DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

GUATEMALA

SUSTAINABLE FOREST MANAGEMENT PROJECT

(GU-L1165; GU-G1005)

PROPOSAL FOR OPERATION DEVELOPMENT

This document was prepared by the project team consisting of: Marion Le Pommellec (CSD/RND), Team Leader; Omar Samayoa (CSD/CCS), Alternate Team Leader; Gloria Visconti, Pamela Ferro, Ayme Sosa (CSD/CCS); Ana Rios, Onil Banerjee and Lisa Restrepo (CSD/RND); Luis Alejandro Mejia (INO/NFP); Hugo Us (GDI/CGU); Paloma Marcos (SCL/GDI); Lilena Martinez and Rodrigo Castro (VPC/FMP); Luis Larrazabal and Maria Isabel Paiz (CID/CGU); Maria C. Landazuri-Levey (LEG/SGO); Maria Jose Carreras, Julia Miguez and Robert Langstroth (VPS/ESG).

CONTENT

ANNEXES	
Annex I	Development Effectiveness Matrix (DEM) - Summary
Annex II	Results Matrix
Annex III	Fiduciary Agreements and Requirements
Annex IV	Safeguard Policy Filter (SPF) and Safeguard Screening Form (SSF)

REQUIRED ONLINE LINKS (ROLS)	
ROL#1	Pluriannual Execution Plan / Annual Operational Plan
ROL#2	Monitoring and Evaluation Plan
ROL#3	Environmental and Social Management Report (ESMR)
ROL#4(a)	Loan Acquisitions Plan
ROL#4(b)	Grant Acquisitions Plan

OPTIONAL ONLINE LINKS (OOLS)	
OOL#1	Sector Analysis – Component 1
OOL#2	Sector Analysis – Component 2
OOL#3	Sector Analysis – Component 3
OOL#4	Technical and Financial Content of the Project
OOL#5	Integral Risk Analysis
OOL#6	Gender Action Plan
OOL#7	Institutional Capacity Assessment (PACI)
OOL#8	Economic Analysis of the Project
OOL#9	Financial Matrix by Product (PMR)
OOL#10	Program Operating Regulations (draft)
OOL#11	References
OOL#12	Climate Change Annex
OOL#13	Data tables
OOL#14	Strategic Environmental and Social Assessment
OOL#15	Environmental and Social Management Framework, including Indigenous Peoples Strategy
OOL#16	Consultation Report

REQUIRED APPENDICES	
Appendix I	Risks Matrix
Appendix II	Development Effectiveness Matrix (DEM)

ACRONYMS	
AFS/SPS	Agroforestry/Silvopastoral System
AP	Acquisitions Plan
CIF	Climate Investment Fund
CONAP	National Council for Protected Areas (for its acronym in Spanish)
EA	Executing Agency
EN-REDD+	National Strategy for Reducing Emissions from Deforestation and Forest Degradation (for its acronym in Spanish)
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESMR	Environmental and Social Management Report
ESS	Environmental and Social Strategy
FIP	Forest Investment Program
Ha	Hectare
IACG	Interagency Coordination Group
IDB	Inter-American Development Bank
IEEM	Integrated Economic- Environmental Modelling
INAB	National Forest Institute (for its acronym in Spanish)
IRR	Internal Rate of Return
MAGA	Ministry of Agriculture, Livestock and Food (for its acronym in Spanish)
MARN	Ministry of Environment and Natural Resources (for its acronym in Spanish)
MSME	Micro, Small and Medium Enterprises
NPV	Net Present Value
PAPNT	Plan of the Alliance for Prosperity in the Northern Triangle
PCU	Program Coordination Unit
PEP-AOP	Pluriannual Execution Plan – Annual Operational Plan
PINFOR	National Forest Incentives Program (for its acronym in Spanish)
PINPEP	Smallholder Forestry Incentives Program (for its acronym in Spanish)
POD	Proposal for Operation Development
POR	Program Operating Regulations
PROBOSQUE	Program to Promote the Establishment, Recovery, Restoration, Management, Production and Protection of Forests
SESA	Strategic Environmental and Social Assessment
SPF	Safeguard Policy Filter
SSF	Safeguard Screening Form
TA	Technical Assistance
tCO2e/year	Tons of carbon dioxide equivalent

PROJECT SUMMARY
GUATEMALA
SUSTAINABLE FOREST MANAGEMENT PROJECT
(GU-L1165; GU-G1005)

Financial Terms and Conditions				
Borrower and Beneficiary:			**Reimbursable FIP** [a]	
Republic of Guatemala			**Amortization period:**	40 years
Executing Agency:			**Disbursement period:**	5 years
National Forest Institute (INAB)			**Grace period:**	10 years
Source	**Amount (US$)**	**%**	**Interest rate:**	(a)
IDB (Forest Investment Program [FIP] reimbursable):	8,450,000	91.6	**Service charge:**	0.25%
IDB (non-reimbursable FIP)	775,000	8.4	**Currency:**	Dollars of the United States of America
Total:	9,225,000	100		

Project at a Glance
Project Objective/Description: The general objective is to contribute to reducing the rate of deforestation and CO2e emissions. The specific objectives are: (i) To improve the efficiency of public forest services; (ii) Improve the effectiveness, profitability and social inclusion of incentive programs; and, (iii) Promote the sustainable use of the forest. The project will finance services and equipment, structured in three components: (i) Institutional strengthening; (ii) Inclusive restoration; and, (iii) Forest-industry-market linkage.
Special contractual conditions prior to the first disbursement: (i) That the Program Operating Regulations have been approved and entered into force (¶3.6); (ii) That the Program Coordination Unit has been formed and a general coordinator has been selected, as well as three component specialists, a procurement specialist, a financial specialist, an environmental specialis; a social specialist, and a monitoring and evaluation specialist to integrate it (¶3.6); and, (iii) Other conditions of the Fiduciary Annex (¶3.6). **Special contractual conditions of execution:** Annex B of the Environmental and Social Management Report (ESMR).
Exceptions to Bank policies: None

Strategic Alignment						
Challenges[b]:	SI	☑	PI	☑	EI	☑
Cross-cutting issues[c]:	GD	☑	CC	☑	IC	☑

[a] The Forest Investment Program (FIP) of the Strategic Climate Fund (SCF), fund of the Climate Investment Fund (CIF), was approved through document GN-2604-3 and its Financial Procedures Agreement was signed with the World Bank on February 17, 2011. According to the financing modalities, the first 20 semi-annual installments of amortization will be for 2% of the balance owed and the next 40 semi-annual installments will be for 4% of the balance owed.

[b] SI (Social Inclusion and Equality); PI (Productivity and Innovation); and EI (Economic Integration).

[c] GD (Gender Equality and Diversity); CC (Climate Change and Environmental Sustainability); and IC (Institutional Capacity and Rule of Law).

I. DESCRIPTION OF THE PROJECT AND MONITORING OF RESULTS

A. Background, problems and justification

1.1 **Dynamics of deforestation in Guatemala.** In Guatemala, forestry contributed to 1.05% of the GDP in 2011 (FAO, 2015) and 2.3% of exports in 2016.[1] These data do not reflect the real importance of the Guatemalan forest, whose 3.7 million hectares provide fundamental ecosystem services (Perera et al., 2018) such as (i) Regulation of the water cycle; (ii) soil formation and protection; (iii) protection against natural disasters; (iv) carbon fixation (it is estimated that the total of Guatemalan forests sequester 374,220.34 tons of carbon dioxide equivalent [tCO2e]/year); (v) energy source: 69.6% of the population uses firewood to cover their thermal needs for cooking, heating and hot water (INAB IARNA-URL-FAO/GFP, 2012); (vi) food and medicinal plants for domestic consumption (HLPE, 2017); (vii) fundamental elements of the worldview of indigenous populations (INAB, 2013); (viii) recreation and tourism opportunities; and, (ix) diversity of species, habitats and ecoregions of the country, whereby Guatemala belongs since 2010 to the group of similar megadiverse countries that host around 70% of total planet's biodiversity (CONAP, 2014). However, this wealth is threatened by deforestation (Table 1). Between 2001 and 2010, gross deforestation (115,792 ha/year) generated 13.4 million tCO2e and 5.7 million tCO2e due to the degradation of forests, representing 60% of the country's greenhouse gas emissions (IACG, 2018).

Table 1 – Historical Trends of Deforestation*

Year	Territory covered by forests		Annual deforestation (net)**	
	%	Millions of Ha	%	Ha
1991	42,00	4,56	-	-
2001	36,80	4,01	1,21	55.000
2006	35,50	3,87	0,70	28.000
2010	33,91	3,66	1,36	52.500
2012	33,74	3,67	-0,14	-5.000
2016	33,36	3,60	0,48	17.500

* Source: INAB/CONAP/UVG/URL, 2012; INAB/CONAP/MAGA/MARN/UVG/URL, 2019.
** Difference between the gross rate of deforestation and the forest gains.

1.2 The main reason for deforestation in Guatemala is the change in land use, whose main causes and agents include (IACG, 2018):

a. The expansion of livestock by medium and large livestock ranchers, especially in protected areas of Petén and Izabal, generating 35% of deforestation;

b. The production of basic grains - maize and beans, particularly in the Western and Eastern Regions. This accounts for 31% of deforestation, and is caused by poor small producers;

c. The production of coffee, cardamom and rubber (involving both small producers and the agroindustry) contributes to 24% of gross deforestation,

[1] Banco de Guatemala (Bank of Guatemala)

although with less impact on the loss of forest resources since they are generally associated with tree species.

1.3 The low relative profitability of forests is a major incentive to change land use. : The Net Present Value (NPV) of the protected forest, natural grass and maize is, GTQ2,565/Ha, GTQ7,578/Ha, and GTQ58,491/Ha respectively (IACG, 2018, Guatemala's National Roundtable on Forest Landscape Restoration, 2018). Other causes include food security and the need for generating immediate gains for survival from poor small producers (FAO, 2012) and illicit activities.[2]

1.4 Causes of the low profitability described above include(i) the low price that producers receive for their timber products between 15 and 38 USD/m^3 compared to a real value of 30 to 77 USD/m^3, (ii) the low volumes traded - Chapas Muralles (2013) identifies, for example, that 62% of the beneficiaries from the PINFOR program (see ¶1.9) had not managed to create a forestry business after the end of the incentive.

1.5 Reasons that promote this situation include:

a. High transaction costs to obtain licenses to use the forest. Although the legal use of the forest is more profitable for the producer (OOL # 13), almost all of them sell their wood without a logging permit - 96% of the nationwide wood is used informally (INAB, CONESFORGUA, IARNA-URL, FAO 2015). Thus, producers receive for their wood half of the price for legal wood. It is because intermediaries - who buy between 70 and 80% of the wood - assume the risk, the overrun costs, and the market penalization associated with illicit exploitation. The main barriers to legal exploitation are (i) the complexity or lack of knowledge of the administrative and technical requirements (OOL # 2, FAO, 2012); (ii) the time to issue the licenses: 95 days and 315 days for forests located outside and within protected areas (PAs), respectively, when the regulations establish maximum periods of 60 and 90 days. In addition to the complexity of the processes, long time periods are due to institutional inefficiencies: little or no automation of processes, lack of homologized technical criteria for the approval of files, and weak exchange of interinstitutional information between INAB and CONAP in case of PAs (OOL # 1).

b. Low commercial quality of the forest as a result of the (i) low density (between 3 and 18 trees/ha on average) of timber species of high value and high demand in natural forests as the best raw material is generally extracted without replacement or enrichment; (ii) low presence or consideration for non-timber species,[3] with the possibility of short-term exploitation; (iii) quality flaws (32% of timber supply is of suboptimal quality) mostly because of the inadequate management practices such as thinning. This insufficiently demand-oriented forest management practice is explained by producers'

[2] Money laundering from drug trafficking through extensive cattle ranching, would explain between 15% and 30% of total deforestation (Sesnie et al, 2017). The areas presenting problems in this context were excluded from the areas of intervention.

[3] Like xate, chicozapote resin and pepper. This issue will be addressed by the FRP # 2 project administered by the World Bank.

knowledge gaps, both on management techniques and on market opportunities and requirements (FAO, 2012; IITO, 2013; OOL # 3).

c. Low capacity of forestry companies to generate value. The forest value chain in Guatemala is characterized by low associativity and the business, technological, and commercial weakness of existing associations. Forest transformation is dispersed among micro, small and medium enterprises (MMEs, essentially cooperatives or producer associations) of which less than 36% transform 10 m^3/month of wood and around 41% transform between 10 and 100 m^3/month. These enterprises usually have low entrepreneurial skills (relative null knowledge about business plans, demand and market prices) and in a-between-low-acceptable technological efficiency according to the International Tropical Timber Organization (ITTO). In addition, companies are focused in transforming low-value wood with a below-the-average transformation yield (85% of the wood is wood logs, sawn wood, and pallets with a profitability below USD400/m^3 compared to USD1,500/m^3 from second-processed products such as floors or furniture)[4]. Likewise, the transformation yield is in average 68%, below the desired.[5] This low transformation yield is caused by limitations in machinery (between low and acceptable in the ITTO scorecard -but without analyzing 36% of very small companies), poor access to finance (the forestry sector receives only 0.3% of credits from private financial institutions, SIB, 2018), informal companies (32%[6] of the MSMEs), and lack of technical skills (INAB 2017; CATIE, 2018, INAB/ITTO, 2016, OOL # 3).

1.6 In this context, the restoration of the forest landscape could contribute to reducing net deforestation[7] by implementing agroforestry (AFS) and silvopastoral (SPS) systems whose profitability would be at least 25% higher than plots of basic grain or pasture (Guatemala's National Roundtable on Forest Landscape Restoration, 2018). An advantage of AFS/SPS is that they allow producers to maintain activities associated with household food security and income generation in the short term through agricultural or livestock activities integrated into the systems. Yields from these activities can increase rapidly through the impacts of the AFS/SPS in increasing soil fertility or decreasing thermal stress in animals; all of the above causing the increase of the profitability of the systems in general and in the short term in particular (FAO/UNDP, 2019).

1.7 Nevertheless, the expansion of AFS/SPS faces several barriers such as:

a. Lack of knowledge on the technical-economic benefits of the AFS/SPS and its implementation - a focus group made with the main community forestry organizations in the country resulted in a knowledge score of 2 on a scale of 5;

[4] Except for community forestry concessions and second-tier associations, high-value products are exported by large companies (to Europe and the United States, which are target markets).

[5] Relationship between the volume produced of sawn wood and the volume in logs. Guatemalan forestry companies that received technical assistance achieved yields of up to 85%.

[6] SIFGUA

[7] Gross rate of deforestation minus forest gains.

b. Pre-investment costs for those AFS/SPS schemes that require expensive inputs for their establishment (up to USD500/Ha, MARN, 2016), combined with the poverty condition of 72.2% of Guatemalan producers (INE, 2014) and the lack of access to finance for the agricultural/forestry sector (¶1.5.c). However, other AFS/SPS schemes do not face this barrier, particularly those based on native species, whose pre-investment costs are mainly limited to family labor.[8]

c. Maintenance costs (up to USD230/Ha/year, MARN, 2016), and long-term investment return (minimum 7 years, Thompson and George, 2009);

d. Lack of security and conflict around land tenure.[9]

1.8 **Advances of the country in the fight against deforestation and promotion of forest restoration.** In recent decades, the Government of Guatemala has developed a policy, legal and institutional framework with the aim of maintaining or restoring the forest: in addition to various governmental and non-governmental programs including incentive programs and support for the commercial exploitation of forests.

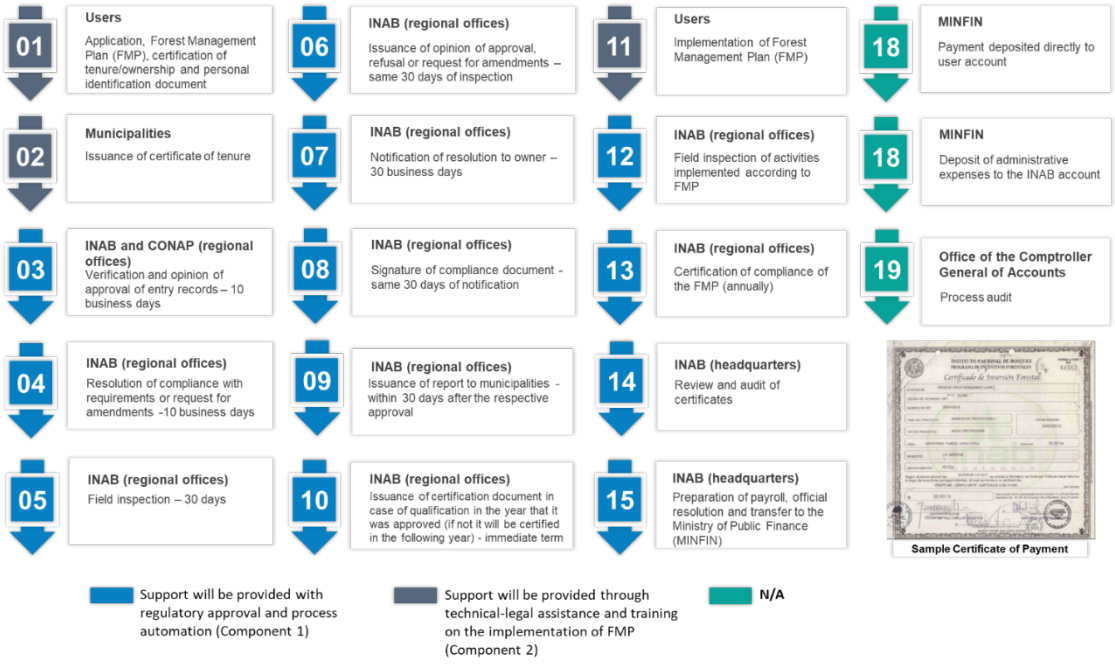
1.9 **Forest Incentive Programs.** These programs are aimed at encouraging the maintenance of existing forest or expansion of tree cover through various modalities (OOL # 13). They include the National Forest Incentives Program (PINFOR, 1998-2016); the Smallholder Forestry Incentives Program (PINPEP, 2010-present); and the Program to Promote the Establishment, Recovery, Restoration, Management, Production and Protection of Forests (PROBOSQUE, 2017-present), managed by the National Forest Institute (INAB), in collaboration with the National Council for Protected Areas (CONAP) .

1.10 Key characteristics of these programs (see figure 1 for more information on the mechanism) include: (i) awarding of incentives based on demand if a complete technical, legal and administrative file is presented; (ii) property title not required for current programs -unlike previous programs, PINPEP and PROBOSQUE acknowledge various forms of tenure and ownership of land that allow incorporating a wide range of social actors; (iii) annual payment based on results which implies: (a) in-advance-investment from candidates to prepare files, including the Forest Management Plan (FMP), and, if needed, the purchase of supplies during the first year; and, (b) field visit by INAB, to annually certify that the activities established in the FMP have been carried out and issue a Certificate of Compliance, used by MINFIN for the payment of the incentives; (iv) quality control by the Forest and Seeds Certification Department of INAB, of the vegetative material used.

[8] Modelo territorial de adaptación climática de la población del corredor seco de Guatemala (Territorial model of climate adaptation of the population of the dry corridor of Guatemala)

[9] The Forest Investment Plan of Guatemala explicitly excludes addressing this problem with the resources of the Forestry Investment Program that finances this operation, so it will not intervene in the zones presenting problems in this area (FIP municipal prioritization).

Figure 1 – Incentive Mechanism



1.11 The distribution of incentives by modality (OOL # 13) demonstrates the high preference of the beneficiaries for the Natural Forest Management for Protection (NFM) modality because of the[10] (i) longer duration of the incentives; (ii) technical simplicity - the implementation of FMP for NFM implies changes in limited practices with respect to usual forest use practices; (iii) unawareness of the benefits from the AFS/SPS systems and how to implement them (¶1.7).

1.12 **Effectiveness and profitability of incentives.** There is no a robust evaluation that measures the effectiveness of incentive programs and, in particular, that allows to attribute the control of the historical trends of net deforestation to these programs (Table 1). Thus, revision of existing literature should be applied. Empirical evidence (Clements et al., 2010; Pattanayak et al., 2010; Börner et al., 2017) suggests, on the one hand, that Payments for Environmental Services (concept to which the NFM modality resembles) (a) can be effective but with marginal positive impacts, and not much larger than other less expensive schemes; (b) can be not effective if the design of the program has not been based on scientific grounds, if there is no proper targeting of the objective population, and if they are applied in a context of institutional weakness; and (c) tend to be unprofitable for producers (low payments, not equivalent to the value of agricultural production on the land) and unsustainable (the protection of the forest ends when the payment ends). On the other hand, empirical evidence indicates that incentive programs are effective for the adoption of AFS/SPS in increasing the

[10] Focus group with the main community forestry organizations in the country.

profitability of farms that have incorporated trees and in increasing tree coverage (De Los Santos y Bravo-Ureta, 2017; Gonzalez Flores y Le Pommellec, 2019). Along the same lines, a recent analysis suggests that incentives aimed at promoting protected forest would not be profitable when incentives under AFS/SPS modalities can be profitable. These conclusions indicate that the current distribution of the incentives granted by PINPEP and PROBOSQUE (Table 3) is not optimal.

1.13 **Inclusion and diversity.** Women and indigenous peoples face difficulties in integrating and maintaining forest incentive programs. The experience[11] in municipalities that share agroecological and sociocultural similarities with several of the intervention municipalities (see ¶1.26), including an almost 100% indigenous population, demonstrated that by implementing interventions to overcome barriers to participation the project contributed to multiply the number of incentive projects by 17 - from 130 to 2,215 - and increase the involvement of women from 3.8% to 24%. At the national level, the average engagement of women and indigenous peoples in PINPEP (taking into account geographical areas where barriers to participation are less active) rises to 34% and 50%, respectively. These barriers to participation in incentive programs include:

a. Lack of knowledge about the existence of incentive programs (OOL # 2; INAB/WB, 2019), mainly because of weaknesses in dissemination campaigns that do not reach municipalities or have insufficient cultural relevance (language gap);

b. Costs to prepare and submit a request for incentives that exceed local capacities such as: (i) obtaining a municipal certificate of land possession and sworn statement (USD60 on average)[12] (ii) preparation of forest management plans (USD20/m^3, INAB, CONESFORGUA, ITTO, 2016); (iii) mobilization to present the file in regional or subregional offices of INAB (in average 6 visits to complete the process);[13]

c. Capacity to prepare incentive files (in Spanish) in a context of higher illiteracy- 32%, 26% and 57.6% among indigenous populations; women; and indigenous women, respectively; when the national average is 20.9% (INE, 2016).

d. Limited technical capacity to implement FMP.

1.14 In addition to considerations of social justice, improving the access of these categories of the population to forest incentives and licenses for forest exploitation is justified by the higher incidence of poverty among indigenous communities (73% compared to the average national poverty of 54%, INE, 2016) when it is known that poverty is linked to higher levels of deforestation (Loening and Markussen, 2003). Likewise, achieving the full participation of women in public forest services can also contribute to increasing sustainable forest management

[11] Modelo_territorial_de_adaptación_climática_de_la_población_del_corredor_seco_de_Guatemala. (Territorial model of climate adaptation of the population of the dry corridor of Guatemala).

[12] Modelo_territorial_de_adaptación_climática_de_la_población_del_corredor_seco_de_Guatemala (Territorial model of climate adaptation of the population of the dry corridor of Guatemala).

[13] According to a focus group carried out with the main community forestry organizations in the country.

(Cook et al, 2019), by improving their cooperation in the public sphere of the community and expanding the welfare and education of their families since women devote more of their income than men to the household and children.

1.15 **Efficiency in incentive management.** Many regulations and processes of the incentive mechanism (Figure 1) are complex and are not harmonized among the institutions involved INAB and CONAP); the information and process management systems are not fully automated, they are not all compatible with each other, and they are not always accessible to the users who would need it; the verification of the implementation of the FMPs is still carried out through physical visits in the field, mobilizing 90% of the total time of the personnel from INAB; and the institutional staff does not always have the capacities to provide quality services. This situation generates excessive processing times. For example, the average time to approve an incentive file is 131 and 471 days for PINPEP and PROBOSQUE respectively, when the regulation establishes that the management time should not exceed 60 days. INAB also considers that it should achieve annual certification of 50 FMPs per week, which is 7 times more than what is currently delivered, in order not to run the risk of generating delays in the payment of incentives and consequently discontent and demotivation in program participants (OOL # 1). This situation could worsen in the short term, with the increase in demand for forest incentives expected from the start of PROBOSQUE, while no increase in collaborating/institutions' personnel is expected (Arrivillaga et al., 2018).

1.16 **Support for the commercial exploitation of the forest through links with industry and the market.** Guatemala has granted concessionary forest rights to community and private groups by creating enabling conditions for the sustainable use of timber and non-timber forest products with positive results in forest maintenance (Blackman, 2015). Technical and financial assistance provided in parallel by various actors provided good results in terms of increased primary transformation performance; access to information on market requirements and specialization of human capital; and, consequently, an increase in the price of the products (CATIE, 2018). Among the lessons learned from these efforts, two key issues stand out for the development of prosperous forestry businesses: (i) the need to strengthen social and human capital at all the stages of the value chain, and not only related to technical issues but to business and marketing as well; and (ii) the need to promote parallel access to finance in order to promote working capital and equipment investments.

1.17 **Theory of change**:

a. Simplify and automate the administrative processes that govern public forest services through a reengineering phase, and then the design and implementation of a computerized information and process management system, as well as the application of a monitoring system based on satellite images to partially replace field visits, will have direct effects in reducing the time for the processing of files and payments and in increasing the capacity of the institutions to meet more demand with the same amount of personnel. Experience and evidence (Sungau et al., 2013, Malenje et al., 2014) suggest that interventions aimed at simplifying and automating processes and training personnel are active in substantially reducing service delivery times. This will

result in easier access for producers, to public licensing services for forest harvesting, as well as incentive programs.

b. Provide technical-legal support for the preparation and presentation of incentive dossiers under the AFS/SPS modality including obtaining a certificate of land ownership and development of quality forest management plans, as well as training and technical assistance for an adequate implementation of the forest management plans. The above with cultural relevance and under a gender-based approach which will allow more vulnerable populations to enter incentive programs and maintain into them. Evidence suggests that providing TA with cultural relevance and under a gender-based approach increases the possibility of accessing incentives[14] and that providing TA and training in parallel with financial support is fundamental to the effectiveness of incentives (UICN, 2013; Flores Gonzalez, 2017). At the same time, focusing on AFS/SPS modalities will contribute to improving the effectiveness of the incentives.

c. Providing technical support to producers for the preparation and presentation of forest exploitation license files will contribute to the sale of more products legally at a better price. Similarly, TA in market-oriented production (replenishment, enrichment, thinning) will encourage silvicultural practices that generate higher quality raw materials and demand by promoting higher prices and sales volumes.

d. Providing technical assistance and training to forest MSMEs in associativity, entrepreneurship, efficient transformation technologies and access to market information will allow them to strengthen their management, improve their transformation yields and, therefore, increase the profitability of the forestry business and capacity to absorb the current supply. Successful cases in the region, including Guatemala (Grogan et al., 2017, CATIE, 2018, FAO, 2016), show that interventions aimed at (i) Improving market-oriented forest management, with a focus on increasing commercial densities of the populations of the species of interest and the quality of control; (ii) organizing producers and supporting them in accessing new markets, including establishing contacts and partnerships with purchasing companies; (iii) improving technological efficiency, through training of technical personnel and acquisition of machinery, to optimize yields and increase volumes of usable timber; and, (iv) providing specific information on market requirements; positively affect the profitability of the business for owners of the forest resource, with duplication or triplication of the price of the resulted products.

1.18 Forest incentive programs and the Forest-Industry-Market nexus are fundamental pillars of the National Strategy for Reducing Emissions from Deforestation and Forest Degradation or National REDD+ Strategy (EN-REDD+, for its acronym in Spanish), which aims to “articulate forest governance to create or operate the main public policy instruments that allow incorporating different actors and social and productive processes in the reversal of causes of deforestation and forest

[14] Modelo_territorial_de_adaptación_climática_de_la_población_del_corredor_seco_de_Guatemala (Territorial model of climate adaptation of the population of the dry corridor of Guatemala).

degradation, through recovery actions and protection of the forest cover of the country."

1.19 In May 2015, the CIF approved Guatemala's initial proposal to access the CIF funds to support the implementation of the EN-REDD+. To access these resources, the country developed, with support from the Bank, its Forest Investment Plan which was approved on June 9, 2017 by the FIP Sub-Committee. The Investment Plan, whose total amount reaches USD24 million, aims to contributing to the EN-REDD+ objectives through three strategic projects that will be implemented in the same areas: (i) Sustainable Forest Management, for an amount of USD9.7 million - a loan of USD8.45 million and a donation of USD1.25 million - channeled by the IDB; (ii) Strengthening of the Governance and Diversification of Livelihoods for an amount of USD11.8 million directed by the World Bank which includes, among others, the preparation and implementation of payment mechanisms for environmental services associated with forests to address the current challenges of effectiveness and sustainability of the incentives for NFM (¶1.12), and support the development of non-timber product value chains (¶1.5); and, (iii) access to financing (USD2.5 million channeled by IDB Lab - GU-T1280 "Green Guarantee for Competitive Landscapes") which will contribute to the realization of the theory of change, meeting the financing challenges of producers and forestry MSMEs (¶1.5) through the creation of a guarantee fund that facilitates access to credit oriented to the financing of plantations and machinery and directed to people who have never been banked.

1.20 The Forest Investment Plan foresees that the "Sustainable Forest Management" project, to be managed by the IDB, will contribute directly to several strategic lines of the EN-REDD+, as well as to the mitigation and adaptation goals of the National Foreseen and Determined Contribution for Guatemala; the General Government Policy for 2016-2020 (strategic country results associated with forest cover and resilience and adaptation to climate change); the K'atun 2032 National Development Plan (axis of "natural resources for today and the future"); the National Policy, Law and Action Plan for Climate Change Adaptation and Mitigation (Chapter "Land use, land use change and forestry"); and Sustainable Development Goals No. 13 and 15.

1.21 **Innovation.** The program will finance (i) a computerized information and process management system; (ii) a system for surveying data in the field based on satellite images; (iii) support for the adoption of new agricultural practices based on AFS/SPS; (iv) support for the implementation of efficient methods in the processing of timber products; and, (v) a market intelligence system. It is planned to implement an Impact Assessment with random promotion to measure the impact of the program for AFS/SPS. This will include a pilot to identify the best incentives to increase the participation of the target population.

1.22 **Lessons learned.** Table 2 presents the main lessons learned from similar interventions and how they have been incorporated into the design of the operation.

Table 2. Lessons learned

Lesson learned	How it is incorporated in the design of the operation
Support aimed at facilitating the preparation of incentive files (including the administrative process of obtaining certificates of possession) substantially improves access to incentives by vulnerable populations traditionally excluded from these programs.	Component 2 includes technical-legal support in this area.
Empirical evidence suggests that ESP (incentives for NFM) are ineffective under conditions of weak institutionalization and targeting when incentives to establish AFS/SPS can be more effective.	Component 2 will focus on support for incentive access under the AFS/SPS modality, combined with institutional strengthening activities (Component 1).
Technical assistance plays a fundamental role in the correct implementation of the practices promoted by incentives; therefore, TA must be offered in a timely manner during the crop cycle and with an appropriate periodicity.	Component 2 includes training, under a gender-based and cultural relevance approach, so that beneficiaries can correctly implement forest management plans aimed at the establishment and maintenance of AFS/SPS.
The eligibility criteria of beneficiary producers and MSMEs, as well as the selection strategy, should promote transparency and equal opportunities.	Priority and selection mechanisms will be applied, considering: (i) The objectives and indicators of the project; (ii) Institutional prioritization instruments for the programs they execute, including the PINPEP and PROBOSQUE prioritization criteria, among others; and, (iii) Safeguard criteria. These criteria will be widely disseminated through communication campaigns, taking into account linguistic diversity. The detail is provided in the POR.
Projects that finance training and TA should include indicators to improve knowledge and practice change, which allow proactively adjusting the content and/or methodology of the training and TA, in case these indicators show their low effectiveness.	The monitoring and evaluation plan includes guidelines for permanent evaluation of the effectiveness of the training in increasing the level of knowledge of the beneficiaries and in changing their work practices. The Results Matrix establishes indicators in this regard.
Any project aimed at promoting a productive sector should consider linking small producers with the market to ensure the sustainability of the model.	Component 3 has the purpose of linking producers to the market.

1.23 **Strategic alignment.** The project is consistent with the Update of the Institutional Strategy - UIS (AB-3008) and is expected to contribute to the Corporate Results Framework 2016-2019 - CRF (GN-2727-6) through the development challenges of (i) Social Inclusion and Equality, by contributing to the access of small producers and communities to forest public services and financing; (ii) Productivity and Innovation, by promoting the productivity and profitability of forestry activity along the value chain and technological innovations in the public and private sectors; and, (iii) Economic Integration, by promoting links with markets. It is aligned with the cross-cutting issues of (i) Gender Equity and Diversity, for its focus on indigenous populations and women; (ii) Climate Change and Environmental Sustainability, due to its orientation towards the protection of priority forest ecosystem services for mitigation (reduction of CO2 emissions) and adaptation

(regulation of the water cycle); and, (iii) Institutions and the Rule of Law, by strengthening the public forestry administration. It is consistent with the Bank's Strategy with Guatemala 2017 2020 - EBP (GN 2899), for its contribution to the objective of promoting the generation of renewable energy and the cross-cutting issues of climate change, gender equality and attention to indigenous populations; and it is include in the Report of the Operations Program 2019 (GN-2948). It also contributes with the axis of "Dynamizing the productive sector" of the Plan of the Alliance for Prosperity in the Northern Triangle (PAPNT), through actions aimed at increasing the added value and access to markets for timber and non-timber products, in 8 of the municipalities prioritized by the PAPNT. It is also consistent with the Sectorial Frameworks of: Agriculture and Natural Resources Management (GN 2709 5), in its success dimension "Natural resources in the region are used in a sustainable manner;" Environment and Biodiversity (GN 2827-8), in its aspect of success "Marginalized populations and indigenous communities reduce their vulnerability and exposure to factors of environmental degradation and disaster risks, and improve their income conditions and associated quality of life to its natural capital;" and, Climate Change (GN-2835-8), in its dimension of success "The countries improve their access to climate finance and diversify their use." 100% of the operation's resources are invested in climate change mitigation activities, according to the MDB's joint methodology for estimating climate financing. These resources contribute to the IDB Group's goal of increasing funding for projects related to climate change to 30% of all operation approvals by the end of 2020.

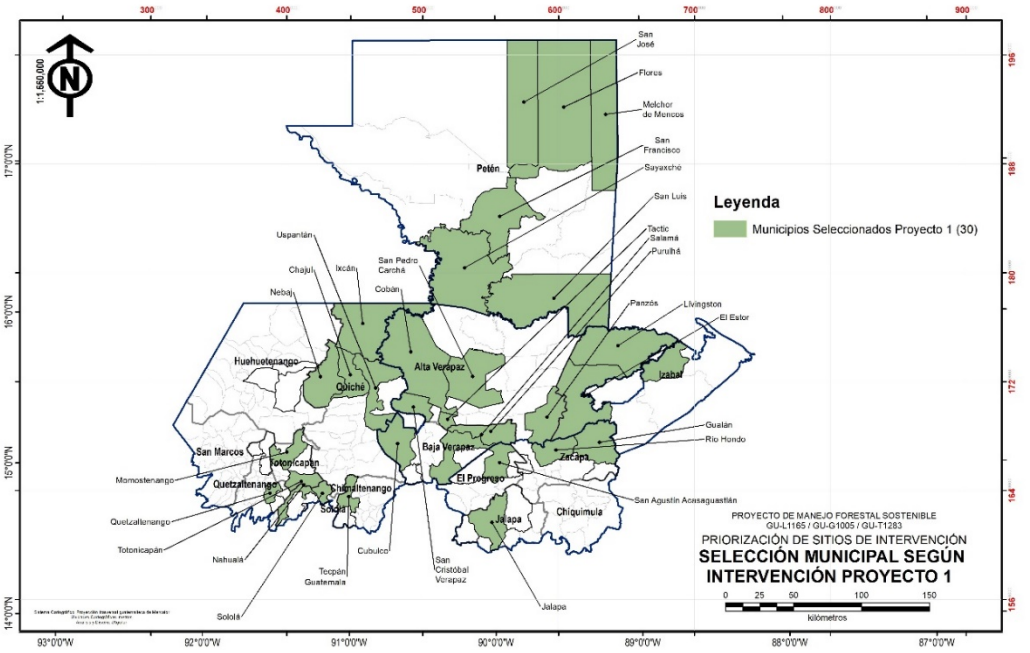
B. Objectives, components and cost

1.24 **Objectives**. The general aim is to contribute to reducing the rate of deforestation and CO2e emissions. The specific objectives are (i) to improve the efficiency of public forest services; (ii) improve the effectiveness, profitability and social inclusion of incentive programs; and (iii) promote the sustainable use of the forest.

1.25 **Target population**. The final beneficiaries will be at least (i) 8,317 small and medium-sized forest producers who meet the requirements to access forest incentives granted by PINPEP and PROBOSQUE - at least 37% of women and 58% of indigenous peoples; and (ii) 800 individual producers - at least 50% of women and 50% of indigenous peoples - and members of 225 MSMEs. Intermediate beneficiaries include 1,570 forest service providers, civil servants or people appointed to conduct public services - at least 20% of women).

1.26 Interventions will focus on 30 municipalities (Map 1) identified through an analysis combining prioritization variables (areas of forest loss, water recharge, firewood deficit, presence of forest industry, INAB office, municipal forestry office) and exclusion (social and territorial conflicts, in particular those associated with land tenure, narco-activity) and validated in a participatory manner.

Map 1: Areas of intervention



1.27 **Activities and components.** The project will finance services and equipment, structured in three components (OOL # 4):

a. **Component 1. Institutional strengthening (USD3,146,891)**. Oriented to reduce the processing times of files and payments of forest incentives and licensing for forest exploitation, consultancy services and goods will be financed to (i) simplify and harmonize processes and regulations; (ii) design and develop an automated information and process management system; (iii) implement IT infrastructure in the national and regional offices of INAB and CONAP; (iv) strengthen the capacities of the personnel involved in the provision of forest services and accompany the organizational change associated with the automation of management; and (v) establish a monitoring system for the certification of forest management plans, based on geospatial images.

b. **Component 2. Inclusive restoration (USD2,202,053)**. Focusing on increasing the area under tree cover, the profitability of agricultural parcels thanks to AFS/SPS, and the participation of women and indigenous peoples in forest incentive programs and improving the targeting of incentives in more effective modalities, consultancy services will be financed to (i) provide producers with technical-legal assistance (including the preparation of FMP and environmental impact assessment when required), with cultural relevance, and under a gender-based approach, to prepare and enter dossiers for access to forest incentives with focus on AFS/SPS; and (ii) provide training and technical assistance, individually and in groups, to local

producers and technicians throughout the duration of the Project, to assist in the proper implementation of the FMPs.

c. **Component 3. Forest-Industry-Market Link (USD2,513,000)**. In order to increase the value of forest products, services from specialized firms will be financed as well as workshops and events aimed at (i) providing technical support to forest producers in market-oriented forest management, including assistance to obtain licenses for use and training in good management practices; (ii) encouraging the formalization of existing associations, cooperatives and MSMEs; the creation of new ones and the promotion of second-tier entities; its strengthening in managerial and marketing capacities, aimed at making the connection with the market, including support for the preparation of business plans and participation in fairs; (iii) promoting technological efficiency through training for machinery operators, exchange of experiences and involvement in fairs; and (iv) establishing a public access market intelligence system, through the elaboration of protocols for the collection and analysis of data and the improvement of current information dissemination mechanisms, operated by INAB in collaboration with municipal forestry offices (website, training, forestry extension, visits by technicians, forestry fairs).

C. Key indicators of results

1.28 The operation has a Results Matrix that includes indicators of impact, results, and products, with their respective baselines, goals, and means of verification. Table 3 presents the impact and result indicators.

Table 3. Key Indicators of the Results Matrix

Impact/result indicator	Measurement time	Justification for its selection
Reduction of the average annual net deforestation rate in the municipalities of intervention	Baseline and final line	See ¶1.4 – Better profitability of the forest and ¶1.6: Restoration of the forest landscape through AFS/SPS, result in less deforestation.
Reduction of additional CO2e emissions in the municipalities of intervention		See ¶1.1 - Lower deforestation results in lower CO2e emissions from this activity.
Average institutional processing times to approve incentives		See ¶1.5 and ¶117 – More agile processing reduces transaction costs that discourage the sustainable use of the forest and/or affect forest incentive programs.
Implementation area of AFS/SPS increased		See ¶1.14 - Better access to incentives and focus on more effective modalities result in greater tree areas with greater profitability.
Change in production value of basic grain plot changed to AFS/grass plot change to SPS		
Percentage of women / indigenous beneficiaries that receive payments for forest incentives		See ¶1.15: Support with a gender and ethnic-based approach results in greater inclusion.
Percentage of timber offer sold		See ¶1.4 ¶1.5: Support aimed at overcoming specific barriers to the use of the forest, results in better access to markets.
Change in average prices received by forest producers for their timber products		

II. Financing Structure and Main Risks

A. Financing instruments

2.1 The total cost of the project is USD9,225,000, which will be financed by the FIP of the Climate Investment Fund (SCX) through (i) a Non-reimbursable Financing for Investment (NRFI) of USD775,000; and (ii) a specific investment loan (SIL) of

USD8,450,000. The distribution by funding source and component is described in Table 4.

Table 4. Costs and financing of the operation (in USD)

Investment Category	CIF Loan	CIF Grant	Total	%
Component 1 – Institutional Strengthening	**2,470,865**	**676,026**	**3,146,891**	**34%**
Component 2 – Inclusive Restoration	**2,202,053**		**2,202,053**	**24%**
Component 3 - Forest-industry-market Nexus	**2,513,000**		**2,513,000**	**27%**
Program Management: Administration, M&N, Audit, Socio-Environmental Management	**1,241,760**	**20,000**	**1,261,760**	**14%**
Executing Unit	390,000		390,000	
Social and Environmental Management	440,000		440,000	
Monitoring and Evaluation	411,760	20,000	431,760	
Incidentals	**22,322**	**78,974**	**101,296**	**1%**
TOTAL	**8,450,000**	**775,000**	**9,225,000**	**100%**

2.2 The Forest Investment Plan was approved with referential amounts, which were adjusted (OOL # 13) during the formulation process, based on the identification, sizing and costing of the intervention needs and the associated mitigation measures.

2.3 The activities will be implemented over five years, according to the preliminary disbursement schedule (Table 5).

Table 5. Disbursement Schedule (in thousands of USD)

Source	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Loan	2,791	1,821	1,847	1,714	276	8,450
Grant	189	465	42	79		775
Total	**2,981**	**2,286**	**1,889**	**1,793**	**276**	**9,225**
%	**32.31%**	**24.78%**	**20.48%**	**19.44%**	**2.99%**	**100.00%**

B. Economic feasibility

2.4 An ex-ante economic impact analysis was carried out to evaluate the financial viability of the Program and estimate its net present value (NPV) and internal rate of return (IRR). To determine the direct, indirect and induced benefits of the program, the multi-regional Integrated Economic-Environmental Modelling (Banerjee et al., 2019) was used for Guatemala, which represents the 22 departments of Guatemala and integrates information from the System of Economic-Environmental Accounts (INE et al., 2013). The scenarios implemented

consist on the one hand of the impact of the program's investment on the different sectors of the economy and the expectations on (i) improvements in the efficiency of public forest services (specific objective I); (ii) improvement in the effectiveness of incentive programs, expressly, by increasing the areas devoted to agroforestry systems and silvopastoral systems (specific objective II.A), and; (iii) increase in the value of forest products (specific objective III). It is estimated that, by the year 2035, the program will have created 1,679 new jobs and reduced the number of poor people by 22,137 individuals. The cost-benefit analysis reveals that with a discount rate of 12%, the program presents a net present value of USD194 million (2019 dollars) and an internal rate of return of 159%.

C. Environmental and social risks

2.5 In accordance with IDB's Environment and Safeguards Compliance Policy (OP-703), the operation has been classified as category B since it is expected to generate direct and indirect environmental and social impacts of a moderate nature, mainly related to the potential non-significant and mitigable conversion/degradation of natural and critical habitats, and the risk of exclusion of indigenous peoples and for gender-related reasons. The Project is not expected to cause the physical or economic displacement of the population. In accordance with the Disaster Risk Management Policy (OP-704), the operation has been categorized as a moderate risk due to natural disasters, mainly landslides, frosts, volcanic eruptions, and droughts, as well as forest fires caused by droughts.

2.6 A Strategic Environmental and Social Assessment (SESA) of the program and its Environmental and Social Management Framework (ESMF) have been developed, including an Indigenous Peoples Strategy, which analyzes the potential impacts and risks of the operation and proposes measures to prevent and/or mitigate them. The Gender Action Plan of the program addresses the two lines of action defined in OP-761: The preventive line, which analyzes the possible adverse impacts of the operation on women and gender equality and proposes appropriate mitigation measures; and the proactive line, with measures aimed at actively promoting gender equality and the empowerment of rural women producers. There is also a Communications Plan with actions aimed at informing potential beneficiaries about the program and reducing reputational risks resulting from the dissemination of deficient and/or inadequate information. These documents are available on the Bank's website.

2.7 Two stakeholder consultation processes have been carried out: One to identify the risks to be considered in the design of Project activities; and, another, on the SESA/ESMF. The first process took place in May 2018 and was attended by 86 people (21% women and 79% men, 36% indigenous Mayan people, and 64% non-indigenous people). The second one took place between November and December 2018 and involved 211 people (40% women and 60% men, 31% indigenous Mayan and Xinca people and 68% non-indigenous people) representatives of municipalities, community-based forestry organizations and cooperatives, groups of women linked to the forestry sector, representatives of indigenous peoples, environmental NGOs, private companies in the forestry sector and regional or local organizations that influence the management of forest resources. The main topics discussed were: How the project would improve forest

administration with INAB/CONAP process homologation actions and state-of-the-art equipment and technology; How the project would support/reduce difficulties in entering the forest incentive programs; What technical assistance would be given to producers; What support would be provided to access financing; Potential risks and impacts of the program. The consultations resulted in adjustments to some interventions to internalize the mitigation measure.

D. Fiduciary risks

2.8 Although INAB has a regulatory framework, uses a financial management system for the public sector and institutional processes, in practice there are challenges that can generate delays in financial management, procurement, and payment of commitments acquired by the project. The limited availability of human resources and the lack of experience executing projects financed by the IDB and developing procurement processes applying the Bank's policies generate risks of (i) Insufficient and inopportune budgetary allocations for the financial execution of the program; (ii) delays in payments to contractors and suppliers; (iii) delays or failures of procurement processes; (iv) Failure to comply with procedures established in the Bank's policies; and, (v) Ineffective contract management; which determines that the fiduciary risk is high. The following were identified as mitigation measures: (a) Creation of a Project Coordination Unit (PCU) with a financial specialist and a procurement specialist with experience in the application of the Bank's financial and procurement management policies, with minimum agreed profiles in the Project Operating Regulations (POR); (b) Deconcentration of the operation of the financial management system in the PCU; (c) Creation of the programmatic structure for the identification of the project within the INAB budget; (d) Comprehensive planning of project activities and timely management of budget allocations and financial quotas; (e) Execution of a plan for training, assistance, accompaniment and financial supervision and procurement; (f) Training and support to the teams that intervene in procurement processes, including the rating committees so that they have the competencies to evaluate the methods according to the Bank's policies; (g) Incorporation into the POR of specific procedures for procurement and the payment of project commitments, identifying responsible parties, actions and deadlines; (h) Implementation of the Contract Management Act as an instrument for monitoring contracts; and, (i) Assignment of the people responsible for the monitoring of contracts.

E. Other risks

2.9 The design of the operation included a comprehensive risk analysis. Based on this, the program was conceptualized so that the interventions themselves internalized the vast majority of solutions or mitigation measures to the problems or risks identified through this analysis. In particular, the issues and risks related to the need to improve the efficiency of forest services are the justification for Component 1, and the issues and risks associated with the low capacity of producers to participate in incentive programs, and inequalities of access for women, indigenous populations and Afro-descendants, constitute the rationale for Component 2. On the other hand, the risks of effectiveness and efficiency associated to the limited capabilities of INAB (OOL # 7) in terms of (i) project execution experience and/or in some technical areas (such as Forest-Industry-Market); (ii) number of personnel available, will be mitigated through an

implementation strategy based on outsourcing: The activities were grouped so that they could be executed by a limited number of consulting firms specialized in the topics of intervention (for example, TA and training in AFS/SPS, TA and Forest-Industry-Market link training). Remaining risks include the possible delay in the approval of the project by Congress, due to the electoral changes in 2019, which has been mitigated by proactive socialization of the program with advocacy groups during formulation.

III. IMPLEMENTATION AND MANAGEMENT PLAN

A. Summary of implementation arrangements

3.1 The borrower and beneficiary will be the Republic of Guatemala, and INAB will be the Executing Agency (EA). INAB is a state, autonomous, decentralized entity, with legal status, its own assets and administrative independence legally established by Legislative Decree No. 101-96 (Forestry Law), as the management body and competent authority of the agricultural public sector in forest-related matters. For the execution of the project, a PCU will be formed consisting of a general coordinator; three-component specialists; a procurement specialist; a financial specialist; an environmental specialist; a social specialist; and, a monitoring and evaluation specialist.

3.2 The EA will guide its work through the POR and will have the following responsibilities: (i) implement activities; (ii) maintain consolidated accounting records that allow identifying the sources and uses of the resources of the operation by component; (iii) prepare and submit to the Bank the disbursement requests and justifications of the respective expenses, as well as the audited financial statements; (iv), contract the annual external audits and present the respective financial reports to the Bank; (v) carry out public tender and bid processes, and carry out the hiring, pertinent payments and technical supervision of the contracts of the activities under its responsibility; (vi) prepare, present to the Bank and make available to the public the operational plans, consolidated monitoring reports and required evaluation reports; (vii) ensure compliance with the contractual clauses established in the Loan Agreement and the Grant Agreement; and, (viii) implement the Environmental and Social Management Plan (ESMP) and ensure compliance with the Bank's environmental and social safeguards.

3.3 **Coordination.** On theone hand, coordination between the projects PIF#1 and PIF#2 will be carried out at three levels: Through INAB, as executing agency of both projects; through the institutional monitoring committee of each project, in both cases conformed by INAB's directorates (technical, administrative, planning and monitoring); and, through the participation of the PCU Coordinator of PIF#1 in the coordination meetings of the PCU of PIF#2, and vice versa. Coordination with PIF#3 will be carried out through the participation of INAB representatives in the Coordination Council. The details are presented in the POR. On the other hand, the Interagency Coordination Group (IACG), made up of the Ministry of Environment and Natural Resources (MARN, for its acronym in Spanish), the Ministry of Agriculture, Livestock and Food (MAGA, for its acronym in Spanish), INAB and CONAP, and which seeks, in a strictly consultative manner, to

harmonize the work agendas of these institutions in terms of mitigation and adaptation to climate change, promote the articulation, complementarity and synergies of the activities of PIF projects according to the competencies of the institutions that comprise it.

3.4 **Fiduciary agreements and requirements.** Annex III reflects the financial management and procurement guidelines that will be applied for the execution of the project. These have been developed based on the analysis of the fiduciary context of the country and the EA, the risk analysis and the meetings held with EA staff and the Public Credit Directorate of the Ministry of Finance.

3.5 **Acquisitions plan (AP).** The AP contains the detail of the project's acquisitions that will be carried out under policies GN-2349-9 and GN-2350-9, and details: (i) Contracts for the purchase of goods and services other than consultancy, and contracting of consulting services required to carry out the project; (ii) The proposed methods for procurement and contracting; and, (iii) The procedures for reviewing the processes. The EA should update the AP annually, or according to the needs of the project. Any proposed revision of the AP should be presented to the Bank for approval.

3.6 **Special contractual conditions before the first disbursement of the financing.** The following will be special contractual conditions to be complied with before the first disbursement: (i) **That it has been approved and has entered into force of the POR**, which must contain, among other issues: Recruitment and procurement procedures that in a single document compile the policies of the Bank that are applied with the procedural provisions of the national law - which are not in the Bank's policies - that would use so that they have a single regulation body for recruitment and procurement for reference and application; a contract management manual; a code of ethics; the Environmental and Social Management Plan (ESMP) for the environment and social exclusion criteria; (ii) **That the PCU has been formed and a general coordinator; three-component specialists; a procurement specialist; a financial specialist; an environmental specialist; a social specialist; and a monitoring and evaluation specialist have been selected to integrate it; and, (iii) The other conditions that appear in the Fiduciary Annex**.

B. Summary of arrangements for the monitoring and evaluation of results

3.7 **Monitoring**. The operation has a Monitoring and Evaluation Plan. The ESMP also includes environmental and social control and evaluation plan. The executing agency will present to the Bank's satisfaction, at the latest within the last quarter of each year during execution, the corresponding Annual Operating Plan (AOP) for the following year. The executing agency will prepare and send to the Bank, no later than 60 days after the end of each semester, during the execution of the activities, a follow-up report, which will focus on: (i) Compliance with product indicators and progress in results, in comparison with what is established in the AOP, including explanations of the possible deviations observed; (ii) The identification of problems encountered and the corrective measures adopted; and, (iii) Compliance with risk mitigation measures, with associated results. The second-semester report must include updated risk analysis. The executing agency will conduct two independent evaluations financed with resources from the

operation: (a) The mid-term evaluation report to be presented to the Bank no later than 90 days after 50% of loan resources have been disbursed or 30 months have elapsed of the entry into force of the loan contract (whichever occurs first); and, (b) A report of the final evaluation to be submitted no later than 90 days after 90% of the operation's resources have been disbursed. These reports will include an assessment of the quality of the data of the monitoring system, the degree of compliance of the products, results, and advances of the expected impacts established in the Results Matrix, as well as the level of compliance with the ESMP, including progress in the social and environmental indicators.

3.8 **Evaluation.** A quasi-experimental impact evaluation will be used, implementing a randomized promotion to increase the participation rate in a randomly-selected treatment group that receives the incentive. This promotion will be used as an instrument variable to evaluate the impact of the program in increasing the profitability of agricultural plots in the transition to AFS or SPS. To select an effective promotional instrument, a pilot test will be conducted where the effectiveness of the brochures, technical visit, and telephone call will be tested. Surveys administered before and after the intervention (in 2019 and 2024) with a total sample of at least 800 producers on each occasion will be the source of information for the analysis. In addition to this evaluation, a methodology for a previous and post evaluation of the program will be used to determine the effect in terms of reducing deforestation and reducing emissions, as well as in other key outcomes (see ROL#2 in detail).