on Climate Change, the Convention on the Elimination of All Forms of Discrimination against Women, United Nations Conference on Environment and Development, United Nations Conference on Sustainable Development, Johannesburg World Summit on Sustainable Development, Universal Declaration of Human Rights, Declaration of the United Nations on the Rights of Indigenous Peoples, Convention 169 of the International Labor Organization, Convention on Biological Diversity.

Regarding the institutional framework, Guatemala has made significant progress in terms of governance structures, including roles and responsibilities regarding the design and implementation of the National REDD+ Strategy, including those related to the approach and respect of safeguards.

Next, the requirements related to UNFCCC and FCPF safeguards, and the progress and commitments made by the Government of Guatemala are examined:

1) UNFCCC requirements: application of the Cancun safeguards, development of a safeguards information system and provision of an information summary,
2) FCPF requirements: application of the World Bank's Environmental and Social Framework (ESF) under the FCPF Common Approach.

The parties to the UNFCCC agreed on a set of social and environmental safeguards, such as a common global framework, to be addressed and respected during the three phases of REDD+: readiness, implementation and results-based payments. The seven safeguards are:

a. The complementarity or compatibility of the measures with the objectives of the national forestry programs and the conventions and international agreements on the subject
b. The transparency and effectiveness of national forest governance structures, taking into account national legislation and sovereignty
c. Respect for the knowledge and rights of indigenous peoples and members of local communities, taking into account relevant international obligations and national circumstances and legislation, and bearing in mind that the General Assembly of the United Nations has approved the UN Declaration on the Rights of Indigenous Peoples
d. The full and effective participation of the interested parties, in particular, of indigenous peoples and local communities, in the actions mentioned in paragraphs 70 and 72 of the present decision
e. The compatibility of measures with the conservation of natural forests and biological diversity, ensuring that those indicated in paragraph 70 of this decision are not used for the conversion of natural forests, but instead serve to encourage the protection and conservation of these forests and the services derived from their ecosystems and to promote other social and environmental benefits
f. Actions to deal with the risks of reversal.

b. The following table shows, for each UNFCCC safeguard, , what is the national legal framework (mainly laws, policies and regulations), plans and programs, as well as the binding international agreements and treaties, which guarantee compliance with the safeguards during the three phases of the National REDD+ Strategy.

Table 90. Guatemala's legal framework and REDD+ safeguards

REDD+ safeguards	Guatemala's legal framework
a) The complementarity or compatibility of the measures with the objectives of the national forestry programs and the conventions and international agreements on the subject.	**INTERNATIONAL AGREEMENTS AND TREATIES:** ▪ United Nations Framework Convention on Climate Change (UNFCCC) ● Convention on Biological Diversity (CBD) ● Specific gender-related declarations: o Convention for the Elimination of All Forms of Discrimination against Women (CEDAW) o The binding conventions (Beijing, Belem do Pará) o United Nations Conference on Environment and Development. o United Nations Conference on Sustainable Development (Rio+20) o Johannesburg World Summit on Sustainable Development o The Cancun Agreement (FCCC/CP/2010/Add.1 decision 1 / CP.16 paragraph 72. ▪ International Covenant on Economic, Social and Cultural Rights Article 12. ▪ Universal Declaration of Human Rights. ▪ United Nations Declaration on the Rights of Indigenous Peoples. ▪ RAMSAR Convention. ▪ National Policy on Integral Rural Development (PNDRI) ▪ Energy Policy 2013-2027 ▪ National Competitiveness Agenda ▪ Communal Land Regulation ▪ National Strategy for the Sustainable Use of Firewood ▪ Policy and Regulation of Co-administration of Protected Areas ▪ Institutional Agenda for the Reduction of Vulnerability and Climate Change Adaptation and Mitigation. ▪ National Rural Extension System (SNRED) ▪ Strategic Climate Change Plan of the Ministry of Agriculture, Livestock and Food Supply (MAGA) ▪ Policy and promotion of integral livestock ▪ National Forest Landscape Restoration Strategy ▪ Institutional Plan of the Department of Commerce and Forest Industry, Strategy of Attention of Indigenous Peoples for Forest Management ▪ National Strategy for the Management and Conservation of Natural Resources in Communal Lands ▪ Interinstitutional Action Plan to Combat Illegal Logging. ▪ ▪ Forest Incentive Program for Small Land Holders (PINPEP) ▪ Law for the Promotion of Forest Management and Forest Recovery (PROBOSQUE) ▪ Institutional Climate Change Agenda of the National Forestry Institute (INAB) ▪ Family Farming and Peasant Economy Strengthening Program (PAFFEC)

REDD+ safeguards	Guatemala's legal framework
	▪ Institutional Strategy for the Attention of Indigenous Peoples in the Forest Sector of Guatemala (INAB) ▪
	NATIONAL LEGAL AND POLITICAL FRAMEWORK:
	Constitution of the Republic Article 126 "Declare reforestation a national urgency…" ▪ Framework Law on Climate Change ▪ Forestry Law ▪ Protected Areas Law ▪ K'atun 2032 National Development Plan
b) The transparency and effectiveness of national forest governance structures, taking into account national legislation and sovereignty	▪ Information Access Law ▪ Framework Law on Climate Change Article 9 National Information System on Climate Change (SNICC) ▪
c) Respect for the knowledge and rights of indigenous peoples and members of local communities, taking into account relevant international obligations and national circumstances and legislation, and bearing in mind that the General Assembly of the United Nations has approved the UN Declaration on the Rights of Indigenous Peoples	▪ Political Constitution of the Republic Article 66 ▪ Peace Agreements: Rights on Identity and Indigenous Peoples ▪ Decrees 24-2006 Law for the National Day of the Indigenous Peoples of Guatemala ▪ ▪ Framework Law on Climate Change. ▪ Law of the RIC and Regulation of Communal Lands: for the issue of land tenure. ▪ ILO Convention 169: Articles 14, 15, 16, 17, 18 and 19. ▪ National Policy on Integral Rural Development (PNDRI), pending approval). ▪ K'atun 2032, addresses: (i) Land access, tenure and productivity, (ii) Urban and rural human settlements with growth and development patterns, (iv) Sustainable Integral Land Management with a focus on water basins, (v) ▪ National Policy Proposal for Indigenous Peoples. ▪ ▪ ▪ United Nations Declaration on the Rights of Indigenous Peoples. ▪ Specific gender-related declarations: o Convention for the Elimination of All Forms of Discrimination against Women (CEDAW) o The binding conventions (Beijing, Belem do Pará) o United Nations Conference on Environment and Development. o United Nations Conference on Sustainable Development (Rio+20). o Johannesburg World Summit on Sustainable Development. o The Cancun Agreement (FCCC/CP/2010/Add.1 decision 1 / CP.16 paragraph 72.

REDD+ safeguards	Guatemala's legal framework
	▪ National Policy for the promotion and integral development of women (PNPDIM) ▪ National Strategy for the Management and Conservation of Natural Resources in Communal Lands. ▪ National Land Management Policy and Plan (still pending to be officialized). ▪ Proposed Law for Management Categories for Indigenous or Community Collective Management Areas. ▪ INAB's Indigenous Peoples Strategy.
d) The full and effective participation of the interested parties, in particular, of indigenous peoples and local communities, in the actions mentioned in paragraphs 70 and 72 of the present decision	▪ Regulation of National forest incentive programs: PINPEP, PINFOR and PROBOSQUE Law ▪ Protected Areas Law, Article 19 ▪ Energy Policy 2013-2027 -MEM-, Pillar 4 (Energy Efficiency) and 5 (Reduction of the use of firewood in the country). ▪ UN Declaration Article 32 Number 2. ▪ ILO Convention 169 on indigenous and tribal peoples. ▪ CEDAW Convention for the Elimination of All Forms of Discrimination Against Women, Article 7. ▪ BELEM DO PARÁ Convention ▪ Rio Declaration on Environment and Development. ▪ International Covenant on Economic, Social and Cultural Rights Article 12. ▪ Universal Declaration of Human Rights. ▪ Access to information according to the Constitution of the Republic of Guatemala Article 30 ▪ Information Access Law ▪ Representation of the National Council on Climate Change, Climate Change Law f, g, h, j, k, l, m. ▪ Article 23 of the Climate Change Law ▪ Municipal Code ▪ Executive Body Law ▪ Law on Development Councils. ▪ National Languages Law. ▪ Government Agreement 260-2013 (creation of Executive Gender Units). ▪ Peace Agreements
e) The compatibility of measures with the conservation of natural forests and biological diversity, ensuring that those indicated in paragraph 70 of this decision are not used for the conversion of natural forests, but instead serve to encourage the protection and conservation of these forests and the services derived from their	Political Constitution of the Republic, Article 64: natural heritage. Article 68: Lands for indigenous communities ▪ Law for the protection and improvement of the environment 68-86 ▪ Decree 114-97 Law of the Executive Body ▪ Convention on Biological Diversity 5-95 ▪ Protected Areas Law 4-89 ▪ UNFCCC decree 15-95 ▪ National Policy on Biological Diversity ▪ Forestry Law

REDD+ safeguards	Guatemala's legal framework
ecosystems and to promote other social and environmental benefits;	▪ Framework Law on Climate Change 7-2013 ▪ National Climate Change Policy ▪ National Policy on Integral Rural Development ▪ National Policy on the Biosecurity of Living Modified Organisms ▪ Law on Development Councils Systems ▪ Municipal Code, Decentralization Law and Council System Law. ▪ Regulation for Environmental Measuring, Monitoring and Control AG 60-2015 ▪ Protected Areas Law 759-90 ▪ National Policy for the Promotion and Integral Development of Women ▪ RAMSAR Convention ▪ National Wetland Policy of Guatemala ▪ ILO Convention 169 ▪ CEDAW-Article 14 of Rural Development ▪ National Water Policy (AG 517-2011) ▪ Policy for Integral Management of the Coastal Marine Areas of Guatemala ▪ K'atun 2032 National Development Plan ▪ Convention on International Trade in Endangered Species of Wild Fauna and Flora
f) Actions to deal with the risks of reversal;	▪ Framework Law on Climate Change 7-2013 ▪ Forestry Law ▪ National Climate Change Policy ▪ National Policy on Integral Rural Development ▪ Policy Framework of the Guatemalan Protected Areas System (SIGAP) ▪ PROBOSQUE Law ▪ National Firewood Strategy ▪ Strategy to Combat Illegal Logging ▪ Policy and Regulation of Co-administration of Protected Areas. ▪ Protected Areas Law ▪ Forest Fire Strategy.
g) Actions to reduce the displacement of emissions.	

On the other hand, the REDD+ Strategy implementation process also assumes, as a minimum standard, compliance with the World Bank's Environmental and Social Framework, which include:

- Environmental and Social Standard 1: Assessment and Management of Environmental and Social Risks and Impacts.
- Environmental and Social Standard 2: Labor and Working Conditions.
- Environmental and Social Standard 3: Resource Efficiency and Pollution Prevention and Management.
- Environmental and Social Standard 4: Community Health and Safety.
- Environmental and Social Standard 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement.
- Environmental and Social Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources.
- Environmental and Social Standard 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities.
- Environmental and Social Standard 8: Cultural Heritage.
- Environmental and Social Standard 9: Financial Intermediaries.
- Environmental and Social Standard 10: Stakeholder Engagement and Information Disclosure.

The following table provides a description of the relevant legal framework linked to the issues covered by the applicable World Bank Environmental and Social Standards.

Table 91. Guatemala's legal framework related to applicable World Bank Environmental and Social Standards

World Bank Environmental and Social Standard	Legal framework	Description
Environmental and Social Standard 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	**Political Constitution of the Republic of Guatemala.**	The Fundamental Charter of the State of Guatemala is based on the protection of ethnic groups. Guatemala is made up of multiple ethnicities, including indigenous groups of Mayan descent. The State recognizes, respects and promotes their ways of life, customs, traditions, forms of social organization, the use of indigenous attire in men and women, their languages and dialects.
	Convention 169 of the International Labor Organization	This agreement is established on the framework of the protection of tribal peoples in independent countries, whose social, cultural and economic conditions distinguish them from other sectors of the national community, and which are governed totally or partially by their own customs or traditions or by special legislation.
	Law on Urban and Rural Development Councils, Decree 11-2002 issued by the Congress of the Republic of Guatemala	The aforementioned law is part of a System of Development Councils, which are the main means of participation for the Mayan, Xinca and Garífuna and non-indigenous populations in public management and in the democratic planning of development, taking into account principles of national, multiethnic, multicultural and multilingual unity of the Guatemalan nation.
	Municipal Code, Decree 12-2002 of the Congress of the Republic of Guatemala	According to the mandate of the Municipal Code, it is established that the communities of indigenous peoples are forms of natural social cohesion and, as such, have the right to recognition of their juridical personality, having to register in the civil registry of the corresponding municipality, with respect to their organization and internal administration that is governed in accordance with its own standards, values and procedures, with their respective traditional authorities recognized and respected by the State, in accordance with constitutional and legal provisions. Moreover, it contains principles related to the indigenous mayorships, given that municipalities must recognize, respect and promote existing indigenous mayors, and their own forms of administration. Regulates community lands and establishes that: "The municipal government will establish, after consultation with the community authorities, the mechanisms that guarantee the members of the communities the use, conservation and administration of the community lands whose administration has traditionally been entrusted to the municipal government; in any case, the mechanisms must be based on what is indicated in Title IV, Chapter I of this Code.
Environmental and Social Standard 5: Land Acquisition, Restrictions on Land	**Political Constitution of the Republic of Guatemala**	To this end, the Political Constitution of the Republic of Guatemala protects indigenous agricultural lands and cooperatives. Lands owned by cooperatives, indigenous communities of the State, credit assistance and preferential technology, which guarantee forms of communal or collective ownership of agrarian property, as well as the family estate and low-income housing will enjoy special State protection, credit and technical assistance to guarantee their possessions and development in order to ensure a better quality of life for inhabitants.

World Bank Environmental and Social Standard	Legal framework	Description
Use and Involuntary Resettlement.	**Expropriation Law, Decree 529-2002 of the Congress of the Republic of Guatemala**	This legal instrument clearly establishes that "utility or public necessity or social interest", for the purposes of this law, means everything that tends to satisfy a collective need, whether of a material or spiritual nature. The declaration to which the object of this law refers must be made with precise reference, whenever possible, to the affected property, determining the purpose of the expropriation with terms that do not allow extending the expropriatory action to other assets than to those that are necessary to achieve the aforementioned collective satisfaction. The expropriation must be limited to the portion necessary to construct the public work or satisfy the collective need, except in the case that for its realization or financing, the expropriation of all the asset or of a larger portion of it, or of another adjacent asset, be necessary, which are extreme cases that should be established in the respective declaration.
	Municipal Code, Decree 12-2002 of the Congress of the Republic of Guatemala	The aforementioned Municipal Code establishes mandatory sessions held by the municipal councils with a view to taking into account aspects related to services, infrastructure, land use planning, urban planning and housing (Article 36). The aforementioned legal instrument is related to aspects of resettlement, by virtue of the municipality's autonomy guaranteed by the Political Constitution of the Republic. To that end, it elects its authorities and exercises through them, the government and the administration of its interests; obtains and disposes of its patrimonial resources; provides the local public services, the territorial planning of its jurisdiction, pursues its economic strengthening and issues its ordinances and regulations. For the fulfillment of its inherent purposes, it will coordinate its policies with the general State laws and, where appropriate, with the special policy of the branch to which it corresponds. No law or legal provision can contradict, diminish or distort the municipal autonomy established in the Political Constitution of the Republic; therefore, resettlement issues are aspects that should be carried out as the main agenda of local authorities, as the main objective of existing local development.
	Social Development Law, Decree 42-2001 of the Congress of the Republic of Guatemala	The purpose of this law is to create a legal framework that allows for the implementation of legal and public policy procedures to promote, plan, coordinate, execute, monitor and assess government and State actions, aimed at human development in relation to their society, family, fellow humans and environment, with emphasis on the groups of special interest. The referred law is related to aspects of resettlement from a point of view that the State should be the guarantor in providing legal norms so that the population feels benefited, safe and protected by the State, as a very important means for the State to acquire legitimacy, since the public power must be grounded on justice and equity towards the Guatemalan population, acting within the resettlement procedures based on robust legal tools and standards to promote social development.
	Law on Urban and Rural Development Councils, Decree 11-2002 of the	The System of Development Councils is the main means of participation for the Mayan, Xinca and Garífuna and non-indigenous populations in public management and in the democratic planning of development, taking into account principles of national, multiethnic, multicultural and multilingual unity of the Guatemalan nation. By these means actions

World Bank Environmental and Social Standard	Legal framework	Description
	Congress of the Republic of Guatemala	can be carried out towards positive and inclusive social results within the resettlement processes, seeking an inclusive and democratic participation.
	Agrarian Transformation Law, Decree 1551 of the Congress of the Republic of Guatemala	This is based on the constitutional guarantee of private property, an indispensable conditions for the owner to reach the highest level of development and use of his property, and, at the same time, to regulate the adequate obligations and limitations to property.
	Housing and Human Settlements Law, Decree 120-96 of the Congress of the Republic of Guatemala	The aforementioned law aims to support, strengthen, encourage and regulate the actions of the State and the inhabitants of the Republic, in order to develop housing and human settlements in such way as to establish the institutional, technical and financial conditions for families to have access to decent and adequate housing solutions.
	Land Fund Law, Decree 24-99 of the Congress of the Republic of Guatemala	The law intends to comply with the referred statements and principles, considering the practical sense of the agreements on Identity and Rights of Indigenous Peoples as well as the Socioeconomic Aspects and Agrarian Situation. In this sense, it is imperative to create a Land Fund through the corresponding legal dispositions that issue a law creating a State, decentralized, autonomous entity. Likewise, this institution has a close relationship in the aspect of resettlement, by virtue of being the governmental institution responsible for addressing requests on access to State lands, with a view to providing relocated people spatial and rights security and access to individual or collective properties, in accordance with the Land Fund Law.
	Cadastral Information Registry Law, Decree 41-2005 of the Congress of the Republic of Guatemala	Said law mainly contains the creation of the Cadastral Information Registry as a competent authority in land-related matters, whose purpose is to establish, maintain and update the national land registry, as established in this law and its regulations. All their acts and records are public. Interested parties have the right to obtain, in a timely fashion, formally by law and without limitation, reports and copies.
Environmental and Social Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources.	**Political Constitution of the Republic of Guatemala**	The Political Constitution of the Republic of Guatemala contains the mandate of reforestation. Therefore, it declares the national reforestation of the country and the conservation of the forests a matter of national urgency and social interest. The law will determine the form and requirements for the rational exploitation of forest resources and their renewal, including resins, rubber, uncultivated wild vegetable products and other similar products, and will promote their industrialization. The exploitation of all these resources will correspond exclusively to Guatemalan individual or legal persons. Forests and vegetation on the banks of rivers and lakes, and in the vicinity of water sources, will enjoy special protection.

World Bank Environmental and Social Standard	Legal framework	Description
	Forestry Law, Decree 101-96	By the present law, reforestation and forest conservation are declared of national urgency and social interest, promoting forest development and its sustainable management, by fulfilling the following objectives: a) Reducing the deforestation of forest land and the expansion of the agricultural frontier, by increasing the use of land according to its vocation and considering their soil, topography and climate characteristics; b) Promoting the reforestation of forest areas currently without forests, to provide the country with the forest products it requires; c) Increasing the productivity of existing forests, subjecting them to rational and sustained management according to their biological and economic potential, encouraging the use of industrial systems and equipment that achieve the greatest added value to forest products; d) Supporting, promoting and encouraging public and private investment in forestry activities to increase the production, trade, diversification, industrialization and conservation of forest resources; e) Conserving the country's forest ecosystems, through the development of programs and strategies that promote compliance with the respective legislation; and f) Encouraging the improvement of the living standards of the communities by increasing the provision of forest goods and services to meet the needs of firewood, housing, rural infrastructure and food.
	Protected Areas Law, Decree 4-89 of the Congress of the Republic of Guatemala	The law declares biodiversity conservation as a matter of national interest since it is an integral part of the Guatemalan natural heritage, therefore, its conservation is also an object of the utmost importance and is achieved mainly through duly declared and well managed protected areas.
	Law for the Promotion of the Establishment, Recovery, Restoration, Management, Production and Protection of Forests in Guatemala (PROBOSQUE) Decree 2-2015	The purpose of this law is to increase the country's forest cover through the creation and application of the Incentive Program for the Establishment, Recovery, Restoration, Management, Production and Protection of Forests, through which the incentives contemplated in this law will be granted. This program, for the purposes of this Law, is called PROBOSQUE.
	Forest Incentives Program for Small Forestry and Agroforestry Land Owners (PINPEP). Decree 51-2010 of the Congress of the Republic of Guatemala.	The purpose of this law is to create a Forest Incentives Program for Small Forestry and Agroforestry Land Owners, which may be abbreviated as PINPEP, for application purposes.

World Bank Environmental and Social Standard	Legal framework	Description
	Regulation for the use of mangroves, Resolution 01.25.98. of the National Forestry Institute.	The present regulation dictates the norms for the suitable application of the Forest Law regarding the use of trees of the mangrove ecosystem, as an integral part of the sustained management of this type of ecosystems.
	Forest Incentives Program for Small Forestry and Agroforestry Land Owners (PINPEP), Resolution JD. 01.12.2011	This regulation develops the provisions contained in the Forest Incentives Law for owners of small areas of forest or agroforestry land, Decree 51-2010 of the Congress of the Republic of Guatemala, regulating its procedures and norms for stakeholder decision-making.
	Regulation for the Management of Plantations and Pinabete Seed Production Areas	The aforementioned regulation governs the Forest Incentives Program implementation, based on its Strategic Plan, with a view to maintaining and improving sustainable forest production, including lands suitable for forests that currently do not have them by establishing and maintaining forest plantations or allowing natural regeneration.
	PROBOSQUE Law Regulation, Resolution JD.03.28.2017, National Forestry Institute (INAB).	It aims to regulate the registration of plantations, seed producing areas and nurseries of *Abies guatemalensis Rehder* and *Abies religiosa* (hunth) Schltd, as well as the use of products and by-products of said species; with the aim to preserve the country's natural heritage.
	Rules for the Granting of Concessions for the Use and Management of Renewable Natural Resources in the Multiple Use Zone of the Maya Biosphere Reserve	The purpose of this recent regulation is to govern the procedures of the PROBOSQUE Law, in compliance with what is established by its decree, and it is also an instrument of general law observance and application throughout the national territory. The aim of the aforementioned regulation is to facilitate, within the existing legal framework, the mechanism for awarding concessions for the use and management of renewable natural resources in the Multiple Use Zones (MUZ) of the Maya Biosphere Reserve (MBR).

World Bank Environmental and Social Standard	Legal framework	Description
	Regulations for the Administration of Forest Recovery Guarantees in Protected Areas	The purpose is to monitor forest recovery guarantees, with the aim of ensuring that any individual or group that makes use of renewable resources complies with the corresponding forest recovery commitment, all within the framework of the protected areas that make up the SIGAP.
Environmental and Social Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources.	**Political Constitution of the Republic of Guatemala**	According to the constitutional mandate, the conservation, protection and improvement of the nation's natural heritage is declared of national interest. The State will encourage the creation of national parks, reserves and natural refuges, which are inalienable. A specific law will guarantee their protection and that of the fauna and flora therein. In addition, it emphasizes that the State, the municipalities and the inhabitants of the national territory are obliged to promote social, economic and technological development that prevents the contamination of the environment and maintains the ecological balance. All the necessary norms will be established to guarantee that the use of the fauna, flora, earth and water be carried out rationally, avoiding its depletion.
	Convention on Biological Diversity (CBD)	It is a legally binding international treaty with three main objectives: the conservation of biological diversity, the sustainable use of its elements and the fair and equitable sharing of the benefits derived from the use of genetic resources. Its general objective is to promote measures that lead to a sustainable future. The conservation of biological diversity is a common interest of all humankind. The CBD covers biological diversity at all levels: ecosystems, species and genetic resources. It also covers biotechnology through the Cartagena Protocol on Biosafety. In fact, it covers all possible domains that are directly or indirectly related to biological diversity and its role in development, from science, politics and education to agriculture, business, culture and much more.
	RAMSAR Convention	The Convention on Wetlands of International Importance especially as Waterfowl Habitat, known as the Ramsar Convention, was signed in the city of Ramsar, Iran, on January 18, 1971 and entered into force on December 21, 1975. Its main objective is "the conservation and wise use of wetlands through local, regional and national actions and through international cooperation, as a contribution to the achievement of sustainable development throughout the world".
	Convention on the Protection of the World, Cultural and Natural Heritage - UNESCO Heritage	The convention is focused on safeguarding those cultural or natural heritage assets that present an exceptional interest that requires them to be conserved as elements of the world heritage of the entire humankind. In addition, the main guidelines of the convention consider as "natural heritage", those "assets or sites" that have any of the following conditions: • natural monuments constituted by physical and biological formations or by groups of these formations that have an outstanding universal value from an aesthetic or scientific point of view,

World Bank Environmental and Social Standard	Legal framework	Description
	Convention on International Trade in Endangered Species of Wild Fauna and Flora **Protected Areas Law, Decree 4-89 of the Congress of the Republic of Guatemala** **Forestry Law, Decree 101-96 of the Congress of the Republic of Guatemala** **Environment Protection and Improvement Law, Decree 68-86 of the Congress of the Republic of Guatemala**	• geological and physiographic formations and strictly delimited areas that constitute the habitat of endangered species, animal and plant, that have an outstanding universal value from the aesthetic or scientific point of view, • Natural sites or strictly delimited natural areas, which have an outstanding universal value from the point of view of science, conservation or natural beauty, CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) is an international agreement between governments. Its purpose is to ensure that international trade in specimens of wild animals and plants does not constitute a threat to their survival. The law declares biodiversity as an integral part of the Guatemalan natural heritage, therefore, its conservation is also an object of the utmost importance and is achieved mainly through duly declared and well managed protected areas. By the present law, reforestation and forest conservation are declared of national urgency and social interest, by which forest development and its sustainable management will be promoted. It establishes the principle that the State, the municipalities and the inhabitants of the national territory will promote social, economic, scientific and technological development that prevent the contamination of the environment and maintains the ecological balance.
Environmental and Social Standard 1: Assessment and Management of Environmental and Social Risks and Impacts.	**Political Constitution of the Republic of Guatemala**	According to the constitutional mandate, the conservation, protection and improvement of the nation's natural heritage is declared of national interest. The State will encourage the creation of national parks, reserves and natural refuges, which are inalienable. A specific law will guarantee their protection and that of the fauna and flora therein. In addition, it emphasizes that the State, the municipalities and the inhabitants of the national territory are obliged to promote social, economic and technological development that prevents the contamination of the environment and maintains the ecological balance. All the necessary norms will be established to guarantee that the use of the fauna, flora, earth and water be carried out rationally, avoiding its depletion. This convention includes two main aspects related to environmental instruments, since consultation and participation are the reason for Convention 169. It is not uncommon for the aforementioned agreement to have so many repercussions in

World Bank Environmental and Social Standard	Legal framework	Description
	Convention 169 of the International Labor Organization	Guatemala, and especially in Latin America, because it is a region where indigenous peoples have the worst socioeconomic and labor indicators. It should be noted that the early consultation provided for in the convention indicates mainly which legislative and administrative measures may directly affect indigenous peoples, or those related to the exploitation and use of mineral or underground resources in the territories where they live. The latter has been the most debated issue in the region. But these debates have the virtue that they aim to achieve solutions.
	Protected Areas Law, Decree 4-89 of the Congress of the Republic of Guatemala	The law establishes that, for activities within protected areas, public or private companies that currently have, or that might develop future facilities or commercial, industrial, tourism, fishing, forestry, agricultural, experimental or transport activities within the perimeter of the protected areas, will enter into a contract with CONAP, which will establish the conditions and rules of operation, determined by an environmental impact study, presented by the interested party to the National Council of Protected Areas, whose opinion will be sent to the National Environment Commission for its assessment, as long as its activity is compatible with the uses foreseen in the master plan of the unit of conservation in question.
	Environment Protection and Improvement Law, Decree 68-86 of the Congress of the Republic of Guatemala	In terms of environmental assessment, the law dictates that any project, work, industry or any other activity that, by its nature, may deteriorate renewable natural resources, the environment, or introduce harmful or notorious modifications to the landscape and the cultural resources of the national heritage, will require, previously to its development, an assessment impact study made by experts on the matter and approved by the Environment Commission. The public official who fails to require the environmental impact study in accordance with this article will be personally responsible for breach of duties, as well as the individual who fails to comply with the EIS will be sanctioned with a fine of Q 5,000.00 to Q 100,000.00. In case of failure to comply with this requirement within six months of being fined, the business will be closed as long as it does not comply.
	Municipal Code, Decree 12-2002 of the Congress of the Republic of Guatemala.	Part of the powers of the municipality. The own competences must be fulfilled by the municipality, by two or more municipalities under agreement, or by a commonwealth of municipalities, especially for the construction permits, public or private, in the district of the municipality.
	Framework Law for The Regulation of Vulnerability Reduction, Compulsory	The referred legal body and the fulfillment of this mandate aims to provide the centralized, decentralized and autonomous State agencies the capacities, instruments and tools to contribute to the process of forced climate change adaptation and mitigation, contributing to the balance of natural goods and environmental services, promoting their best use for sustainable development aimed at improving the living conditions of the entire Guatemalan population.

World Bank Environmental and Social Standard	Legal framework	Description
	Adaptation to Climate Change Impacts and Mitigation of Greenhouse Gases. **Decree 7-2013 of the Congress of the Republic of Guatemala** **Regulation of Environmental Measuring, Monitoring and Control Governing Agreement 137-2016** **Regulation of Wastewater Discharge and Reuse and Sludge Disposition, Governmental Agreement 236-2006** **Operational Guide for the Implementation Indigenous Peoples Consultations**	The law aims to comply with the Environment Protection and Improvement Law, contained in Decree 68-86 of the Congress of the Republic of Guatemala, and states that the State, municipalities and inhabitants of the national territory should promote social, economic, scientific and technological development to prevent the contamination of the environment and maintain ecological balance; and, for its part, the Law of the Executive Body, Decree 114-97 of the Congress of the Republic of Guatemala, establishes that it is the function of the Ministry of Environment and Natural Resources to formulate and execute the policies related to its branch, comply with and enforce the regime concerning conservation, protection, sustainability and improvement of the environment and natural resources in the country and the human right to a healthy and ecologically balanced environment. The purpose of this regulation is to establish the criteria and requirements that must be met for the discharge and reuse of wastewater, as well as for the disposal of sludge. This is done so that, through the treatment of these wastes, it be possible to establish a continuous process that allows: a) Protecting the water receiving bodies from the impacts of human activity. b) Recover receiving bodies of water from the process of eutrophication c) Promote the development of water resources with an integrated management vision. The Operative Guide for the implementation of indigenous peoples consultation is a tool for the official in in charge of carrying out a consultation as a result of the established dialogues. In addition, it abides by the Constitutional Court ruling in the Oxec and Oxec II cases, in order to activate the institutional framework of the State to comply with ILO Convention 169. This guide was developed by the Ministry of Labor and Social Welfare, and was built together with the most vulnerable sectors of the country, and discussed with the relevant government sectors. It should be mentioned that the guide is a document that does not have a legal instrument that has approved it, and is only an administrative tool that guides public administration, within the framework of its commitments or procedures regarding consultation procedures.
Environmental and Social Standard 8: Cultural Heritage.	**Political Constitution of the Republic of Guatemala** **Convention for the Protection of the World, Cultural and Natural Heritage**	It is based on the constitutional mandate for the protection of cultural heritage, since it is part of the cultural, paleontological, archaeological, historical and artistic heritage of the Nation and are under the protection of the State. It prohibiting its alienation, export or alteration except in the cases determined by law. An international treaty that recognizes the obligation to identify, protect, conserve, rehabilitate and transmit to future generations the cultural and natural heritage located in its territory. It will seek to act with that object by means of its own efforts and using the maximum of resources at its disposal, and, if necessary, through international assistance and cooperation at its disposal, especially with regard to the financial, artistic, scientific and technical aspects.

World Bank Environmental and Social Standard	Legal framework	Description
	Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transport of Ownership of Cultural Property	International treaty in which the States Parties recognize that the illegal import, export and transfer of ownership of cultural property is one of the main causes of the cultural impoverishment of countries and that international collaboration is one of the most effective means to protect their respective cultural assets against all dangers that those acts entail.
	OAS Convention on the Protection of the Archeological, Historical, and Artistic Heritage of the American Nations, Convention of San Salvador	International treaty whose purpose is the identification, registration, protection and monitoring of the assets that make up the cultural heritage of the American nations, in order to: a) prevent the illegal export or import of cultural goods; and b) promote cooperation among the American States for the mutual knowledge and appreciation of their cultural assets.
	Central American Convention for the Restitution and Return of Archaeological, Historical and Art Objects	International treaty in which the States Parties undertake individually and, as the case may be, jointly to coordinate actions and resources to combat the illegal traffic of cultural goods, as well as to coordinate actions to claim, from third countries, the return and restitution of the cultural heritage that has been abducted or illegally exported.
	Law for the Protection of the Cultural Heritage of the Nation Decree 26-97 and its modifications reformed by Decree 81-98 of the Congress of the Republic of Guatemala.	Said law regulates the protection, defense, investigation, conservation and recovery of the assets that make up the cultural heritage of a nation. The State is therefore responsible for taking these actions through the Ministry of Culture and Sports.
	Protective Law of the City of Antigua Guatemala	The aforementioned law declares the protection, conservation and restoration of La Antigua Guatemala and surrounding areas of public utility and national interest that integrate with it a single unit of landscape, culture and artistic expression.

The Program's Environmental and Social Commitment Plan, presented in a draft version as an Annex, includes the actions and measures to be implemented by the Program related to compliance with the World Bank's Environmental and Social Standards.

Table 92. ESS standard and observations in the ERP framework.

Standard	Observations
ESS2. Labor and Working Conditions **The ESS2 recognizes the importance of creating jobs and generating income in the search for poverty reduction and inclusive economic growth. Borrowers can promote appropriate relationships between workers and management, and improve the development benefits of a project by treating project workers fairly and providing safe and healthy working conditions.**	Although the Program does not foresee constructions, in the case of contracting technicians or specialized workforce for the preparation or assistance to the project, the Government of Guatemala must meet the requirements established on ESS2.
ESS3. Resource Efficiency and Pollution Prevention and Management **1. The ESS recognizes that urbanization and economic activity often generate air, water and earth pollution, and consume finite resources in a way that can endanger people, ecosystem services and the environment at local, regional and global level. Atmospheric concentrations of current and projected greenhouse gases (GHGs) threaten the well-being of current and future generations. At the same time, the most efficient and effective use of resources and the prevention of pollution and GHG emissions, as well as mitigation technologies and practices, have become more accessible and affordable.** **2. This ESS specifies the requirements to address efficiency in the use of resources and the prevention and management of pollution throughout the project cycle in accordance with the GIIP**	Review and analyze project activities for energy and water use efficiency, for good management of agriculture and the best practices for water pollution management or soil degradation and pesticide management.
ESS4 Community Health and Safety. Recognizes that the activities, equipment and infrastructure of the project can increase the community's exposure to risks and impacts. In addition, communities that already face the impacts of climate change may also experience an acceleration or intensification of those impacts due to project activities	Complete the assessment of social and environmental risks and impacts derived from the implementation of the ERP projects.

In the REDD+ strategy formulation framework, Guatemala has developed the Social and Environmental Strategic Assessment (SESA) and the Environmental and Social Management Framework (ESMF)[212] including a grievance mechanism based on the FCPF safeguard requirements and the World Bank's Environmental and Social Standards, which have been prepared in a participatory process involving 611 stakeholders (242 women and 369 men) in 5 regions of the country. The objective of the assessment was to identify and prioritize possible impacts (adverse and positive) derived from the implementation of Guatemala's REDD+ options and activities[213]. The process of dialogue and participation performed is described in Section 5 of this document[214].

The SESA[215] is derived from the World Bank's environmental assessment (EA) requirements. It is intended to be an inclusive process through which the country, with the participation of all potentially affected stakeholders, seeks to "identify potential impacts, as well as opportunities," among different REDD+ strategic options.

The SESA concluded with the development of an Environmental and Social Management Framework (ESMF) as a means to manage environmental and social impacts as countries develop their national REDD+ strategies.

In compliance with the new Environmental and Social Framework of the World Bank, the prepared safeguard instruments will be adjusted, and a Stakeholder Engagement Plan is being developed. These instruments will be included in the Environmental and Social Commitment Plan (ESCP), whose draft in included in the Annex section to be signed between the Government of Guatemala and the World Bank, which will summarize the measures and significant actions for the Program to comply with the WB Environmental and Social Standards in a satisfactory manner. These safeguard instruments will be adjusted to the new Environmental and Social Management Framework in the final version of the ERPD.

The potential adverse environmental and social impacts derived from the National REDD+ Strategy, which were identified through the SESA, and the specific measures to reduce, mitigate or offset them are presented below.

Considering that the ESMF is a product of the SESA, it is organized by option following the same structure and rationale used during the SESA. Through the SESA and the stakeholders engagement process , the potential impacts were identified and prioritized (showing the link with the proposed REDD+ activities and actions), and the potential mitigation measures were discussed with the relevant parties.

In Annex VIII, tables are presented to explain the link to each of the seven strategic options of the National REDD+ Strategy and in accordance with the analysis executed in the SESA process.

[212]Environmental and Social Management Framework http://www.marn.gob.gt/s/redd_/paginas/Salvaguardas

[213]The participatory process for the formulation of the Social and Environmental Strategic Assessment (SESA), the Environmental and Social Management Framework (ESMF) and the Grievance Redress Mechanism (GRM) can be found in the "Systematization of consultation and participation process carried out for the SESA in Guatemala. Design and preparation of the Social and Environmental Strategic Assessment (SESA), the Social and Environmental Management Framework (ESMF) and the Grievance Redress Mechanism (MAR)".

[214]Check
http://www.marn.gob.gt/s/redd_/paginas/Apoyo_a_la_preparacin_metodolgica_facilitacin_y_sistematizacin_de_talleres_locales_para_la_Evaluacin_Estratgica_Social_u_Ambiental_EESA_y_el_Mecanismo_de_Atencin_a_Reclamos_MAR
http://www.marn.gob.gt/s/redd_/paginas/Apoyo_a_la_preparacin_metodolgica_facilitacin_y_sistematizacin_de_seis_talleres_regionales_para_MGAS_y_MAR

[215]See the SESA at http://www.marn.gob.gt/s/redd_/paginas/Salvaguardas

The ESMF also presents measures to enhance the positive environmental and social impacts derived from the implementation of the REDD+ strategy options, and which were identified and prioritized through the SESA[216].

Environmental and social management instruments

In accordance with the World Bank's Environmental and Social Framework, ERP formulation includes the following instruments:

a) Environmental and Social Commitment Plan (ESCP).
b) Stakeholder Engagement Plan (SEP).
c) Environmental and Social Management Framework (ESMF)
d) Indigenous Peoples Planning Framework (IPPF)
e) Procedural Framework
f) Framework for Involuntary Resettlement (if there are economic losses)

The ESCP, whose draft version is attached as an Annex comprises a summary of the measures and actions to be implemented to address the environmental and social risks and impacts of the Program. This ESCP will be the basis for the subsequent monitoring of the environmental and social performance of the Program.

The ESCP also includes a summary of the organizational structure that will be established and maintained to implement the actions agreed upon, taking into account the different roles and responsibilities and the agencies responsible for executing the Program. It will also contain information on the systems, resources and personnel that will carry out safeguards monitoring.

It should be noted that, in compliance with the provisions of the Law for the Protection of the Cultural Heritage of Guatemala and the Environmental and Social Standard 8 on cultural heritage, as part of the Environmental and Social Management Framework (ESMF), the procedure for fortuitous findings will be implemented, which aims to protect cultural heritage in the event of adverse impacts from the Program activities.

Regarding the SEP, whose advanced draft is included in the Annex, it describes the methods and timing of stakeholder engagement during the entire program cycle, distinguishing between parties affected by the program and other interested parties. The scope of the information and the time of publication will be detailed, as well as the type of information that will be requested and published. The SEP will determine how the communication with stakeholders will be managed during the readiness and execution phases of the Program, describing the measures that will be used to eliminate obstacles to participation and the way in which the opinions of affected groups will be obtained. The SEP will be agreed with the interested parties.

Given that the specific project sites have not yet been identified, the SEP describes the general principles and the current status regarding stakeholder identification, as well as the plan for the participation process to be implemented once the specific activities and their location are defined.

Stakeholder consultations carried out so far captured the viewpoints and perceptions of people who may be affected or who have an interest in this forestry project, and provides channels for these opinions, questions and recommendations to be taken into account as contributions to a design and implementation of improved projects that would prevent or reduce adverse impacts and increase benefits.

The SEP will be updated in the upcoming dialogue and participation activities in July and August 2019 described in the SEP section.

Both documents, the ESCP and the SEP, are attached as ERPD Annexes.

The Program ESMF will present the guidelines that should be applied by all actors/sectors that carry out REDD+ actions, in order to ensure that the REDD+ actions to be implemented are environmentally sustainable in accordance

[216] http://www.marn.gob.gt/s/redd_/paginas/Salvaguardas

with the provisions of the national legislation and the guidelines established in the applicable World Bank Environmental and Social Standards.

The guidelines established in the ESMF are structured in the following three phases that respond to the REDD+ implementation cycle:

A. REDD+ actions pre-assessment
B. REDD+ actions readiness
C. REDD+ actions implementation

The pre-assessment will consider potential negative environmental impacts, whether direct or indirect, regional or cumulative in nature, including the environmentally related social and cultural impacts of REDD+ actions. Operations will be classified according to the level of potential impact, so that environmental safeguards and appropriate environmental review requirements can be defined.

Depending on the classification of REDD+ actions and the provisions of national legislation, an environmental assessment must be carried out. Which according to the degree of impact may be an environmental impact assessment (EIA), strategic environmental assessment (SEA), sociocultural analysis (SA), environmental analysis and environmental audit.

Any assessment carried out must comply with the provisions of national legislation and the World Bank's Environmental and Social Standards.

An Environmental and Social Management Plan will be part of the environmental and social impact assessment and will describe the mitigation measures and monitoring requirements agreed during the environmental assessment and will establish the framework for its application in the later stages of the project.

The ESMPs will include:

a) A presentation of the key impacts and risks of the proposed operation, both direct and indirect;
b) The design of the environmental / social measures that are proposed to avoid, minimize, compensate and/or mitigate the key impacts and risks, both direct and indirect;
c) The institutional responsibilities related to the implementation of such measures, including, if necessary, capacity building and training;
d) Schedule and allocated budget for the execution and management of such measures; consultation or participation program agreed upon for the project;
e) The framework for the supervision of environmental and social risks and impacts throughout the execution of the project, including clearly defined indicators, monitoring schedules, responsibilities and costs.

The REDD+ projects that are part of the early activities are implemented with the rationale of the project cycle in the Voluntary Carbon Market under the Climate, Community and Biodiversity Standards (CCBS) and the VCS (Verified Carbon Standard) administered by Verra, whose framework implements the environmental and social management procedures required by such standards.

The Guatecarbon Project also carried out a risks and impacts on the community and biodiversity assessment. All are small-scale activities, since the main activity is forest management. The local activities aim to boost the economy with the generation of income alternatives that help to remove the pressure on illegal forest exploitation. These activities are framed in specific plans, in certification standards, and are under the approval and supervision of CONAP[217].

Project activities contribute positively to the High Conservation Values due to the elimination of threats to the MBR, and through the maintenance of the forest habitat and ecosystem in general. No identified High Conservation Value is negatively affected by the project.

[217] https://www.vcsprojectdatabase.org/#/project_details/1384

The Forest Certification System with the RA Cert/FSC standards also works as a double guarantee to avoid negative impacts in the Project area. The standards include detailed guidelines on forest benefits, assessment and mitigation of potential environmental impacts, and the development and validation of sustainable management plans.

The activities of the Guatecarbon Project foresee the non-affectation of High Conservation Value areas, in addition to that, several of the conservation measures executed are circumscribed as part of the FSC certification responsible forest management compliance.

Within the conditions of the baseline, monitoring of biodiversity includes working with communities, which has yielded good results. Monitoring is designed with the participation of the villagers who have been trained to carry out the work, with the purpose recognizing the importance of conservation.

The assessment of the Lacandón Project [218] did not identify negative impacts on stakeholders. The project represents an example of good practices and innovative approaches, which can be adopted by other communities not participating in the project.

The project does not anticipate negative direct or indirect impacts on biodiversity, as the interventions were designed to promote improvements in environmental management, avoiding deforestation and degradation and promoting the regeneration of degraded forests.

Within the FIP formulation framework, the specific safeguards instruments that will govern its implementation are being developed, among which are a Framework for Specific Environmental and Social Management, a Planning Framework for Indigenous Peoples and an Involuntary Resettlement Policy Framework, which will comply with the requirements of the World Bank Environmental and Social Standards and the World Bank operational policies.

Indigenous Peoples Planning Framework (IPPF)

The implementation of the National REDD+ Strategy in Guatemala and the ERP projects will involve Indigenous Peoples (IPs) and indigenous communities. In order to ensure that its implementation does not cause adverse impacts on IPs, and positive impacts are maximized, an Social Environmental and Strategic Assessment (SESA) was developed, which included the participation of indigenous communities, generating relevant inputs for the preparation of this document.

During the SESA, Operational Policy 4.10 of the World Bank has been considered which establishes the preparation and implementation of an Indigenous Peoples Planning Framework (IPPF) to establish the principles, criteria and instruments to address the specific impacts that may be generated during implementation.

The purpose of the IPPF is to provide a guide for the participating units and organizations in the execution of REDD+ actions, avoid negative impacts and maximize the potential benefits to indigenous peoples, in accordance with Environmental and Social Standard 7 of Indigenous Peoples and the national legislation.

The ESMF and the IPPF that will be elaborated provide a summary of the potential adverse impacts on indigenous peoples in Guatemala. These impacts were extracted from the SESA, through which the potential adverse impacts prioritized for the implementation of the REDD+ options were identified.

All projects proposed for Bank financing in whose area of influence there are indigenous peoples require a process of dialogue, engagement and friendly negotiation with the affected indigenous people, independently of what is required by the national legislation. This should allow for a genuine exchange to achieve a satisfactory degree of support from the indigenous people affected by the project and the associated mitigation and compensation measures. These processes (which must be duly documented) must be socio-culturally appropriate and include design, analysis of alternatives, preparation, due diligence, and project execution. In addition, they must be consistent with the legitimate decision-making mechanisms of the affected indigenous peoples or groups.

[218]https://www.vcsprojectdatabase.org/#/project_details/1541

It is necessary to verify and document that the affected indigenous communities have expressed their full support to the project, paying special attention to the social assessment and the minutes and the result of the prior, free and informed consultation with the affected indigenous communities. Projects with potential adverse impacts on indigenous peoples must have agreements with indigenous peoples or affected groups.

The IPPF presents the guidelines for the development of indigenous peoples' plans (IPPs) in Guatemala to be implemented during REDD+ actions.

For its part, the Forest Governance and Diversification of Livelihoods Project (FIP) developed an Indigenous Peoples Planning Framework (IPPF) in compliance with the guidelines of the World Bank's Environmental and Social Standard 7 on Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities.

The National Forestry Institute (INAB) will be the executor of the Project, who will also have the strategic support of the National Council of Protected Areas (CONAP) and the document also briefly describes its perspective on forest administration by indigenous peoples.

The objective of the analysis that leads to the IPPF is:

- Avoid the exclusion of the indigenous peoples who are in the intervention areas of the Project. To do that, it may be necessary to define prioritization criteria with a cultural relevance approach, so that the Project is able to identify subprojects that benefit indigenous peoples, even considering affirmative action measures.
- Promote development with the identity of the indigenous peoples participating in the Project, which may require specific measures to ensure that the design and implementation of the project responds to the interests, characteristics, values, knowledge and identity of the community.
- Avoid negative impacts on indigenous communities, whether the community is the participant or beneficiary of the subproject; but also, if the indigenous community does not participate directly in the Project; but could be affected directly or indirectly by it. An example of this situation could be negative impacts on land uses and land tenure, access to natural resources, loss of livelihoods, food security, generation of conflicts between communities or within the community.

The IPPF identifies possible risks and impacts from excluding indigenous peoples from the project, some measures to mitigate them and establishes the procedures and scope for the eventual formulation of Indigenous Peoples Plans during implementation.

In the Project execution, it will be ensured that the Indigenous Peoples, women's groups and local communities show a strong ownership of the components and a high level of participation dialogues on the implementation, participation in the activities and access to the benefits.

Framework for Involuntary Resettlement / Procedural Framework

The Involuntary Resettlement Policies Framework (IRPF), whose purpose is to establish the guidelines and procedures that will steer the measures to be taken in the event that it is necessary to acquire or use land, either totally or partially, in the framework of REDD+ actions, and, consequently, prepare an Involuntary Resettlement Plan (IRP).

The IRPF establishes the principles and procedures to be followed if it is determined that the REDD+ actions will cause an involuntary resettlement. It should be noted that the Project will exclude the expropriation of land, but could, although it seeks to avoid it, cause economic losses.

The IRPF establishes the norms and procedures to address involuntary resettlements according to the scope established by the World Bank's Environmental and Social Standard 5 on Land Acquisition, Restrictions on Land Use and Involuntary Resettlement, which may affect the population in the context of REDD+ implementation.

The Guatecarbon Project has a mechanism for the management of land invasions in the SIGAP protected areas. It states that CONAP, as the national guarantor of the Guatemalan System of Protected Areas, before an any usurpation

of a protected area, tries to dialogue with people and let them know that they are in protected areas and ask them to leave and not degrade it. The general procedure is described in the PDD in Section 5.4 Resettlement

FIP projects

The Procedural Framework for the Governance Strengthening and Diversification of Livelihoods Projects was developed in compliance with OP 4.12 and in line with the World Bank's Environmental and Social Standard 5 on Land Acquisition, Restrictions on Land Use and Involuntary Resettlement. The objective of the Procedural Framework is to establish a process by which the members of the potentially affected communities participate in the design of the project components, determining the necessary measures to achieve the objectives of the resettlement policy, specifically the eventual new rules of access to resources that lead to a restriction of access to natural resources and the implementation and supervision of the relevant project activities.

In the Procedural Framework for the Governance Strengthening and Diversification of Livelihoods Project, exclusion criteria are established for social, ecological, indigenous population and gender reasons. With regard to social exclusions, we can highlight the non-financing of activities that:

- Involve displacement of rural or indigenous populations
- Involve or encourage invasions of State, municipal, communal and private lands
- Promote agrarian conflicts linked to land property and tenure
- Involve evictions and/or resettlement of human populations

It is worth noting that none of the activities of the project involves people resettlement risks. The possibility that the activities of the Project may represent a risk of displacing rural or indigenous populations was analyzed and the conclusion is that there is no possibility of this whatsoever. First, because none of the activities promotes changes in land ownership, nor do them encourage invasions of State, municipal, communal and private lands. In addition, it is important to mention that in the 5 risk analysis workshops held between August and September 2018, in the different regions of the country, none of the actors from the public sector, private sector, local governments, communities, indigenous peoples and representatives of grassroots organizations expressed the possibility that might occur with the implementation of the Project's activities. The only way that such a risk could occur is if the Project were to carry out sanitation measures in a protected area and, for that purpose, this protected area would have evacuated and any human population would be resettled, however, no activity of this type has been planned for the Project.

Only the creation and strengthening of control and monitoring centers with an early warning system approach related to deforestation and degradation could imply stricter restrictions on the use of natural resources. To this end, mitigation measures are presented in the ESMF, MP and the IPPF.

To ensure compliance with the implementation of these mitigation measures and ensure that during Project implementation, no activity that could restrict access and use of natural resources to indigenous and non-indigenous population will be executed, the Executor will send a compliance report to the Bank every six months regarding the World Bank's Environmental and Social Standard 7 on Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities.

Institutional arrangements for safeguards

The Interinstitutional Coordination Group (ICG) has been the main coordinator of the National REDD+ Strategy readiness phase.

The ICG includes a political level (made up of Ministers, Secretary and Manager) and a technical one. Through this technical group, the Directorates, Departments and Units related to Climate Change, Indigenous Peoples, Gender, GIS and others, coordinate efforts with multiple stakeholders from the public sector, private sector, academia, Indigenous Peoples, NGOs, Municipalities, Peasant Organizations, civil society, women's groups, among others.

In addition, the ICG can also invite officials from other State institutions, the private sector, academics, organized civil society, and International Cooperation entities, who will participate as observers and/or advisers, in the meetings held, provided that their competencies have relation with any of the topics to be discussed in the ICG agenda.

Regarding the implementation of the safeguard instruments, it is estimated that the ICG has a solid legal and institutional framework to supervise its implementation in its capacity as lead entity. These institutions, through the ICG, have the responsibility to ensure that the actions in the field/projects that are incentivized, comply with what is defined in the Framework.

In that sense, the roles and responsibilities of the framework implementation will be governed by the thematic competence of each of the institutions that are part of the ICG.

MARN will be the executing organization that will coordinate efforts with the other members of the ICG (MAGA, CONAP, INAB). Each one of the ICG members will have a Climate Change Unit in charge of implementing the activities according to their competence.

14.2 Description of arrangements to provide information on safeguards during ER Program implementation

Safeguards and other non-carbon related variables are a set of general principles, so countries should be in charge of interpreting their scope and purpose, and implement them according to their own context.

Based on the above, it was defined that the generalities of the non-carbon variable monitoring system for the country are the following[219]:

i. It will be built on existing systems at the national level. It is already being done.
ii. Each institution will be responsible for monitoring the variables it has already been measuring.
iii. The information generated and collected will be systematized and standardized to be inserted into a platform that integrates all the data.

Based on this, the non-carbon variables that are already being measured by the different ICG institutions were identified, although not necessarily in the REDD+ context. The variables taken into account are related to the seven Cancun Safeguards and its management.

For the elaboration of this matrix, it was also necessary to take as reference the document of the 2015 National Safeguards Approach, from which the twenty progress indicators corresponding to the seven Cancun Safeguards were extracted.

Table 93. Progress indicators for each REDD+ safeguard

REDD+ safeguards	Progress indicators
a) The complementarity or compatibility of the measures with the objectives of the national forestry programs and the conventions and international agreements on the subject.	• Number of approved legal instruments that make the implementation of REDD+ measures feasible. • Number of developed legal instruments that make the implementation of REDD+ measures feasible. • Number of standards, programs, plans and strategies that materialize the international conventions ratified in this matter and that make the REDD+ measures feasible and makes the country compliant within the international context.
b) The transparency and effectiveness of national forest governance structures, taking into account national legislation and sovereignty	• Number of stakeholders involved in the design, construction and implementation of the information system (REDD+) - (ICG, GBByCC, National System of Development Councils, Municipalities).

[219]Governance Framework for the National Monitoring, Reporting and Verification System of the LULUCF Sector in Guatemala. Proposal of the Interinstitutional Coordination Group (ICG) and the Interinstitutional Group for the Monitoring of Forests and Land Use (GIMBUT). Climate, Nature and Communities Project in Guatemala. USAID. Center for Environmental Studies and Biodiversity, Universidad del Valle de Guatemala (CEAB-UVG) 66 pp.

REDD+ safeguards	Progress indicators
	• Percentage of forest governance structures for REDD+ that have functional information access mechanisms (ER-PIN Governance Platforms). • Number of types of media that guarantee that the information generated is accessible to interested parties (ICG). • Program to strengthen forest governance structures implemented.
c) Respect for the knowledge and rights of indigenous peoples and members of local communities, taking into account relevant international obligations and national circumstances and legislation, and bearing in mind that the General Assembly of the United Nations has approved the UN Declaration on the Rights of Indigenous Peoples	• Number of local communities and indigenous peoples that apply their traditional knowledge in the collective management of forests in the implementation of REDD+ measures. • Number of people from local communities and indigenous peoples of the REDD+ measures consulted through free, prior and informed consent. (indigenous peoples directorates and units from the responsible government institutions, for example, INAB, CONAP, MAGA MARN); with the follow-up of the authorities or representatives of the local communities or indigenous peoples.
d) The full and effective participation of the interested parties, in particular, of indigenous peoples and local communities, in the actions mentioned in paragraphs 70 and 72 of the present decision	• At least 35% of families (members disaggregated by sex), who participate and/or benefit from REDD+ measures in the prioritized territories. • At least 40% of local and indigenous communities related to the use and/or conservation of forests, which participate in REDD+ measures. • 100% of the prioritized territories have a consultation mechanism, which respond to the particularities of each group.
e) The compatibility of measures with the conservation of natural forests and biological diversity, ensuring that those indicated in paragraph 70 of this decision are not used for the conversion of natural forests, but instead serve to encourage the protection and conservation of these forests and the services derived from their ecosystems and to promote other social and environmental benefits	• Number of protected areas whose natural forest has not been subject to conversion or degradation due to the REDD+ measures. • Number of local communities that have improved their livelihoods through the implementation of REDD+ measures.
f) Actions to deal with the risks of reversal	• Presence of forest cover, rate of deforestation, carbon content, forest dynamics through: (i) periodic mapping of forest cover and land use; (ii) National Forest Inventory; (iii) Calculation of forest carbon content. • Underlying attitudes on forest management, through surveys. • Number of complaints, inventory of complaints.
g) Actions to reduce the displacement of emissions.	• Presence of forest cover, rate of deforestation, carbon content, forest dynamics through: (i) periodic mapping of forest cover and land use; (ii) National Inventory; (iii) Calculation of forest carbon content. • Underlying attitudes on forest management, through surveys. • Number of complaints, inventory of complaints.

In the monitoring activities of non-carbon variables, the GIREDD+ will play an important role as a link between the MRV System and the SISyMB. It will be responsible for preparing the formats or protocols for gathering information on the non-carbon variables and sharing them with the offices involved in the monitoring activities within the institutions so that they gather the information. The representatives of each institution that make up the GIREDD+ will collect information from the indicators of each office within their institution (which is in the proper format) and will integrate all the information in a single document, which will be in the hands of the Institution's Climate Change Office. This document will systematize the information in a more descriptive format respecting and complying with the safeguards, which will include information on each safeguard and its progress indicators according to what is established in the draft document of the National Safeguards Approach.

The SIREDD+, whose administration is done by MARN, will have a link with the digital information access platforms of the INAB, CONAP and MAGA, that will feed it into the system automatically.

The document systematized by the representatives of the GIREDD+ in each institution will be sent from the respective Climate Change Offices in INAB, CONAP and MAGA, to MARN's Directorate of Climate Change, that will be responsible for integrating the documents of the four institutions into one, which must be transferred to the Environmental Information and Climate Change Unit, as the office in charge of the National Climate Change Information System (SNICC). This Unit will be responsible for carrying out the reporting and publication of information at the national level. For international reporting purposes, the information must come from the highest authority of this Ministry, because it is the country's focal point for climate change issues.

In addition to the identification of non-carbon variables currently being measured by the offices of the ICG institutions, although they do not necessarily do so in the context of REDD+, a proposal was developed non-carbon variables to be measured in the future. This was done because Guatemala has defined its Monitoring, Reporting and Verification System (MRV) based on the current capacities of national institutions and the information available, but its scope will increase as these capacities continue to be developed, strengthened and international financing becomes available.

After the identification of non-carbon variables that are already being measured by the different ICG offices, although not under the context of REDD+, and the classification of each one of them by progress indicators of the seven Cancun safeguards, it was determined that these variables needed to be validated and prioritized to make their inclusion feasible within the REDD+ Information System (SIREDD+).

Community monitoring is the basis of the REDD+ Measurement, Reporting and Verification System (MRV), since it provides local information on forests, the dynamics of forest cover change, the natural resources associated with the ecosystem and the social and economic conditions of the communities that directly and indirectly use and exploit forest resources.

In accordance with the Design of the National Information System for GHG Emissions, Multiple Benefits, Other Impacts, Management and REDD+ Safeguards from April 2017, and after a facilitation activity with the interested parties on the process of definition and scope of the SIREDD+, a proposal was generated, presented and validated by the ICG and those responsible for the IT units.

A review and characterization was carried out for of 20 systems and existing information sources of the ICG entities and other government agencies that may be useful for the SIREDD+, as well as an assessment of the functionality, limitations, gaps and scope for the compilation of information from these systems. The conclusion is that, of the analyzed systems, nine (9) collect information that would be relevant for the SIREDD+[220]. However, it will be necessary to adapt and strengthen these systems so that they can provide the relevant information in the context of REDD+ implementation.

Guatemala considers as a key stage of its national safeguard approach the conceptualization and implementation of the Safeguard Information System (commonly referred to as SIS), which seeks to be an integral part of the National Information System for GHG Emissions, Multiple Benefits, Other Impacts, Management and REDD+ Safeguards. The integration of the SIS and the national emission monitoring system under the National MRV System responds to

[220] Table: Summary of primary sources to be used for the design of the Safeguard Information System. Design of the National Information System for GHG Emissions, Multiple Benefits, Other Impacts, Management and REDD+ Safeguards of April 2017

Guatemala's decision to have a single integrated database that facilitates the interrelation among the four components of the REDD+ Strategy, as well as to reduce operating costs, improve the management and coordination of systems among ICG institutions and facilitate access and dissemination of information.

The creation of an interinstitutional coordination entity among government entities has been proposed, which complies with the functions of compilation, integration (aggregation) and analysis of information on compliance with REDD+ safeguards, which may be defined as:

Interinstitutional Committee on Environmental and Social Safeguards (CISAS): intergovernmental coordination entity of the ICG, responsible for compilation, integration and/or aggregation of information and the synthesis and analysis of information on compliance with the REDD+ Safeguards. The committee may be composed of the units responsible for climate change, gender, indigenous peoples, legal issues, biodiversity, social communication and others considered relevant by the ICG.

This entity will coordinate efforts with the National REDD+ Safeguards Committee, whose main function is to be a multisectoral advisory group that, despite not participating in the elaboration of the Strategy's products, is in charge of legitimizing and validating the processes to ensure they are addressing, respecting and complying with the REDD+ safeguards (ENS Guatemala, P 22)[221].

Information that cannot be compiled through information systems will be compiled through requests for information addressed to the institutions / stakeholders in charge of REDD+ implementation in the regions and in the early REDD+ actions. The Interinstitutional Committee for Environmental and Social Safeguards (CISAS) will be responsible for compiling the information[222] of each ICG entity.

Those responsible for the analysis of the information will be the Technical ICG, the Interinstitutional Committee for Environmental and Social Safeguards (CISAS), the Support Organizations and the Integrating Unit of MARN.

Regarding information dissemination, it should be mentioned that Guatemala seeks to have a computer / web platform with direct and visible access for interested parties. Likewise, Guatemala recognizes that a web platform is not appropriate as a single means of disseminating information, so it is considering other mechanisms for community outreach, which could involve the mediation of information and the use of alternative channels such as radio, television, social networks and smart mobile phone applications.

In this context, MARN has created the Unit for Environmental Information and Climate Change to integrate and design the Environmental Information System -SIA- and the National Information System on Climate Change -SNICC- which, to date, is in the conceptual design phase.

The Guatecarbon Project elaborates a non-carbon variable report through which the positive effects on climate, community and biodiversity generated from the beginning of the project and during the implementation period covered by the project are reported. The Guatecarbon Project has been generating positive net impacts on the atmospheric concentrations of greenhouse gases by avoiding sudden changes in land use within the project area. Deforestation remained below GHG emissions baseline and therefore a positive net effect is shown with respect to the Climate objective. The result of several intermediary simultaneous activities has directly contributed to emission reductions, namely;

a. territorial planning
b. State control and monitoring
c. Community control and monitoring
d. Control of fires in communities and
e. law enforcement

[221] Rodríguez, C.; Sosa,A.; Samayoa, O.; C. Bonilla, [2016] *Enfoque Nacional de Salvaguardas Guatemala [ENS-GUA]*, Interinstitutional Coordination Group, Guatemala City, Guatemala. April 4th Version, pg. 32-40

[222]The governance proposal for MRV REDD+, for the carbon accounting part, has created the Information Generation Group, made up of GIMBUT and the Technical ICG. For compilation, aggregation and analysis of data and information for safeguards, the creation of a group of information generating entities has been proposed, and will have to be followed up and monitored by the CNSREDD+.

Regarding activities that were planned positive net benefit activities for the communities, we can mention:

1. Improve quality of life - Education and Health
2. Improve the competitiveness of forest small and medium-sized enterprises (SMEs)
3. Income diversification and maintenance

Advances in climate actions and indirectly, in the community, have contributed to the conservation of the ecological integrity of the project area. The project has registered some large-scale biological integrity indicators that point out to a positive result for biodiversity. Activities corresponding to 5 areas were carried out:

1. heat point records
2. Monitoring of accessibility and roads
3. Monitoring of xate quality and its sustainable use
4. Monitoring of seed trees
5. Monitoring of the natural regeneration of the species.

The Lacandón Project conducted an analysis to define indicators of biodiversity and social aspects to determine if the activities that are being carried out by the project to reduce deforestation are being met and to register possible negative impacts in order to avoid or reduce them.

Some biological indicators: Rate of deforestation by forest type, number of ha with forest conservation in community polygons, number of ha with reforestation in community polygons, number of ha with forest increase and agroforestry systems, number of new accesses / roads, number of patrols and kilometers traveled, number of lost high conservation values ha (HCV), presence of species (mammals, birds, reptiles, amphibians), number of people carrying out illegal activities, number of hours of technical assistance and technical personnel available and number of families / cooperatives with approved CONAP management plans.

Some social indicators: Number of families implementing best practice activities in agriculture and livestock (ecoagriculture and/or silvopastoral activities), number of families and ha with family productive unit plans, number of communities implementing forest fire early warning system (SATIF), Number of families applying sustainable economic alternatives, number of women/men/youth participating in training / workshop or educational talk and number of signed official documents (cooperation agreements, letters of understanding, etc.).

FIP Projects - Forest Governance and Diversification of Livelihoods Project.
To ensure compliance with the implementation of these mitigation measures and ensure the Bank that during Project implementation, no activity that could restrict access and use of natural resources to indigenous and non-indigenous population will be executed, the Executor will send a compliance report to the Bank every six months.

14.3 Description of the Feedback and Grievance Redress Mechanism (FGRM) in place and possible actions to improve it

Guatemala designed an Information and Attention to Complaints Mechanism (MIAQ) in order to provide information and manage complaints and conflicts derived from the readiness and implementation of the REDD+ Strategy in a clear and effective manner[223].

The specific objectives of the MIAQ in accordance with the FCPF requirements are:

- Provide timely and clear information to users who require it.
- Identify and solve implementation problems in a timely and cost effective manner: As early warning systems, the MIAQ should function properly to help identify and address potential problems before they get worse, avoiding costly and time-consuming disputes.

[223]See Information and Attention to Complaints Mechanism (MIAQ): Design and Route of Implementation of the Information and Attention to Complaints Mechanism at http://www.marn.gob.gt/s/redd_/paginas/Salvaguardas

- Identify systemic problems: The information from the MIAQ cases can highlight recurrent, increasingly frequent or increasing complaints, which helps to identify underlying systemic problems related to the execution capacity and processes that need to be addressed.
- Improve the REDD+ results: Through the timely resolution of the issues and problems, the MIAQ will be able to contribute to the timely achievement of REDD+ objectives and that could affect the successful implementation of the REDD+ Strategy (including emissions reversal).
- Promote accountability in REDD+ countries: The MIAQ should promote greater accountability among the stakeholders involved, positively affecting specific activities and the general governance of REDD+. The MIAQ would serve as the first line of communication and response for users and other communities related to the forest, through which they can get information on REDD+ and obtain solutions to implementation problems.
- Contribute to promote participation and empowerment of forest users in REDD+: By providing solutions through dialogue and the resolution of complaints, the participation of relevant stakeholders is promoted.

The MIAQ is not intended to replace the judicial power or other forms of legal and/or traditional action in the country, but to complement them. Therefore, parties may address their complaints and use the typology of existing and relevant mechanisms according to their competences

The design of the MIAQ was developed based on the identification and analysis of the mechanisms of information and attention to existing and relevant REDD+ complaints in the country, [224] and on an identification and assessment of the potential conflicts that may arise in the implementation of the Strategic Options of the National REDD+ Strategy, which were identified through the development of the SESA, particularly the SESA workshops[225] .

The assessment of the existing complaints mechanisms considered:

- Mechanisms for complaints and conflict resolution before judicial authorities: are those that are settled in any judicial authority (civil, criminal, labor and judicial courts).
- Mechanisms for complaints and resolution of administrative disputes: are those that the administrative authorities themselves resolve conflicts that arise between individuals or against public servants due to the non-observance of administrative laws and which damage some of the rights guaranteed by the REDD+ safeguards (for example, denunciation, complaints to internal control offices, conciliation and arbitration bodies).
- Mechanisms for complaints and resolution of traditional disputes: are those that the parties resolve their disagreements by themselves, by their free will, either directly or assisted by neutral third parties that facilitates dialogue and the search for solutions. Specifically, they are used by communities and indigenous peoples to resolve conflicts that arise between members of these communities and indigenous peoples. These mechanisms vary considerably, encompassing various methods of different degrees of formality; and generally do not have a legal foundation.
- Complaint mechanisms for REDD+ projects: mechanisms used by individuals and communities to resolve conflicts arising from the implementation of REDD+ projects. These conflicts are addressed at first by the leader of the project in charge of implementing the REDD+ strategy, providing the user with direct assistance and assisting them when the issue must be taken up to a government authority.

The assessment of the existing complaint mechanisms and the consultations on the matter with the interested parties can be consulted in http://www.marn.gob.gt/Multimedios/9983.pdf.

Next, the mechanisms of information and attention to complaints considered as directly relevant to the National REDD+ Strategy are presented.

Table 94, Information mechanisms and attention to complaints relevant to the National REDD+ strategy.

[224]Report of analysis of the platforms and mechanisms for information and attention to complaints relevant to the REDD+ Strategy, including an action plan to be used in the REDD+ context; within the design and preparation of the Social and Environmental Strategic Assessment (SESA), the Social and Environmental Management Framework (ESMF) and the Information and Attention to Complaints Mechanism (MIAQ). Published on the site of the Ministry of Environment and Natural Resources of the Government of the Republic of Nicaragua (http://www.marn.gob.gt/Multimedios/9983.pdf)

[225]Report on the Social and Environmental Strategic Assessment (SESA) of Guatemala, July 2017.

Mechanism	Responsible institution	Jurisdiction
1. Complaints about violation of human rights	Human Rights Prosecution Office	Administrative jurisdiction
2. Mechanism for attention to complaints by CONAP	National Council of Protected Areas	Administrative jurisdiction
3. Attention to complaints by CODISRA (Presidential Commission against Discrimination and Racism)	Commission responsible for ensuring respect for the human rights of indigenous populations, which has had a strong presence at the political and national level for the defense of the rights of indigenous peoples.	Administrative jurisdiction
4. Attention to complaints by DEMI	Defender of Indigenous Women- DEMI	Administrative jurisdiction
5. Attention to conflicts by SAA	Secretariat of Agrarian Affairs (SAA)	Administrative jurisdiction
6. Attention to complaints by Interinstitutional Roundtables	**Interinstitutional Roundtables** COCODES COMUDES Municipalities Municipal judges National Dialogue System Secretary of Agrarian Affairs Presidential Human Rights Commission - COPREDEH- Human Rights Ombudsman -PDH- Cadastral Information Registry Social Pastoral of the Catholic Church Center for Conservationist Studies of the USAC - CECON-	It does not have specific jurisdiction, it is applicable to the case that is being analyzed.
7. Attention to complaints	Ministry of Environment and Natural Resources	Administrative jurisdiction
8. Attention to complaints	National Forestry Institute	Administrative jurisdiction
9. Conflict resolution through indigenous customary law	Ancient authorities of each community (through the Cabeceras, indigenous mayorships, among others)	It does not have specific jurisdiction, it is of a traditional nature.
10. Conflict management and resolution protocol for the Guatecarbon REDD+ project	Guatecarbon	It has no specific jurisdiction. It is only applicable within the project.
11. Attention to claims of the REDD+ Lacandón Project	Defensores de la Naturaleza Foundation (FDN)	It has no specific jurisdiction. Only applicable within the Sierra Lacandón National Park project

The mechanisms of the ICG institutions were analyzed, that is, the mechanisms for information and attention to complaints from CONAP, MARN, INAB, and MAGA. Likewise, the analysis of the complaint response mechanisms available for the Guatecarbon and Lacandón Projects is presented.

Two of these institutions, the National Council of Protected Areas and the Ministry of Environment and Natural Resources, have strengthened the mechanism of attention to complaints through forms or telephone lines and even internal manuals for complaints approach such as CONAP's or a virtual platform as the one managed by the Ministry of Environment and Natural Resources.

Likewise, there are REDD+ Projects that provide complaints mechanisms, such is the case of Guatecarbon and Lacandón.

Next, a brief description of each mechanism is presented.

Table 95. Brief description of complaints mechanisms by institution

Institution	Scope of the mechanism
National Council of Protected Areas (CONAP)	CONAP takes in complaints made by individuals in written or oral form in accordance with Article 85 of Decree 4-89 of the Congress of the Republic of Guatemala, "Protected Areas Law," which establishes that any person considered to be affected by acts against wildlife and protected areas may appeal to CONAP, in order to investigate such events and proceed in accordance with the law. That is why, at the institutional level, the same mechanism is used to receive complaints.
Ministry of Environment and Natural Resources (MARN)	The complaints can be filed through a written and electronic form on the website.
National Forestry Institute (INAB)	The mechanism for receiving complaints is only through the telephone without any internal administrative procedure other than sending them to the appropriate institution, specifically to the Public Prosecutor's Office.
Ministry of Agriculture, Livestock and Food Supply (MAGA)	The existing mechanism a telephone line or direct contact with extension agents in the rural area.
Conflict management and resolution protocol for the REDD+ Guatecarbon Project	It has no specific jurisdiction. It is only applicable within the project.
Mechanism of attention to complaints at Defensores de la Naturaleza Foundation - FDN- through the REDD+ Lacandón Project	It has no specific jurisdiction. Only applicable within the Sierra Lacandón National Park project
CALEMCAC-Reddes para el Desarrollo grievance redress mechanism	

The analysis carried out included a detailed comparison of how each of the complaints mechanisms work, showing their strengths and weaknesses[226]. The assessment of the existing complaints and grievance mechanisms finished with the development of an Action Plan to strengthen mechanisms for information and attention to complaints in the REDD+ context and in connection with the MIAQ for the following government agencies[227]:

- NATIONAL COUNCIL OF PROTECTED AREAS - CONAP-
- NATIONAL FORESTRY INSTITUTE - INAB-
- MINISTRY OF ENVIRONMENT AND NATURAL RESOURCES - MARN-
- Guatecarbon
- DEFENSORES DE LA NATURALEZA FOUNDATION -FDN-
- MINISTRY OF AGRICULTURE, LIVESTOCK AND FOOD SUPPLY -MAGA-

Based on the assessment of existing mechanisms mentioned, with the intention of providing an effective resolution to the claims presented by the stakeholders involved in the ER Strategy, and in accordance with the FCPF guidelines, the Information and Attention to Complaints Mechanism for REDD+ (MIAQ) has been designed according to the following guiding principles:

a. **Legitimate**: facilitates trust for the stakeholders directly involved to whom the mechanism is intended and is accountable in terms of its processes and their fairness.

[226]Report on the analysis of the platforms and mechanisms for information and attention to complaints relevant to the REDD+ Strategy, including an action plan to be used in the REDD+ context. Design and preparation of the Social and Environmental Strategic Assessment (SESA), the Social and Environmental Management Framework (ESMF) and the Information and Attention to Complaints Mechanism (MIAQ)

[227]See Chapter 2 Action plan to strengthen mechanisms for information and attention to complaints in the REDD+ context and in relation to the MIAQ in Report on the analysis of platforms and mechanisms for information and attention to complaints relevant to the REDD+ strategy.

b. **Accessible:** known to all parties directly interested to whom the mechanism is intended, and provides adequate assistance for those who face specific access barriers. Access barriers may include a lack of knowledge about the mechanisms, language, literacy, costs, physical location and fear of retaliation.

c. **Predictable**: provides a clear procedure known to all interested parties, with a clear date of response for each stage and clarity about the types of process and results available, and the means for monitoring implementation.

d. **Equitable**: ensures that the parties directly affected have reasonable access to the sources of information, advice and knowledge necessary to participate in a complaint resolution process under fair, informed and respectful conditions.

e. **Transparent**: keeps those who make the complaint informed about the progress of the case and provides sufficient information about the functioning of the mechanism, which generates trust in its effectiveness and meets any public interest at stake. Also, transparency on the performance of the mechanism is promoted through statistics, case studies or more detailed information on the handling of certain cases. At the same time, the confidentiality of the dialogue between parties and the identities of the individuals involved should be kept when necessary.

f. **Compatible with rights**: the mechanism is consistent with nationally applicable and internationally recognized rights. Complaints are often not presented in terms of rights and many do not get involve in matters related to the violation of human rights or other rights. However, when the results involve a matter of rights, it is important to be consistent with the nationally applicable and internationally recognized standards and to not restrict access to other redress mechanisms.

g. **Facilitates continuous learning**: it is based on relevant measures to identify lessons to improve the mechanism and avoid future complaints and damages. Periodic analysis of frequent patterns and causes of complaints; the strategies and processes used to resolve them; and the effectiveness of these strategies and processes, may allow the institution in charge of the MIAQ to improve policies, procedures, practices and performance, and, therefore, prevent future damages.

h. **Based on participation and dialogue**: the parties are consulted directly and focus is on dialogue as a means to address and resolve complaints. The regular participation of the parties directly affected in the design and performance of the MIAQ can help ensure that it meets their needs, that they use it in practice, and that there is a common interest in ensuring its success.

Scope of the MIAQ

The MIAQ addresses the grievances that arise related to REDD+ strategy options implementation (and REDD+ activities and actions in each territory). As it was mentioned before, the MIAQ is not intended to replace the judicial power or other forms of legal and/or traditional action in the country (including those complaint mechanisms at the project level), but to complement them. Therefore, parties may address their complaints and use all existing and relevant mechanisms according to the competence of each. In the event that complaints are directly linked to the REDD+ process, the recipient of the complaint must report it to MARN for the single registry of REDD+ complaints, however, this should be regulated in some way, given that institutions cannot oblige the traditional authorities in this sense. The following is illustrated below, showing the scope of the MIAQ and its relationship with the other existing mechanisms, according to their competencies.

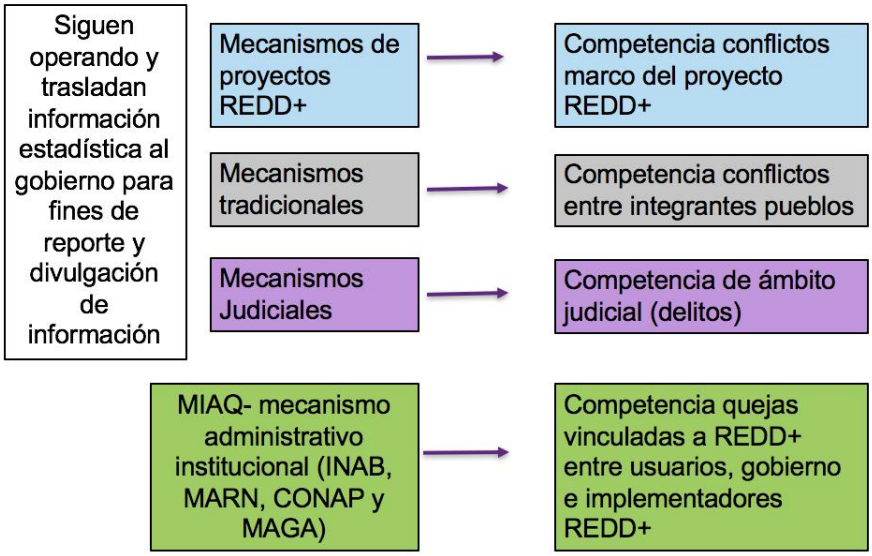


Figure 45. Scope of the MIAQ and other relevant mechanisms.

It is considered that the type of grievances that must be addressed by the MIAQ are related to tensions that exist on land tenure and the use of forest resources, benefit sharing, as well as aspects related to participation in the design and application of the REDD+ Strategy Options, among others:

- **Participation and dialogue:** it is considered that the MIAQ should address grievances related to discrepancies and disputes that may arise in relation to the participation of the relevant stakeholders in the implementation, and the assessment of the implementation of REDD+ Strategy Options. The foregoing includes aspects related to the adequate exchange of information on REDD+, and the awareness, engagement and incidence of stakeholders.
- **Land tenure and use of forest resources**: it is considered that the MIAQ should address grievances related to processes to acquire land rights (including those associated with lack of legal certainty, regulation of land tenure, and restrictions on land access by women and vulnerable groups), and exploitation of forest resources. Likewise, conflicts that may arise in connection with the access and implementation of forest incentive programs, and in response to the reinforcement of forest protection and control measures on illegal logging activities and on the use of firewood.
- **Rights of indigenous peoples and communities**: it is considered that the MIAQ should address complaints related to the lack of recognition and respect for the rights of indigenous peoples and communities, in particular, regarding their customary rights (including the rights of tenure and use of land and natural resources) and traditional practices and knowledge.
- **Benefit sharing**: it is considered that the MIAQ should address grievances related to the distribution of benefits among the different users / owners of the forests. This includes situations in which there is inadequate recognition and economic valuation of environmental goods and services associated with forests (in particular carbon rights); and rights holders (in particular, communities) that were in the area prior to the declaration of protected areas are not recognized.

Structure of the MIAQ

The MIAQ will have an administrative structure coordinated by MARN, and operational in the regional and departmental offices of INAB, MAGA, MARN and CONAP. The institutional delegates of each REDD+ institution in the regions will be in charge of implementing the MIAQ with the support of the legal department of their institution, ensuring compliance with the principles indicated in the previous section and transferring the statistical information to the central MARN office for its dissemination through SIREDD+ or other means of reporting.

Procedure of the MIAQ

In accordance with the guidelines and principles of the FCPF and international best practices, the following procedure is considered for the resolution of complaints through the MIAQ in Guatemala, relevant to MARN, INAB, CONAP and MAGA at the central level as well as in the regional offices of each institution. As it was mentioned in the objectives section, the MIAQ is not intended to replace the judicial power or other forms of legal and/or traditional action in the country (including those complaint mechanisms at the project level), but to complement them.

The maximum total period between the moment the complaint is received until a resolution is issued on the dispute is 30 working days. A systematic process is followed and consists of five steps as shown in the following Figure: i) Reception and registration, ii) Investigation, iii) Selection of approach, iv) Assessment and Response, v) Monitoring. Each of these steps is described later.

It should be noted that any complaint or request for information may be anonymous, in the regional language, and made at the regional, local or national level.

Procedure of the MIAQ

Figure 46. Diagram of the MIAQ procedure process

A. Complaint reception and registration

The MIAQ plans to reach out to stakeholders in remote locations, offering easy ways to present complaints personally or digitally from a distance.

Channels and staff

Complaints may be submitted through multiple low-cost channels that may include: direct communication with a field technician, e-mail, REDD+ website (SIREDD+), suggestions / complaints box, and oral complaint through a toll-free number, or SMS text. It is emphasized that, in order to ensure cultural relevance, the modalities will accept complaints submitted in the local language.

Complaint registration

Each complaint will be recorded using the following information: i) name of the complainant, and preferably ID number, or anonymously according to their request, ii) assigned number, iii) date of the complaint, iv) location of the complaint, v) default complaint category and summary of the complaint, vi) number of people involved, and viii) communication channel to be used.

The forms are registered in the respective offices of MARN, INAB, CONAP and MAGA to where the complaint was sent. If relevant, according to the scope of the complaint, it will be sent to the other relevant government institution for processing. Likewise, a copy of the form will be sent to the coordination office of the MIAQ at MARN. The respective office of MARN, INAB, CONAP and MAGA will act as the central point for the registration and processing of the complaint and request for information. Process for registering the complaint, the respective MARN, INAB, CONAP and MAGA office where the complaint was sent has to see and examine if the complaint falls within their competence.

Once examined, the complaint will be recorded in the respective registry of each institution (INAB, CONAB, MAGA and MARN) and in a central registry of MARN at the national level. Once registered, processing can begin. The respective MARN, INAB, CONAP or MAGA office communicates with the complainant via the selected communication channels (telephone, letter, e-mail, etc.) to confirm that the complaint has been officially registered. In case of anonymous complaints, confirmation of registration of the complaint is sent to the contact provided in the complaint form.

The total registration process would take 5 business days.

B. Investigation

Once the complaint has been registered, the technician of the relevant institution (INAB, CONAP, MAGA or MARN) will proceed to compile the relevant information to identify the key issues that help determine the possibility and the best way to solve the issue. This will be carried out with the support of community structures (if relevant to the claimant). The technician of the relevant institution may appoint an independent evaluation team (EEI), made up of the technician and two independent, culturally relevant, local experts on the issue at (for example, experts from an NGO on the subject). These experts will be carefully selected from different entities, such as communities, interest groups, NGOs, the private sector and the public sector, as long as they have no interest in the outcome of the dispute.

The MIAQ will maintain a list experts in which independent experts are listed based on their field of expertise, background and relevant skills. Only experts on the list will be eligible to be part of an EEI. The selected experts will follow a conflict of interest policy and must sign a contractual agreement that establishes different procedures and policies (for example, confidentiality) for the assessment. The associated costs of the assessment are covered by the implementation costs of the National REDD+ Strategy and specifically as part of the operating costs of the MIAQ.

The list of experts should be updated periodically. The EEI contacts the complainant, other relevant parties, and organizations to obtain first-hand information in order to better understand the problem. The team gathers the opinions of the complainant and other main parties involved. This includes potential resolutions and/or solutions to the complaint. Once all the facts are collected and a potential resolution for the case is identified, the team is dissolved. As of that moment, the technician of the institution continues to handle the complaint alone.

The selection and assessment process takes 15 business days.

C. Selection of approach

Once all the necessary information has been collected, the technician of the institution establishes a 'resolution approach' based on the result of the independent assessment and the complexity of the issue:

- Approach 1: proposal and meeting with the institution technician. In this approach, the complainant and another (affected) party meet with the technician, discuss the resolution proposed by the EEI and agree on a process acceptable to both parties. This applies to low-complexity complaints, to which the independent assessment has recommended the use of a simple approach. In the case of more complex complaints, the institution's technical staff must decide in accordance with the EEI recommendations and apply one of the following approaches:
- Approach 2: Mediation by the institution's technicians. In this case, they act as a mediator to positively influence the interaction, but do not interfere with the decision-making capacity of the parties. The technician's role is to help the parties solve the grievance. Technicians have to be well informed about REDD+ activities and actions to help the parties expose and assess their options, and choose solutions and solution packages.
- Approach 3: Mediation by an external expert.

In the case of highly complex complaints, technicians should refer the case to an external mediator on the List of Experts.

The selection of a resolution approach should last 5 business days.

D. Assessment and response

Next, we proceed to implement the selected approach and resolve the complaint. In Approach 1, the technician meets with the complainant and the other affected parties to mutually discuss the resolution proposed by the EEI and shape it into a process acceptable to all. In case of Approaches 2 and 3, the technician or the external mediator begins to prepare the resolution process. Preparation includes establishing a relationship with the parties, selecting a strategy, collecting and analyzing background information, and designing a mediation plan.

Then, the technician or the external mediator sets up the mediation meeting with the parties. Observers and witnesses can be present at these meetings to ensure transparency. The technician or the external mediator formulates a written response about the decision and resolution process (verbal process). The form of the response is as important as its content, and must be sensitive to cultural issues. A response usually includes: i) the complaint and the issue addresses by the response, ii) the opinion of each party on the issues, iii) the justification of the decision, iv) the decision and the approach to the resolution.

The response will be delivered by technician in a face-to-face meeting with the complainant, followed up by community representatives (if relevant to the claimant, preferably in the location of the issue). The technician explains the proposed resolution step by step. In case the complainant is not satisfied with the resolution approach, they may appeal or proceed to use the formal and informal grievance mechanisms available and applicable. If the complainant is satisfied with the resolution approach, additional instructions will be given by the case officer on how to implement the resolution.

The result is an agreement between the parties. The parties will sign this agreement and will be obliged to comply with its terms.

The assessment and decision-making process takes 15 business days at most.

If an acceptable solution is not reached, the technician or external mediator issues a report of the results. The report is shared with the complainant and all other parties. The complainant may then choose to file an appeal for revocation or reconsideration as established by law. Likewise, if an acceptable solution is not found, some additional decision levels are available in the MIAQ. At first, complaints will be replied by the institutional delegate or REDD+ link at CONAP, MAGA, INAB and MARN. If the complaint cannot be resolved to the satisfaction of the complainant, through

a revocatory or reconsideration action, the complaint may be taken to the second level to the regional institutional coordinator. If an acceptable solution is not found, through an appeal of reconsideration, the complaint may be raised to the third level and the territorial ICG will take over and carry out a collegiate analysis. The procedure applicable in these other levels is the reconsideration or reversal appeal.

E. Monitoring

At the national level, MARN is responsible for monitoring the implementation of the resolution. The MIAQ monitoring system can be a simple database where the information can be analyzed to identify patterns of complaints, the main causes, and assess how effectively the complaints are being handled by the MIAQ.

The monitoring and information process will take as long as the duration of the agreement and resolution established (usually between 3 to 12 months). As noted above, if the complaint is not followed up appropriately, the complainant may then choose to file an appeal as provided by law, or proceed to use the available and applicable judicial grievance mechanisms.

Implementation Path

Within the national REDD+ strategy readiness framework, a document called "Design of the Implementation Path for the Information and Attention to Complaints Mechanism (MIAQ)" was drafted. The document is published on the Ministry of Environment and Natural Resources' website (http://www.marn.gob.gt/Multimedios/10100.pdf).

The aim of the aforementioned report was to present a design, development and implementation path for the MIAQ.

The implementation will have three phases. The first phase is focused on establishing the legal basis, a solid team and a coordination structure in MARN. After the core team is trained and operating, the field infrastructure will expand to other relevant regions in the second phase. In the last phase, digital platforms will be made fully functional so stakeholders can submit their complaints. Next, a more detailed description of each phase is presented.

During the design of this methodology, a preliminary version was presented to stakeholders through regional environmental and social management framework workshops in order to hear their input. The updated report was presented at a national workshop and in a meeting with the ICG. On both occasions, stakeholders were able to provide input and feedback on the MIAQ proposals.

Regarding the implementation capacity, all human and technical resources needed for MIAQ's work have been defined.

Table 96. Technical Resources and Requirements required for the implementation of the MIAQ

Process	Activity	Staff requirement	Technical requirement
Reception and registration	Handling suggestions and complaints box	Institutional delegates or REDD+ links	Transportation, computer, internet, land line and cell phone
	NGOs, interest groups, community leaders, etc., provide support with the translation, preparation and transport of complaint letters	N/A	
	Registration of the complaint in the institution's office (MARN, MAGA, INAB, CONAP)	Administrator	Computer and database
	Reception over the phone	Administrator	Dedicated telephone number

Process	Activity	Staff requirement	Technical requirement
	Reception of complaints via e-mail and letters	Administrator	Website, internet connection, dedicated e-mail
	Reception by field technicians	Institutional delegates or REDD+ links	Internet connection
Investigation	Admissibility study (according to Section 2.4.2.)	Institutional delegates or REDD+ links	
	Evaluation	Institutional delegates or REDD+ links	Transportation and logistical support for travel
Selection of approach	Decision on the approach to be applied	Institutional delegates or REDD+ links	
Assessment and response	Compile response	Institutional delegates or REDD+ links	Transportation and meeting room
	Conduct meeting / mediation	Institutional delegates or REDD+ links Complaints Manager	Transportation and meeting room
	Inform the parties	Institutional delegates or REDD+ Manager links	Transport
	Sending a digital copy of the completed file to the MIAQ central office	Institutional delegates or REDD+ links	Internet connection
Monitoring	Monitoring implementation complaints	Institutional delegates or REDD+ links Administrator	Transport database

Complaints Manager	Institutional delegates or REDD+ links with support of its legal department	Administrator	Monitoring officer
Train and supervise the staff	Coordinate complaints submission with claimants and other relevant stakeholders	Receive complaints over the phone	Design, develop and manage database
Monitor and manage operations	Review policy and procedure for handling complaints	Receive complaints by email, website and letters	Develop policies and procedures for the monitoring and filing of complaints
Develop policies and procedures for handling complaints	Monitor complaints	Coordinate and manage a database	Control monitoring and file complaints
Control complaints handling and monitoring	Prepare, execute and report on meetings and mediations	Organize and support meetings	Act as a point of contact for complainant
	Report and work with the complaints manager	Provide general administrative support	
Select external experts to handle complaints	Provide teams of external experts to handle complaints	Act as a point of contact for complainant	
Monitor, assess and adapt processes as necessary	Develop technical reports for handling complaints		
Awareness about the MIAQ	Awareness about the MIAQ		

Act as the MIAQ contact point in relation to other government institutions, the media, NGOs, etc.	Act as a point of contact for MIAQ complainants and other interested stakeholders		

REDD+ projects have internal protocols for dealing with complaints. However, as noted in the scope of the MIAQ, stakeholders have the option of using the projects' complaint response protocols or the MIAQ. If they decide to use the MIAQ, complainants are expected to reach out to the technician in charge of the particular project and obtain the necessary support in submitting and following up their complaint or request using the MIAQ procedure. Likewise, it should be noted that the complainant can also resort to, if necessary, to traditional and community institutions, associations, non-governmental organizations and groups and other local support institutions.

Table 97. Summary of the MIAQ by project

REDD+ projects	Document	Comments
Guatecarbon	Conflict management and resolution protocol for the REDD+ Guatecarbon Project[228]	Define "conflict" and "conflict management" Define six steps; which include communication with stakeholders: 1. Receiving the complaint personally, by phone or e-mail. 2. Verification and acceptance 3. Action to resolve the conflict or complaint 4. Referral to the Human Rights Ombudsman in case the community conflict cannot be resolved by the project staff and the involved parties. The steps of this process are also defined. 5. Monitoring the complaint resolution 6. Resolution of land conflict, forest fires, illegal activities, lack of services to community, etc. In the case of conflicts, complaints and their respective resolution, the project manager will prepare a report summarizing the actions taken to resolve the conflict, number of complaints received, and compare numbers from different periods of complaints. In addition, the report should state how many reports were resolved with the protocol.
LACANDÓN BOSQUES PARA LA VIDA	COMPLAINTS AND GRIEVANCES RESOLUTION MECHANISM	Person in charge of handling complaints and claims: FDN technician, who will keep communication (at least once a month) with the community representative, to keep him updated regarding news, complaints, questions, suggestions, new stakeholders and others. The technician will gather information in the format established by the consultant team and pass it on to the REDD+ project coordinator. Should additional assistance be needed, the consultant team or the Governance Committee can be contacted. Once the feedback results are in, the community representative is notified with regard to the status of the case and the procedure to be followed. It is recommended that the question and answer cycle last a maximum of one week.
CALMECAC REDDES PARA EL DESAROLLO		

[228] http://guatecarbon.com/wp-content/uploads/2014/09/123.-Protocolo-de-manejo-y-resoluci%C3%B3n-de-conflictos-del-proyecto-Guatecarbon-fin.pdf

REDD+ projects	Document	Comments
FOREST INVESTMENT PROGRAM PROJECT FOR FOREST GOVERNANCE AND DIVERSIFICATION OF LIVELIHOODS	Procedural Framework Participation, complaints and claims mechanism	Every user has the right to present: ✓ Information request in general ✓ Petition ✓ Complaint ✓ Concern ✓ Claim ✓ Suggestion Composed of three elements; 1. the manner in which complaints are file in MIAQ: telephone, social networks, Whatsapp, e-mail, face-to-face, or mailbox located in the Municipal Forestry Office 2. How they are processed. The process ends with a communication issued by INAB informing the outcome of the complaint, petition, or other input. 3. Important principles to be taken into account.

15 BENEFIT-SHARING ARRANGEMENTS

15.1 Description of benefit-sharing arrangements

Benefits and beneficiaries

Potential beneficiaries categories

The main potential beneficiaries of the Emissions Reduction Program will be those who have successfully completed REDD+ activities during the results period within the framework of government support programs, specifically from INAB (PINPEP and PROBOSQUE, under compensation mechanisms for co-systemic and environmental services associated with forests[229] established by the PROBOSQUE Law, Article 19, and CONAP) and as part of REDD+ projects. Generally speaking, potential beneficiaries can be classified into:

1. Land owners or holders
2. Communities
3. Associations
4. Cooperatives
5. Companies
6. REDD+ projects
7. Municipalities
8. The Government of Guatemala, to the extent that it could receive a part of the payments for results to cover the costs of the ERP.

The following table shows the types of beneficiaries for each government program and projects included in the ERP as direct actions.

[229]These mechanisms are voluntary agreements that establish the transfer of economic or in-kind resources to stakeholders with the aim of promoting sustainable activities by forest land owners or holders that provide a defined environmental service (Article 5 of the Law for the Promotion of the Establishment, Recovery, Restoration, Management, Production and Protection of Forests in Guatemala).

Table 98. Types of beneficiaries

REDD+ program / project	Types of beneficiaries
PROBOSQUE	Land owners, including municipalities; Social groups with legal personality that, by virtue of a legal arrangement, occupy land owned by the municipality; Tenants of reserve areas; and, Cooperatives, indigenous communities or any other form of communal or collective possession of agrarian property, which has historically belonged to them and which they have traditionally managed in a special way, provided they are duly represented.
PINPEP	Holders that do not have property title deeds for forest and agroforestry lands or lands with or without forest cover.
CONAP	Concessionaires
Guatecarbon	Communities Concessionaires
Lacandón	Cooperatives Defensores de la Naturaleza Foundation (FDN)
Calmecac	Municipalities Communities

Eligibility criteria

To be eligible to receive benefits derived from results-based payments, potential beneficiaries must:

1. Transfer carbon rights from their forests to the Guatemalan State, when they no longer belong to the State by law;
2. Carry out REDD+ activities within any government programs or ERP REDD+ projects;
3. Meet the relevant ERP reporting requirements;
4. Formally express compliance with the Benefit Sharing Plan;
5. Have a contract signed with the Ministry of Finance (or other relevant government entity) in which the aforementioned requirements, and others, are adequately formalized.

Benefit types and scale

According to ERP estimates, payments for results made by the Carbon Fund to Guatemala could reach USD 52.5 million. (10.5 million tCO2e paid at USD 5/tCO2e). These payments will be distributed among the beneficiaries in the form of monetary and non-monetary benefits, depending on the program or project and the type of beneficiary (see the following table).

Table 99. Types of benefits

REDD+ program / project	Types of benefits
PROBOSQUE	Monetary
PINPEP	Monetary
CONAP	Monetary
Compensation mechanisms	Monetary and non-monetary
Guatecarbon	Monetary and non-monetary
Lacandón	Monetary and non-monetary
Calmecac	Monetary and non-monetary

Criteria, processes and times for benefit sharing

Benefit sharing criteria

ERP benefit sharing will be governed by six general principles:

1. **Equity and justice**: Benefit sharing will be proportional to the contribution of each beneficiary or group to emission reductions and carbon removal, for which payments for results will be made. Decisions on the distribution of these resources will be made with the participation of representatives of all key stakeholders under equal conditions.

2. **Transparency**: Benefits will shared according to clear rules and procedures and accessible to the general public. The report on the distribution of benefits will be issued periodically and will be available to the public. The distribution of benefits will be subject to periodic audits and accountability.

3. **Recognition of contributions to the REDD+ process in the country**: Benefit sharing will take into account the contributions of different stakeholders to the development and implementation of REDD+ activities in the country, including the reference level, the MRV system and the safeguard system, as well as the design and piloting of policies and measures, among others.

4. **Solidarity:** Benefit sharing will be carried out in such way as to ensure the success of the Emissions Reduction Program as a whole through mutual support among the different stakeholders, particularly in situations of force majeure that may affect the performance of some of them.

5. **Continuous improvement**: The Benefit Sharing Plan (BSP) will establish measures to ensure that the distribution of benefits improves based on the experience obtained during implementation and as a result of improvements in other relevant aspects of the ERP, such as MRV.

6. **Efficiency**: To carry out the distribution of benefits, the existing infrastructure, procedures and capacities will be used whenever possible, in order to minimize the operating costs of the Benefit Sharing Plan and, therefore, maximize the proportion of resources given to beneficiaries.

These principles are the basis for developing the following distribution criteria:

- **Contribution to the reduction of emissions and the increase of forest carbon stocks:** this is the main benefit sharing criterion, and is ideally measured in tons of carbon dioxide equivalent mitigated by the ERP REDD+ activities. However, in cases where the available information and the MRV system are not able to estimate emission reductions (for example, when they are generated in areas that are too small), contribution will be estimated using the areas in which REDD+ activities have been implemented during the period for which the benefits were received.
- **Contribution to the development of REDD+ in the country:** This criterion seeks to recognize efforts by non-governmental and private stakeholders to create the necessary conditions in the country for ERP implementation, including their participation in generating emission factors, activity data, information on social and environmental safeguards, lessons learned for the design of policies and social organization, etc. In practice, this recognition will grant of a percentage to be defined of the benefits received to those stakeholders that can demonstrate their contribution during a period prior to the start of the ERP (which must also be agreed).
- **Solidarity:** This criterion seeks to reflect the fact that, obtaining benefits for each of the projects, programs and potential ERP beneficiaries will depend on their joint performance and, at the same time, provide incentives to support those whose performance has been affected by force majeure events (e.g., extreme weather events, pests, fires, etc.) during the period for which payment for results was received. To this end, a mechanism will be established (for example, a percentage of the benefits in the period in which force majeure events have occurred, or a contingency fund) through which potential affected beneficiaries can be supported by those whose performance would not have been impacted by these events.

In practice, these criteria will be applied as shown in the example illustrated on the following table

For the purposes of this example, it is assumed that the Guatemala ERP achieves an emission reduction of 11.8 million tons of carbon dioxide equivalent (tCO2e) during the results period, in accordance with the ex ante estimates included in this document and presented on the table below:

Table 100. Simplified example of the proposed distribution criteria

	Areas (M ha)	Emission reductions (MtCO2e)	Payments for FC results (USD/tCO2e)	Total payment by results (Millions USD)	Payment per ha (USD/ha)

REDD+ projects total	1.1	1.5	5	7.5	N/A
FIP	3	7.6	5	38	12.67
Areas without actions	5.88	2.7	5	13.5	2.30
Total	9.98	11.8	5	59	N/A

As can be inferred from the table, the MRV system will provide data on the emission reductions that could be generated in three large areas: the areas of the projects (for which estimates may be available per project), for the FIP application areas (which include areas where activities supported by INAB and CONAP will be carried out, and reinforced by the same FIP) and in the so-called "areas without actions", which are actually areas in which the programs of both institutions also operate, but which do not have the direct support of the FIP.

Consequently, benefit sharing can be made based on the information on emission reductions in each REDD+ project, on all the FIP areas and on all the areas without actions. However, the sharing within these two sets of areas should be made based on the number of hectares in which the beneficiaries or groups have successfully carried out activities during the results period, since there is currently insufficient data to estimate the emission reduction at those levels. Thus, in the example provided, the projects as a whole would receive USD 7.5 million, and the rest of the payments for results (51. 5 million) would be distributed among the beneficiaries of the FIP areas and the areas without actions according to their mitigation contribution per hectare: in the first, the beneficiaries would receive USD 12.67 dollars per hectare, while in the second they would receive 2.30 dollars per ha.

This example is based on the assumption that the beneficiaries in the FIP areas and those without actions cover all of these areas and that they have transferred their carbon rights to the Guatemalan State. Likewise, to make things simpler, it is considered that the payments are fully made to beneficiaries, without deducting, for example, a percentage to cover the ERP transaction costs.

In a variation on this example, it could be assumed that some of the projects or programs would have been affected by extreme weather events that would have affected their normal performance. In this case, when determining the amounts to be shared among programs and projects, a deduction would be made from an agreed percentage that would provide a minimum incentive to the affected beneficiaries. Alternatively, a contingency fund could be established with similar contributions every time benefits are distributed (with or without force majeure events).

The recognition of pioneering actions in the country could also mean additional benefits (to be negotiated between ERP stakeholders) granted to REDD+ projects able to demonstrate their contribution to a number of factors to be determined. This recognition could be granted once or on a recurring basis, if a constant contribution to the country's REDD+ process is demonstrated.

Benefit sharing processes

The mechanism for the sharing of ERP benefits will be built, to the extent possible, taking advantage of existing channels in government programs and REDD+ projects to deliver resources to beneficiaries. At first, this means that the signing of agreements or contracts with them - by which they will legally formalize, among other things, their voluntary participation, the transfer of carbon rights and the recognition of reporting responsibilities related with the sharing of benefits - will be carried out in the following way (see also Figure 47):

- In the case of compensation mechanisms for ecosystem and environmental services associated with forests established by the PROBOSQUE Law, Article 19, in which beneficiaries of PINPEP, PROBOSQUE, former beneficiaries of PINFOR and other potential beneficiaries may participate, INAB will sign contracts with beneficiaries or their representatives within compensation mechanisms frameworks;
- In the case of concessions for environmental services (if these occurred during the results period) and the Guatecarbon project, CONAP will be in charge of signing these contracts;
- In the case of REDD+ projects, contracts will be directly signed with the Financial Directorate of MINFIN.

The information in these contracts will be transferred by each of the signing entities to MINFIN in order to transfer it to the REDD+ Registry administered by MARN, to provide transparency regarding persons and areas involved, as well as the activities carried out and the ability of the Guatemalan government to transfer the emission reductions generated by them, as well as to avoid double counting of areas, activities, participants and emission reductions.

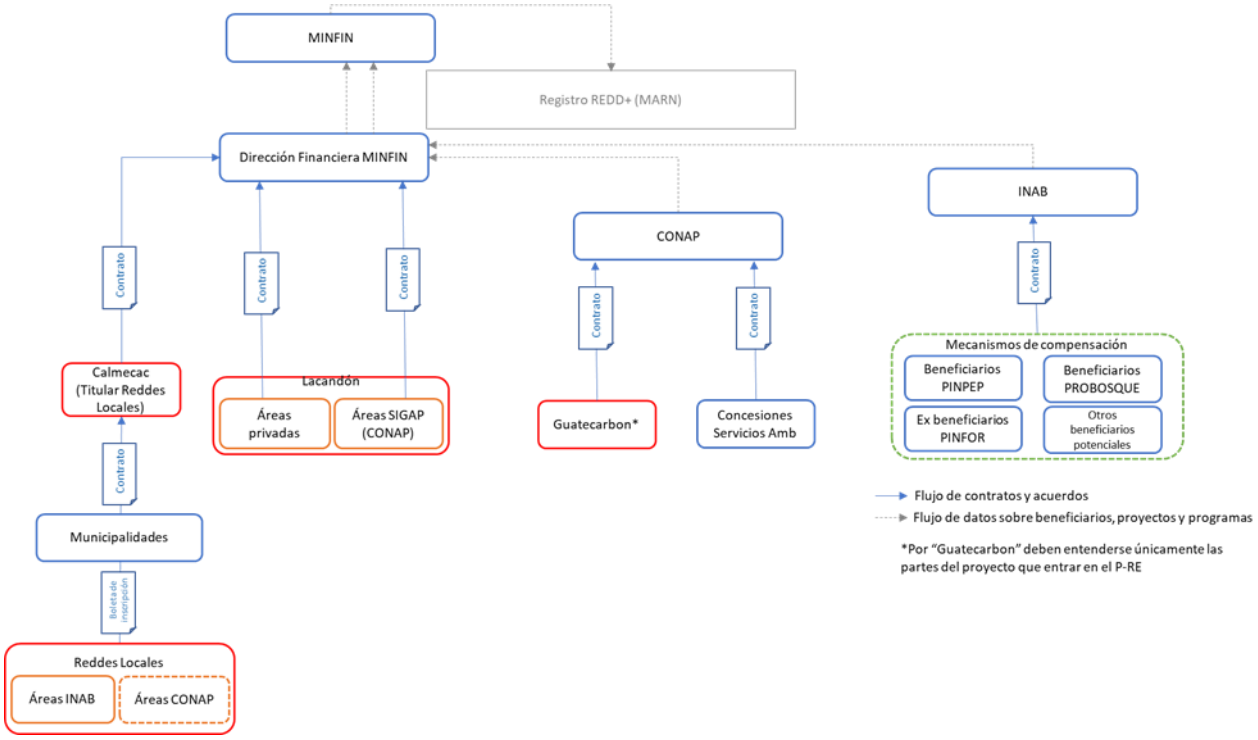


Figure 47. Process for the identifying, registering and contracting with potential beneficiaries

Similarly, the annual report and verification of REDD+ activities information that will serve as the basis - together with the MRV information - for sharing benefits (specifically for cases in which the data on emissions reduction cannot be used for this purpose and the "hectare approach" mentioned above should be used) will be carried out following existing procedures in both REDD+ projects and government support programs (see Figure 48):

- REDD+ projects (with the exception of the Guatecarbon project) will report to MARN's Special Execution Unit, which will verify the information provided and register it;
- Guatecarbon, as well as concessions for environmental services, will provide reports to CONAP, which will transfer this information to MARN's Special Unit, after verification thereof;
- Compensation mechanisms must submit reports to INAB for their verification and for the transfer thereof to the MARN.

MARN's Special Execution Unit will produce a general report on the performance of the ERP in the results period (based on the aforementioned reports and data from the MRV system and safeguards), which will be shared with MINFIN so that the relevant information is used to prepare the necessary documentation to prepare the payments for results that will be submitted to the Carbon Fund.

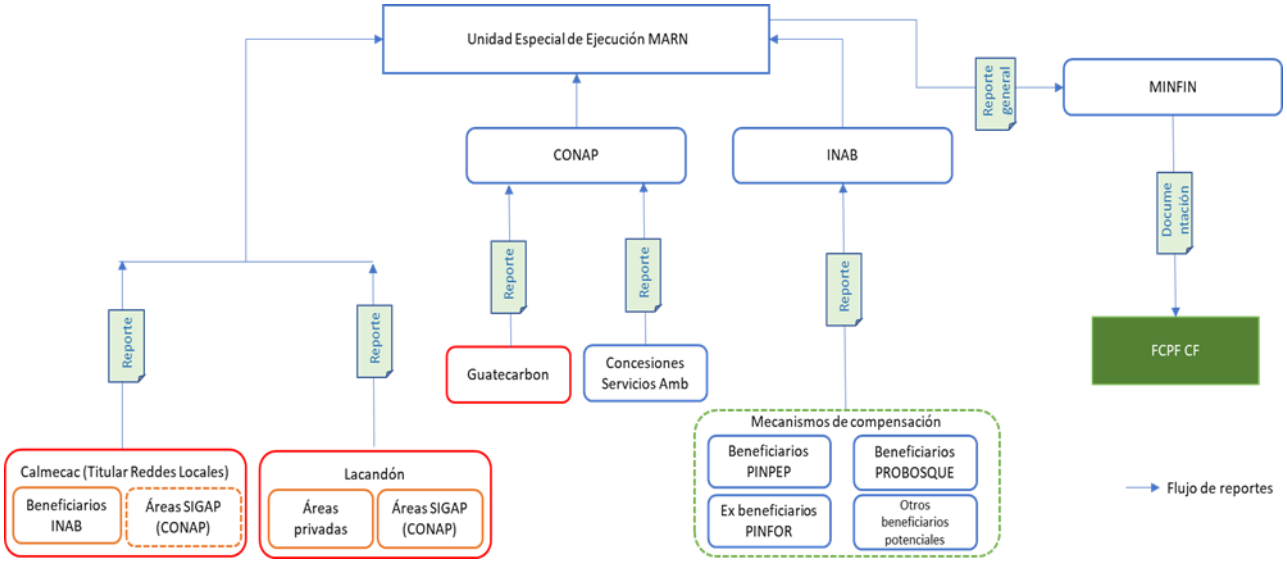


Figure 48. Procedures for the preparation and verification of baseline reports for benefit sharing

On the other hand, for the distribution of benefits as such, it is proposed that the MINFIN be the recipient of payments for results from the Carbon Fund, and that, based on the decisions of a Committee or other body, existing or new, with the participation of all those involved in the generation of emission reductions in the ERP and the criteria established in the Benefit Distribution Plan, will transfer these resources directly to the beneficiaries of CONAP and INAB (that is, following a procedure similar to the one applied for the support programs of these entities) and REDD+ projects. It should be noted that a portion (to be defined) of the payments for results received will be transferred to INAB, CONAP and MARN to help them cover the ERP implementation costs. Based on that, each program and project will distribute the benefits following their own procedures and provisions of the BSP described in the following figure.

- In the Reddes project, benefit sharing will be carried out by the municipalities, which are autonomous governing entities in each project city.
- In the case of the Lacandón project, benefits received will be distributed according to a benefit sharing plan, which will be agreed upon by the REDD+ Governance Committee. A similar scheme will be applied in the Guatecarbon project, where the project committee will decide on the benefit distribution.
- On the other hand, environmental services concession beneficiaries that could be granted during the ERP. To that end, a committee must be established to decide on the use of these benefits.
- Likewise, in the case of compensation mechanisms for ecosystem and environmental services associated with forests, the sharing of benefits will be defined by means of the governing bodies applicable for that purpose.

Additionally, when projects and programs benefit recipients represent groups of beneficiaries and distribute these resources among their represented (for example, in the case of associations or communities) they will be able to use the channels and decision-making processes they already have, but should follow the principles and criteria established by the BSP and report on how the distribution of benefits was carried out as mentioned below.

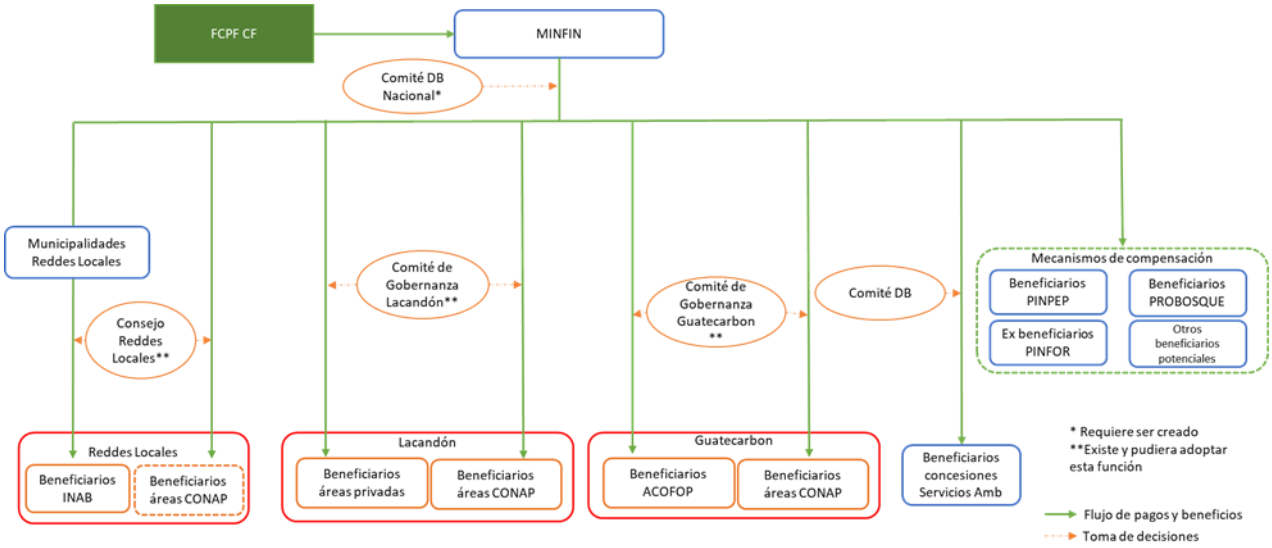


Figure 49. Benefit sharing mechanism

Benefit sharing times

The times for the distribution of benefits have not yet been defined, but a time limit should be set to do that starting from the date on which the payments for the Carbon Fund results are received.

Provisions for monitoring benefit sharing

The distribution of benefits will be monitored at various levels, such as projects' programs' obligation to report, after each distribution phase, on the form of these benefits and their recipients. Additionally, the programs and projects will have the responsibility of monitoring these same aspects within groups of beneficiaries whose representatives have transferred the benefits (i.e., associations, communities). These reports will be reviewed and approved by the respective benefit sharing committees, who will submit a program or project report to MARN's Special Execution Unit in the case of the Reddes Locales and Lacandón projects, and to CONAP in the case of Guatecarbon and the environmental services concessions, and to INAB in the case of compensation mechanisms.

In turn, the Special Unit, CONAP and INAB will review and approve their corresponding reports, and will produce general reports that will serve as input for MARN's Special Execution Unit to prepare the report on the ERP benefit sharing. This report will be reviewed and analyzed by the National Benefit Sharing Committee together with any relevant complaint filed through the REDD+ Information and Complaint Attention Mechanism, which may propose improvements to the Benefit Sharing Plan based on the information received and will approve the final monitoring report that must be submitted to the Carbon Fund. All reports, documents and minutes produced in this process will be made public and may be consulted on the ERP website.

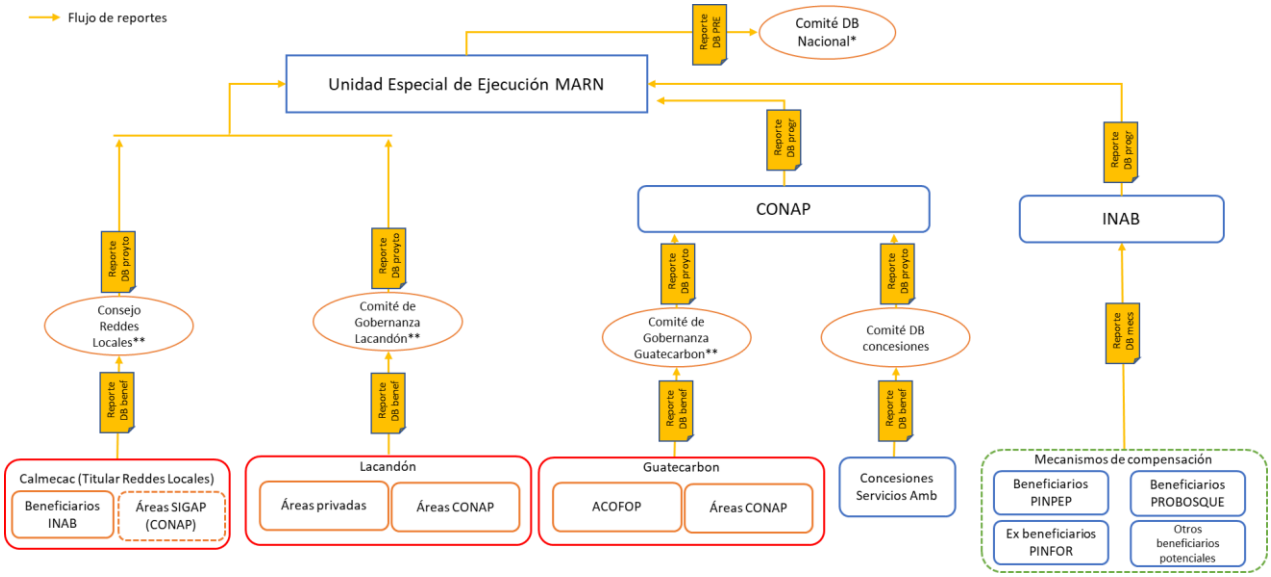


Figure 50. Benefit sharing monitoring and reporting

15.2Summary of the process of designing the benefit-sharing arrangements

The process of designing arrangements for the ERP benefits sharing has been developed so far in two phases:

- During the first phase, a preliminary version of the benefit sharing principles was elaborated, as well as the categorization of benefits and beneficiaries, and the eligibility of the latter, which was shared for consultation and validation with the ICG entities. This preliminary proposal was adjusted and subsequently validated by the inputs provided by REDD+ and ICG project implementers. On the other hand, the aforementioned principles were submitted for consideration by the technical ICG, together with the criteria for the allocation of benefits, an initial draft of the benefit sharing mechanism and a proposal of steps to be followed for the finalization of the BSS.
- In a second phase, arrangements for the distribution of benefits initially developed were reviewed for improvement, considering additional analysis and consultations and decisions made after the first proposals were developed. As part of this process, interviews were held with project developers, as well as representatives of MINFIN, INAB and CONAP, and an initial consultation with the technical ICG was subsequently made. The result of this review is presented in the current version of this document, and will be consulted during May 2019 with the political ICG and other relevant stakeholders.

The Benefit Sharing Plan draft will be prepared considering the feedback obtained from the aforementioned entities, and will be the subject of consultations with projects and programs beneficiaries in order to validate data and develop the final BSP version.

15.3 Description of the legal context of the benefit-sharing arrangements

The legal context on which the arrangements for the benefit sharing described above are based regulates both the ownership of carbon in the forests and the capacity of owners to transfer it to the Guatemalan State when necessary, as well as the legal capacity of the different stakeholders to sign participation contracts in the ERP, establish compensation mechanisms for environmental services, grant concessions in natural areas, and receive and transfer benefits at different points of the benefit sharing mechanism. While the legal aspects related to the transfer of ER titles are addressed section 17.2 of this document, this section describes those related to the other elements of the benefit sharing arrangements. To that end, the following table gives the legal definition of the roles of each stakeholder that participates in the benefit sharing scheme as proposed by the arrangements.

Table 101. Stakeholders, functions and legal support related to benefit sharing arrangements

Stakeholder	Role	Legal basis
MINFIN	Signatory of contracts with REDD+ projects and beneficiaries for participation in the ERP	This will be included in the draft law initiative that MINFIN submits through the Executive Body, to be approved in Congress. This will be published as a Legislative Decree because that is how all Public Credit operations are approved, similar to a loan operation. At the moment, this is only maintained at a draft level as part of the file submitted to Congress.
	Recipient of payments for FC results	Law of the Executive Body, Article 35 p) "Program, manage, negotiate, contract by delegation of the competent authority, register and supervise external financing operations, as well as arrange for international cooperation in general, and perform the analyzes to predict the government's debt capacity (…).”
	Distributor of payments for results to REDD+ projects and beneficiaries	This will be included in the draft law initiative that MINFIN submits through the Executive Body, to be approved in Congress. This will be published as a Legislative Decree because that is how all Public Credit operations are approved, similar to a loan operation. At the moment, this is only maintained at a draft level as part of the file submitted to Congress.
CONAP	Signatory of contracts for participation in ERP concessions	Decree number 4-89 - Law of Protected Areas, Article 69, powers of CONAP: f) Approve the subscription of concessions for the use and management of the protected areas of the SIGAP and ensure that the norms contained in the regulations established for this purpose are complied with. Article 19 of the Protected Areas Law. Articles 27, 28, 37 and 38 of the Protected Areas Regulation. Articles 4,5,6,7,8,9,10,11,12,13,14,22,25,30 of the Rules for the Granting of Concessions for the use and management of Renewable Natural Resources in the area of multiple use of the Maya Biosphere Reserve. Article 98 of the State Contracting Law. Decree 57-92 of the Congress of the Republic and its reforms.
INAB	Signatory of contracts for participation in ERP compensation mechanisms	In accordance with Article 14 letter e) of Decree 101-96 of the Congress of the Republic of Guatemala, Forestry Law, it is the responsibility of the INAB Board of Directors to dictate the necessary provisions for the efficient operation of the institution and compliance with its mandate; therefore, in accordance with these powers, a contract will be drafted for the transfer of ER title ownership. This document will be applicable to PINPEP and PROBOSQUE. Article 5 of Decree 2-2015 of the Congress of the Republic of Guatemala, Law for the Promotion of the Establishment, Recovery, Restoration, Management, Production and Protection of Forests in Guatemala (PROBOSQUE), the institution responsible for applying the law is under the competence of the National Forestry Institute (INAB). Article 4 of Decree 51-2010 of the Congress of the Republic of Guatemala, Law of the Forest Incentives Program for Small Forestry and Agroforestry Land Holders (PINPEP) establishes that the application of this decree is under the competence of the National Forestry Institute; and payments to their beneficiaries will be made in coordination with the Ministry of Public Finance.
Compensation mechanisms	Recipients of payments for results	Decree 2-2015 of the Congress of the Republic of Guatemala, Law for the Promotion of the Establishment, Recovery, Restoration, Management, Production and Protection of Forests in Guatemala (PROBOSQUE) Article 19. Compensation mechanisms for ecosystem and environmental services associated with forests. INAB, in collaboration with beneficiaries and other interested parties, will promote compensation mechanisms aimed at project participants that generate ecosystem and environmental services associated with forests. Aspects related to the planning, organization, direction and control of different compensation mechanisms will be established in the regulations of this law. Resolution of INAB's Board of Directors Number JD.01.27.2018. Regulation of the Law for the Promotion of the Establishment, Recovery, Restoration, Management, Production and Protection of Forests in Guatemala (PROBOSQUE). Article 5. Definitions. For the purposes of applying this regulation, in addition to those in the PROBOSQUE Law, current forestry regulations and other applicable laws, the following definitions are established:… Compensation mechanism for ecosystem and environmental services associated with forests: Voluntary agreements that establish the transfer of economic or in-kind resources to stakeholders with the aim of promoting sustainable activities by forest land owners or holders that provide a defined environmental service; Article 6. Application body. The application of this Regulation is under the competence of the National Forestry Institute. INAB should promote and disseminate PROBOSQUE to potential project owners, with the aim of increasing forest cover, promoting sustainable forest management, promoting forest productive chains and supporting access to compensation mechanisms for ecosystem and environmental services associated with forests to help guarantee people's livelihoods. Article 44. Destination of Fund Resources. The resources that enter the fund will have the destinations established by Article 21 of the PROBOSQUE Law, including all operating and

		investment expenses necessary to guarantee the operation and continuity of the services provided by the institution; as well as the financing of projects aimed at building capital in forest areas and compensation for ecosystem and environmental services associated with forests and other expenses established by the Manual of Budget Classifications of the Public Sector of Guatemala linked to institutional purposes. For the execution of the FONABOSQUE resources, the provisions of the Organic Budget Law, the State Contracting Law, its respective regulations and other applicable legal provisions must be observed. All activities planned to be financed by fund resources must be part of the Annual Operating Plan approved by INAB's Board of Directors. Article 45. External or internal cooperation funds. Funds from donations or any type of external or internal cooperation for the purpose of compensating environmental services associated with forests or other related destinations will be subject to the rules and legal provisions of internal and external cooperation, according to each case, as well as to commitments made by INAB, the beneficiaries and the cooperating entity in the corresponding instrument. Article 58. Promotion of compensation mechanisms. INAB will promote compensation mechanisms for ecosystem and environmental services associated with forests at the local, national and international levels, which will be governed by the Manual of Technical Guidelines. Article 59. Planning of compensation mechanisms. INAB, in coordination with the interested parties, will design, prepare and monitor the plans for the establishment of compensation mechanisms for ecosystem services in those forest areas that meet the minimum technical, economic, social and institutional conditions that ensure continuous service provision, which must abide by the legal framework of the mechanism and the regulations for the administration and execution of funds. Article 60. Organization of compensation mechanisms. INAB, in coordination with the stakeholders, will establish the organizational structure and the roles of these stakeholders, for the functioning of compensation mechanisms. Article 61. Direction and control of compensation mechanisms. INAB will design, carry out and monitor the establishment and operation of monitoring, reporting and verification systems for the compensation mechanisms that require them, in order to ensure the execution of the activities stipulated in the stakeholders agreements. Article 62. Administration of compensation mechanisms. Economic income from the administration of compensation mechanisms for ecosystem and environmental services associated with forests will be a part of the National Forest Fund (FONABOSQUE). To that end, INAB will define the administrative mechanism that provides the guidelines for the channeling and use of the economic resources. Article 63. Payment for administrative expenses. INAB will establish a mechanism to charge for administrative expenses involved in managing the funds from compensation mechanisms for ecosystem and environmental services, as well as for the costs of monitoring, reporting and verification. For these purposes, a cost will be established relative to the ecosystem service to which the compensation mechanism is applied.

16 NON-CARBON BENEFITS

16.1 Outline of potential non-carbon benefits and identification of priority non-carbon benefits

The ERP activities will generate direct and indirect benefits that have a greater scope than only carbon benefits.

This section will describe the potential non-carbon benefits and establish priorities among them.

In order to identify potential non-carbon benefits and their respective importance, a local consultation was carried out within the SESA development framework, in four regions, with the participation of 190 stakeholders.

1. Tierras Bajas del Norte: Workshop in Petén with participants from Petén and part of Izabal.
2. Verapaces: Workshop in Cobán with stakeholders from Alta and Baja Verapaz.
3. Oriente: Workshop in Teculután, Zacapa, with representatives from Oriente departments and Izabal stakeholders.
4. Occidente: Workshop in Panajachel, Sololá, with stakeholders from Occidente departments.

Through these dialogues, 3 types and 10 categories of non-carbon benefits were prioritized according to their relevance.

Table 102. Prioritization of non-carbon benefit categories in Phase I dialogues.

Type of Multiple Benefits	Category of Multiple Benefits	Relevance
1. Environmental benefits	1. Conservation and sustainable use of biological diversity	Criterion compliance is ensured
	2. Water resource improvement	
	3. Soil resource improvement	
	4. Provision of timber and non-timber products	
2. Socio-economic benefits	5. Improvement in livelihoods (environmental, cultural, social and economic)	
	6. Strengthening capacities (education and training)	
	7. Inclusion of vulnerable populations (indigenous peoples, local communities, women and youth)	Criterion compliance is highly likely
	8. Strengthening forest governance.	
	9. Contributions to food and nutrition security	
3. Cultural and traditional benefits	10. Respect and recognition of ancient and traditional knowledge	Criterion compliance is ensured

Table 103. Non-carbon benefits identified in Phase I.

Category	Non-carbon benefits description
Conservation and sustainable use of biological diversity	- The number of flora and fauna species in protected areas is increased or conserved. - The number and area of projects with PINPEP and PROBOSQUE forest incentives in strategic forest ecosystems is increased. - The area of forest under natural management that receives incentives is increased or maintained.

	- The area of forest under ecosystem connectivity focus management is increased or maintained.
Water resource improvement	- The number of projects is increased through forestry incentives in water recharge zones and high catchments and hydrological regulation areas. - Water quality is improved. - Water availability increases (m3).
Soil resource improvement	- The volume of soil lost is reduced per hectare intervened with vegetation cover.
Provision of timber and non-timber products	- The number of beneficiaries of non-timber and timber products extraction in forest concessions is increased. - The income generated through the extraction of non-timber forest products increases. - Technical assistance provided to municipalities increases.
Livelihoods are improved	- New jobs are created by timber extraction and management in forest concessions. - New jobs are created by PINPEP and PROBOSQUE projects. - New jobs are created by strengthening sustainable tourism management of SIGAP. - The number of beneficiaries of extraction of non-timber products in forest concessions is increased.
Capacity building	- More training is offered related to forest management, fire control, sustainable tourism and food security among others.
Inclusion of vulnerable populations	- Beneficiaries from the most vulnerable population groups increase (women, indigenous peoples, illiterate) in forest incentives (PINPEP and PROBOSQUE). - Increase in the participation of representatives from vulnerable population groups in watersheds and microwatersheds committee boards and other organizations related to the management of natural resources. - The participation of representatives from vulnerable population groups in technical assistance programs is increased.
Strengthening forest governance	- The number of community forestry platforms is increased by implementing forest management actions. - The participation of communities in forest resource management decision making processes is increased. - The exchanges of experiences between community organizations increase.
Contributions to food and nutrition security	- Training related to food security is increased. - The number of programs and projects aimed at rescuing and strengthening traditional production linked to the ancestral economy is increased.
Respect and recognition of ancient and traditional knowledge	- The number of meetings with COCODES or community leaders to promote traditional knowledge increases - Partnerships are created with Councils of Elders and Spiritual Guides of indigenous peoples. - Agreements are made with educational centers in order to recover and implement indigenous traditional knowledge

Within the framework of the strategic options of the National REDD+ Strategy in Guatemala, the processes by which non-carbon benefits are generated are described and presented on a summary table.

Option 1: Harmonization of the policy framework, plans and instruments of sectors linked to land use, land use change and forest-environmental management.
Benefits description: Environmental governance, including its operation, are consolidated by a simpler application of their instruments by government institutions. Likewise, the addressed stakeholders have a clearer idea and are able to better recognize their rights, including land tenure. As a result, several indirect benefits are expected, such as improving access to financial instruments, reducing and resolving land conflicts, and strengthening of formal forest economic sector.

Option 2: Strengthening institutional capacities for the monitoring and protection of forests, compliance with legislation and control of illegal logging.
Benefits description: Forest monitoring and protection institutions can exercise their mandates with greater strength and are recognized by the results achieved. Anthropogenic forest degradation and deforestation reduced and sanctions are applied. Hence, forests are able to generate more ecosystem services with better quality and provide multiple local and global benefits.

Option 3: Promotion and strengthening of national territorial planning.
Benefits description: Pressure on forests is reduced by a territorial plan that makes harmful activities unfeasible. A greater level of knowledge about forests and their ecosystem functions at a territorial level. Sets the basis to develop viable economic alternatives to predatory forest uses. Possibility of generating payments for environmental services and other alternatives that require a consistent and long-lasting regulation.

Option 4: Strengthening existing programs and creating new mechanisms to encourage forest and agroforestry conservation and protection, management of economic and non-economic activities and the production of wood-based energy.
Benefits description: Development of economic activities that complement forestry work and ecosystem functions. Local actors participate and benefit from this local economic dynamics, reducing migration as a livelihood strategy, strengthening food security and traditional forest uses. Livelihoods are strengthened by the diversification of sustainable economic income activities and higher costs associated with predatory activities such as the extraction of firewood.

Option 5: Development of the normative and institutional framework for recognizing the economic importance of environmental goods and services, including forest carbon.
Benefits description: Favorable conditions for developing local and global compensation schemes for environmental services foster scientific research and generation of local financial mechanisms. Local stakeholders do not incur the costs of conserving ecosystem services.

Option 6: Promotion of productive activities and livelihoods compatible with the conservation and sustainable management of forests and agroforestry landscapes.
Benefits description: Forests and their ecosystem functions generate more habitats for endemic fauna and flora, and benefit from reforestation projects. Local stakeholders, particularly women, support benefit sharing associated with conservation activities and sustainable use of forests. Their agricultural activities are strengthened by the use of sustainable practices, for example agroforestry or agricultural practices adapted to climate change.

Option 7: Development and implementation of a strategy for the sustainable use and production of firewood as an energy source.
Benefits description: Reforestation and forest conservation activities leads to a reduction in forest degradation. At the same time, local stakeholders have opportunities to extract firewood with economic benefits. The efficient use of firewood leads to lower consumption and less smoke pollution.

16.2 Approach for providing information on priority non-carbon benefits

The activities proposed in the ER Program are expected to optimize the management of natural resources and promote the conservation of forests and biological diversity and the comprehensive management of productive landscapes, improving the livelihoods of local populations.

Guatemala has decided to have a single system that integrates a Greenhouse Gas Emissions Monitoring System and an information system on Non-Carbon Benefits, other impacts, management and REDD+ safeguards in order to facilitate the interrelation between the four components of the REDD+ Strategy, as well as to reduce operating costs, improve the management and coordination of systems among the ICG institutions and facilitate information access and dissemination.

This National System of Information on GHG Emissions, Multiple Benefits, Other Impacts, Management and REDD+ safeguards of Guatemala (SIREDD), integrates two sub-components: a) National MRV System and b) Information System for Multiple Benefits, Other Impacts, Governance, and Safeguards. Each sub-component is composed of several components for monitoring the carbon and non-carbon variables. Therefore, SIREDD+ is fed by other systems under development and sources of information in State entities.

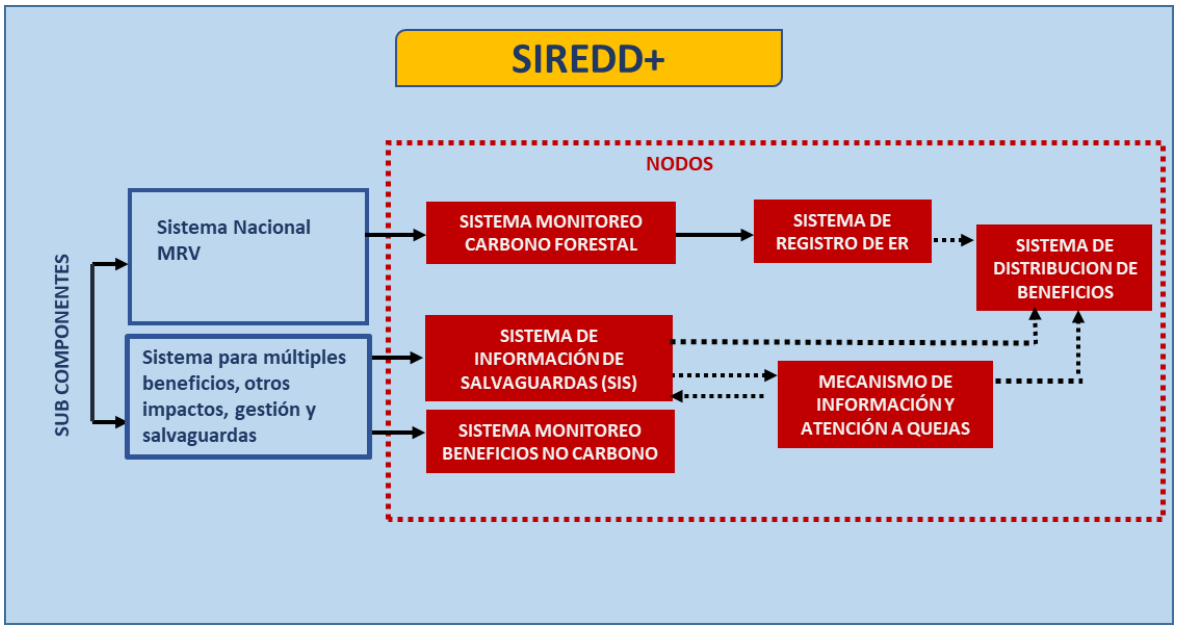


Figure 51. SIREDD+ components and nodes

The Non-Carbon Benefit Monitoring System within the 6 SIREDD+ nodes (systems) includes the same approach defined for MRV for data compilation, integration, analysis and reporting. In this sense, SIREDD+ does not generate new information, but only discloses information already processed and analyzed (Figure y).

To report the Non-Carbon Benefits through the SIREDD+, the ICG institutions will be responsible for monitoring by:

- Compiling information primarily through the existing information systems and the administrative records of each institution. This information collection will be done through the institutional information nodes at the national, regional and local levels.
- Integrating and aggregating information in accordance with the reporting needs of Multiple Benefits, Other Impacts and Management, since the information will be "compiled" by multiple relevant systems and existing information mechanisms. The integration of information will be carried out by the Integrating Unit, ICG, GIMBUT and GISREDD+.
- Analyzing aggregate information: evaluating the integrated or aggregate information that allows to monitor non-carbon benefits. This information will be validated by the political ICG.

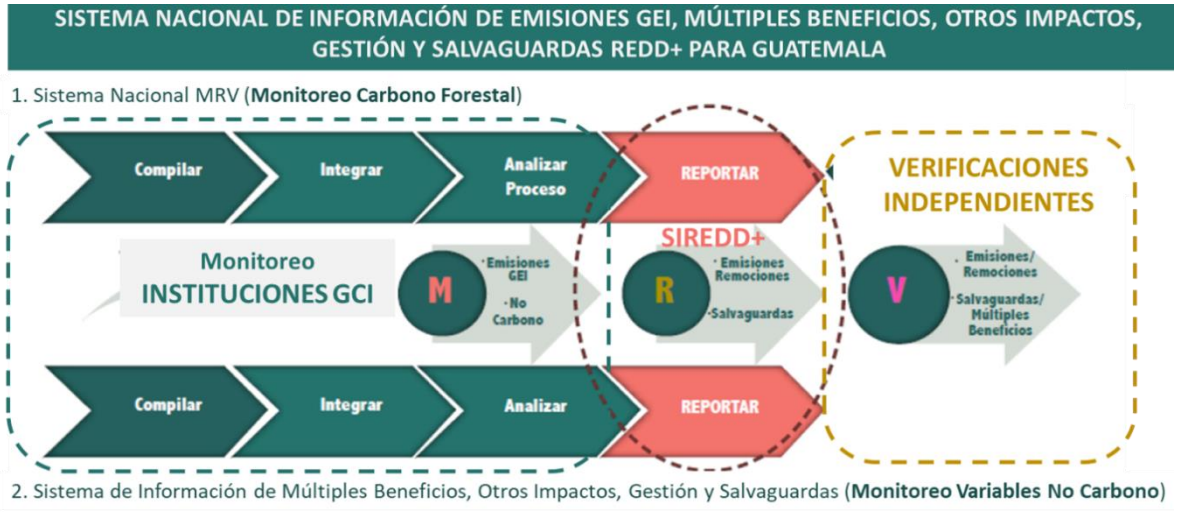


Figure 52. Monitoring, Reporting and Verification of Forest Carbon and Non-Carbon Variables.

The monitoring of non-carbon benefits will be done through the existing ICG information systems and platforms, which will be used for compiling information

Table 104. Existing information systems and sources for the monitoring of non-carbon benefits

Acronym	ICG institution	Characteristic of the information system or source
Guatemala Forest Information System (SIFGUA)	National Forestry Institute (INAB)	Statistical information in the forestry sector of Guatemala. Public use.
Electronic Forest Management System (SEGEFOR)	National Forestry Institute (INAB)	System that integrates the different INAB systems for the simplification of administrative and operational processes of the sector.
Electronic Forest Companies Information System (SEINEF)	National Forestry Institute (INAB)	Information on forestry companies. Use restricted to the public, only to users with permits
Electronic National Forest Monitoring System (SERNAF)	National Forestry Institute (INAB)	System that automates the information of individuals or legal entities that carry out activities in the forestry sector. Use restricted to the public.
Department of Municipal and Community Forestry Strengthening (DFFMC)	National Forestry Institute (INAB)	Statistics and administrative records of municipal offices for women, indigenous communities and community forestry platforms in the framework of forest management.
National Portal on Biological Diversity of Guatemala (CHM)	National Council of Protected Areas (CONAP)	Information repository system on biological diversity. Open to the public.
Directorate for the Development of Guatemalan Protected Areas System (SIGAP)	National Council of Protected Areas (CONAP)	Registries of protection, conservation, territorial planning and sustainable use of natural heritage. Ramsar files
Directorate of Geospatial Analysis	National Council of Protected Areas (CONAP)	Early Fire Alert Maps in Protected Areas Hotspots density maps according to the incidence of forest fires nationwide.

Environmental Management Directorate	National Council of Protected Areas (CONAP)	Records for evaluation, control and monitoring of projects, works, industries or activities within SIGAP and biological diversity.
Indigenous Peoples and Local Communities Unit	National Council of Protected Areas (CONAP)	Records of trainings on ancient knowledge, food sovereignty, protected areas, medicinal plants and others.
Wildlife	National Council of Protected Areas (CONAP)	Non-timber resource records used and management plans.
Environmental Information and Climate Change System (UIACC)	Ministry of Environment and Natural Resources (MARN)	Unit responsible for managing the SNICC and the Environmental Information System.
Multiculturalism Unit and Gender Unit	Ministry of Environment and Natural Resources (MARN)	Records of programs and projects of traditional production used in the ancestral economy
Department of Water Resources and Basins	Ministry of Environment and Natural Resources (MARN)	Records of Boards of Directors of Watershed and Micro-Watershed Committees
Ecosystems Office	Ministry of Environment and Natural Resources (MARN)	Records of managed sites for public and private ecosystems connectivity
Department of Land Degradation, Desertification and Drought	Ministry of Environment and Natural Resources (MARN)	Records of gained and lost polygon surfaces
Directorate of Geographic, Strategic and Risk Management Information (DIGEGR)	Ministry of Agriculture, Livestock and Food Supply (MAGA)	Records of basic cartographic and digital information in the form of images and documents available for planning in the agricultural sector.
Regional Coordination and Rural Extension Directorate (DICORER)	Ministry of Agriculture, Livestock and Food Supply (MAGA)	Records of practices, training and technologies for food security.
National Rural Extension System (SNER)	Ministry of Agriculture, Livestock and Food Supply (MAGA)	Records of practices, training and technologies for food security.
Vice Ministry of Rural Economic Development (VIDER)	Ministry of Agriculture, Livestock and Food Supply (MAGA)	Records of wood-saving stoves program beneficiaries
Gender Unit	Ministry of Agriculture, Livestock and Food Supply (MAGA)	Records of technical assistance to women

INAB and CONAP will be responsible for monitoring over 75% of the multiple benefits through their current structure and systems. In addition, with the exception of water and soil resource that will be monitored by INAB forestry incentives statistics, the rest of the non-carbon benefits category will be monitored by more than one ICG institution (Table n).

Table 105. ICG institutions responsible for the monitoring of non-carbon benefits according to category

	Category of non-carbon benefits	ICG institution

Type of non-carbon benefits		CONAP	INAB	MAGA	MARN
Environmental benefits	Conservation and sustainable use of biological diversity	■	■		■
	Water resource improvement		■		
	Soil resource improvement		■		
	Provision of timber and non-timber products	■	■		
Socio-economic benefits	Improvement in livelihoods (environmental, cultural, social and economic)	■	■	■	
	Strengthening capacities (education and training)	■	■	■	
	Inclusion of vulnerable populations (indigenous peoples, local communities, women and youth)		■	■	
	Strengthening forest governance.	■	■		
	Contributions to food and nutrition security	■		■	■
Cultural and traditional benefits	Respect and recognition of ancient and traditional knowledge	■	■		

Monitoring and evaluation of non-carbon benefits will be carried out through a system of SMART indicators to select, process, analyze and contextualize the information to generate an objective and comparable report. In this context, the Guatemala REDD+ Strategy Phase I dialogues defined indicators for monitoring non-carbon benefits were defined, several of which are already being measured by the ICG institutions.

During Phase II, evaluations are being carried out for indicators that comply with all the SMART criteria, in other words, they must be specific, measurable, attributable, realistic and targeted. In this sense, there is an extensive list of 70 SMART indicators for monitoring the 10 categories of non-carbon benefits identified. This initial list of indicators will be refined in the Phase II dialogues so that the Non-Carbon Monitoring System end up with approximately 10 key SMART indicators to monitor the main non-carbon benefits generated through the implementation of the ERP and generate biannual reports of these prioritized benefits.

17. Title to emission reductions

17.1 Authorization of the ER Program

Name of entity	Ministry of Public Finance of Guatemala
Main contact person	
Title	
Address	
Telephone	
E-mail	
Website	http://www.minfin.gob.gt
Reference to the decree, law or other type of decision that identified this entity as the national authority on REDD+ that can approve ER Programs	Decree 114-97 of the Congress of the Republic of Guatemala, Law of the Executive Body, Article 35 r) The MINFIN has the legal competence to sign the contract with the World Bank in accordance with Article 35 r) of Decree 114-97 of the Congress of the Republic of Guatemala, Law of the Executive Body, which stipulates that MINFIN has, among others, the powers to create, in any national banking institution, trusts, funds and other financial instruments and execute central government programs, as well as regulate, register and control their operation.

17.2 Transfer of title to ERs

The ability of MINFIN to transfer generated ERs to the FCPF during the 2020-2024 period and contracted by the ERPA is based on the specific characteristics of the Program that includes early REDD+ actions and programs of compensation or results-based payments, and the respect for the legal regime and land tenure rules. Tile to ER transfer under the ERP is guided by the FCPF Methodological Framework and the criteria included in the Note on the Ability of Program Entity to Transfer Title to Emission Reductions (ERs) Forest Carbon Partnership Facility, Carbon Fund of January 2018, and has the aim of guaranteeing the integrity of the system by preventing double counting. For these purposes, the transfer of ER titles by MINFIN to the Carbon Fund is based on the following premises:

a. A Climatic Change Law that establishes on Article 22 a relationship between rights over ERs, land ownership and the requirement of a National Registry record.
b. Respect for land ownership regimes, including the constitutional guarantee of private property and the rights of indigenous and local communities.
c. Different arrangements and their legitimacy to obtain ER titles from MINFIN according to the activities that give origins to the ERs.
d. The fact that MINFIN should only have ownership over ERs from REDD+ projects that following their nesting and the allocation of a quota are sold to MINFIN, or by individuals and communities that benefit from forest incentive programs of the compensation mechanisms that can be created, and that, and that will therefore be included in Benefit Sharing System.
e. The requirement for registering REDD+ projects and programs that generate ERs order to prevent double counting.

The formal basis and institutional arrangement that allow MINFIN to transfer the full legal titles and exclusive rights over ERs established on the ERPA with the FCPF are described below. In order to facilitate comprehension, the analysis is divided into formal capacity and substantial capacity of MINFIN to carry out the transfer of ER rights.

A. Formal legitimacy of MINFIN for the transfer of ER rights

The MINFIN has the legal competence to sign the contract with the World Bank's Carbon Trust Fund in accordance with Article 35 r) of 114-97 of the Congress of the Republic of Guatemala, Law of the Executive Body, which stipulates that MINFIN has, among others, the powers to create, in any national banking institution, trusts, funds and other financial instruments and execute central government programs, as well as regulate, register and control their

operation. The MINFIN has signed the Letter of Intent with the FCPF on April 26, 2017, on behalf of the State of Guatemala, contract in which MINFIN acted under its competence and responsibilities in accordance with Guatemalan law. MINFIN will create a new unit called Financial Directorate to manage climate financing and will be in charge of relations with donors and international institutions, including the management and negotiation of agreements with these donors.

For the purposes of national procedures, the signing of the ERPA with the World Bank must be approved by the Congress of the Republic of Guatemala. In this sense, and in accordance with Article 171, letter l) numbers 4 and 5 of the Political Constitution of the Republic of Guatemala, the Congress is responsible for approving treaties, agreements or any international arrangement, before their ratification, and whenever they represent a commitment to submit any matter to an international judicial decision or arbitration; or when there is a general clause of arbitration or submission to international jurisdiction. Authorization by the Congress of the Republic of Guatemala is therefore subsequent to the ERPA contract negotiation and prior to the signing of it.

The Congress should therefore approve the negotiation and singing of the ERPA contract with the World Bank. Within this process of authorization by the Congress to the signing of the ERPA, the Congress of the Republic will not only authorize the signing of the ERPA with the World Bank, but also the signing of the contracts by MINFIN with the early REDD+ projects included in the Program and the Benefit Sharing Plan, as well as any proposed legal change considered appropriate (known as the "ERPA Package"). This process of Congress authorization represents, on the one hand, additional legal guarantees for the World Bank, since the ERPA Package is approved by a Decree Law and, on the other, a clear political commitment on the part of the Government of Guatemala.

Once the ERPA has been signed, the Office of the Attorney General of Guatemala, in its capacity as State representative, will issue a statement confirming that the obligations assumed by the State of Guatemala are valid and enforceable. The sale of ERs in accordance with the ERPA is not subject to the rules of Public Procurement of the State of Guatemala.

Next, a diagram with the ERPA Package negotiation and approval process is presented.

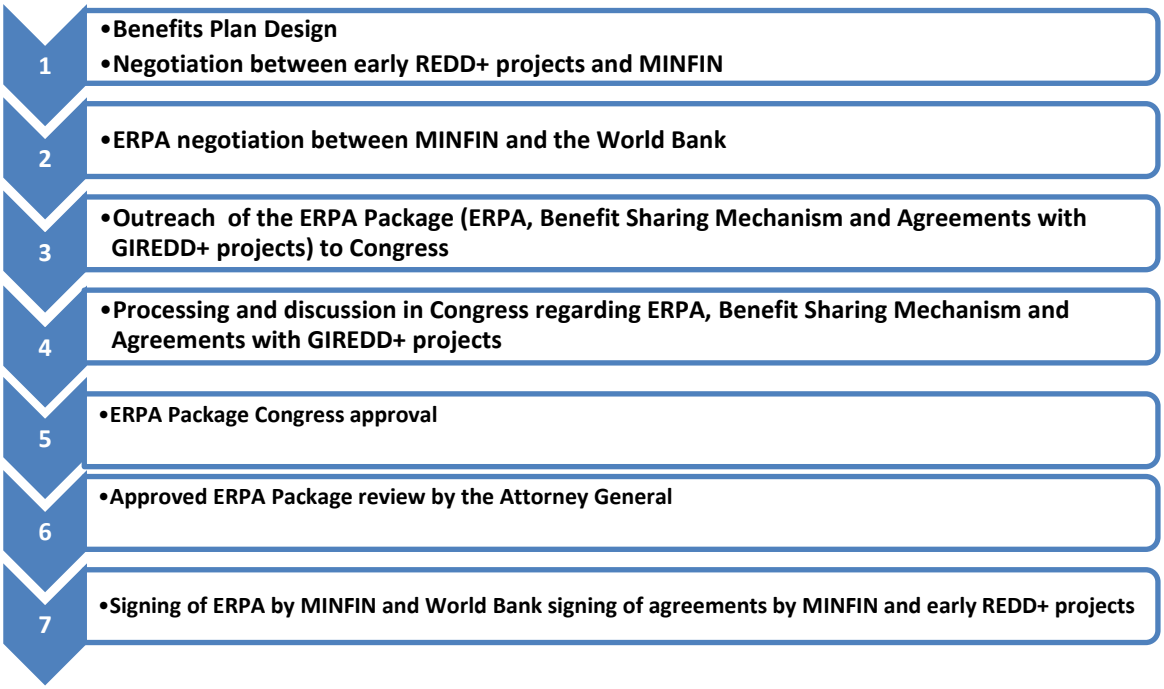


Figure 53. ERPA Package negotiation and approval process

B. Substantial legitimacy of MINFIN for the transfer of ERs: Evidence to demonstrate Program Entity's ability to transfer title to ERs

Considering that the Accounting Area of the Guatemala Program includes early action REDD+ programs and that Guatemala aims to transfer the largest possible number of ERs during the 2020-2024 period to the FCPF, this section will address the necessary mechanisms and conditions so that the rights over ERs are transferred to the Carbon Fund, considering the different REDD+ activities of the program.

In this sense, the proof of ER title by the Program Entity (MINFIN) will be based on a combination of several schemes based on the origin of the ERs as provided by Indicator 36.2 of the FCPF Methodological Framework and the options mentioned in Section II of the Note on the Ability of Program Entity to Transfer Title to Emission Reductions (ERs) Forest Carbon Partnership Facility, Carbon Fund of January 2018, and as specifically indicated below:

1. **In the case of early REDD+ actions participating in the ERP, the Program Entity (MINFIN) will sign a supplementary agreement (in the terminology of the FCPF Methodological Framework) for the transfer of contracted ERs by the Program Entity with each REDD+ projects.** This will consider the agreements reached by the participants of each project, including all arrangements with the local and indigenous communities in the project area, and will be carried out with the entity in charge of the project's ER titles project that has the ability to transfer them in accordance with the legislation in force and the arrangements signed between the different project participants. These agreements between MINFIN and REDD+ projects will be negotiated in the first months of 2019, before the signing of the ERPA with the World Bank and will enter into force after Congress approval. All agreements between MINFIN and the early REDD+ projects included in the Program will provide, among others, a clause of assignment of rights to the contracted ERs, a preferential right clause on the contracted ERs ("seniority") over other possible buyers of CERs generated by the project in question, a waiver of present and future rights over the ERs during the duration of the program and the benefit-sharing agreement, including the exact amount of benefits shared among the beneficiaries of each project.
2. **In the case of ERs from forest arrangements that grant monetary and non-monetary benefits**, the Program Entity will hold title to ERs based on the fact that INAB would introduce a Compensation Mechanism for Ecosystem and Environmental Services Associated with Forests (MCSEAB) that will include a clause for ER title transfer by the beneficiaries of the MCSEAB in exchange of payments[230]. INAB is currently studying technical, legal and economic analysis to develop the MCSEAB[231] and it is expected that if the MCSEAB is finally adopted, regulations associated with it would be ready to be integrated into the ERPA Package and approved by the Congress of the Republic.
   MCSEAB would be a compensation mechanism that may benefit:
   - current PINPEP and PROBOSQUE beneficiaries who want to join the MCSEAB;
   - past PINPEP and PROBOSQUE beneficiaries who want to join the MCSEAB; and
   - Beneficiaries who have not been benefited by forestry incentive programs and who want to join the MCSEAB.

   The MCSEAB would be articulated at the local level so that there would be local MCSEABs, which the potential beneficiaries identified above could voluntarily join. MCSEAB membership implies that beneficiaries have to sign an MCSEAB Agreement that, in addition to the obligations of the beneficiary and economic remuneration, would include a clause specifying that every land owner or holder benefiting from the incentive will agree to assign all present and future rights over the ERs to the State of Guatemala and will refrain from transferring any ER right to third parties. This process will be easily managed by INAB given that it replicates the same provisions currently in force for PINPEP and PROBOSQUE incentives and that there are template contracts that will facilitate the design of a MCSEAB contract. The MCSEAB normative framework would be integrated into the ERPA Package for its approval by Congress, which will avoid risks in the Program's implementation. For

[230]INAB would develop the MCSEAB under the provisions of Articles 20 and 21 of the Forestry Law that provides for the creation of compensation mechanisms. The development of the MCSEA by INAB is part of a broader strategy for regulating environmental services in other areas, including compensation for hydrological services, landscape services and biological diversity.

[231]Currently, INAB is carrying out different institutional analyzes (technical, administrative and legal) for the integral design of the MCSEAB, which are included in the project proposal for the Strengthening of forest governance, and diversification of livelihoods FIP.

more details on the operation and workings of the MCSEAB and the benefit sharing system, see Section 15 on Benefit Sharing.
The advantages of adopting a specific MCSEAB and differentiating it from the incentives granted under the national forest incentive schemes would be:

- The differentiation between the nature and objectives of forest incentives (PINPEP and PROBOSQUE) and MCSEAB.
- The need to respect the legal requirements to avoid double incentives, as required by the PROBOSQUE Law and the PINPEP Law[232].
- The guarantee of respect for private property, given that membership of the MCSEA will be voluntary.
- Provide guarantee and legal security to the transfer of the ERs to the State of Guatemala.

3. MINFIN, as Program Entity, will register the Program under the National Registry of Guatemala. This registry, made by MINFIN will thus include all ERs from the Program's activities, obviously including the Program's Early Action REDD+ Projects and the ERs under the MCSEAB. This implies that the owners and beneficial owners of MCSEAB REDD+ designed under the Program, or those owners or holders included in the Early REDD + Projects will not be required to register their REDD+ activity in the National Registry as a condition for the transfer of ownership. The registration requirement is satisfied with the registration made by MINFIN.
4. **In the case of ERs from activities that are not within REDD+ or ERs from the MCSEAB,** the ERs obtained during the term of the Program will be included in the national accounting. In order to prevent double counting of ERs, the State of Guatemala will oblige every individual and legal entity, and every governmental and non-governmental institution that intends to carry out an emission reduction project to register the ERs in the national registry.

In all cases, the transfer of title to ERs by MINFIN to the World Bank will be carried out in accordance with the legislation in force regarding land tenure and natural resources, the Framework Law on Climate Change, special legislation that can be adopted for the purpose of implementing the ERPD, and respect for the rights of local communities and indigenous peoples.

Implications of the Guatemalan Framework Law on Climate Change on Title to ERs and on the Program

The Program Entity's analysis of title to ERs should be based on the Framework Law for the Regulation of Vulnerability Reduction, Compulsory Adaptation to Climate Change Impacts and Mitigation of Greenhouse Gases (Framework Law on Climate Change) and more specifically, Article 22, which provides details on the rights related to carbon projects and whose articles state that:

"The activities and projects that certify removals or reduction of greenhouse gas emissions may have access to voluntary and regulated carbon markets, as well as other bilateral and multilateral mechanisms of compensation and payment for environmental services.

The rights, tenure and negotiation of carbon and greenhouse gases emission reduction units, as well as their respective certificates shall belong to project owners as stated on the previous paragraph, which should be duly registered in the Registry created by the Ministry of Environment and Natural Resources.

Rights holders can be individuals, legal entities and the State, as long as they are the legal owners or holders of the lands or assets used in the projects.

In a maximum period of eighteen (18) months from the entry into force of this law, the Ministry of Environment and Natural Resources, taking into account the proposals of the National Council on Climate Change created by this law, shall issue the necessary regulations for the creation and operation of the National Registry of GHG Emission Reduction and Removals Projects aimed at disclosing, promoting, registering, validating, monitoring and verifying projects."

[232] Art. 17 of PROBOSQUE Law and Art. 15 of the PINPEP Law.

Article 22 of the Framework Law for the Regulation of Vulnerability Reduction, Compulsory Adaptation to Climate Change Impacts and Mitigation of Greenhouse Gases should be interpreted in the sense that the REDD+ activities' ERs belong to:

1. The legal owners or holders of land,
2. who have registered their project in the Registry created by the Ministry of Environment and Natural Resources.

This interpretation establishes the linkage of title to ERs with the rights over the land, as established in Article 22 of the Climate Change Law but to make rights over the ERs effective, owners and holders must register their project, on other words, they must carry out the activity that leads to the generation of the ERs. This interpretation allows the implementation of the Program, since being the formal owner or holder of the land does not guarantee in itself any title or benefit related to ERs if there is no registered activity being carried out and generating ERs.

According to the activities included in the Program, this means that, according to Article 22 of the LMCC, the title to ERs must be considered in three types of areas: (i) REDD+ projects area; (ii) areas that participate in the MCSEAB; and (iii) the remaining areas that are not part of an early action nor receive forest incentives.

1. In early REDD+ actions areas, the holder of the ERs will be:

    - The legal owner(s) or holder(s) (individual or collective) of the area where the REDD+ project is developed. The project must be registered in the Program and in the National Registry, and the holders will assign title to ERs to the State of Guatemala in accordance with the agreement signed with MINFIN, as stated above.
2. MCSEAB benefit areas, the holder of the ERs will be:

    - The individual or collective land owner that voluntarily joins the MCSEAB, that will be part of the Program registered in the National Registry by the Program Entity and will assign the title to ERs to the State of Guatemala, in exchange for benefits within the framework of compliance with participation in MCSEAB.
3. Areas not included in REDD+ projects, not even under MCSEAB:

    - Title to ERs is attributed to land owners and holders as long as they register their projects in the Registry.

Regarding areas not included in REDD+ projects or forestry incentive initiatives, this interpretation not only guarantees an easy implementation of the program but also respects the principle of private property and ensures that double counting will not occur. Article 22 of the LMCC requires the registration of projects, and therefore, does not imply that the Program must have the explicit and ad hoc consent of all owners and holders of land, as this would make it impossible to execute the actions. However, they must be informed of it and have all the necessary knowledge. Moreover, land owners or holders that do not participate in any incentive or compensation program in exchange for ERs, will have the right to freely carry out activities in their areas, including conservation and reforestation actions, and will be able to trade their ERs in carbon markets, as long as they register their projects. Only in this way will MARN be able to guarantee that the ERs generated by these projects can be deducted from Program inventory and thus prevent double counting. In the same way, if a land holder or owner wants to participate in any Program activity or carry out a project within the Program, they will be able to do it after registering, therefore guaranteeing their non-participation in other payment by results schemes during the term of the Program and the non-transfer of the ERs generated and committed to the Program.

Arrangements for the transfer of Title to ERs to the Program Entity by the REDD+ Projects

The MINFIN, in coordination with the ICG, has prepared a roadmap to establish agreements on the transfer of title to ERs with the implementers of early REDD+ projects, specifying execution and schedule details. The MINFIN, on behalf

of the State of Guatemala, will sign a contract, once authorized by the Congress, with each REDD+ project in order to formalize the transfer of all rights and titles to contracted ERs from projects that are part of the Program. Each project will voluntarily decide how many ERs allocated under the nesting rules will be transferred to MINFIN.

Although contracts will be adjusted to the particularities of each project, they will contain the following provisions to largely reflect the requirements of the FCPA's ERPA contract model in relation to subprojects[233]:

1. Cumplimiento de las condiciones de anidamiento, tal y como establecidas por el Gobierno de Guatemala
2. Transfer and assignment of rights over the contracted ERs.
3. Benefit-sharing agreement.
4. Preferential rights to contracted ERs (seniority)
5. Bases for the generation of ERs, including baseline and number of ERs contracted.
6. List of legal provisions and guarantees, as established by the FCPF's ERPA contract in relation to subprojects.

Likewise, the signature of each contract with the implementers of REDD+ Projects in the Program will be previously endorsed internally by all local and indigenous communities that are part of the project. This internal approval will be done in accordance with the decision-making procedures established by each project.

Contract negotiations with project developers will be led by MINFIN with the support of MARN and CONAP.

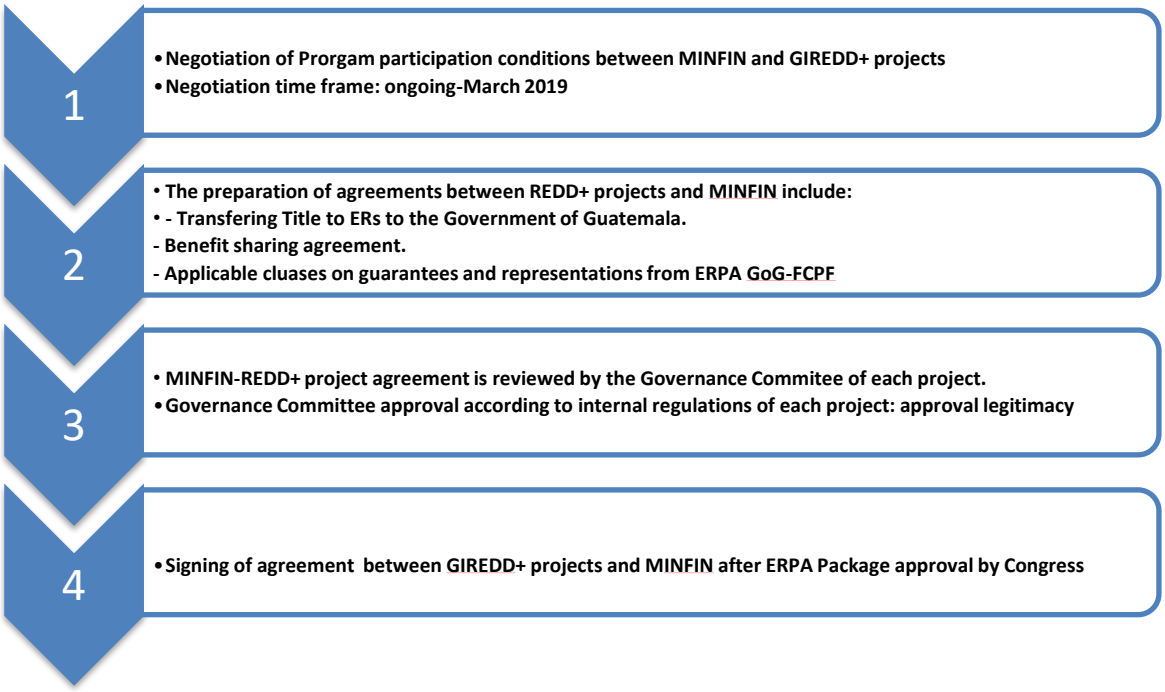


Figure 54. Negotiation process with early REDD+ action projects included in the Program

The ER title transfer agreement between the early REDD+ projects and MINFIN will also include that the Program Registration by MINFIN would imply the registration of the Program's early REDD+ projects included in the Program.

In the case of the Guatecarbon and LACANDON Projects, both registered under the VCS and CCBA standards, and in order to avoid any risk of double counting (standards and Program), the two projects will be committed, in its agreement with MINFIN, not to request the issuance of ERs by the voluntary standards during the Program. Additionally, each project, and for the sake of greater transparency and proactivity will send a letter to the VCS officially informing its participation in the Program. It should be considered that the VCS does not currently have a formal procedure to cancel or suspend a registered REDD+ project, nor are there specific documents in this regard,

[233] Terminology used by the FCPF's Emission Reduction Payment Agreement, 2014.

nor is the request for suspension required as such. Therefore, the notification sent to the VCS by the REDD+ LACANDON and GUATECARBON projects will be a formal letter, a document that will be added as an annex to the ERs transfer contract between MINFIN and the two projects.

In the case of the CALMECAC Project, and in spite of being a project that has not yet been registered as a VCS and CCBA project, the CALMECAC Foundation, as one of the Project organizers, intends to register the project under these carbon standards or the Plan Vivo. In order to avoid conflicts of ownership, the CALMECAC Project, upon joining the Program and signing contract with MINFIN, will agree not to request the issuance of the ERs that will be transferred to MINFIN for the purposes of the Program.

Specific arrangements with REDD+ Projects for the transfer of ERs to the Program Entity

Lacandón Project

According to the LMCC, the legal owners of title to ERs are: The Defensores de la Naturaleza Foundation (FDN), the Unión Maya Itzá, La Lucha and La Técnica Agropecuaria cooperatives, since each of these entities are owners of the project areas. These entities have signed a series of agreements, from those signed with VCS to the creation of local project governance committees in charge of making decisions. Likewise, the three cooperatives have cooperative terms in which their members have agreed to be part of the REDD+ project. There are no land conflicts, therefore, the FDN and the cooperatives, as private land owners, have legal ownership over the ERs in accordance with Article 22 of the Climate Change Law. The Lacandón Project has not alienated nor has any charges on the ERs to be generated between 2020 and 2025.

For operational purposes, and as mentioned above, this project has established a Governance Committee as a legal entity, composed of two representatives from each participating cooperative and the FDN. The transfer of title to ERs to MINFIN must follow the procedure established in the 2015 Internal Operating Regulations of the Governance Committee[234]. In particular, the agreement on the transfer to the Government of Guatemala must be signed by the legal representative of FDN, legitimized by a Governance Committee statement, with prior approval of the respective cooperatives' authorities and the FDN's Board of Directors[235]. This procedure ensures that the members of the three cooperatives will approve the agreement regarding the transfer of ERs to MINFIN and to Benefit Sharing System. These approvals should be formalized in the internal regulations of each cooperative.

Guatecarbon Project

The State of Guatemala is the legal owner of the Maya Biosphere Reserve, and of the Multiple Use Zone where the ERP REDD+ Projects are located, including forest concessions, and there are no privatelyowned lands in the area. This is supported by Executive Order MA 2-73, which provides for the implementation of the Petén Land Titling Law. According to this executive order, ownership is granted to the State of Guatemala (Property 292 on book 3, folio 28, of the Land Registry of Guatemala) , and is supported by Governmental Decree 5-90, which establishes the Maya Biosphere Reserve, including the MUZ, as a protected area of the State. Since the State of Guatemala is the legal owner of the lands where the Project activities are carried out, it also owns the ERs generated by the project and there is no need for any type of transfer agreement, but rather an institutional agreement between CONAP and MINFIN.

The transfer of ERs by the Program Entity respects the agreement signed between CONAP and concessionaires represented by ACOFOP. Despite some disputes in the past regarding theoretical disagreements on the interpretation of ER ownership (see Section 4.4, Impact of Forest Tenure on ER Ownership), and specifically, on whether concessionaires can be considered as legal holders for the purposes of Article 22 of the Climate Change Law, nowadays, such disagreements are overcome. CONAP and ACOFOP, on behalf of community concessions, agreed and decided that, for formal purposes, CONAP would own the title to ERs. Thus, for the purposes of the VCS, it was decided

[234]Regulation of the Governance Committee of the REDD+ Lacandón Project, in the Sierra Lacandón National Park of the Maya Biosphere Reserve, November 11, 2015.

[235] The three cooperatives are aware of the possibility of including the project in the ER-PD in order to sell ERs to the FCPF.

that CONAP should be the Issuance Representor and Registration Representor. At a later date, and through CONAP's Resolution 01-16-2015, concessionaires are recognized as co-proponents. Being a co-proponent means that they have rights and responsibilities within the project and that they participate in the sharing of benefits[236]. CONAP's Resolution 01-16-2015 states that concessionaires are recognized as co-proponents "without prejudice to the ownership of the project, rights, tenure and negotiation of carbon emission reduction and certificates owned by the State of Guatemala". All this does not jeopardize the sharing of ER benefits with concessionaires, given that, at all times, CONAP has recognized the rights of the concessionaires to participate in the project's benefit-sharing scheme, having at the present time put forward a plan for sharing concession benefits, which needs to be approved by CONAP and concessionaires.

For internal compliance purposes of the Guatecarbon Project, the Project Governance Council formed by representatives of CONAP and ACOFOP (as representative of the concessionaires), according to its attributions, must previously approve the commercial terms of the transfer agreement with MINFIN in accordance to its mission of assessing the technical proposals for the trade of ER certificates. To this effect, the Governance Council must approve the agreement with MINFIN, which will be reflected in a formal statement registered in the Comptroller General of Accounts. This agreement will include provisions for the transfer of contracted ERs, the benefit-sharing framework between CONAP and concessionaires and clauses waiving any type of present or future rights over the contracted ERs. It is not considered a risk that the Governance Council of the Guatecarbon Project would formally oppose the transfer of ERs to the World Bank Trust Fund given that ACOFOP has been informed at all times of the steps necessary for the project to join the Program and, since 2014, ACOFOP has been negotiating with CONAP and, since the beginning of the REDD+ process in Guatemala, has expressed its accordance to include the project in the ER-PIN of Guatemala. Likewise, the necessary approvals by the Guatecarbon Governance Council will be concluded before the signing of the ERPA with the World Bank.

A relevant issue regarding the transfer of the Guatecarbon Project's ERs is the fact that, as seen in Section 4.4, two concessions contracts will end during the ERPA contract period. In this case, the concessions can be extended at the request of the concessionaires two years prior to the contract expiration, and provided that they have complied with the terms of the current concession as established in Article 41 of the Rules for the Granting of Concessions for the Use and Management of Renewable Natural Resources in the Multiple Use Zone of the Maya Biosphere Reserve and the applicable legislation. In order to clear any doubt regarding ER ownership in the concession areas, CONAP will include in the renewed concession text a clause on the ownership of the ERs by the State and the benefits to be assigned to concessionaires, and, in general, the conditions for accessing payments for ecosystem services. In this regard, it is worth noting that CONAP, in order to clarify the procedures and regulate the administrative-financial procedure for the development of ecosystem services in the national SIGAP lands, has prepared a normative draft that will provide legal certainty in this matter.[237]

The Guatecarbon Project has not alienated nor has any charges on the ERs to be generated between 2020 and 2025.

➢ ***Mitigation measures to guarantee the transfer of ERs from concessions that expire during the execution of the ERs and possible termination of concessions***

- In order to clear away any doubt that may arise regarding the rights of the concessionaires over the ERs in the Guatecarbon Project, the Project Governance Council formed by CONAP and ACOFOP will issue a statement agreeing on the inclusion of the Guatecarbon Project in the FCPF's ERPA. This statement will mention the conformity of the members of the Governance Council regarding the sale of the project's ERs to the FCPF.
- The negotiations for the renewal of the community concessions will be carried out in such a way that it takes place without there being discontinuity in the execution of the concessions, which will depend on the administration process of the contract renewal or extension.

[236]This benefit sharing agreement is still under negotiation to set the percentage that each consensus receive and there is already a proposal prepared by CONAP and ACOFOP which will be submitted to consensus and final decision in 2018.

[237] CONAP is currently preparing a draft regulation on ecosystem services: *Regulation of the Environmental Service of Reduction and/or Removal of GHG Emissions in National CONAP Lands.*

- The new concession contracts will be renewed, as long as they meet the conditions established by law and in accordance with all legal procedures, for two community concessions that expire during the period of the Program and will contain a specific clause stipulating the obligation to participate in the REDD+ Project, the holding of ER titles by the State of Guatemala and establishing a benefit-sharing agreement with concessionaires.
- The termination or suspension of a concession would not pose problems to the ownership over the ERs, since the areas of the Projects, as protected areas, are owned by the State of Guatemala. In this case, in order to overcome the lack of management in the forest area and guarantee the generation of ERs, CONAP will take over the administration of the canceled or suspended concession.

CALMECAC Project

The Project in on the design phase but already has the essential elements to ensure that there are no obstacles to the transfer of ERs to MINFIN.

The ER ownership transfer in the Project will be done in accordance with the Framework Law on Climate Change and involves three categories of stakeholders as shown in:

1. CALMECAC Foundation: will act as the owner of the project to whom the ERs will be transferred by the participating municipalities. It is the entity in charge of trading the ERs and will transfer the ERs to the Government of Guatemala in order to allow the transaction of ERs to the World Bank Trust Fund.
2. Municipalities: The 12 municipalities participating in the Project will transfer the ERs to CALMECAC under a contract. At the moment, no type of contract has been signed, although there are general agreements between CALMECAC and the municipalities where the general terms of participation in the project are included. It is expected that contracts between CALMECAC and municipalities will be signed in the second semester of 2019 and the first semester of 2020. These contracts will include, among other clauses, the transfer of ERs to CALMECAC. Likewise, CALMECAC will require each municipality to submit a Municipal Investment Plan for the Recovery, Conservation and Increase of Forest Cover
3. Owners and holders. These are land owners and holders in the municipalities participating in the project. These owners and holders are mostly PINPEP and PROBOSQUE beneficiaries and are already part of the organization Enredémonos por el Corazón Verde, support organization led by CALMECAC, that provides technical support in their forest incentive projects. Participants can enroll in the Project voluntarily and free of charge using a participation ticket at an Emissions Reduction teller, which will be available at the Municipal Environmental Management Units (UGAM) and/or at the Municipal Forestry Office (OFM) in each of the 12 municipalities that participate in the Project. The owners and holders who decide to join the project in the municipal teller service will sign a simple contract with the municipality in which the conditions of participation are established and will agree to transfer ERs to the municipal government, who in turn will transfer them to CALMECAC. One of the requirements to join the project is not to participate in other projects or programs that involve the transfer of ERs. The participating owners and holders will receive the benefits directly from the municipalities, as explained in Section 15.

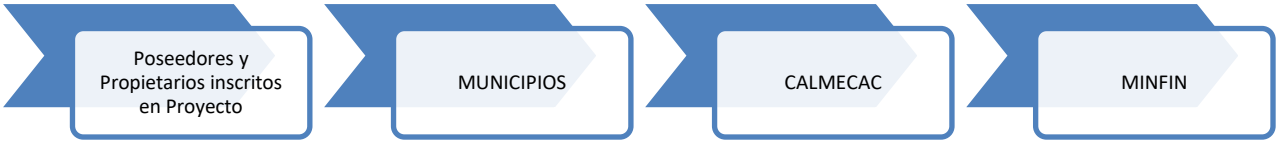


Figure 55. ER transfer cycle in the CALMECAC Project

The CALMECAC project has not alienated nor has any charges on the ERs to be generated between 2020 and 2025.

Arrangements for the transfer of title to ERs to the Program Entity by beneficiaries of forest incentives

In the case of ERs from forest incentive programs or Compensation Mechanism for Ecosystem and Environmental Services Associated with Forests (MCSEAB) that can be introduced under the Program. This mechanism is currently being designed by INAB, although INAB already has arrangements for the transfer of ER ownership. The original title with respect to the ERs that will be generated by the MCSEAB belong to collective or individual land owners and holders, and is regulated by the specific program laws as well as Article 22 of the Climate Change Law, as long as they voluntarily join or participate in the MCSEAB. .. INAB will prepare a specific contract model that will be signed by every MCSEAB member, in which a clause will be included to make holders and owners will transfer title to ERs to the Program Entity (MINFIN) in exchange for the REDD+ benefits. The models of these contracts will be presented by the Government of Guatemala to the World Bank Trust Fund before the signing of the ERPA.

The transfer of titles will be based on INAB'S consolidated administrative practices in the management of forestry incentives and in the preparation and signing of contracts with the beneficiaries, an experience accumulated in more than 20 years and more than 300 million dollars granted to more than one million beneficiaries. The procedure by which INAB operates the forestry incentives is as follows:

1. Potential beneficiaries of MCESAB - current beneficiaries of PINPEP and PROBOSQUE, former beneficiaries of PINFOR, not benefiting from forest incentives - voluntarily join the MCESAB. This membership requirement will be made locally. n. In the case that the applicants are already beneficiaries of forestry incentives or have been in the past, and given that to access these incentives it was necessary to demonstrate the ownership certificate or proof of ownership, which will indirectly eliminate the inclusion in the MCESAB of areas with conflicts over land. In the case of adherents to the MCESAB who have not previously been beneficiaries of forestry incentives, INAB will request a series of requirements, including a certificate of possession or a property registry, which will again serve to avoid including areas with conflicts over land.
2. Review of the application for membership by the INAB. INAB will verify compliance by applicants of the requirements established in the rules and procedures of the MCSEAB.
3. Contract between INAB and beneficiary. This MCSEAB contract includes the conditions to receive MCSEAB payments, the transfer of ER ownership and the amount of benefits. INAB will inform the MARN's registry about the contracts signed and the areas covered.
4. Control and certification by INAB regarding the MCSEAB contract compliance. INAB will verify compliance with the dispositions established on MCSEAB beneficiary contracts, similar to the verification processes carried out in the case of forest incentive systems. This information will be sent to the Registry. After verifying compliance, MCSEAB will make the payment to the beneficiary.

Section 15 gives more details on the benefit sharing process under MCSEAB. The MCSEAB will be presented by the Government of Guatemala before signing the ERPA.

Areas not included in REDD+ projects or in forest incentive schemes

As explained above in the section called Implications of the Guatemalan Framework Law on Climate Change on title to ERs and on the Program, it is important to bear in mind that the owners or holders of private lands that do not participate in the incentive programs or in REDD+ projects, have, under Guatemalan law, full rights over their properties and possessions and, according to Article 22 of the Climate Change Law, would be the owners of the ERs originated in their properties, as long as the REDD+ projects are registered in the National Registry. In other words, the State of Guatemala and the REDD+ Program do not restrict private property, which means that private owners can participate in emission reduction projects under voluntary or other carbon market schemes. In this case, the State of Guatemala will recognize the title to ERs of owners and holders as long as they register their projects or programs in the Guatemalan ER Registry according to the nesting rules set up by the government. This means that the State of Guatemala's interpretation regarding the title to ERs is based on the following two principles of Article 22 of the LMCC:

1. Having the land owner or holder status;
2. Registering the Project or Program in the National Emissions Registry.

Only this interpretation prevents the risk of double REDD+ ER counting and allows private parties to exercise their rights to develop REDD+ activities.

The regulation of the National Registry will be done by MARN, which is currently has a first draft and will stipulate the conditions required by Guatemala for the registration of projects in the National Registry, including nesting requirements as set out in Section 18 and Annex XI of this document. This registry will be consolidated in the Data Registration and Management System, as explained in Section 18 of the ERPD. In this way, the State of Guatemala will ensure that generated, issued and transferred ERs are registered in the country's greenhouse gas registry and deducted from the national accounting figures. Before the Registry has been effectively established, in compliance with the LMCC and with the aim of providing security to the ERP REDD+ projects, the government (MARN) will establish the official mechanism for recognizing projects.

Land conflicts and security in the transfer of Title to ERs

Despite the progress in their resolution, land conflicts are very much present in the country, as discussed in Section 4.3. The State of Guatemala is aware of the need of securing that ERs transferred to the World Bank under the ERPA are done so completely and without any claims third parties regarding their ownership. The State of Guatemala is also aware of the duty of complying with the safeguards related to land conflicts. In addition to the safeguards system and the existing complaints and claims mechanisms, the State of Guatemala will ensure that:

1. The Program's early REDD+ actions and the contracts between projects and MINFIN will include provisions for the frequent reporting by project managers of any arising land conflict in their areas, the type of conflict, the exact location and the solutions to be applied. These reports will be issued regularly.
2. As for the Compensation Mechanism Programs, the State of Guatemala, similarly to the forest incentive schemes already in place, will only admit those owners and holders of areas where there are no land disputes. The fact that the MCSEAB is basically a mechanism for PINPEP and PROBOSQUE beneficiaries, according to the current procedure for the granting of forestry incentives, they must comply with the current documentation procedures that owners and holders must submit to INAB are a guarantee for minimizing the inclusion of conflict areas in the Program.

At a general level, in case of doubts, INAB, MARN and CONAP will consult the SAA or the Attorney General's Office, about areas where some kind of conflict could arise and affect the Program.

General measures by MINFIN to mitigate the risk of transferring Title of ERs and prevent double counting

The following table summarizes the risks that may arise in terms of the ER transfers to the FCPF, its scope and the proposed mitigation measures to reduce and eliminate such risks.

Table 106. Risks for ER transfers and mitigation measures

Description of risk	Scope and mitigation measure
Risk of Congress not approving the ERPA agreement	*Scope: Lack of prioritization of the ERPA Package approval in the legislative agenda.* *Risk assessment*: Low *Mitigation measure*: The ICG, MINFIN[i] and REDD+ project implementers will approach different levels of government involved in the approval process to expedite actions by Congress.
Risk of disapproval by the Attorney General's Office	*Scope: Declaration of non-conformity of the ERPA Package with Guatemalan legislation.* *Risk assessment*: Low. A statement by the Attorney General's Office declaring the ERPA not invalid is not likely to happen. *Mitigation measure*: The Office of the Attorney General will be informed prior to the signature of the ERPA on the responsibilities of the State of Guatemala and the content of the ERPA Package.

Risk of lack of title transfer agreements with REDD+ Projects	*Scope: Failure to reach an agreement with the REDD+ projects that are part of the Program* *Risk assessment*: Low. The REDD+ projects have informed all the stakeholders involved and beneficiaries of their interest in participating in the Program. *Mitigation measure*: REDD+ projects will establish the necessary agreements with the FCPF for their participation in the ERP and the transfer of title to contracted ERs.
Risk of transfer of ERs in MCSEAB programs	*Scope: No transfer of ERs by owners or holders who receive incentives.* *Risk assessment*: Low. The agreements between INAB and MCSEAB beneficiaries, if approved will contain an ER assignment clause in favor of the State by owners and holders who receive REDD+ benefits. *Mitigation measure*: The Government of Guatemala will include in the Benefit Sharing Mechanism a provision that any owner or holder who benefits from the Program will assign the resulting ERs to the State of Guatemala in the contract between INAB and the beneficiary. Likewise regulations that can be adopted to operate the MCSEAB will contain the requirements to participate in the mechanism as well as the requirement for transferring beneficiaries' ERs.
Title to ER risks in the REDD+ Lacandón Project, and the REDD+ CALMECAC Project	*Scope: Impossibility of transferring ERs to MINFIN due to land conflicts or lack of agreement within the Project.* *Risk assessment:* Low. In the case of the Lacandón Project, there is no risk for the transfer of title to ERs, since they belong to the FDN and the participating community cooperatives. In the case of the CALMECAC Project, CALMECAC will establish agreements with municipalities, and these in turn with owners, and holders for the transfer of ERs to CALMECAC and for the structuring of the benefits system. *Mitigation measure*: In the case of the three projects, MINFIN will sign an agreement for the transfer of ERs with each project, once the authorizations and procedures at the level of internal governance have been formalized. Additionally, the projects will be obliged to report Program's life cycle any type of land conflict that could give rise to an ER title ownership issue so that the government can exclude the affected area if necessary, and discount the affected ERs.
Title to ER risks in the Guatecarbon Project and non-renewal of community concessions	*Scope: Conflicts over title to ERs.* *Risk assessment:* Low. *There is currently no disagreement between concessionaires and CONAP regarding the title to ERs and both parties confirm that the concessionaires will hold benefit titles.* *Mitigation measures*: In order to clear away any doubt that may arise regarding the rights of the concessionaires over the ERs in the Guatecarbon Project, the Project Governance Council formed by CONAP and ACOFOP will issue a statement agreeing on the inclusion of the Guatecarbon Project in the FCPF's ERPA. This statement will mention the conformity of the members of the Governance Council regarding the sale of the project's ERs to the FCPF. Scope: Risk of non-renewal of two concessions that end during the Program contract period. Risk assessment: Low-medium. The risk of not renewing concessions is not significant. Although not being an automatic process and having to comply with the legal procedures, the renewal of concessions to community concessionaires is more than likely, given their nature. *Mitigation measures:* The process for the renewal of community concessions that expire during the ERP period will be initiated with sufficient anticipation. CONAP already has an extension regulation that is expected to be approved by June 2019 and already has a favorable opinion from CONAP's Executive Secretariat. In the unlikely event of any type of

	downtime in which the forest area is left without management, CONAP, to alleviate this problem and guarantee the generation of ERs, will take over the management and administration of the canceled concession. The new concession contracts that will be renewed for two community concessions and that expire during the period of the Program will contain a specific clause stipulating the obligation to participate in the REDD+ Project, the holding of ER titles by the State of Guatemala and establishing a benefit-sharing agreement with concessionaires. The termination or suspension of a concession would not pose problems to the ownership over the ERs, since the areas of the Projects are owned by the State of Guatemala, which is the rightful holder of the title to ERs.
Double counting risk	Any owner or holder of individual or collective land who intends to develop an ER-generating project will be required to register their project in the National Registry, in accordance with the Registry's provisions including nesting rules.

Risk of double counting-Double registration of REDD+ Programs (in the Program and in the VCS and CCBA standards)	*Scope*: Risk of double issuance of ERs and risk of double counting since the REDD+ LACANDON and GUATECARBON projects are registered under the Program and under the VCS, CCBA standards. *Risk assessment*: Low. The REDD+ LACANDON and GUATERCARBON projects, being registered as projects under the VCS and CCBA standards, can theoretically request the issuance of VCUs (Verified Carbon Units) for ERs generated during the Program. However, the commitment of these two projects to the Program and the agreements that will be made with MINFIN will ensure they will not request emission reductions issued from the VCS and contracted by MINFIN and sold to the Carbon Fund. Additionally, both projects will send to the VCS and the CCBA a letter informing about their participation in the Program. *Mitigation measures*: The LACANDON and GUATECARBON Projects will include as a commitment in the transfer agreements of ER titles with MINFIN a waiver ERs issuance under the VCS and CCBA environmental standards during the Program, for the ERs committed under the Program. Additionally, these two projects will send to the VCS and CCBA a formal notification informing about their adhesion to the Program and their waiver of the ERs request contracted under the Program during its term.
Risk of land conflicts	Scope: Transfer of ERs in areas of conflict *Risk assessment*: Medium. Conflict exists throughout the country. In the areas of the Program's early action projects, the level of conflict is low. In incentive programs, the incentive granting procedure itself guarantees to a large extent that areas of conflict will be excluded. *Mitigation measure*: The early REDD+ action projects will periodically report any land conflict. The incentive granting procedures guarantee to a large extent that the beneficiaries own and hold lands without conflicts. The Secretariat of Agrarian Affairs will provide support to identify conflict areas or clarify doubts about types of conflicts.
Risk of flaws in MCSEAB contracts and REDD+ Projects contracts	*Scope:* *Risk assessment:* *Mitigation measure*: *-The details of the contracts with the early REDD+ action projects, as well as the framework contract of what the MSCEAB could be, will be provided before the signing of the ERPA.* *-During the preparation of the aforementioned contracts, the general ERPA terms with the World Bank will be considered, including clauses applicable to sub-projects in order to avoid inconsistencies and avoid putting the transfer of ERs at risk.* *-These template contracts will be sent to the World Bank before the signing of the ERPA.*

18 DATA MANAGEMENT AND REGISTRY SYSTEMS

18.1 Participation under other GHG initiatives

Guatemala has a number of REDD+ projects and initiatives in progress and others in design and the government has prepared a Nesting Principles and Approach Document ("Nesting Document") so that both current and future REDD+ initiatives can be aligned with national emissions accounting and avoid any type of double counting. The Nesting Document contained in Annex XI outlines the necessary principles and approaches of Guatemala's nesting strategy, as well as the linkage of nesting to the national registry and benefit-sharing plan. This document will be updated

throughout the month of September and October 2019 to conclude the details and concrete rules of nesting that will be adopted by MARN regulations.

Within the Program area, there are currently two early REDD+ action projects registered according to the Verified Carbon Standard and the Climate Community and Biodiversity Standard. These two projects (Guatecarbon and Lacandón) will participate in the Program. Additionally, the ERP will include the REDD+ CALMECAC Project, which will also be registered under one of the aforementioned environmental standards or/and under Plan Vivo. All projects will avoid counting risks according to the following guidelines:

1. The three projects, in their agreements with MINFIN, will include a commitment not to request the issuance of ERs contracted under the ERPA to the VCS.
2. The Lacandón and Guatecarbon projects will send to the VCS and the CCBA a letter informing about their participation in the Program and their refusal to request the issuance of VCUs of ERs contracted under the ERPA, in order not to compromise the ERs contractually included in the Program during its term.

The three projects will be integrated into the ERP, respecting the integrity of their requirements, especially carbon accounting, reference levels, the benefit plan and the transfer of ER ownership titles related with the ER contracted under the ERP.

There are currently no other REDD+ projects or initiatives in the ERP area although, there are other projects in formulation that are not yet in operation, associated with entities such as the Foundation for the Integral Development of Man and his Environment (CALMECAC) and Defenders of Nature (Sierra de las Minas). There is a REDD+ project, Project FUNDAECO, outside the Program area, which does not overlap with the ERP area. The municipality of Los Amates is not included in the REDD+ FUNDAECO Project. In the case of the municipality of El Estor, FUNDAECO will exclude some small polygons originally included in the original project design and that are in the El Estor municipality. Below is a map of the mentioned polygons that will be excluded from the FUNDAECO project in

order to avoid double counting.

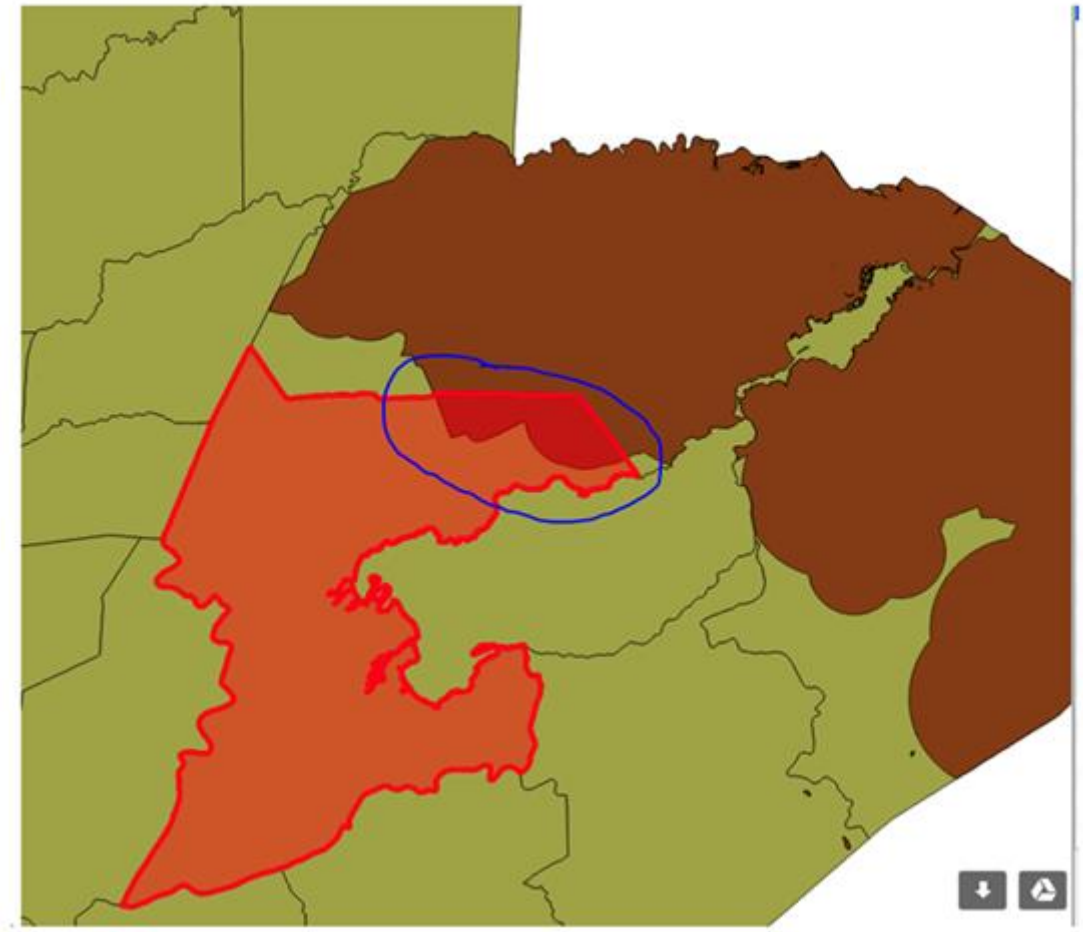


Figure 56. Overlap of El Estor municipality with REDD+ FUNDAECO Project areas

There are also two projects in the Program area that are being implemented (approx. 2,500 ha each) related to plantations for the production of natural rubber/hule (Hevea brasilienses) (South Coast: Departments of Escuintla, Suchitepéquez, Retalhuleu and Izabal), namely: (i) Natural Rubber Production, Industrialization, Commercialization and Advisory Projects (ECO2 Rubber Forest Guatemala) and (ii) Promoting Sustainable Development through Natural Rubber Tree Plantations in Guatemala (Pica de Hule Natural S.A.). Both projects belong to Grupo Occidente and are registered under the VCS-VERRA.

Methodological principles for the nesting of REDD+ Projects and Programs in Guatemala

In order to overcome methodological differences between the scale of Projects and the scale of Program Guatemala will use the concept of nesting in order to integrate REDD+ Projects into broader (national/subnational) REDD+ Programs that include project areas. The methodological approach for the nesting of REDD+ Projects and Programs in the ERP in Guatemala is contained in Annex XI. The nesting methodological approach is a simple and transparent approach that has as its primary objective the avoidance of double counting and consists of the distribution of the FRL (or in its case, until it is officially approved, the Reference Level of Emissions and PRE Removals) in portions ('quotas') according to criteria that reflect the efforts made by the various REDD+ initiatives (early REDD+ initiatives, Forest Investment Program (FIP), rest of the program area, rest of the national area). The results will be measured using the national MRV system that is enabled to estimate emissions and removals for the reporting period in the various areas of interest.

Under the nesting mechanism the GoG will use the combination of the following two variables in the allocation of the FRL quotas:

- The current forest area within the initiative area (from the previous year of quota allocation), and
- The current deforestation/degradation rates within the initiative area (activity data from the two years prior to the quota allocation year).

This proposal considers simple and fair methodological aspects of allocation and is based on two official variables that are obtained and updated in each monitoring event. Collect Earth's grid of sampling points has this information until 2016, but it will be updated soon until 2018 and then until 2020, coinciding with the beginning of the implementation of the ERP.

In addition to the two previous variables three additional criteria are to be considered in order to establish the percentages of quota allocation under the nesting process:

- Protected area management category;
- Water recharge areas, INAB's strategic ecosystems; and
- Map of REDD+ sub-regions.

All REDD+ initiatives (current and future), whether within or outside the ERP area, will be subject to this 'quota' allocation system. The Inter-Institutional Coordination Group (GCI), with the support of the Inter-Institutional Monitoring Group on Forests and Land Use (GIMBUT), will carry out the measurements and establish the quotas, and will also apply the discount percentage related to uncertainties at the jurisdictional/national level. These quotas will be reviewed at each monitoring period to evaluate their update. Consequently, REDD+ initiatives registered prior to the ERP under other standards, such as the VERRA VCS Program, must follow the new nesting rules and adapt to other aspects and requirements of the recently published ERP and those to be developed in the future, being established that:

- Projects must be subject to each and every relevant national or sub-national government law, regulation, agreement or other rule to nesting.
- Projects or reference levels of REDD+ registered or emerging in VCS/JNR shall comply with all requirements and other relevant documents of the VCS Program standards and the national registry.
- Reference level´s allocation to projects derived from the jurisdictional (national/subnational) reference level covering the project area (provided that such jurisdictional reference level has been technically assessed and validated; e.g. by the FCPF TAP or UNFCCC experts) will be carried out by the GCI with support from GIMBUT.
- Projects may carry out appropriate uncertainty analyses at the project level according to the requirements of the standard where they are registered (however, uncertainty analysis will always be carried out at the jurisdictional, PRE or National level, to maintain the environmental integrity of the verified ERs considering the discounts -buffer of uncertainty- always carried out at the program area level).
- Projects should align their data, parameters and monitoring methods with national forest monitoring systems. They should seek reconciliation with national data so that they are aligned in the framework of the biennial update (biennial monitoring).

The Government of Guatemala will analyze the possibility of establishing a period of adaptation of the baselines of the REDD+ Projects to the FREL of the ERP, taking into account the need to secure the commitments established with the Carbon Fund through the ERPA. This period of adaptation (or pre-nesting) will be completely defined and regulated in the Annex XI.

The data and methods used to establish the baselines of the initiatives (distribution of 'quotas') and to measure the results obtained are therefore consistent with those used to establish the FRL (and its updates) and the National MRV System. The data used in quota allocation, the methods and the allocated quotas will be communicated in time and form for each initiative and discount percentages based on uncertainties will be applied in order to create a National Security Reserve.

The periodic review and updating for each monitoring event (2 years) of the 'quotas' corresponding to each initiative of the national/jurisdictional LRF (and/or in its case update of the LRF), will be done punctually so that the initiatives

will have the calculations of their quotas. Deadlines will be established for reviews, complaints and justifications, both for the updates of the FRL before it is sent to the CF or the UNFCCC, and for the quotas allocated to each initiative.

Further details of the nesting strategy are provided in the Nesting Document ("Annex XI"). This document has been communicated and discussed with the GIREDD+ Projects whose representatives provided their comments during its elaboration. The GIREDD+ Projects also participated in a nesting workshop held in late July 2019. After approval of the final details of the Nesting Document it will be adopted by regulation. The Program Entity will send a letter to the different existing projects and initiatives explaining the nesting model and the procedure for adjusting and updating the baselines of the projects according to the new jurisdictional/national requirements.

18.2 Data management and Registry systems to avoid multiple claims to ERs

According to Criteria 37 and 38 of the FCPF's Methodological Framework, the ER Program requires a series of arrangements to prevent double counting of ERs, ensuring that any ER title of the REDD+ activities is not generated more than once and consequently sold to other buyers or recorded in other registries (for example, voluntary market registers, national registries associated with NDC monitoring or national emission transaction mechanisms). For this, the Government of Guatemala is providing technical support through a specialized consultancy to design a Data Management and, optionally, a Transaction Registry (SMDRT), and thus comply with requirement 37.1 of the MF, taking into account the structure proposed in the following figure.

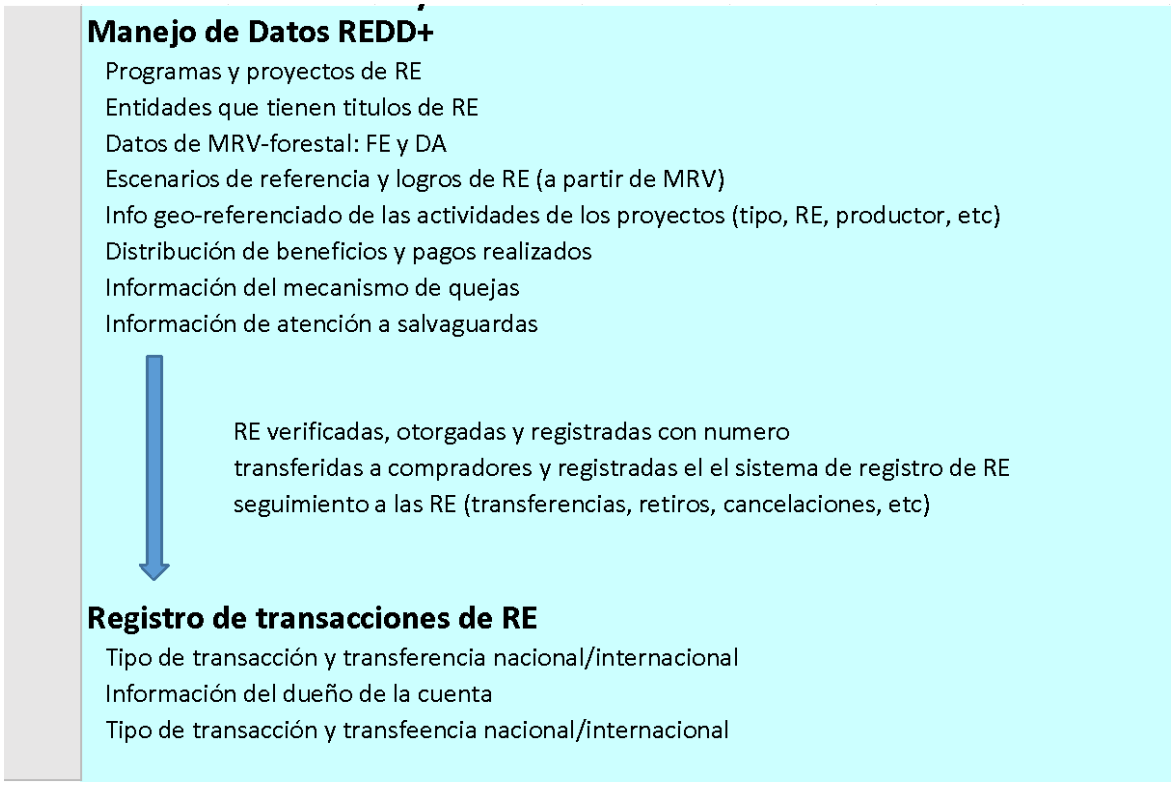


Figure 57[238]. Data Management and Transaction Record System, coupled to the MRV and SIS systems.

The Government of Guatemala has not yet decided on the scope of the registry but it is likely that the Government will choose - at least in a first phase - to establish only a REDD+ data management. The fact that the World Bank is finishing the details of the Centralized Transactional Registration System (SCRT) allows Guatemala to use the World Bank Transaction Registry in a first phase and later, if necessary, adopt a national transaction record that is adapted to SCRT guidelines and operations. This option would facilitate the establishment of the Registry and would save costs.

[238] EF: Emission factors. AD: Activity data.

To respond to Indicator 37.1 of the FCPF Methodological Framework, and be consistent with the level of ambition of the ERP and other legal provisions, the Government of Guatemala has decided to design and implement a centralized registry for the country, which should work together with the national forest MRV system, the Safeguards Information System (SIS), the national GHG inventory, and other mechanisms required for its proper functioning.

Annex XI ("Nesting Document") includes the principles and bases that will govern the Registry system and that will be adopted legislatively. Next, some details of the Registry system, which is being analyzed for adoption and includes both the Data Management System and the Transaction Registry.

1. Programs and Projects Data Management System

The Data Management System is used to record and manage emission reductions and removals generated within the framework of the national REDD+ strategy of Guatemala, with specific emphasis on the Emissions Reduction Program that is being prepared with the FCPF.

Based on an analysis and assessment of national and international regulations and the technical and methodological requirements of the Data Management System regarding REDD+ emissions, a computer platform with the required applications is being designed to gather information about transactions of CO2 emissions reductions and removals according to various international standards. At the same time, these registries will be associated with the REDD+ projects and programs databases. The Data Management System will have the following characteristics that comply with the FCPF's methodological framework:

- A computer platform will be formalized with applications that will carry information on the generation of ERs by the different ERP activities and REDD+ projects and initiatives in the country. The information will be available in Spanish, thus fulfilling criterion 37.3 of the Methodological Framework.
- The National Data Management System for Programs and Projects will aim to record and manage emission reductions and removals generated within the framework of the national REDD+ strategy of Guatemala, with specific emphasis on the Emissions Reduction Program that is being prepared with the FCPF.
- The registry system will be hosted by MARN, which will also manage it.
- All procedures will be performed in a standardized manner in order to ensure ease of use and data and processes reliability. The system will facilitate the generation of documents and remote and face-to-face third-party auditing, if required, therefore fulfilling requirement 37.4 of the MF.
- It will include information on the generation of ERs by REDD+ activities, programs and projects, as well as information on the geolocation of activities and project lands, their participants, beneficiaries and benefits received, the reference level used, ER volumes reported and verified and ERs issued and transferred (buyer) in each monitoring event and for each REDD+ program or project, thus fulfilling indicator 37.2 of the Methodological Framework regarding a comprehensive information system. The publication of the information will respect the Guatemalan regulation relative to information privacy. The Data Management System will have a special treatment for the "Buffer" reserve within the framework of the different agreement options, for example, the Carbon Fund of the FCPF, the VCS buffer mechanism of the Jurisdictional and Nested REDD+ approach, other potential international or domestic transaction agreements and their linkage with the Nationally Determined Contribution (NDC) and the Enhanced Transparency Framework of the Paris Agreement.
- The Data Management System will be designed according to the technical requirements and rules necessary to be harmonized with other international registries.
- The system will guarantee transparency and the proper documentation of emissions reductions and removals, offering support to prevent double counting and show the public, in a transparent manner, that environmental benefits related to GHG emissions reductions and removals will not be claimed twice.
- While access to the system will be open to any user who has access to the general information mentioned in the previous points, different categories of users will be established to access more

specific technical information if they are direct participants of the REDD+ programs, projects and activities.

- The Data Management System will provide information that the credit related to carbon reduction or uptake will be issued, serialized, transferred, withdrawn or cancelled acoordingly.
- The system will be coordinated with other national platforms operated by government entities and must be directly linked to the registry of transactions that will eventually be established by the World Bank within the FCPF framework and by other international entities.
- The data registry system will be linked to the Monitoring, Reporting and Verification System (MRV), the Benefit Sharing System (BSS), the Safeguards Information System (SIS) and the Complaints and Conflict Resolution Mechanism (MRQC).
- Guatemala, with the support of a specific consultancy for the design of the National Data Management System for REDD+ programs and projects, will prepare a document defining the administrative procedures for registration operations.

With the support of the consultancy, protocols and rules for a single data serialization with a direct reference to each ER title generation to ensure ER traceability with information related to the region where the resource is obtained, the project or program it belongs to and its registration number within the program (which must be directly related to the participants of this component of the project or program), the date and duration, number of equivalent tons, type of REDD+ activity, ownership and all the descriptors that allow an efficient administration, control and identification, so, all generated ERs will be historically and geographically traceable.

For the proper functioning of the system, suitable solutions to national needs are analyzed and proposed, considering the principles and regulations of ER titles, specific ER characteristics of each REDD+ activity, links with the different land tenure options, relationship with REDD+ strategic options and actions identified at the national level, and links between the ER Program and REDD+ projects implemented by the GIREDD entities through the VCS and CCB standard managed by Verra.
Within the scope of technical requirements associated with the accounting and design characteristics of the Data Management System, solutions appropriate to national circumstances are offered, considering the relationship with the ER registry system, and the Monitoring, Reporting and Verification System (MRV), the Benefit Sharing System (SDB), the Safeguards Information System (SIS) and the Complaints and Conflicts Resolution Mechanism (MRQC).

2. Transaction Registration System

As mentioned at the beginning of this section, until it has its own Transaction Registry, Guatemala will use the FCPF/BioCF registry, thus complying with Indicator 38.2 of the MF. In the future, if Guatemala decides to implement its own national registry, it should have clear links to the basic project information included in the National Data Management System of REDD+ Programs and Projects; ensuring that ERs are not issued, accounted for or claimed by more than one entity. At this moment, the process of REDD+ initiatives registration in the National Data Management System (in design) will avoid double counting of initiatives that could later coincide in the same registry. Its information will be taken into account when operating in the World Bank Centralized Transaction Registry System (in the event that REDD+ initiatives coincide in space and time with the FCPF ERP CF; it is not foreseen).

The future Transactions Registry System would be based on the national context and the possibilities of different modalities regarding the transfer of ERs. This includes assessing the potential options established during the ERPA negotiation with the Carbon Fund, other possible ER transaction options in international markets, links with the possible generation of ER offerings in the domestic market in the future and the relationship with the commitments established in the Nationally Determined Contributions (NDC). Protocols will be developed for standardization according to reporting needs and minimum system features.

If the adoption of a transaction registry by the country is considered appropriate, it should have the following characteristics:

- All the development protocols and guidelines that being developed by the World Bank for the SCRTE will be considered in order to avoid duplication of work and ensure system compatibility.
- The Registration System that monitors national and international transactions will be flexible enough so that it can be used in other international REDD+ payments initiatives such as the Green Climate Fund (GCF) and eventual national emission transactions that can happen in the future such as Article 6 of the Paris Climate Agreement, the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), voluntary market, among others.

Regulatory initiative by the Government of Guatemala

The REDD+ Initiatives Registry will be part of the National Registry of GHG Emission Reduction or Removal Projects stated in Article 22 of the Framework Law on Climate Change and will be based on the criteria and principles adopted by the Government of Guatemala in the Nesting Document ("Annex XI").

All current REDD+ initiatives registered under VCS-VERRA or future initiatives potentially wishing to register under various standards shall be registered in Guatemala's National Registry of REDD+ Initiatives. The registration requirement for all initiatives related to activities and projects that generate GHG emissions removal or reduction certificates that intend to have access to voluntary and regulated carbon markets is required by Art. 22 of the Framework Law to Regulate the Reduction of Vulnerability and Mandatory Adaptation to the Effects of Climate Change and the Mitigation of Greenhouse Gases (Decree Nº 7-2013).

For each initiative or project that applies for registration and after upon compliance with legal requirements MARN will formally issue a National Approval Letter. For any registered initiative or project, the registry will provide the following information at all times:

- The documents submitted by the proponent that support the fulfillment of the national eligibility and quality criteria.
- The document describing the project or jurisdictional program, with its participants, planned activities, duration, etc.
- The accounting area (polygon of the area), in pdf format and shapefiles format to visualize and analyze in any geographic information system (GIS).
- The 'quota' of the assigned FREL with the corresponding calculation.
- The volume of ERs achieved and allocated on a biennial basis, with the corresponding calculation, including any deduction for uncertainties and contributions to national reserves.
- All transactions of ERs with due respect to all confidential information.

National Criteria for Registration of REDD+ Initiatives in Guatemala

The Nesting Document ("Annex XI") includes a minimum and verifiable set of national criteria whose fulfillment is a condition for any REDD+ activity to be registered in Guatemala's National Registry of REDD+ Initiatives), namely:

- Contribution to sustainable development.
- Compliance with the social and environmental safeguards of the jurisdictional initiative in which it is nested.
- Demonstration of ownership/possession of carbon rights and absence of land conflicts.
- Possession of emission reduction potential in territories where mitigation actions will take place.
- Establishment of the Benefit Sharing Plan signed by the participants in the project.

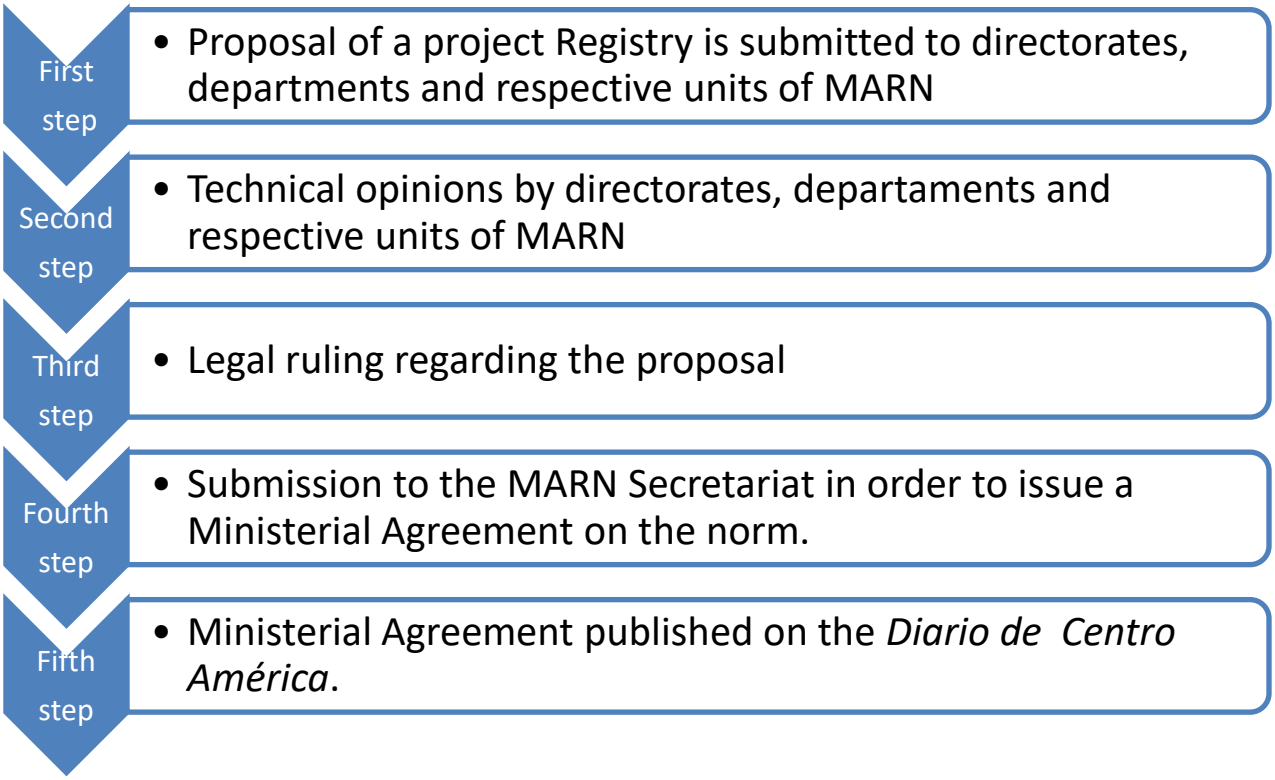
The Nesting Document also includes the procedure for the elaboration of the criteria for the registration of REDD+ initiatives, as well as the rights and obligations of REDD+ registered initiatives that include:

- Allocation right of a national/jurisdictional FRL 'quota' following the determined allocation methodology.
- Right to be part of the Benefits Sharing Plan of the ERP, for those initiatives nested and participating in the ERP.

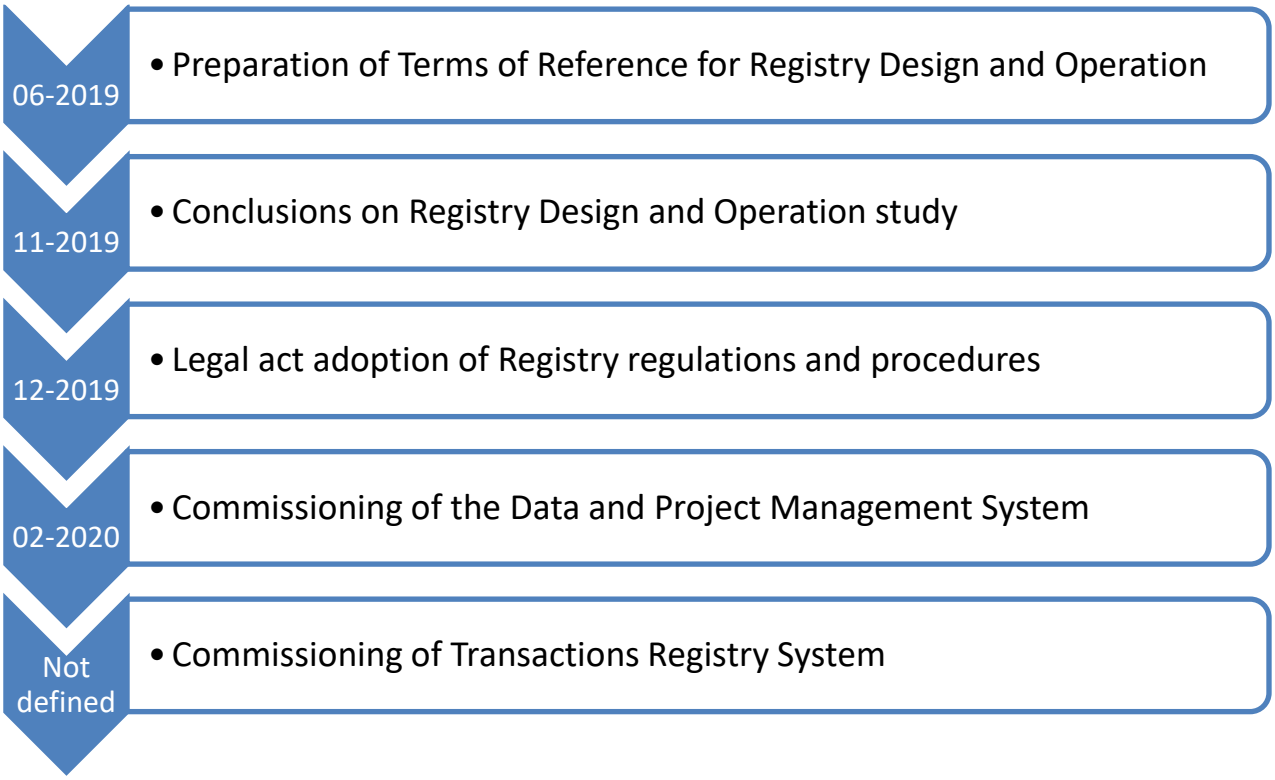
- Ownership or right over ERs generated in your project area/initiatives. These ERs will be determined using as a baseline the FRL quota assigned ex ante and the biennial ex post measurement of actual emissions by the national MRV entity.
- Following established procedures and deadlines, right to request review and information on previous allocations (FRL quota and REs) and to receive a response within a reasonable time.
- Obligation to report any transactions of ERs to the registry of REDD+ initiatives in conformity with confidential information rights under applicable law.
- Prohibition to transfer ERs to entities of foreign parties wishing to use them to comply with their respective NDCs without the authorization of the designated national authority.

For further details on the procedure for the final definition of registration criteria, rights and obligations of registered initiatives and institutional mechanisms, see Annex XI ("Nesting Document").

The roadmap for the development of the registration rules is the following:



Roadmap in the Development of Registration Platforms Besides adopting a general registration mechanism, as explained in the previous paragraphs, MARN will carry out a specific consultancy for the preparation of the procedures related to the Registry and its operation. The Terms of Reference will include the assessment of technical options for implementation and operation, as well as costs, and the guarantee of compliance with the requirements established by the FCPF registration system. Next, a roadmap with the steps for the operation of the Registry is presented.


06-2019
• Preparation of Terms of Reference for Registry Design and Operation
11-2019
• Conclusions on Registry Design and Operation study
12-2019
• Legal act adoption of Registry regulations and procedures
02-2020
• Commissioning of the Data and Project Management System
Not defined
• Commissioning of Transactions Registry System