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Report No: PAD2295

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED GRANT

IN THE AMOUNT OF US\$ 21.86 MILLION

TO

NACIONAL FINANCIERA, S.N.C., I.B.D.
ACTING AS TRUSTEE OF THE CLIMATE CHANGE FUND

AND

THE UNITED MEXICAN STATES

FOR A

MEXICO: SUSTAINABLE PRODUCTIVE LANDSCAPES
{RVP/CD CLEARANCE DATE}

{Agriculture Global Practice}

{Latin America And Caribbean Region}

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CURRENCY EQUIVALENTS

(Exchange Rate Effective {Sept 14, 2017})

Currency Unit = USD

= US\$1

US\$ 1 = MXN 17.68

FISCAL YEAR

January 1 - December 31

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ABBREVIATIONS AND ACRONYMS

ADT	Agencia de desarrollo territorial (Territorial development agency)
AFD	French Development Agency
AFOLU	Agriculture, Forestry and Other Land Uses
BIOFIN	UNDP Biodiversity Finance Initiative
BRPL	Biodiverse and Resilient Productive Landscapes
CDD	Community-Driven Development
CNBV	Comisión Nacional Bancaria y de Valores (National Banking and Securities Commission)
CONABIO	Comisión Nacional para el Conocimiento y Uso de la Biodiversidad (Commission for the Knowledge and the Use of Biodiversity)
CONAFOR	Comisión Nacional Forestal (National Forestry Commission)
CONANP	Comisión Nacional de Áreas Naturales Protegidas (National Commission for Natural Protected Areas)
CPS	Country Partnership Strategy
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FAO	Food and Agriculture Organization of the United Nations
FCC	Fondo para el Cambio Climático (Climate Change Fund)
FCPF	Forest Carbon Partnership Facility
FEFA	Fondo Especial de Financiamiento Agrícola (Special Fund for Agricultural Financing)
FEGA	Fondo Especial de Asistencia Técnica y Garantía para Créditos (Special Fund for Technical Assistance and Guarantees for Agricultural Loans)
FIP	Forest Investment Program
FIRA	Fideicomisos Instituidos en Relación con la Agricultura (Instituted Trust Funds for Agriculture)
FM	Financial management
FONDO	Fondo de Garantía y Fomento para la Agricultura, Ganadería y Avicultura (Guarantee and Development Fund for Agriculture, Livestock and Poultry)
FOPESCA	Fondo de Garantía y Fomento para las Actividades Pesqueras (Guarantee and Promotion Fund for Fishing Activities)
GEF	Global Environment Facility
GHG	Greenhouse gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Development Agency)
GDP	Gross domestic product
INECC	Instituto Nacional de Ecología y Cambio Climático (National Institute of Ecology and Climate Change)
KfW	Kreditanstalt für Wiederaufbau (German Development Bank)
LULUCF	Land Use, Land-Use Change, and Forestry
M&E	Monitoring and evaluation
MSMEs	Micro, small, and medium enterprises
NAFIN	Financiera Nacional S.N.C.
NAFTA	North American Free Trade Agreement
NAP	National Action Program
NBSAP	National Biodiversity Strategy and Action Plan

NDCs	Nationally Determined Contributions
NFMS	National Forest Monitoring System
NPV	Net present value
PCG	Partial credit guarantee
PCU	Project Coordinating Unit
PDO	Project Development Objective
PLR	Performance and Learning Review
PO	Producer organization
POM	Project Operational Manual
PROFOR	Program on Forests
RTU	Regional Technical Unit
RU	Responsible Unit
SAC-MOD	Wide Coverage System for Monitoring Diversity <i>(Sistema de Amplia Cobertura para el Monitoreo de la Diversidad)</i>
SAGARPA	Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación (Ministry of Agriculture, Livestock, Rural Development, Fisheries, and Food)
SAR-MOD	High Resolution System - Monitoring of Ecosystem Diversity in Natural Protected Areas of Mexico <i>(Sistema de Alta Resolución para el Monitoreo de la Diversidad)</i>
SEMARNAT	Secretaría de Ambiente y Recursos Naturales (Ministry of Environment and Natural Resources)
SHCP	Secretaría de Hacienda y Crédito Público (Ministry of Finance and Public Credit)
SPF	Secretaría de la Función Pública (Ministry of Public Administration)
TPS	Territorios Productivos Sostenibles (Sustainable Productive Landscapes)
UMA	Unidades de Manejo para la Conservación de la Vida Silvestre (Wildlife Conservation and Management Units)
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNFCC	United Nations Framework Convention on Climate Change
UTEMRV	Technical Unit Specialized in Monitoring, Reporting and Verification (CONAFOR) <i>(Unidad Técnica Especializada en Monitoreo, Reporte y Verificación)</i>



BASIC INFORMATION

Is this a regionally tagged project? No	Country(ies)	Financing Instrument Investment Project Financing	
<input type="checkbox"/> Situations of Urgent Need of Assistance or Capacity Constraints <input checked="" type="checkbox"/> Financial Intermediaries <input type="checkbox"/> Series of Projects			
Approval Date 27-Mar-2018	Closing Date	Environmental Assessment Category B - Partial Assessment	Focal Area Multi-focal area
Bank/IFC Collaboration No			

Proposed Development Objective(s)

To strengthen sustainable management of productive landscapes and increase economic opportunities for rural producers in priority areas of Mexico

Components

Component Name	Cost (US\$, millions)
Capacity Strengthening for Sustainable Landscape Management	12,277,866.00
Investments into Biodiversity-Friendly and Climate-Smart Production Systems	57,287,000.00
Project Management, Monitoring & Evaluation	7,593,119.00

Organizations

Borrower : United Mexican States
 Financiera S.N.C. (NAFIN)/Trustee for the FCC (Climate Change Fund)



Implementing Agency : SEMARNAT
 Financiera S.N.C. (NAFIN)/Trustee for the FCC (Climate Change Fund)

PROJECT FINANCING DATA (US\$, Millions)

Counterpart Funding Trust Funds Parallel Financing

Total Project Cost:	Total Financing:	Financing Gap:
76.16	76.16	0.00
	Of Which Bank Financing (IBRD/IDA):	
	0.00	

Financing (in US\$, millions)

Financing Source	Amount
Borrower	17.95
Global Environment Facility (GEF)	21.86
Borrowing Country's Fin. Intermediary/ies	36.00
LOCAL: BENEFICIARIES	0.34
Total	76.15

Expected Disbursements (in US\$, millions)

Fiscal Year	2018	2019	2020	2021	2022
Annual	1.00	4.00	8.00	6.00	2.86
Cumulative	1.00	5.00	13.00	19.00	21.86



INSTITUTIONAL DATA

Practice Area (Lead)

Agriculture

Contributing Practice Areas

Climate Change

Environment & Natural Resources

Finance, Competitiveness and Innovation

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

Gender Tag

Does the project plan to undertake any of the following?

a. Analysis to identify Project-relevant gaps between males and females, especially in light of country gaps identified through SCD and CPF

Yes

b. Specific action(s) to address the gender gaps identified in (a) and/or to improve women or men's empowerment

Yes

c. Include Indicators in results framework to monitor outcomes from actions identified in (b)

Yes

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	● Substantial
2. Macroeconomic	● Moderate
3. Sector Strategies and Policies	● Moderate
4. Technical Design of Project or Program	● Substantial
5. Institutional Capacity for Implementation and Sustainability	● Substantial
6. Fiduciary	● Substantial
7. Environment and Social	● Moderate



8. Stakeholders	● Moderate
9. Other	● Moderate
10. Overall	● Substantial

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

Yes No

Does the project require any waivers of Bank policies?

Yes No

Safeguard Policies Triggered by the Project

Yes No

Environmental Assessment OP/BP 4.01	✓	
Natural Habitats OP/BP 4.04	✓	
Forests OP/BP 4.36	✓	
Pest Management OP 4.09	✓	
Physical Cultural Resources OP/BP 4.11	✓	
Indigenous Peoples OP/BP 4.10	✓	
Involuntary Resettlement OP/BP 4.12	✓	
Safety of Dams OP/BP 4.37		✓
Projects on International Waterways OP/BP 7.50		✓
Projects in Disputed Areas OP/BP 7.60		✓

Legal Covenants

Sections and Description

Project Coordination Unit (“PCU”): To facilitate the implementation of the Project, the Recipient, through SEMARNAT shall maintain throughout Project Implementation a Project Coordination Unit With staff in and functions set forth in the Operational Manual.

Sections and Description

Project Technical Committee (“PTC”): To facilitate the implementation of the Project, the Recipient, through



SEMARNAT shall maintain throughout Project Implementation a Project Technical Committee with composition and functions forth in the Operational Manual.

Sections and Description

Regional Technical Unit (“RTU”): To facilitate the implementation of the Project and prior to the carrying out of any Project activities within a Region, the Recipient, through SEMARNAT shall establish and thereafter maintain throughout project implementation the relevant Regional Technical Unit with composition and functions set forth in the Operational Manual.

Sections and Description

FCC Agreement and FCC Committee: To facilitate the carrying out of the Project, the Recipient shall maintain throughout Project implementation the FCC Agreement and the FCC Committee.

Sections and Description

Subproject Agreement: To facilitate the carrying out of Part 2.1 of the Project, and prior to the carrying out of each Subproject, the Recipient, through NAFIN, shall enter into an agreement with the relevant Producer Organization, under terms and conditions acceptable to the World Bank.

Sections and Description

Coordination Agreement: To facilitate the carrying out of the Project, the Recipient, through NAFIN and SEMARNAT, shall no later than 90 days after the Effective Date enter into an agreement with each of the Project Entities under terms and conditions acceptable to the World Bank.

Sections and Description

Guarantee Agreement: To facilitate the carrying out of Part 2.2 of the Project, and prior to the carrying out of any Strategic Subproject, the Recipient through NAFIN, shall cause FEGA to enter into an agreement with the relevant Financial Intermediary under terms and conditions acceptable to the World Bank.

Sections and Description

Operational Manual: The Recipient, shall carry out the Project and/or cause the Project to be carried out, in accordance with the provisions of a manual satisfactory to the World Bank.

Sections and Description

Anti-Corruption Guidelines complied by the Financial Intermediaries: the Recipient, through NAFIN, shall cause FEGA to issue a notice (Oficio) acceptable to the World Bank requiring the Financial Intermediaries to comply with the provisions of the Anti-Corruption Guidelines and stating that once the Financial Intermediaries have entered into an Guarantee Agreement, such action will be interpreted as a tacit acceptance of the Anti-Corruption Guidelines.



Conditions

Type Disbursement	Description FEGA Agreement: To facilitate the carrying out of Part 2.2 of the Project, the Recipient, through NAFIN, shall enter into an agreement with FEGA, under terms and conditions acceptable to the World Bank.
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Type Disbursement	Description PCG Operational Manual: The Recipient, through NAFIN, shall cause FEGA to operate the Partial Credit Guarantee Fund under Part 4 of the Project in accordance with the provisions of a manual satisfactory to the World Bank and adopted by FEGA.
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Type Effectiveness	Description Project Operational Manual has been duly adopted by the Recipient in a manner acceptable to the World Bank.
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PROJECT TEAM

Bank Staff

Name	Role	Specialization	Unit
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Katie Kennedy Freeman	Team Leader	Economist	GFA04
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Name	Title	Organization	Location
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MEXICO
MEXICO: SUSTAINABLE PRODUCTIVE LANDSCAPES

TABLE OF CONTENTS

I. STRATEGIC CONTEXT	10
A. Country Context	10
B. Sectoral and Institutional Context	11
C. Higher Level Objectives to which the Project Contributes	13
II. PROJECT DEVELOPMENT OBJECTIVES	14
D. PDO	14
E. Project Beneficiaries	14
F. PDO-Level Results Indicators	14
III. PROJECT DESCRIPTION.....	15
A. Project Components	15
B. Project Cost and Financing.....	20
C. Lessons Learned and Reflected in the Project Design	20
IV. IMPLEMENTATION.....	21
V. KEY RISKS	23
A. Overall Risk Rating and Explanation of Key Risks.....	23
VI. APPRAISAL SUMMARY	24
A. Incremental Economic Analysis	24
B. Technical	25
C. Financial Management.....	26
D. Procurement	26
E. Social (including Safeguards)	27
F. Environment (including Safeguards).....	28
G. Other Safeguard Policies (if applicable)	29
H. World Bank Grievance Redress.....	30
VII. RESULTS FRAMEWORK AND MONITORING	31
ANNEX 1: DETAILED PROJECT DESCRIPTION	40
ANNEX 2: IMPLEMENTATION ARRANGEMENTS.....	50
ANNEX 3: IMPLEMENTATION SUPPORT PLAN	63
ANNEX 4: FIRA AND FEQA ASSESSMENT.....	65



ANNEX 5: GREENHOUSE GAS ACCOUNTING ANALYSIS.....	67
ANNEX 6: INCREMENTAL ECONOMIC ANALYSIS	70
ANNEX 7: SITE SELECTION METHODOLOGY	80
ANNEX 8: SITUATIONAL ANALYSIS PER INTERVENTION SITE	85



I. STRATEGIC CONTEXT

A. Country Context

- 1. Mexico's economy continues to expand at a steady though moderate rate of growth.** The increase in Mexico's GDP over the past three years, 2014-2016, at an annual average of 3.0% was stronger than annual average growth recorded during the previous two decades, 1994-2013, of 2.4%.¹ Growth is expected to moderate to about 1.9% in 2017 and strengthen in the medium-term to about 2.5% by 2019² as uncertainty regarding NAFTA and the presidential elections (July 2018) dissipates and gross fixed investment growth resumes. However, these growth rates are only about half the average growth observed in emerging market economies (5.3%) between 1994 and 2016.
- 2. Economic performance has been resilient in view of external shocks experienced over the past few years.** During this time, Mexico's economy has experienced several external shocks, including a sharp drop in oil prices with average oil prices down by 50-60%, an additional reduction in the volume of oil and gas production by 6% annually, international financial market volatility related to a normalization of monetary policy in advanced economies, and, more recently, uncertainty over the future of U.S.-Mexico trade relations. Sensible monetary and fiscal policy responses to these shocks, within an overall sound macroeconomic policy framework including a flexible exchange rate, an inflation-targeting monetary policy framework and fiscal oversight ensuring moderate public sector deficits, has maintained macroeconomic stability in recent years.
- 3. Moderate economic growth over recent years has limited significant poverty reduction and improvements in shared prosperity.** The most recent official poverty estimate, based on a combination of monetary and non-monetary dimensions of welfare, shows a decline in poverty from 46.2% to 43.6% and in extreme poor from 9.5% to 7.6% between 2014 and 2016.³ Access to health services and access to social security and food security were the non-monetary components that most improved. Monetary poverty also declined as poverty rates at the well-being poverty line dropped from 53.2% to 50.6%.⁴ The decline in monetary poverty has been driven by higher income growth at the lowest income distribution levels.
- 4. Mexico is one of the world's richest countries in terms of biodiversity and is generously endowed with forests, land, oil, and mineral resources.** It has approximately 12 percent of the world's biodiversity, with high levels of endemism, including an estimated 200,000 species in rich ecosystems. Mexico also boasts 64 million hectares of forests, which represent 33 percent of its territory. About 61 percent of forest land belongs to rural communities under a legally established collective ownership system (*ejido*) that is unique in the world. The country's biomes are important for curbing global climate change and conserving global biodiversity.
- 5. This wealth of natural resources is at risk.** Economic pressure, extreme natural events, and climate change continue to erode the country's natural capital. Forest degradation and deforestation have persisted for decades, and only about 10 percent of the native tropical forest area and half of the temperate forest area remain intact. While deforestation at an aggregate level is declining in Mexico, it is still high, particularly in southern states.⁵ Soil erosion affects almost half of the national territory, and 38 percent of Mexico's rivers are

¹ Bank staff estimates based on INEGI

² Global Economic Prospects, January 2018

³ CONEVAL

⁴ CONEVAL

⁵ Deforestation decreased over the last decade to an average rate of 0.2% between 2010 and 2015 (FAO, 2015 in ENAREDD+, 2017)



considered highly polluted. Some sources estimate that the economic cost of environmental degradation and natural resource depletion in Mexico is equivalent to roughly 6.3 percent of national GDP, and that this cost is even higher in deforestation hotspots. Mexico's extreme vulnerability to climate change will only heighten its development challenges. World Bank studies estimate that climate change could slow the pace of poverty reduction by 2.4 percentage points by 2030, meaning an extra 2.9 million people would remain in poverty.

6. **For Mexico to prosper more equitably and sustainably, policy must reflect stronger climate change and environmental considerations.** Sound policy interventions can strengthen productivity and earnings, improve inclusiveness to ensure that the poor have access to services, and increase sustainability so that development does not harm Mexico's resource base. Mexico's National Development Plan 2013–2018 (NDP) focuses on promoting prosperity by stimulating economic growth.⁶ It recognizes that opportunities for growth must be environmentally sustainable, low-carbon, and climate resilient to expand durable economic gains and reduce socioeconomic disparities (NDP, Strategic Objective 4, Strategy 4.4.3.). The Special Program for Climate Change 2014–2018 is the national umbrella program for addressing low-carbon development and sustainable strategies.⁷ Most recently, the government has undertaken measures designed to support implementation of the United Nations Sustainable Development Goals (SDGs) and achieve coherent national policies for the country's sustainable development.

B. Sectoral and Institutional Context

7. **The agriculture and forest sectors make important contributions to Mexico's economy and provide livelihoods for millions of rural households.** About half of Mexico's land is under agricultural production (crops and livestock). In 2015 primary agriculture accounted for around 3.4 percent of Mexico's GDP—actually about 11 percent, when the sector's forward and backward linkages (through input markets, post-harvest agro-industrial processes, and food production) are considered. The sector employs about 13.5 percent of the Mexican labor force. Forestry production accounted for 0.6 percent of GDP in 2015, twelve million people live in forested areas and depend directly on local natural resources for their livelihoods. Of this population, more than 1.5 million are indigenous, and more than half live in extreme poverty.

8. **The considerable poverty in rural areas increases pressure on natural resources, mainly through activities related to agriculture and forests.** The expansion of commercial and subsistence agriculture has brought significant environmental challenges to Mexico. About 80 percent of agricultural land suffers from some level of degradation caused by overgrazing, excessive pesticide use, and improper water management. Agriculture and cattle ranching are not only a primary source of greenhouse gas (GHG) emissions in Mexico but are the third most rapidly growing source of emissions.⁸ Pressure from agricultural expansion is increasing in forest buffer zones. In the seven areas selected for the proposed Sustainable Productive Landscapes project (Territorios Productivos Sostenibles, TPS), which are an important reservoir of biodiversity, forests come under pressure largely because of the changes in land use that accompany agriculture and livestock production, and because of unsustainable forest use (Annex 8). Forests and agriculture are both highly vulnerable to climate hazards, which exacerbate natural resource deterioration. In southern states, such as Guerrero, Chiapas, and

⁶ Plan Nacional de Desarrollo 2013–2018, available at <http://pnd.gob.mx/>.

⁷ Mexico has made important global commitments to reduce national emissions in relation to a defined baseline (for example, by 2030 emissions should be 22 percent lower than the baseline).

⁸ Agricultural emissions come mainly from methane enteric fermentation (representing 63.87 percent of all agricultural emissions), followed by manure management (17.13 percent), soil management (16.58 percent), rice (0.47 percent), burning of agricultural residues (0.27 percent), and fuels for energy used (mainly water pumping—0.0007 percent).



Oaxaca, farmers face severe climate risks, such as floods and pest infestations. For example, efforts to de-commodify coffee production (an economic activity central to the livelihoods of thousands of Mexican producers) via differentiation in organic markets increased exposure to climate-related pests and diseases due to the lack of large-scale and coordinated investments to identify, validate, and deploy technological packages for organic production.

9. Improved technologies and practices represent opportunities for addressing climate-related challenges, protecting biodiversity, ensuring land productivity, and supporting the economic growth and development of the agriculture and forest sectors. Farmers in Mexico, through different publicly and donor-funded programs, have begun to adopt a variety of climate-smart practices. Those efforts need to be scaled-up, and for that to happen, there is a need to address significant bottlenecks that restrict improvements in productivity and access to key services and markets. For example, the lack of collateral or financial intermediaries are key bottlenecks in accessing finance, which is crucial to achieving improvements in productivity and market integration. Mexico recently launched a Strategy for Financial Inclusion that seeks to provide financing options to marginal groups, and activities of the proposed TSP will be linked to that strategy.

10. The Government of Mexico recognizes the importance of adopting strategic, integrated spatial approaches to ensure large gains from agriculture and forest activities while sustaining the natural resource base upon which those activities depend.⁹ Lessons from Mexico and elsewhere demonstrate the relevance of spatial/landscape approaches in addressing conservation issues. They also emphasize the importance of anchoring spatially integrated approaches among the local actors to whom they matter the most, using mechanisms for identifying strategic priorities and building consensus. Evidence from Mexico shows that communally managed forests experience less deforestation than protected nature reserves and forests managed under logging bans. Extending community and locally based management approaches beyond forests to cover activities in other productive landscapes, particularly in forest buffer zones, can have important environmental and livelihood impacts.

11. A stronger agenda is needed to more fully integrate the dual goals of improving productive outcomes and enhancing environmental sustainability. SAGARPA (the Ministry of Agriculture, Livestock, Rural Development, Fisheries, and Food) has several instruments in place to support climate-smart production, including a program to modernize irrigation, incentives for investment in bioenergy and renewable energy, production of organic and mineral fertilizers, among others. Important gains remain to be made, however, from mainstreaming climate-smart approaches and biodiversity criteria into some of SAGARPA's largest programs, such as PROAGRO Productivo¹⁰ and PROGAN.¹¹ At the same time, several programs managed by the Ministry of Environment and Natural Resources (SEMARNAT) and others focus on productive objectives around agriculture, but they have few links to SAGARPA programs. Intra-agency coordination to reach consensus around support programs represents a significant opportunity to increase outreach and achieve scale.

12. Transformational impacts in agricultural productivity, rural livelihoods, and environmental conservation will not be achieved at scale without strongly aligned policies, institutions, and incentives. Striking the correct balance and scope of action between growth policies and environmental protection is a

⁹ Pioneering examples of such approaches are the Sustainable Production Systems and Biodiversity project implemented by CONABIO (Commission for Knowledge and the Use of Biodiversity), and the Biodiversity in Production Forest and Certified Markets project, implemented by CONAFOR (National Forestry Commission). Both projects are funded by the Global Environment Facility (GEF).

¹⁰ PROAGRO Productivo is one of the largest programs of SAGARPA for the agriculture sector. In 2015, Mexico invested nearly US\$ 700 million dollars in this program.

¹¹ PROGAN (Programa de Producción Pecuaria Sustentable y Ordenamiento Ganadero y Apícola) is the largest SAGARPA program for the livestock sector.



major challenge, but Mexico is taking important early steps to transform this challenge into an opportunity. The country has introduced several policies and programs and set up institutional frameworks to sustainably manage its productive resources, under the oversight of two leading ministries—SEMARNAT and SAGARPA. Strengthening inter-sectoral collaboration and coordination between SEMARNAT and SAGARPA and allied agencies will do much to ensure that an enabling and effective institutional and policy environment emerges to support sustainable production in Mexico. The Mexican presidency is undertaking high-level efforts to create a coherent policy framework as well, as exemplified by the recent agreement between SEMARNAT and SAGARPA to coordinate programs. To achieve scale and transformational impacts, it is also critical to align efforts to develop and strengthen producers' entrepreneurial capacities and link them to product and service markets. For that reason, the government decided strategically to use a substantial portion of its GEF resources to support integrated productive landscape approaches to align production, livelihood, and conservation objectives.

C. Higher Level Objectives to which the Project Contributes

13. **The proposed TSP Project is consistent with the World Bank Group's Performance and Learning Review (PLR) of the Mexico Country Partnership Strategy (CPS) (2014–2019) (Report No. 104752).** One of the four strategic themes of this CPS is green and inclusive growth, which includes a reduction of the growth footprint and the use of natural resources in an optimal way. The CPS acknowledges not only the costs of land and forest degradation but the importance of natural resource management as an essential source of employment, income, and livelihoods, as well as an essential means of mitigating and adapting to climate change. The PLR emphasizes that more sustainable management of key natural resources is integral to achieving inclusive green growth. The project also has an important relationship with the thematic area of "increasing social prosperity," because it relies on local and indigenous peoples' groups and producer units to improve coordination among land uses by identifying and implementing new and innovative collaboration and land management activities, defined at a local scale. The proposed project is also an instrument to support the policy recommendations emerging from the thematic policy notes currently under preparation.

14. **The World Bank's efforts in the environmental and agricultural sectors to foster integrated landscape management for sustainable rural development and poverty reduction will be strengthened by the addition of the proposed project.** Those efforts comprise the full range of World Bank instruments, building upon a long-standing, successful collaboration, which includes knowledge services through the Forest Carbon Partnership Facility (FCPF) operation, analytical work under the Program on Forests (PROFOR), and financial services such as the Sustainable Production Systems and Biodiversity Project (P121116), the Sustainable Rural Development Project (P10876), the Forests and Climate Change Project, and the Coastal Watershed Conservation Project (P131709). The proposed project will greatly benefit from these experiences and will complement and expand the geographical scope of the existing projects. Its emphasis on integrated landscape management for agriculture, livestock, and other productive land-use activities will complement the emphasis on forests under the recently approved Strengthening Entrepreneurship in Productive Forest Landscapes Project (P164661).

15. **The project aligns with several international frameworks.** It reflects the Convention on Biological Diversity's (CBD) Aichi Biodiversity Targets, under Strategic Areas B (Reduce the direct pressures on biodiversity and promote sustainable use) and E (Enhance implementation through participatory planning, knowledge management, and capacity building). It helps to fulfill the SDGs, particularly goals 15 (Promoting sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation, and halt biodiversity), 12 (sustainable consumption and production), and 13 (urgent action on climate change). The project is aligned with Mexico's National Biodiversity Strategy and Action Plan (NBSAP)



submitted to the CBD, and the National Action Program (NAP) of the United Nations Convention to Combat Desertification (UNCCD), both of which address the two central issues of mainstreaming and connectivity, and include drylands and ecosystems not previously considered in similar projects. The NBSAP and NAP identify 600,000 hectares of priority sites that cover 30 percent of the national territory, of which only 13 percent are in protected areas, suggesting that Mexico needs to redouble its efforts to increase areas under conservation and sustainable use of biodiversity outside of protected areas. The project is also consistent with the objectives of UNCCD’s “Land Degradation Neutrality (LDN) Target Setting Programme,” which supports the definition of national baselines, targets, and associated measures to achieve LDN by 2030.¹²

16. **By contributing to both mitigation and adaptation objectives, the proposed project aligns with Mexico’s ambitious Nationally Determined Contributions (NDCs) goals under the United Nations Framework Convention on Climate Change (UNFCCC).** Mexico’s NDCs recognize the important role of forests and agriculture in supporting mitigation through low-carbon rural development, and they highlight the key role of forests and landscapes in enhancing resilience. The NDCs specifically seek to establish synergies between adaptation and mitigation. The project directly supports this ambitious objective of linking adaptation and mitigation by fostering low-carbon rural development while enhancing ecosystem resilience.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

17. The Project Development Objective (PDO) is to strengthen sustainable management of productive landscapes and increase economic opportunities for rural producers in priority areas of Mexico.¹³

B. Project Beneficiaries

18. The beneficiaries of the Project include about 20,000 producers¹⁴ in 14 priority sites. The beneficiaries of the Project include about 20,000 producers in 14 priority sites. The Project will improve the organizational capacity of producer groups and associations and enhance their technical, entrepreneurial, and marketing skills for sustainable production, while promoting strategic alliances and increasing the competitiveness of productive activities. Participating government institutions are also beneficiaries of the project via capacity-strengthening.

C. PDO-Level Results Indicators

19. The following key results are proposed for measuring achievement of the PDO:

- (i) Productive landscape area under Sustainable Management.
- (ii) Share of beneficiary producer organizations (POs) that improve their capacity to align business

¹² Mexico is one of the 114 countries committed to set LDN targets.

¹³ A sustainable productive landscape is defined as one that fosters forest connectivity for biodiversity conservation and ecosystem services, contributes to climate change mitigation, and provides livelihood opportunities for rural producers. The higher-level (global) objectives to which the Project contributes include biodiversity conservation, sustainable land and forest use, and climate change mitigation.

¹⁴ In this Project, the term “producers” refers to agricultural and livestock producers, foresters, and others who derive their livelihoods from the landscape, including ejidos, agrarian communities, and organizations.



growth with conservation objectives.

- (iii) Increased sales of goods and services marked under biodiversity/sustainable criteria.

20. The theory of change of the project is discussed in Annex 1. The project will access GEF funding from four focal areas: biodiversity (BD 4), sustainable forest management (SFM 2), land degradation (LD 3), and climate change mitigation (CCM 2). The contributions of the project to each of the GEF focal areas will be measured at the level of Project Outcomes (the PDO indicators and intermediate indicators) and High-Level Project Outcomes (impacts). See Annex 1 for details. The project's target contributions to global environmental benefits are as follows:

- (i) Maintain globally significant biodiversity, conserve forest, and the ecosystem goods and services that it provides to society (target: 3,000,000 ha).
- (ii) Enhance sustainable productive land management in production systems (agriculture, rangelands, and forest landscapes) (target: 200,000 ha).
- (iii) Support shifts towards a low-carbon and resilient development path (target: reduce emissions by 1.36 million metric tons of CO₂e over the five-year project period).

III. PROJECT DESCRIPTION

A. Project Components

21. The project will be implemented across seven regions that were found to be representative of priority sites for biodiversity conservation, ecological connectivity, land and forestry management activities, climate vulnerability and anthropogenic threats (land degradation, deforestation, and forest degradation—as discussed in Annex 1), ecosystem services, and relevance of agricultural production activities. The seven regions hold 540 species of significance for global biodiversity and are: (1) Chihuahua-Durango, (2) Coahuila, (3) Jalisco, (4) Sierra Madre Oriental, (5) Sierra Norte Oaxaca, (6) Usumacinta Basin, and (7) Yucatán Peninsula. Within these 7 regions, 14 priority intervention sites have been selected for the project, comprising about 3 million hectares, covering 15 states, 106 municipalities, and 569 agrarian units (ejidos and agrarian communities).¹⁵ Annex 7 provides a detailed description of the site selection methodology and the prioritization of areas within these regions

22. The northwestern sites (Durango-Chihuahua, Coahuila, and Jalisco) are predominantly forests and scrub lands, which host high numbers of biological species of global significance and have moderate land degradation and low rates of forest land-use changes. In these regions, forest degradation is more prevalent than deforestation. By comparison, the southern sites (Sierra Madre Oriental, Sierra Norte de Oaxaca, Usumacinta Basin, and Yucatán Peninsula) have a more fragmented forested landscape with a higher number of biological species of global importance, given the higher heterogeneity of habitat types. These ecosystems experience higher rates of deforestation and forest degradation than the northern sites, and their land base is more severely degraded. In contrast, the northern sites are more affected by unsustainable and ineffective forest practices. Across the southern sites, where agriculture has a more dominant presence, crop and livestock production impose a different set of challenges to landscape integrity and conservation. A summary of the main drivers of

¹⁵ The 14 sites overlap with 29 protected areas (18 federal state, 6 local state, 4 certified, and 1 private).



biodiversity loss, land degradation, and deforestation, including the value added of the project, is presented in Annex 8.

23. The project has three components, described in the following paragraphs.

24. **Component 1: Capacity Strengthening for Sustainable Landscape Management** (Total: US\$12.27M, GEF: US\$9.67M, GoM: US\$2.60M). This component seeks to strengthen national and local capacities to support the sustainable management of productive landscapes in the selected project areas. Dimensions of capacity to be strengthened/developed include: the policy environment, via harmonization of relevant policies and programs; the institutional framework to effectively support landscape management approaches and investments; and collective and individual capacities of different actors at the national and local levels. Component 1 will support activities through two subcomponents, one focusing on the enabling environment and the other on building capacity at the local level.

25. **Subcomponent C1.1. Enabling Environment for Sustainable Productive Landscape Management.** This subcomponent aims to build an enabling environment that supports landscape planning and management through activities that strengthen system capacities and knowledge at the national level, including:

- (i) **Institutional coordination via the harmonization of policies and programs and the strengthening of inter-institutional platforms.** Detailed studies and analysis will be financed to assess the environmental impacts of current programs and policies and identify feasible options to improve their environmental outcomes. At the inter-institutional level, this subcomponent will also support the strengthening of: (a) the Climate Change Fund (FCC) as an inter-institutional mechanism to coordinate and leverage climate funding from the public and private sector, as well as the international community, and (b) capacities of relevant agencies for integrated landscape monitoring in alignment with current national systems.¹⁶
- (ii) **Training, workshops, and the development of guidelines targeting policy makers and technical staff** (including extension agents). These activities will focus on governance models favoring land-use planning and management and key options to enhance the environmental sustainability and profitability of key production systems. Together, these activities will help to build awareness; exchange knowledge, experience, and tools; disseminate lessons learned; and identify opportunities to scale up and mobilize new mechanisms for investment in sustainable productive landscapes. South–South cooperation, through the formation of strategic alliances between different actors working on integrated landscape management in Mesoamerica and beyond, will also be supported. The project will engage with the financial sector to create awareness and support the exchange of knowledge on the potential benefits of engaging in climate finance/biodiversity conservation, including the guarantee fund supported by the project under Subcomponent C2.2.
- (iii) **Enhanced incentive mechanisms to support integrated landscape management.** This activity includes studies/assessments aimed at improving current economic incentives (or designing new ones), to support investments with a sustainable and climate-smart approach to productive activities, mainly within the agriculture, forestry, and tourism sectors.

26. **Subcomponent C1.2. Local Capacities for Enhanced Landscape Governance, Management, and Business Development.** This subcomponent expands local capacities for productive landscape planning,

¹⁶ The National Monitoring, Reporting and Verification System for REDD+ and the National Monitoring Biodiversity System.



management, and business development to support conservation objectives, sustainable use of biodiversity, and sustainable productive investments. It promotes broad alliances at the landscape and local business levels:

- (i) **Broad alliances at the landscape/territorial level.** These alliances will build shared or agreed mid- to long-term landscape management objectives among relevant stakeholders. Activities to be supported include: (a) a detailed mapping of relevant actors/roles in the 14 project intervention sites; (b) support to current or new platforms for dialogue and consensus building by organized producers and other local actors (women will be particularly encouraged to join these platforms); (c) capacity building for Producer Organizations (POs) and other actors to strengthen levels of collective action, internal governance structures, and business strategies; and (d) workshops and local assessments leading to the establishment of landscape management plans for Biodiverse and Resilient Productive Landscapes (BRPL plans). These plans will align objectives around economic growth, biodiversity, forest conservation, and climate resilience. The plans will also support the identification of strategic sustainable productive landscape investments (a green investment portfolio) in the 14 project sites. Consultancies and field work will be supported to help develop the "business case" for the green investments that are identified.
- (ii) **Business alliances for subproject investments.** "Territorial business subproject investments" will be prepared in alignment with the landscape prioritization exercise carried out at the landscape level. Support will also be provided for the design and implementation of a communication and information strategy for each project intervention site, including a market information platform on the "key green investments" identified in the 14 sites where the project will operate. Territorial development agencies (ADTs)¹⁷ will be hired to guide processes of collective action, provide capacity building for local actors and POs, as well as to support the identification and formulation of business subprojects to be implemented under Component 2.

27. **Component 2. Investments into Biodiversity-Friendly and Climate-Smart Production Systems** (Total: US\$56.28M, GEF: US\$11.09M, GoM: US\$8.85M, Other (loans to beneficiaries): US\$36.00M, Other (contributions from beneficiaries): US\$0.34M). This component aims at enhancing opportunities for economically viable business investments around the sustainable use of biodiversity and the establishment of biodiversity-friendly and climate-smart production. It supports the implementation of strategic territorial business subproject investments by consolidating support to POs to enhance business opportunities through knowledge-sharing and market-related activities (Subcomponent C2.1) as well as direct productive investments (Subcomponent C2.2). Subprojects will be financed by a combination of grants, credits/loans, and contributions by beneficiaries. The knowledge-sharing and market-related activities of subprojects will be supported through grants, whereas direct productive investments will be supported mainly through loans (although small collective investments in infrastructure/works could also be supported by grants). To facilitate access to loans by beneficiary POs and their members, the project will operationalize a partial credit guarantee (PCG) fund under Subcomponent C2.2.

28. **Subcomponent C2.1 Knowledge Sharing and Market Development.** The subprojects will support POs in the establishment of innovation networks to promote the adoption of best practices and technologies, with the goals of improving productivity and profitability, promoting sustainable management of biodiversity, and contributing to the reduction of GHG emissions. Grants will be provided to beneficiary POs to build partnerships with universities and research centers to support technology transfer—for example, through farm demonstration plots and farmer field schools. These knowledge-sharing activities will include specific strategies

¹⁷ Including Territorial Agencies of the Forest Sector.



to target vulnerable groups, including women and indigenous people. Market-related support will include development of territorial branding strategies, differentiation initiatives, and market linkages.

29. **Subcomponent C2.2. Mitigating Credit Risk for Subprojects to Access Commercial Finance.** This subcomponent will capitalize a PCG fund of US\$6 million to facilitate access to finance for POs implementing strategic subprojects. The fund will be managed by the second-tier development financial institution, FIRA, through its existing guarantee fund (FEGA, Fondo Especial de Asistencia Técnica y Garantía para Créditos).¹⁸ The PCG will serve as a risk-reducing instrument and incentive for FIRA's large network of financial intermediaries to lend to the subprojects, which are in areas currently poorly served by the financial system, and will motivate financial intermediaries to support a wide range of sustainable productive initiatives (mainly in the forest, agriculture, and tourism subsectors). The capital of the fund will be leveraged to allow a lending portfolio of at least US\$36 million to be supported at any point in time. The PCGs will primarily support investments under the subprojects of POs, but they could also support lending to individual producers who wish to undertake productive initiatives aligned with the objectives of the approved subprojects. The design of the PCG will reflect the Principles for Public Credit Guarantee Schemes for SMEs.¹⁹ The guarantee premiums paid to FIRA will reflect the cost of providing the guarantee. The project will use FEGA's risk-based pricing model, which considers different sectors and locations and the risk profiles of the various private financial intermediaries that make the loans.

30. **Component 3. Project Management, Monitoring, and Evaluation** (Total:US\$7.59M, GEF:US\$1.09M, GoM:US\$6.5M). Resources under Component 3 will be used for the management of the project. GEF funds will be used for the operation of the Project Coordinating Unit (PCU) and the Regional Technical Units, as well as the overall monitoring and evaluation (M&E) of project activities, including the mid-term and final evaluations.

31. **Gender and Youth Considerations.** This project is aligned with the World Bank's gender strategy and will contribute to reducing gender gaps in accordance with pillar 3 (Removing barriers to women's ownership and control of assets). The project acknowledges the importance of the relationship between women and the environment, as well as the significant role that women play in community development and in strengthening governance. As a result of cultural, migratory, and demographic factors, women in the project sites will often lack clear title to land, especially in the context of ejido and community decision-making processes. On average, less than 25 percent of direct beneficiaries of forestry and other productive programs are women, partly because of the legally established collective land tenure system, as well governance structures that tend to benefit men. Some of the main barriers to women's active participation in land management systems are legal and institutional, and others include gender norms and limited access to information and resources. These constraints have been examined through various gender studies focusing on behaviorally rooted barriers. The assessments conclude that barriers to women's ownership and control of assets must be removed to close gender gaps, yet those barriers should not prevent women from participating in decision making or taking an active part in the productive groups that have access to technology development and financial resources. To that end, the project will encourage participation of women and youth and will provide targeted capacity building for these groups at the production and governance levels. It will also support and monitor youth and women's participation in all its activities, specifically targeting these groups at the producer level with investments under Component 2.

32. **Crowding in Private Finance and Engagement.** The project attempts to crowd-in the provision of crucial financial services to farmers, delivered through the private sector, and thus optimize the use of GEF and public

¹⁸ Special Fund for Technical Assistance and Guarantees for Agricultural Loans (FEGA, Spanish acronym).

¹⁹ Principles for Public Credit Guarantee Schemes for SMEs, the World Bank (2015).



resources to provide sustained financial solutions to generate economic opportunities for poor producers. The project proposes an innovative and responsive PCG instrument that reduces the risk of lending for financial institutions and allows investments in private sector operations to be scaled up. At the same time, training and extension services provided to producer groups will aim to help them increase the value-added of their production. The project will also strengthen the capacities of public agencies to establish an enabling environment that supports biodiverse, resilient, and productive landscape management.

33. **Climate Change Co-Benefits.** It is estimated that the project will provide significant mitigation and adaptation co-benefits, equivalent to as much as 90–100 percent of total funding for the project.²⁰ As per the guidelines and methodology established for all similar projects, the World Bank’s Operations Policy and Country Services team will conduct a detailed assessment of co-benefits after the Project is approved. Each of the Project components aligns with activities included in the climate finance methodology used by the multilateral development banks.²¹ Component 1 matches the eligible activities of “national, sectoral or territorial mitigation policies/planning” and “national, sectoral, or territorial mitigation action plan/institutions” under category 9.1, “support to national regional or local policy, through technical assistance and policy lending.” Component 2 supports mitigation activities in the Agriculture, Forestry, and Land-Use (AFOLU) sector (such as rangeland management, techniques that increase soil carbon, sustainable forest management) and adaptation activities (such as improved management of pest and disease outbreaks and increased production of fodder crops to supplement rangeland foraging).

34. **Green House Gas Analysis.** As a first step (ex-ante mitigation potential assessment), the net balance of GHGs emitted or avoided/sequestered as a result of the project was compared to the “without project” scenario.²² Over the implementation period of five years, the project could reduce 693,257 tCO₂e by avoiding deforestation, and enhance carbon stocks in 254,548 tCO₂e through productive systems. Additionally, the conservation practices that will be supported by project would enhance carbon stocks in 917,221 tCO₂e. This implies a total mitigation of 1,865,027 tCO₂e, with an average mitigation of 0.37 million tCO₂e per year. The expected reduction in emissions comes largely from the conservation practices adopted under the project and the deforestation prevented on approximately 1.3 million hectares as a result of coordinated public and local governance programs (the estimates applied national emission factors). The introduction of agroforestry, silvopastoral, and improved agricultural practices constitute a carbon sink of 0.25 million tCO₂e, estimated of with the ex-act tool using default values. For a more detailed analysis, see Annex 5. This analysis will be improved and updated by INECC and CONAFOR during the implementation of the project, using domestic data and methodologies. The project’s approach to GHG monitoring and accounting is discussed in Annex 2.

35. **Citizen Engagement.** Project preparation included extensive rounds of regional workshops to engage citizens in target areas, focusing on the project’s technical, social, and environmental safeguards. Through these workshops, Project stakeholders from each of the seven regions learned about the design proposed for the project and provided their input and feedback. They will continue to provide feedback during the project’s implementation through stakeholder workshops held by the institutions involved, which will also disseminate information on the project’s activities. Designed to be participatory, the project supports extensive community engagement in developing landscape management plans. The project will put a grievance redress mechanism (GRM) into place within SEMARNAT, relying on the experience of CONAFOR, CONANP, and CONABIO. Both

²⁰ Depending on whether financing for Project Management (under Component 3) is included in the calculations.

²¹ See http://www.eib.org/attachments/documents/joint_mdb_report_on_climate_finance_2015.pdf.

²² The GHG accounting was performed using the tool EX-Act (<http://www.fao.org/tc/exact/ex-act-home/en/>) as a general approach.



CONANP and CONAFOR have vast experience working with community stakeholders and indigenous people, and CONABIO has worked with a GRM under two previous Bank-supported projects.

B. Project Cost and Financing

Project Components	Project cost	IBRD or IDA Financing	Trust Funds	Counterpart Funding Institutions	Counterpart Funding (Beneficiaries and Others)
Component 1: Capacity Strengthening for Sustainable Landscape Management	US\$12,277,866		US\$9,674,266	US\$ 2,603,600	
Component 2: Investments into Biodiversity-Friendly and Climate-Smart Production Systems	US\$56,287,000		US\$11,095,000	US\$8,850,000	US\$36,342,000
Component 3: Project Management and M&E	US\$7,593,119		US\$1,093,119	US\$6,500,000	
Total Costs	US\$76,157,985		US\$21,862,385	US\$ 17,953,600	US\$36,342,000

C. Lessons Learned and Reflected in the Project Design

36. The design of the project reflects major lessons from international and national programs on sustainable productive landscape management:

- **Community engagement and collective planning are necessary to create buy-in and enable long-term sustainability of landscape planning and management.** Successful landscape management programs rely on: (i) long-term management objectives that are shared or agreed among stakeholders and encompass multiple benefits from the landscape; (ii) field, farm, and forest practices that are collectively designed by stakeholders to contribute to those shared objectives; (iii) collaborative, community-engaged processes for dialogue, planning, negotiating, and monitoring decisions for landscapes, and (iv) planning processes capable of creating positive synergies among different competing uses of the landscape.
- **Planning and managing at a landscape scale requires a unique body of knowledge and technical capacity, and policy can support its development and dissemination.** Spatial information, such as maps of important areas for biodiversity, agriculture, and hydrology, which can be overlaid with local socio-economic data, are essential to plan strategically for a multi-functional landscape that capitalizes on the synergies between different land uses while balancing stakeholder priorities.
- **An enabling environment, including appropriate economic incentives, is critical to support sustainable landscape management approaches.** Where local communities see tangible economic benefits from biodiversity conservation, their conservation efforts are more sustainable. To achieve shared landscape objectives, markets and public policies must be shaped to support those objectives. Accessible markets should be strengthened or created to support agricultural objectives, and public



policies must be designed to support landscape objectives.

- **Strong policy coordination at multiple levels of government is needed for lasting landscape management.** Policy coordination is necessary at the national level, as well as at subnational, jurisdictional, and landscape levels. Governments can help promote successful landscape planning and programs by facilitating, funding, and rewarding inter-agency coordination and collaboration, sharing examples of documented synergies between sectors, and reinforcing the importance of cross-sectoral priorities. Inter-agency working groups can improve communication and collaboration.

37. Lessons learned by the World Bank and FIRA in developing credit guarantee funds are also reflected in the Project design. One of the most important lessons is that for the credit guarantee instrument to be successful, it needs to be linked with the broader entrepreneurship ecosystem, and to the provision of technical assistance to build capacity in micro, small and medium enterprises (MSMEs) at the pre-investment and post-investment levels.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

38. The Fondo para el Cambio Climático (FCC, the Climate Change Fund)²³ and the SEMARNAT will jointly implement the Project. FIRA/FEGA will manage Project funds for the partial credit guarantee, under operational and financial management arrangements agreed with the World Bank. Participation of other agencies (SEMARNAT, CONAFOR, CONANP, INECC, and SAGARPA) in the implementation of Project activities will be carried out through coordinating mechanisms that will form part of the Project's Institutional Arrangements.

39. **The Project Coordinating Unit will be hosted at SEMARNAT.** The overall responsibility of FCC is under the General Directorate of Policy and Climate Change at SEMARNAT. Within SEMARNAT the General Directorate of Planning and Evaluation of the Under-ministry of Planning and Public Policy will be the Responsible Unit for the project to the World Bank. Within this Responsible Unit, an Executive Unit for the TPS Project will be established, to house the TPS Project Coordinating Unit (PCU). Furthermore, an FCC support unit within SEMARNAT is in charge of preparing financial reports and providing administrative and technical support to FCC's portfolio of funded projects. This unit will also provide support to the PCU. GEF funds will be channeled through Nacional Financiera (NAFIN), which will act as the fiduciary institution (trustee) managing FCC funds. The PCU will include a team of technical experts and administrative staff under the overall guidance of a General Coordinator/Manager. At the regional level, the project will operate through seven Regional Technical Units.

40. **A Directive Committee for the project will be established.** It will comprise representatives of each of the partner institutions, including SEMARNAT, SAGARPA, CONAFOR, CONABIO, INECC, CONANP, and FIRA. The project's Directive Committee will operate under the rules defined in the Project Operational Manual (POM). Further details on institutional arrangements for the project are provided in Annex 2.

²³The FCC is a public Trust Fund instituted in November 2012, under the Climate Change General Law (Ley General de Cambio Climático). Its main objective is to channel funds from the public and private sectors to implement climate change adaptation and mitigation measures.



B. Results Monitoring and Evaluation

41. The project's monitoring and evaluation (M&E) approach has three elements: (i) monitoring project outcomes (PDO results and intermediate indicators, and financial and procurement outcomes, including performance of the PCG fund); (ii) monitoring of biodiversity, land degradation, sustainable forest management, and carbon-related outcomes; and (iii) an unbiased impact evaluation to capture the project's mid- to long-term causal impacts on environmental, productive, and socio-economic factors. The costs of the M&E approach, including the impact evaluation, are incorporated into Components 1 and 3. Under Component 1, the project will strengthen institutional and local capacity for local M&E of sustainable productive landscapes. An M&E unit within the Project Coordinating Unit of SEMARNAT will assume responsibility for monitoring and collecting relevant project data. CONABIO and CONAFOR will be responsible for monitoring environmental outcomes of biodiversity and connectivity; these agencies have developed environmental monitoring capacity through prior projects. CONAFOR will guide the process of monitoring forest degradation and together with INECC will take responsibility for the accounting and monitoring of GHG in coordination with SEMARNAT. CONANP will be responsible for guiding the process of ecosystem monitoring in protected areas. Indicators measured through the monitoring systems of CONABIO, CONAFOR, CONANP and INECC will feed into the main M&E system housed in SEMARNAT. To meet the project's monitoring requirements, an important activity will be to strengthen the national monitoring systems that are already in place, such as the National Monitoring, Reporting and Verification System for REDD+²⁴ and the National Biodiversity Monitoring System.

C. Sustainability

42. The project is central to the current government's efforts to link growth with environmental objectives. Over the long term as well, the project's approach and proposed outcomes will remain central to Mexico's rural growth, social, and environmental agendas, and to its international visibility and commitments for climate change, biodiversity conservation, and poverty reduction. The project's design internalizes several elements of technical and financial sustainability, as follows:

- Building the capacity of relevant stakeholders, particularly local ones, leads to increased and more sustainable knowledge and capacity. Component 1 provides support to government agencies to foster the convergence of spatially coordinated efforts. It also supports capacity building at the local level to prepare local leadership for the strategic use of land and natural resources. Anchoring capacity-building processes in communities, among local actors, is key to the long-term sustainability of project outcomes.
- Investments and improved practices will be facilitated at the territorial level, and all of them will be underpinned by a territorial land management plan developed through a rigorous process of community-level participation. The fact that land management plans are driven by local stakeholders will help to ensure that these investments are sustained.
- Enhancing coordination on landscape interventions becomes the basis for long-term sustainability by creating lasting partnerships among institutions.

²⁴ REDD+: Reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries.



- The project leverages financial solutions that can be sustained beyond the project's life.
- The project enhances long-term institutional and local capacities for monitoring impacts in alignment with current national systems and local experience (community-driven monitoring).

D. Role of Partners

43. The role of collaborating partners will be crucial in this project. Each agency (SAGARPA, SEMARNAT, CONABIO, CONAFOR, CONANP, FIRA, and INECC) will play a specialized role, based on its strengths and capacities. SAGARPA will play a key role in agriculture, livestock, and rural development in the territory, while SEMARNAT will play a key role in protecting, restoring, and conserving the ecosystems, natural resources, assets, and environmental services of Mexico with the goal of fostering sustainable development. CONABIO will draw on existing experience coordinating, supporting, and executing activities designed to foster an understanding of biodiversity within Mexico and leading biodiversity monitoring efforts. CONAFOR will develop, support, and promote the sustainable use, conservation and restoration of Mexico's forests, as well participate in the development of plans, programs, and policies for sustainable forestry development. CONANP will be responsible for coordinating project activities involving government, civil society, and rural and indigenous communities in the governance of federal conservation units and protected areas. FIRA will create awareness among financial intermediaries and provide the credit guarantees that will expand their engagement in areas where the project operates. INECC will contribute with related policies, including the development, coordination, and dissemination of studies and scientific or technological research related to climate change, green growth, and sustainability; INECC will also lead carbon monitoring efforts, together with CONAFOR/CONANP. Strengthening the FCC through the project is critical to consolidate its expected coordinating role for climate-related finance in the future (bringing together agencies across different line ministries in an impartial and unbiased fashion). Meanwhile, SEMARNAT will be supporting the FCC through its institutional structures.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

44. The overall level of risk for the project is Substantial. The key risks that can affect successful implementation of the project are outlined in the following paragraphs.

- **Political and governance risk** surround the federal elections in 2018, which may bring changes in personnel that may translate into changing institutional priorities and delay Project implementation. Early engagement with the new government is critical to mitigate such risks and foster continued high-level political support. The thematic notes (particularly the note on resilient and productive landscapes) will support early engagement with the relevant authorities. In addition, the World Bank team will maintain close communication with government officials and brief new appointees on opportunities to achieve the dual goals (income-generating opportunities and environmental protection) promoted by the project. The capacity-building activities under Component 1 will help the project transition its political and technical engagement from the current to the incoming administration.
- **Technical design risk** is related to innovative activities proposed by the project. One example is the validation of incentives (credit for borrowers and the capital risk guarantee for lenders) for crowding-in



financial support for sustainable investments. The risk is that neither the lenders nor the beneficiaries (POs and farmers) will make sufficient use of the incentives. This risk will be mitigated by significantly involving the private sector during the design and implementation of the incentive instruments. Furthermore, the project will adopt an adaptive learning approach, continually validating assumptions made and introducing adjustments to the proposed instruments as needed. The World Bank team will also closely monitor the features of the incentives as they are designed and implemented.

- **The institutional capacity risk** results from the institutional complexity and significant coordination needs at the central and regional levels. This risk is mitigated through: (i) the signing of inter-institutional agreements laying out roles and responsibilities of each partner entity (described in detail in the Operations Manual) and (ii) the creation of an inter-agency committee, over which SEMARNAT will preside, and which will include representation of decision makers of the national agencies/institutions involved in implementing the Project. In addition, the inter-agency committee has selected the FCC as the implementing agency for the project.²⁵ While there is a consensus that this fund should be supported, there is also recognition that capacity in important areas must be addressed to ensure the fulfillment of FCC's roles and long-term sustainability. To mitigate this risk, the implementation arrangements have been carefully crafted to use the current structures supporting the FCC at SEMARNAT, to host and provide support to the PCU. Furthermore, the project will support the ongoing strengthening of the FCC as project implementation is underway. Close support by the World Bank, particularly, during the first year of implementation, will also help mitigate institutional capacity risks.
- **Fiduciary risk** results from working with a large number of small-scale producers and their organizations, because their capacity tends to be low. For investments financed under the project, strict validation mechanisms and controls must be in place to monitor financial and physical progress, and subproject beneficiaries will need close supervision and capacity building. In addition, timely provision of counterpart financing can be challenging in a period of fiscal austerity and can affect progress in implementing the Project. To mitigate these risks, the project will work to ensure from the onset that fiduciary training is provided not only to the project coordinating bodies, but to the participating associations themselves. In addition, a written commitment for an annual stream of public counterpart resources will be sought to ensure compliance.
- **Other risks** include challenges that may arise from the security situation in remote rural areas of the country. An appropriate analysis of the situation will be done, and mitigation measures will be taken.

VI. APPRAISAL SUMMARY

A. Incremental Economic Analysis

45. The project's incremental benefits can be summarized as follows: through Component 1, incremental benefits would be derived within the project's geographical areas through the incorporation of "biodiversity and sustainability criteria" into at least eight publicly funded programs or policies falling within the agriculture, environment, and forestry scope of influence. This action would have large incremental effects on the environmental, social, and economic impacts of future projects designed for productive operations in the area.

²⁵ The decision has been endorsed by the Ministry of Finance and Public Credit (SHCP) in a formal endorsement letter, in which they stress the importance of strengthening this fund for its future use in all projects related to climate change.



Through inter-ministerial/inter-agency coordination and collaboration, the value added to territorial outcomes would be maximized relative to the baseline scenario in which agencies pursue their individual operations. The development of guidelines, mutually agreed upon by SAGARPA and SEMARNAT, for governance models favoring land-use planning, management, and the environmental sustainability and profitability of key production systems, create additionality through the Project. Similarly, through Subcomponent 1.2, which promotes sustainable landscape management instruments and build the capacities of local actors in the 14 Project sites, the Project provides marginal benefits by contributing to the development of territorial plans for biodiverse and resilient productive landscapes. While the value of these activities is not quantifiable, there is a clear added-value of the project, relative to a scenario in which different governmental agencies, producer groups, producers, and other entities operate individually, within their own purview, on a given landscape.

46. Furthermore, the project creates additionality by: (i) providing access to assistance, credit, and technological innovation for beneficiaries; (ii) fostering the transformation and added-value of economic activities, through strengthening access to markets of biodiversity and environmentally friendly, sustainably produced goods; and (iii) linking local, regional, and federal actors to POs and producers to derive benefits of information and knowledge exchange on biodiversity, sustainable productive practices, climate-smart agricultural practices, and legislation to generate behavioral changes in the implementation of productive changes. Annexes 6 and 8 provide a detailed summary table of the additionality of the proposed project activities, in relation to the deviation from the baseline scenario and expected environmental and socio-economic benefits resulting from transitioning toward more sustainable production patterns. The incrementality analysis focuses on assessing the economic and financial benefits of transitioning from the baseline scenario toward more sustainable productive systems.

Economic analysis of potential activities under specific interventions to achieve sustainability

47. The economic analysis of the proposed project was based on seven sustainable productive systems that are likely to be the focus of important investments under the project, mainly under Component 2. Through the systems evaluated for an investment of US\$36 million, leveraged through a partial credit guarantee fund of US\$6 million of GEF financing and counterpart funding of US\$6.05 million, the expected net present value (NPV) is estimated at US\$15.33 million, or an economic internal rate of return (EIRR) of 22%. Benefits are expected in terms of value addition via improved production resulting from the application of better and sustainable production practices and technologies, along with associated broader social and environmental benefits (such as improving land/soil productivity). Financial benefits are expected from (i) increasing sustainable investments via accessible loans/credit and (ii) penetration into more remunerative domestic and international markets. A detailed estimate of the return on investment is presented in Annex 6.

B. Technical

48. The proposed integrated management approach in productive landscapes, anchored in processes of capacity building, strategic planning, and investment prioritization (Component 1), will contribute to informing and improving the coordination of investments within SEMARNAT (CONAFOR, CONABIO) and between SEMARNAT and SAGARPA, and also among local governments and development partners. The proposed project carries forward and scales up efforts and results of past and current projects; at the same time, it directs the World Bank's engagement toward supporting productive landscape investments under sustainability criteria. CONABIO (leading the preparation of the project) has implemented two previous World Bank projects, the



Mexico Mesoamerican Biological Corridor Project and the Sustainable Production Systems and Biodiversity Project. Through these projects, CONABIO has developed approaches for landscape-level interventions that will be adapted under the proposed project. International best practices on landscape-level coordination platforms and development of landscape management plans have been incorporated into the Project design to ensure technical validity and sustainability. GEF resources represent an opportunity for inter-agency coordination in implementing landscape-integrated investments that will transform the impact of public and private investments in rural areas. Examples under Component 1 include: (i) processes of landscape governance that integrate the conservation of biodiversity with ecosystem services and landscape resilience and (ii) building the capacity of actors at different levels to take decisions and pursue actions that are consistent with sustainability considerations. An example under Component 2 is the convergence of funds, including private finance, to support productive investments to secure economic benefits for rural producers within a sustainable landscape management trajectory.

C. Financial Management

49. **The Financial Management (FM) risk for this project is deemed Substantial.** From the FM and implementation perspectives, this project poses important challenges. It will strive to harmonize divergent landscape policies across federal, state, and local institutions, which implies important coordination efforts among agencies, authorities, and existing programs at the national and subnational level and across different sectors. Additionally, the project will rely on a variety of actors (at the community/PO level) to develop and implement landscape management plans and subprojects (the latter through a grant mechanism). While the FCC will act as the recipient of Grant proceeds, the project will be technically and operationally coordinated by SEMARNAT, and FIRA (through FEGA) will manage the guarantee fund to be capitalized under Component 2.2.

51. **Project financing.** GEF resources will be used to complement other financial resources, including producers' own resources, support from the public sector, and/or credit from financial institutions and other actors. Financial inclusion will be fostered (access to private or public credit institutions) as well as the development of other market instruments for the public and private sector to promote sustainable production and linkages to existing commercial markets. Funds from the French Development Agency (AFD) and the German Technical Assistance Corporation (GIZ) will support complementary activities that are not part of the TPS project.

52. **SEMARNAT, along with the FCC, will implement the project.** CONABIO, CONAFOR, CONANP, INECC, and SAGARPA will participate in project implementation through specific coordination arrangements, agreed with the World Bank as part of the implementation arrangements (Coordination Agreements that will form part of the Institutional Arrangements). The FCC is currently receiving support from BIOFIN to strengthen its institutional capacity to receive, manage, and channel resources for biodiversity more efficiently. This capacity-strengthening process will be continued through the project. FIRA (through FEGA) will also participate in project implementation as the recipient of Grant proceeds that will be used for a PCG fund that will facilitate access to credit for small-scale producers (in most cases with no credit history).

D. Procurement

50. **Procurement will be conducted per the World Bank Procurement "Regulations for Borrowers under Investment Project Financing"** dated July 1, 2016, revised on November 2017, for the supply of civil works, goods, consultants, and non-consultant services. Procurement activities under Components 1 and 3 will be undertaken directly by a PCU to be created in SEMARNAT. The PCU will be responsible for general execution of the project.



Beneficiaries (formally organized producers) under Subcomponent C2.1 programs will follow Commercial Practices and Community-Driven Development (CDD) procurement approaches, as detailed in the POM. Procurement Regulations do not apply to Subcomponent C2.2, as the resources will be allocated to the capitalization of a PCG fund implemented by FIRA/FEGA. The World Bank's Standard Procurement Documents will govern the procurement of World Bank–financed Open International Competitive Procurement, which is not expected under this subcomponent. When approaching the national market, as agreed in the Procurement Plan dated January 30, 2018, the harmonized procedures and documents agreed by the Bank with the Secretaría de la Función Pública (SFP) and the Inter-American Development Bank will be used.

51. A procurement capacity assessment was carried out for SEMARNAT; the analysis concluded that SEMARNAT lacks direct experience in dealing with procurement activities under World Bank Procurement Regulations and procedures, so the procurement risk is considered Substantial. For subprojects, the POM shall include clear procedures comprising: (i) a simplified capacity assessment methodology for the beneficiaries; (ii) eligible expenditures under CDD; (iii) procurement methods that will apply under Commercial Practices and CDD; (iv) templates for Commercial Practices and CDD (simplified procurement plan, request for quotations, contracts, etc.); and (iv) supervision arrangements.

E. Social (including Safeguards)

52. A Social Assessment was conducted in the proposed project areas. The project is expected to have positive social impacts by promoting participation of local communities and ensuring an inclusive distribution of benefits for indigenous people, youth, and women. The project will also generate local and global benefits by conserving biodiversity, providing ecosystem services, and reducing carbon emissions. Local social and economic value will be created by engaging communities to establish priorities; strengthen community organizations to facilitate access to public programs; create participatory monitoring mechanisms to empower community organizations to participate in decision making and improve governance; implement biodiversity and land-improving practices; and better understand climate change and ways of mitigating its impact. The Indigenous Peoples (OP 4.10) safeguard policy is triggered, because there are indigenous communities in the 14 intervention sites. Involuntary Resettlement (OP 4.12) is triggered to address possible impacts from restrictions on access to and use of natural resources in protected areas supported under Component 2.

53. The social risks associated with the Project are limited, due primarily to the nature of the proposed interventions. However, the Social Assessment identified the need to strengthen the mechanisms for citizen participation and several risks/recommendations were identified under each component. Component 1 risks included the lack of adequate communication mechanisms between agencies and the lack of transparency in territory-level documents, leading to a lack of information at the national level. Recommendations included the need to strengthen culturally appropriate mechanisms for citizen participation. Component 2 identified the need to address risks by establishing (i) mechanisms for citizen participation; (ii) a strategy for culturally adequate communication; (iii) a strategy for including indigenous people, gender, and youth; and (iv) M&E mechanisms.

54. The project will finance only activities in production units that have complied with social and legal requirements (the POM will include a negative list), and all subproject screening will reference the standards and policies of the World Bank to secure social sustainability. The eligibility conditions for subprojects will require the screening to include social criteria to improve participation of indigenous people, women, and youth.

55. **Indigenous People Planning Framework (IPPF).** An IPPF was developed, based on the results of the Social Assessment, and benefiting from review and analysis by the government agencies participating in the project.



The IPPF: (i) reviews the eligibility rules; (ii) identifies potential barriers for indigenous people to participate in the project and proposes corrective measures; and (iii) establishes guidelines and criteria for an Indigenous Peoples Plan (IPP). The IPPs will be developed in the regions or subprojects where indigenous people are present. The IPPF establishes actions and strategies to include the social recommendations in accordance with Social Safeguards: (i) communication and culturally appropriate participation strategy; (ii) strengthening and training strategy; (iii) inclusive care strategy, with a focus on gender and care of the indigenous population; (iv) actions that promote local governance; and (v) a grievance mechanism, among others.

56. **Involuntary Resettlement (OP/BP 4.12).** No involuntary resettlement is expected to result from any activities financed by the project. The project does not anticipate any land acquisition, and all investments financed under this operation will be carried out on private land, owned by the project beneficiaries. A Process Framework (PF) has been developed as a means of mitigating any potential adverse impacts that may emerge from restrictions on access to natural resources. The PF also includes a screening tool to exclude any interventions that could potentially lead to land conflicts, and it provides clear guidance on handling of conflicts.

57. During the project preparation process, participatory consultation workshops were held in the seven priority areas with the following objectives: (i) publicize the content of the project among representatives of the key local actors of each region and receive feedback; (ii) obtain information that ratifies or complements that obtained by other means, about local conditions, obstacles, or constraints to the model of intervention of the project and positive conditions for the project; and (iii) identify possible positive and negative impacts of the project. Input from those consultations was incorporated into the final versions of the IPPF and PF. The consultation process took place during September and October 2017, in the states of Oaxaca, Chihuahua, Durango, Jalisco, Puebla, Chiapas, Quintana Roo, and Coahuila. In general, the participants expressed their support for the project, agreed on the importance of promoting the participation of the owners of natural resources, as well as aligning programs for the conservation of biodiversity and economic prosperity, for the benefit of the local population.

F. Environment (including Safeguards)

58. The proposed project approach would lead to mainly positive environmental impacts. For example, it would help to decrease the pressure on natural ecosystems, with global benefits in terms of maintaining the socio-economic functionality of sustainable production landscapes along with their biodiversity and ecosystem services. At least 540 species categorized under the International Union for Conservation of Nature (IUCN) Criteria and of global importance will benefit from the project's implementation (see Annex 8).

59. No activities involving land-use changes will be supported in any key habitat, including forests and grasslands, and no primary forests will be degraded. A thorough analysis was prepared by CONABIO (Environmental Assessment OP/BP 4.01), which included a detailed framework of environmental aspects, risks, potential damage, and mitigation measures for each of the project components. It also included the broad and specific array of legal instruments that govern the project's activities. The analysis considered wildlife habitats, agricultural biodiversity, carbon sequestration, stabilization of the water cycle, continuity of traditional cultures, the welfare of inhabitants, and connectivity between ecosystems, among other issues. The overall environmental risk of the project is low, and recommendations for each productive activity in the 14 selected sites within the 7 priority regions were provided. The selection criteria for subprojects within the 14 selected sites will be included in the POM, with the actual selection of subprojects to be done during implementation. Once their specific geographic areas of intervention are identified, subprojects with similar structures will follow the Environmental and Social Management Framework (ESMF) that has been prepared for the TSP Project. Both the Environmental



Assessment and the ESMF have been found acceptable to the Bank. A negative list will be included in the POM to screen subprojects for any potential negative impacts on Natural Habitats.

60. Apart from the Environmental Assessment OP/BP 4.01, which finds the TSP Project to be a Category B Project in terms of its environmental aspects, the project triggers (i) Natural Habitats OP/BP 4.04, (ii) Forests OP/BP 4.36, (iii) Pest Management OP 4.09, and (iv) Physical Cultural Resources OP/BP 4.11. These five policies will ensure an appropriate environmental performance.

- (i) **Natural Habitats (OP/BP 4.04).** The project will not support activities that can lead to the loss or degradation of natural habitats; instead, through improved production and harvesting techniques, biodiversity will be maintained or improved. Conservation areas in the seven regions have been identified to conserve species of global significance at the landscape/territorial level.
- (ii) **Forests and forestry (OP/BP 4.36).** No project activities will convert or degrade critical forest areas or other natural habitats associated with forests, nor will the project apply any techniques that may impact international environmental laws, nor involve any conversion or degradation of critical natural habitats, including adjacent or downstream critical natural habitats. The project will provide financing and technical assistance to help communities and producers engage in trade in timber and/or related timber and non-timber forest products and services. CONABIO/CONAFOR standards are consistent with Bank policy, including time-bound plans for small and community forest management schemes. Management will be ruled by and (whenever feasible) will be geared toward achieving internationally accepted certification standards.
- (iii) **Pest Management OP 4.09.** The adoption of biodiversity-friendly practices promoted by the project is expected to significantly reduce the use and hence environmental impacts of fertilizers and pesticides. No activities that incorporate or increase the use of pesticides will be supported by the project. An acceptable plan for pest management has been prepared and is part of the Environmental Assessment and the ESMF.
- (iv) **Physical Cultural Resources (OP/BP 4.11).** No large-scale or linear infrastructure is expected under the project, although some remodeling or small works may be required, opening the possibility of chance finds. Considering that many subprojects will be carried-out in areas that may have sites of cultural significance and historical resources, all technical studies for the subprojects will consider any physical cultural resources in the managed landscapes that are a focus of the activities. The respective law (Ley de Monumentos y Sitios Arqueológicos) will guide the project team to take appropriate action to report and follow up on any chance find or identification of cultural resources within the geographic scope of the project interventions.

G. Other Safeguard Policies (if applicable)

61. Three other World Bank safeguard policies were not triggered. Safety of Dams OP/BP 4.37 is not triggered; no dams will be constructed or rehabilitated under the proposed project. Project interventions will not rely on the performance of existing dams, as smallholder agriculture is generally rainfed. Similarly, no actions in international waterways are contemplated in the project (and all irrigation activities will be excluded from eligible project activities), and no areas in dispute in the territory proposed for project interventions, so Projects on International Waterways OP/BP 7.50, and Projects in Disputed Areas OP/BP 7.60, are not triggered.



H. World Bank Grievance Redress

62. Communities and individuals who believe that they are adversely affected by a World Bank–supported project may submit complaints to existing project-level grievance redress mechanisms or the World Bank’s Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project-affected communities and individuals may submit their complaint to the World Bank’s independent Inspection Panel, which determines whether harm occurred, or could occur, as a result of World Bank non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank’s attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank’s corporate Grievance Redress Service (GRS), please visit <http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service>. For information on how to submit complaints to the World Bank Inspection Panel, please visit: www.inspectionpanel.org



VII. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY : Mexico

Mexico: Sustainable Productive Landscapes

Project Development Objectives

To strengthen sustainable management of productive landscapes and increase economic opportunities for rural producers in priority areas of Mexico

Project Development Objective Indicators

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Productive landscape area under sustainable management		Hectare(Ha)	0.00	3000000.00	Annual	Project M&E System	PCU/SEMARNAT (CONAFOR/INECC/CONABIO/CONANP)
Description: This indicator reports on the hectares of productive landscapes where improved biodiversity conservation and sustainable productive practices are incorporated (as per defined criteria).							
Name: Share of beneficiary producer organizations (POs) that improve their capacity		Percentage	0.00	80.00	Annual	Project M&E System (PO surveys/diagnostics)	PCU/SEMARNAT



Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
to align business growth with conservation objectives							
<p>Description: This indicator will be measured on the base of an index encompassing several dimensions: i) governance within the organization and adherence to conservation objectives; ii) planning and monitoring capacity; iii) market performance (e.g. product differentiation and diversification of markets); and iv) economic performance. It is expected that at least 85 percent of beneficiary producer organizations will increase their performance index from the defined baseline (in at least a level). The index will be fully developed in the Operational Manual and will benefit from experience gained through the implementation of the Sustainable Production Systems and Biodiversity Project, implemented by CONABIO.</p>							

Name: Increased sales of goods and services marked under biodiversity/sustainable criteria		Percentage	0.00	20.00	Biannual	Project M&E System	PCU/SEMARNAT
<p>Description: The indicator measures the increased in sales (in volume) for goods and services, by beneficiary producer organizations that is marked as a differentiated product, as per biodiversity conservation and sustainable criteria.</p>							

Intermediate Results Indicators

Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Programs funded by Project implementing agencies/co-partners that incorporate criteria for sustainable productive		Number	0.00	8.00	Biannual	Project M&E System	PCU/SEMARNAT



Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
landscape management							
<p>Description: This indicator measures the alignment of public programs around environmental conservation (preservation of biodiversity, connectivity and ecosystems services and climate-smart and resilient production landscapes/systems), as a result of the Project. This implies mainly alignment at the level of objectives and rules of operation.</p>							
Name: Enhanced incentive mechanisms to support integrated landscape management		Number	0.00	4.00	Annual	Project M&E System	PCU/SEMARNAT & Co-partner agencies
<p>Description: The indicator measures the number of current operating incentive mechanisms (or new ones) to support integrate landscape management that are improved (or created) as a result of studies and assessments undertaken by the project.</p>							
Name: Local platforms created/strengthened for landscape governance that integrate conservation and sustainable use of biodiversity		Number	0.00	14.00	Biannual	Project M&E System	PCU/SEMARNAT
<p>Description: This indicator measures the establishment of local platforms for landscape strategic prioritization and management (as per productive, biodiversity and conservation criteria) involving productive and social organizations and cooperatives, municipal governments and other local actors, within each of the 14 priority intervention areas</p>							
Name: Share of women of the total number of		Percentage	0.00	30.00	Biannual	Project M&E System	PCU/SEMARNAT and Co-partners



Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
representative leaders from producer groups, communities and social organizations							
<p>Description: The indicator measures the participation of women (voice/agency) among leaders in strengthening or creating local platforms for landscape management/governance. The indicator will measure the average over a given period of participating in planning meetings.</p>							
Name: Number of instruments aligned (SEMARNAT, SAGARPA, CONAFOR) to support priority local investments in the seven priority areas		Number (Thousand)	0.00	7.00	Annual	Project M&E System	PCU/SEMARNAT
<p>Description:</p>							
Name: Business cases developed for sustainable investments in key productive subsectors		Number	0.00	7.00	Annual	Project M&E System	PCU/SEMARNAT
<p>Description:</p>							
Name: Producer Organization Subprojects benefiting of Project's financing instruments to		Number	0.00	70.00	Biannual	Project M&E System (with links to FIRA data)	PCU/SEMARNAT & FIRA



Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
support productive and sustainable investments							
<p>Description: This indicator measures the number of subprojects with positive credit evaluation and access to funding as a result of the credit guarantee and capital risks trust supported by the Project in alignment with defined productive and sustainability criteria included in the Project Operational Manual.</p>							
Name: Total Beneficiaries of Subprojects (Grants and PGC)		Number (Thousand)	0.00	20000.00			
Of which women		Percentage	0.00	30.00			
<p>Description:</p>							
Name: Volume of credit supported by the Partial Credit Guarantee (PCG) established by the Project		Amount(USD)	0.00	36000000.00	Biannual	FIGA/FERA	PCU/SEMARNAT/FIRA/FEGA
<p>Description: The indicator measures the credit provided to beneficiary producers and producer organizations and back-up by the Project's PCG.</p>							
Name: Grievance Redress Mechanism (GRM) established and operating		Yes/No	N	Y	Biannual	Project's Citizen Service Mechanism	PCU/SEMARNAT
<p>Description: GRM established means that questions or complaints registered in the project's Citizen Service Mechanism (MAC) are addressed on time and in a manner according to the Operations Manual.</p>							



Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
Name: Land area under sustainable landscape management practices	✓	Hectare(Ha)	0.00	200000.00	Baseline, mid-term, end of project	Project M&E System (aggregating on farm, landscape levels)	
<p>Description: The indicator measures, in hectares, the land area for which new and/or improved sustainable landscape management practices have been introduced. Land is the terrestrial biologically productive system comprising soil, vegetation, and the associated ecological and hydrological processes; Adoption refers to change of practice or change in the use of a technology promoted or introduced by the project; Sustainable landscape management (SLM) practices refers to a combination of at least two technologies and approaches to increase land quality and restore degraded lands for example, agronomic, vegetative, structural, and management measures that, applied as a combination, increase the connectivity between protected areas, forest land, rangeland, and agriculture land.</p>							
Name: Net greenhouse gas emissions	✓	Tones/year	0.00	1360000.00	Annual. Methodologies based on the National GHG Inventory for the AFOLU sector and exact tool. The target value estimated with the exact tool is 1.87 million tCO ₂ e with an average GHG emission reduction of 0.37 million tCO ₂ e per year and applies both T2 and default emission factors. This tool will be applied to calculate	Baseline, mid-Term, end of Project	INECC and CONAFOR



Indicator Name	Core	Unit of Measure	Baseline	End Target	Frequency	Data Source/Methodology	Responsibility for Data Collection
					total project emissions along the project and the value will be reported. To EOP target included in the RF is, however, the result from national estimations, using T2 emission factors available, and focusing on conservation and reduced deforestation. They do not consider productive systems and a broader range of land-uses and carbon sinks. Therefore, the EOP target of this indicator will change, as a result of more detailed baseline estimations during implementation and variations resulting from methodological improvements.		
Description:							



Target Values

Project Development Objective Indicators

Indicator Name	End Target
Productive landscape area under sustainable management	3000000.00
Share of beneficiary producer organizations (POs) that improve their capacity to align business growth with conservation objectives	80.00
Increased sales of goods and services marked under biodiversity/sustainable criteria	20.00

Intermediate Results Indicators

Indicator Name	Baseline	End Target
Programs funded by Project implementing agencies/co-partners that incorporate criteria for sustainable productive landscape management	0.00	8.00
Enhanced incentive mechanisms to support integrated landscape management	0.00	4.00
Local platforms created/strengthened for landscape governance that integrate conservation and sustainable use of biodiversity	0.00	14.00
Share of women of the total number of representative leaders from producer groups, communities and social organizations	0.00	30.00
Number of instruments aligned (SEMARNAT, SAGARPA, CONAFOR) to support priority local investments in the seven priority areas	0.00	7.00



Indicator Name	Baseline	End Target
Business cases developed for sustainable investments in key productive subsectors	0.00	7.00
Producer Organization Subprojects benefiting of Project's financing instruments to support productive and sustainable investments	0.00	70.00
Total Beneficiaries of Subprojects (Grants and PGC)	0.00	20000.00
Of which women	0.00	30.00
Volume of credit supported by the Partial Credit Guarantee (PCG) established by the Project	0.00	36000000.00
Grievance Redress Mechanism (GRM) established and operating	N	Y
Land area under sustainable landscape management practices	0.00	200000.00
Net greenhouse gas emissions	0.00	1360000.00



ANNEX 1: DETAILED PROJECT DESCRIPTION

COUNTRY: Mexico

Mexico: Sustainable Productive Landscapes

1. The five-year Sustainable Productive Landscape Project (TPS) is to be implemented by a GEF contribution of US\$21.86 million, an expected counterpart contribution by the Government of Mexico (GoM) of US\$17.9 million, and leveraged financing of at least US\$36 million provided through credit schemes.²⁶ The PDO is to strengthen sustainable management of productive landscapes and increase economic opportunities for rural producers in priority areas of Mexico. A sustainable productive landscape is defined as one that fosters forest connectivity for biodiversity conservation and ecosystem services, contributes to climate change mitigation, and provides livelihood opportunities for rural producers. The high-level objectives to which the project contributes include biodiversity conservation, sustainable land and forest use, and climate change mitigation.

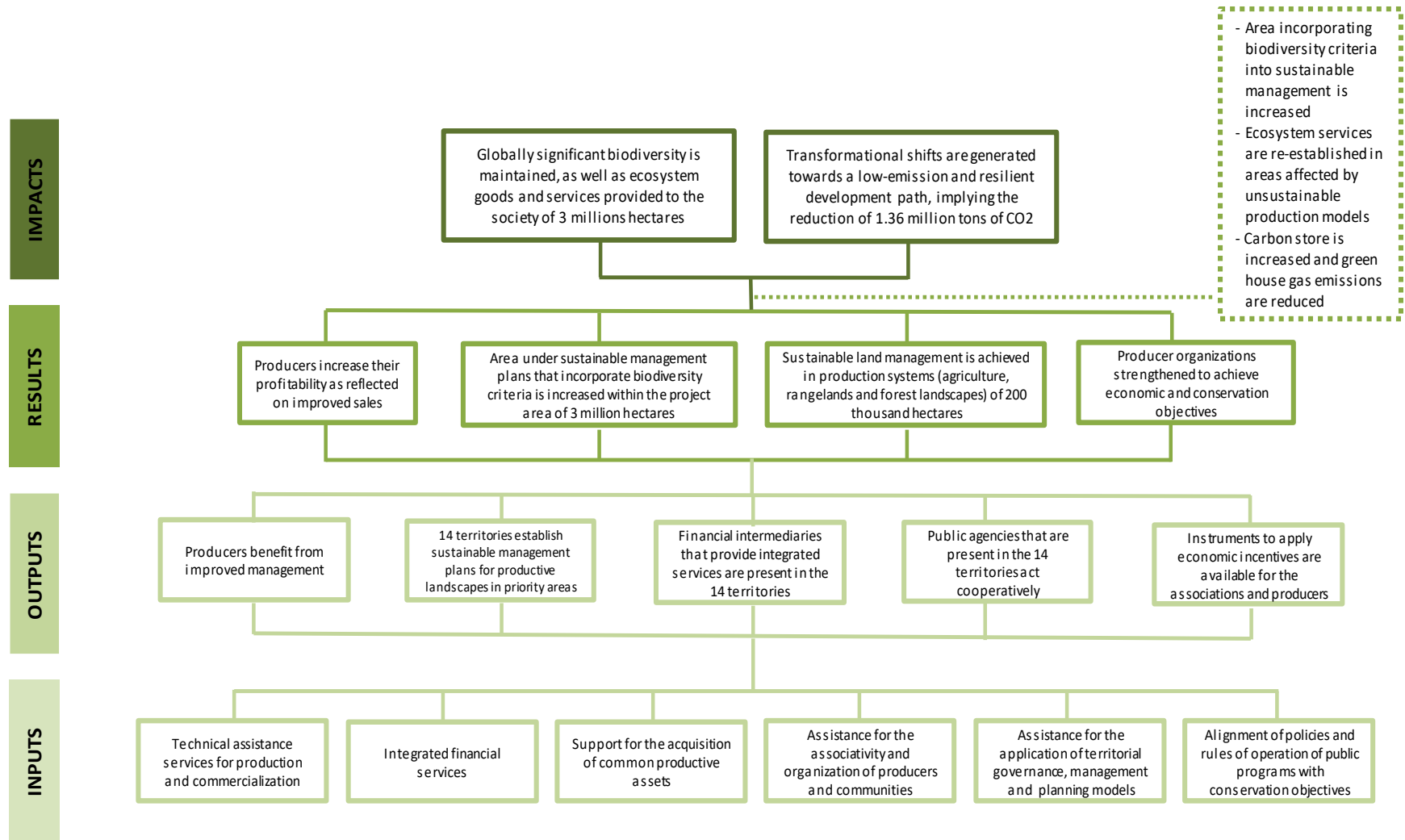
2. **Theory of Change.** Together, the (i) unsustainable expansion of agricultural/livestock production and low productivity of the sector, (ii) lack of coordination across government policies and programs at a national and territorial/landscape level, (iii) inadequate access to finance, and (iv) lack of the right mix of market and non-market incentives for sustainable production, fail to contribute to enhanced efforts to conserve biodiversity, inhibit sustainable management of forests and land, and limit the potential of agriculture and productive activities to mitigate climate change. The theory of change of the TSP Project builds on the notion that if (i) an adequate area of forest is conserved under various regimes, such as voluntary agreements, payments for environmental services, and indigenous lands; (ii) agriculture, forest, and degraded lands are managed productively and sustainably; (iii) national policies, strategies, and policies reconcile growth and conservation objectives; and (iv) local capacity and cooperation between key players at the landscape level improves, then the protection of globally significant biodiversity and the integrity of ecosystem services in the targeted regions can be achieved, carbon emissions can be reduced, and opportunities for livelihoods can be improved.

3. In line with this notion, as shown in Annex Figure 1.1, the project proposes interventions to support transformational changes in the way institutions coordinate and intervene at the landscape level, as well as in the ways stakeholders interact and make decisions that have impacts at the farm and landscape levels. The project will bring about these changes by: (i) strengthening the policy and institutional framework and national capacities for landscape management and planning, leading to better alignment of programs/policies/investments and improved coordination; and (ii) strengthening collective action and capacities of producers and other local stakeholders to plan and manage the landscape based on productive but also environmental considerations. Furthermore, the promotion of climate-smart and biodiversity-friendly production systems and productivity improvements, through the alignment of incentives to facilitate access to knowledge, technical assistance, financing, and markets, is expected to increase the value of the products or services produced by smallholder farmers/foresters/communities, improving livelihoods and contributing to the achievement of combined local and global environmental impacts.

²⁶ Beneficiary contributions are estimated at US\$0.34 million.



Annex Figure 1.1: Theory of Change



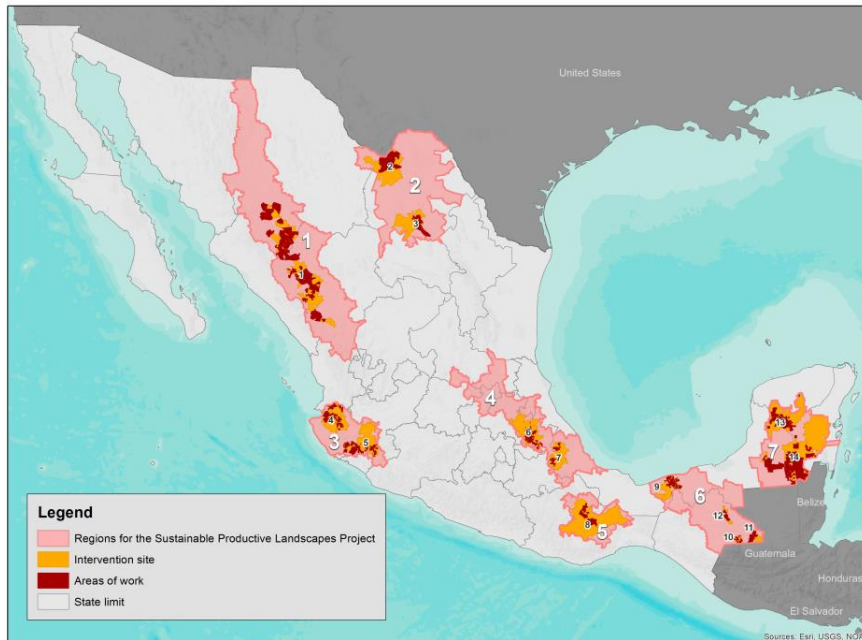


4. **Alignment with GEF focal areas.** The project will access GEF funding from four focal areas to support implementation: biodiversity (BD 4), sustainable forest management (SFM 2), land degradation (LD 3), and climate change mitigation (CCM 2). The contributions of the project to each of the GEF focal areas will be measured at the level of project outcomes (indicators of PDO and intermediate indicators) and high-level project outcomes (impacts). The project’s target contributions to global environmental benefits are as follows:

- i. Maintain globally significant biodiversity, conserve forest, and the ecosystem goods and services that it provides to society (target: 3,000,000 ha).
- ii. Enhance sustainable productive land management in production systems (agriculture, rangelands, and forest landscapes) (target: 200,000 ha).
- iii. Support shifts towards a low-emission and resilient development path (target: 1.36 million metric tons of CO₂e over the 5-year Project period).

5. The project will be implemented across seven regions that are priority sites for biodiversity conservation, ecological connectivity, land and forestry management activities, climate vulnerability and anthropogenic threats (land degradation, deforestation, and forest degradation), ecosystem services, and relevance of agricultural production activities. The seven regions (identified in Annex Figure 1.2) are: (1) Chihuahua-Durango, (2) Coahuila, (3) Jalisco, (4) Sierra Madre Oriental, (5) Sierra Norte de Oaxaca, (6) Usumacinta Basin, and (7) Yucatán Peninsula. In those 7 regions, 14 priority intervention sites, comprising about 3 million hectares and covering 15 states, 106 municipalities, and 569 agrarian units (ejidos and agrarian communities), have been selected as the project area.²⁷

Annex Figure 1.2: Priority regions selected for the Sustainable Productive Landscapes Project



²⁷ Some of these areas overlap with 29 protected areas (18 federal state, 6 local state, 4 certified, and 1 private).



6. The northwestern sites (Durango-Chihuahua, Coahuila, and Jalisco) are predominantly forest and scrub lands, which host high numbers of biological species of global significance, in a territory with moderate land degradation and low rates of forest land-use changes. In these regions, forest degradation is more prevalent than deforestation. By comparison, the southern sites (Sierra Madre Oriental, Sierra Norte de Oaxaca, Usumacinta Basin, and Yucatán Peninsula) are characterized by a more fragmented forested landscape with a higher number of biological species of global importance, given their greater heterogeneity of habitat types. These southern ecosystems experience higher rates of deforestation and forest degradation on more severely degraded land, whereas the northern ecosystems are more affected by unsustainable and ineffective forest practices. Agriculture has a more dominant presence in the southern ecosystems, and crop and livestock production impose different challenges for landscape integrity and conservation. A detailed description of the site selection methodology and prioritization of land areas within these regions can be found in Annex 7.

7. The target area for the project includes areas where strategies for timber forest management have already been deployed and forest conservation has improved, mainly through payments for environmental services. The target area also encompasses agricultural and livestock production systems, which present important challenges for landscape conservation. A lack of coordination among programs operating in the targeted geographical regions is an important gap that the project will address to achieve efficiencies and scale up the impacts of those programs. There is also a need to strengthen the sustainability criteria applied by public programs operating in the selected sites: efforts to support sustainable forest management generally have little consideration of biodiversity conservation, and efforts to improve agricultural/livestock productivity often lack environmental conditionality. Despite the productive potential of Mexico's forests, most forest dwellers remain marginalized and live in poverty. The sustainable use and management of forests and productive land can significantly improve the livelihoods of those living in forest and buffer areas. To do so, interventions supporting productivity improvements, entrepreneurship, and business development are needed.

8. The strategies to be deployed by the project are aligned with the drivers of landscape deterioration and opportunities to improve rural livelihoods. In the northwestern sites, priority strategies include the improvement of local management and business capacities for integrated, productive, and sustainable forest management (including sustainable use of biodiversity) to conserve forests while generating better economic opportunities for local populations. In the southern sites, the most promising opportunities are aligned with improving the profitability and environmental sustainability of agriculture, livestock, and other productive activities to reduce pressure on the remaining forest, reduce land degradation, and support reforestation, while ensuring sustainable management of forests. A summary of the main drivers of biodiversity loss, land degradation, and deforestation, including the value added of the project, is presented in Annex 8.

63. **Project Beneficiaries.** The project beneficiaries include producers in 14 priority sites in 7 regions. In this project, the term “producers” refers to agricultural and livestock producers, foresters, and others who derive their livelihoods from the landscape, including ejidos, agrarian communities, and organizations. The project will improve the organizational capacity of producer groups and associations and enhance their technical, entrepreneurial, and marketing skills for sustainable production, while promoting strategic alliances and increasing the competitiveness of productive activities. Approximately 20,000 producers are expected to be reached directly through the activities promoted by the project. The number of beneficiaries reached through the planning activities and alignment of policy and programs will be significantly higher. Participating government institutions are also beneficiaries of the project via capacity-strengthening.



Project Components

9. **Component 1: Capacity Strengthening for Sustainable Landscape Management** (Total: US\$12.27M, GEF: US\$9.67M, GoM: US\$2.60M). This component seeks to strengthen national and local capacities to support the sustainable management of productive landscapes in the selected project areas. Dimensions of capacity to be strengthened/developed include: the policy environment, through the harmonization of relevant policies and programs; the institutional framework to effectively support landscape management approaches and investments; and collective and individual capacities of different actors at the national and local levels. The component will support these activities through two subcomponents, C1.1 and C1.2.

10. **Subcomponent C1.1. Enabling Environment for Sustainable Productive Landscape Management.** Subcomponent activities aim at building an enabling environment to support landscape planning and management, by focusing on enhancing national system capacities and knowledge. Specific activities to be supported include:

- (i) **Institutional coordination via the harmonization of policies and programs and the strengthening of inter-institutional platforms.** Detailed studies and analyses will be financed to assess the environmental impacts of current programs/policies and identify feasible options to improve their environmental outcomes. It is expected that at least eight publicly funded support programs/policies (mainly led by SAGARPA and SEMARNAT, including CONAFOR) will incorporate and/or harmonize “sustainability” criteria.²⁸ Furthermore, at the inter-institutional level, the subcomponent will support the strengthening of: (a) the Climate Change Fund (FCC)²⁹ as an inter-institutional mechanism to coordinate and leverage climate funding from the public and private sector, as well as the international community, and (b) capacities of the relevant agencies for integrated landscape monitoring (for instance, through consultancies for scenario planning for mitigation options, studies on the estimation of forest degradation rates) in alignment with current national systems (see Annex 2 for a description of the landscape monitoring strategy).³⁰
- (ii) **Training, workshops, and development of guidelines targeting policy makers and technical staff** (including extension agents). Training will focus on governance models favoring land-use planning and management and key options to enhance the environmental sustainability and profitability of key production systems. These activities will help to build awareness; exchange knowledge, experiences, and tools; disseminate lessons learned; and identify opportunities to scale up and mobilize new

²⁸ Examples of potential programs include: (1) Special Program for Climate Change (PECC); (2) Program for Human Rights in the Environmental Sector; (3) Program for Institutional Development; (4) National Water Program; (5) Program to Foster the Conservation of Wildlife (UMA); (6) Projects for Environmental Education; (7) Training Program for Sustainable Development and Environmental Education Communication; (8) Environmental Leadership Program for Competitiveness; (9) PRONAFOR Program (CONAFOR); (10) PROCODES Program (CONANP); (11) Integrated Strategies for Public Agricultural Policy; (12) Program for Research, Innovation, and Technological Agricultural Development; (13) Productive PROAGRO Program; (14) Integrated Strategies for Productive Chains; (15) Productive PROGRAM Program; (16) Access to Finance Program; (17) Program for Productive Assets and Agro-Logistics; (18) Program to Strengthen Productive Chains; (19) Program for Commercial Incentives; (20) Program for the Development of Arid Zones (PRODEZA); (21) Program for Extension, Capacity Development, and Productive Collective Action; (22) Program to Strengthen Rural Organizations; (23) PROCAFÉ Program and Productive Catalyst for Coffee; (24) Productive Infrastructure Program for Sustainable Soil and Water Exploitation; (25) Project for Food Security in Rural Areas; and (26) Program for Technological Packages for Agriculture, Livestock, Fisheries, and Aquaculture.

²⁹ The FCC was created by the General Climate Change Law, Chapter VII, Articles 80–86.

³⁰ The National Monitoring, Reporting, and Verification System for REDD+ and the National Monitoring Biodiversity System.



mechanisms for investment in sustainable productive landscapes. This subcomponent also supports South–South cooperation, through the formation of strategic alliances between different actors working on integrated landscape management in Mesoamerica and beyond. Through engagement with the financial sector, the project will also create awareness and support the exchange of knowledge on the benefits of climate finance/biodiversity conservation, including their participation in the guarantee fund supported by the project under Subcomponent C2.2.

- (iii) **Enhanced incentive mechanisms to support integrated landscape management.** These activities include studies/assessments aimed at improving current economic incentives (or designing new ones) to support investments in sustainable and climate-smart approaches to productive activities, mainly within the agriculture, forestry, and tourism sectors. Examples of such mechanisms include payments for environmental services, adjustments to grant mechanisms under current programs, and incorporating sustainability criteria into public procurement guidelines. More specifically, the subcomponent will support improvements in the design of current schemes to pay for environmental services (managed by CONAFOR) to enable them to cover improved silvicultural and biodiversity practices in the context of regional watershed strategies. Changes in the design, operating principles, and/or criteria of current incentives, along with improvements in local capacity (supported under Subcomponent C1.2) will improve the implementation of the forest management plans that are already in place and incorporate biodiversity criteria and productivity improvements into those plans.

11. **Subcomponent C1.2. Local Capacities for Enhanced Landscape Governance, Management, and Business Development.** This subcomponent will develop local capacities for productive landscape planning, management, and business development with regard to conservation objectives, sustainable use of biodiversity, and sustainable productive investments. It will promote alliances at both the landscape level and local business level.

12. **Broad alliances at the landscape/territorial level.** These alliances will build shared or agreed mid- to long-term landscape management objectives among relevant stakeholders through several activities: (i) detailed mapping of relevant actors/roles in the 14 project intervention sites; (ii) support for current or new platforms to increase dialogue and build consensus among organized producers and other local actors (women will be particularly encouraged to join); (iii) capacity building for POs and other actors to strengthen levels of collective action, internal governance structures, and business strategies; and (iv) workshops and local assessments leading to the establishment of landscape management plans for Biodiverse and Resilient Productive Landscapes (BRPL plans). These plans will align objectives around economic growth, biodiversity, forest conservation, and climate resilience. The plans will also support the identification of strategic sustainable productive landscape investments (a green investment portfolio) in the 14 intervention areas of the project. Consultancies and field work will be supported to help develop the "business case" for the green investments that are identified.

13. The BRPL plans will include the set of prioritized and localized landscape strategies that local actors have worked together to develop for integrated landscape management and connectivity. Preparation of these plans will be anchored in local dialogue, guided by technical inputs such as maps linking economic pressures to deforestation, maps of the distribution of species, and regional management programs. In project areas where regional strategies have been developed, support will be directed toward improving the scope and/or implementation of those strategies (for example, through regional studies at the UMAFOR³¹ level, watershed studies, preparation of management plans for Mexico's Natural Protected Areas (Áreas Naturales Protegidas)

³¹ Unidad de Manejo Forestal (Forest Management Unit).



and monitoring strategies, and the strengthening of local capacities for landscape governance and monitoring, including the strengthening of community-based biodiversity monitoring.

14. **Business alliances for subproject investments.** To support business alliances, the preparation of “territorial business subproject investments” will be financed. The subproject investments will be aligned with the BRPL plans developed through the prioritization exercise at the landscape level. Support will be available for designing and implementing a communication and information strategy for each project intervention site, including a market information platform for the “key green investments” identified in the intervention areas. Territorial development agencies³² will be hired to guide the collective action and capacity-building processes in which local actors will engage, and to support the identification and formulation of business subprojects. The business alliances will promote collective action by producer organizations (horizontal coordination) but also vertical linkages between organized producers and private players/buyers, and between organized producers and service providers.

15. **Component 2. Investments into Biodiversity-Friendly and Climate-Smart Production Systems** (Total: US\$56.28M, GEF: US\$11.09M, GoM: US\$8.85M, Other (loans to beneficiaries): US\$36.00M, Other (contributions from beneficiaries): US\$0.34M). This component aims at enhancing opportunities for economically viable business investments around the sustainable use of biodiversity and the establishment of biodiversity-friendly and climate-smart production. It supports the implementation of strategic territorial business subproject investments by consolidating support to POs to enhance business opportunities through knowledge-sharing and market-related activities (Subcomponent C2.1) as well as direct productive investments (Subcomponent C2.2). Subprojects will be financed via a combination of grants, credits/loans, and contributions by beneficiaries. Knowledge-sharing and market-related support under the subprojects will be provided through grants, whereas direct productive investments will be supported mainly through loans, although small collective investments (in infrastructure or works) could also be supported via grants. The BRPL plans will identify prospective subsectors to be supported, but they could include sustainable cattle production, shade-grown coffee, organic cacao, sustainable timber and non-wood forest products, ecotourism, maize biodiversity, and aromatic herbs, among others (potential business opportunities are listed in Annexes 6 and 8). To facilitate the access to loans by POs and their members, the project will capitalize a PCG fund under Subcomponent C2.2.

16. **Subcomponent C2.1 Knowledge Sharing and Market Development.** Through subprojects, POs will receive support to establish innovation networks to promote the adoption of best practices and technologies, with the goals of improving productivity and profitability, promoting sustainable management of biodiversity, and reducing GHG emissions. Beneficiary POs will be encouraged to partner with universities and research centers to support technology transfer (for example, through demonstration plots and farmer field schools). These knowledge-sharing activities will include specific strategies to target vulnerable groups, including women and indigenous people. The range of potential practices/technologies at the core of the project’s knowledge agenda include: (i) soil management with conservation and enrichment of organic matter; (ii) managed crop and livestock rotations; (iii) improved tillage practices; (iv) soil management practices; (v) establishment of silvopastoral systems; (vi) use of organic fertilizers; (vii) selection of improved seeds and crops; (viii) improved phytosanitary management; (ix) forestry activities, community-based biodiversity monitoring, certified production, best practices regarding the management and conservation of biodiversity, among others. Market-related support will include development of territorial branding strategies, differentiation initiatives, and market linkages.

³² Including Territorial Agencies in the Forest Sector.



17. **Subcomponent C2.2. Mitigating Credit Risk for Subprojects to Access Commercial Finance.** A PCG fund of US\$6 million will be capitalized under this subcomponent to facilitate access to finance for POs implementing strategic subprojects. The fund will be managed by FIRA through its existing guarantee fund, FEGA.

18. **FIRA is second-tier development finance institution set up by the Bank of Mexico and supervised by the banking regulator.** Established in 1954, FIRA offers second-tier lending, guarantees, insurance, training, and technical assistance. FIRA has a staff of more than 1,000 people and 143 branches, of which more than 40 percent are in communities with fewer than 50,000 residents. It is governed by a board of directors comprised of representatives from the federal government, regulatory bodies, commercial banks, agricultural industries, and a wide array of agricultural organizations representing small- and large-scale farmers. Although FIRA is not licensed as a bank, it is subject to prudential oversight by the National Banking and Securities Commission (Comisión Nacional Bancaria y de Valores, CNBV).

19. **The PCG will facilitate the provision of credit through FIRA's large network of financial intermediaries.** FIRA operates through a network of 81 financial intermediaries, including banks as well as non-bank financial institutions. The PCG will allow financial intermediaries to lend with less credit and liquidity risk to the subprojects, in areas that are currently poorly served. The PCG will offer a first loss guarantee after *garantías líquidas* have been exhausted. *Garantías líquidas* are provided under a government program that also supports credit provision for socially important high-risk segments, and it will be available for some subprojects. The owners of the projects must provide capital, and the PCG will offer 10 or 20 percent coverage depending on the nature of the credit provided (the higher coverage will be applied to longer-term investment loans to acquire fixed assets). The expectation is that about 80 percent of lending will consist of these longer-term loans. The product helps financial institutions to manage liquidity risk by offering a rapid payout. The intermediaries have to perform recovery activities under their agreement with FIRA, but in the meantime, they benefit from the payout of the PCG. The capital of the fund will be leveraged so that a lending portfolio of at least US\$36 million can be supported at any point in time. Further analysis of the expected portfolio is needed to assess the level of risk and thus the capital required. As loans are repaid, new loans can be extended through the same fund.

20. **The design of the PCG will consider the Principles for Public Credit Guarantee Schemes for SMEs,³³ including for pricing.** The guarantee premiums paid to FIRA will reflect the cost of providing the guarantee. The project will use FEGA's risk-based pricing model, which considers different sectors and locations and the risk profiles of the various private financial intermediaries that make the loans. Additional design considerations include the 10 or 20 percent partial credit risk coverage to avoid moral hazard; risk-based premiums differentiated for different risk profiles; transparent, specific, and efficient claims processes, which will be implemented by the financial intermediaries that have the contractual claims on the final borrowers; and stringent eligibility criteria to ensure that the intended objectives are served.

21. **The demand for PCGs to support lending will depend on the financing needs of approved subprojects and the extent to which financial intermediaries will take credit guarantees to lend to subprojects.** The PCGs will primarily support investments under the subprojects of POs, but they could also support lending to individual producers who wish to undertake productive initiatives aligned with the objectives of the approved subprojects. The demand for the product will become clearer as FIRA starts marketing it. Considering the innovative nature of the PCG instrument and the fact that aspects of demand remain to be validated, the project will take an adaptive

³³ World Bank (2015), "Principles for Public Credit Guarantee Schemes for SMEs," Washington, DC.



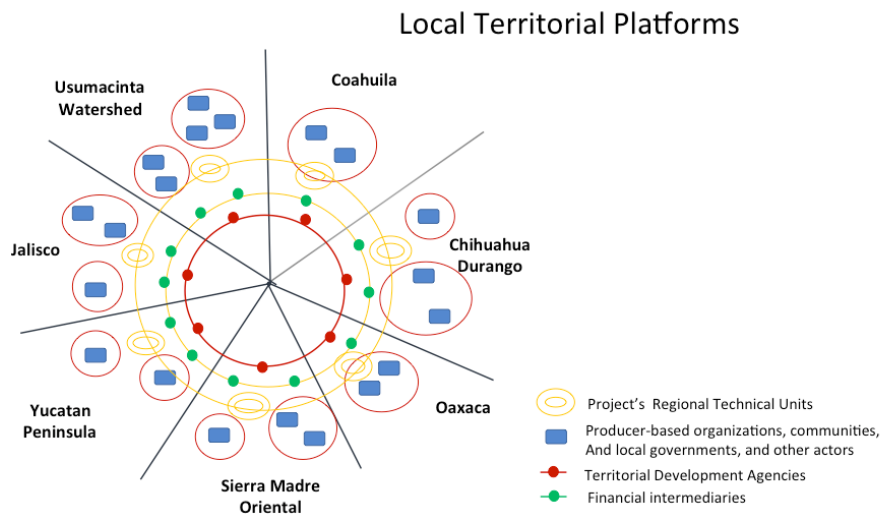
approach to implementing the guarantee fund, making adjustments as needed to reflect demand and market conditions.

22. **Component 3. Project Management, Monitoring, and Evaluation** (Total: US\$7.59M, GEF: US\$1.09M, GoM: US\$6.5M). Resources under Component 3 will be used for the management of the project, including implementation, monitoring, evaluation, systematization of lessons learned, financial management (including project audits), procurement (through the financing of goods, operating costs, and consultants' services), and the provision of training. GEF funds will be used to support operation of the Project Coordinating Unit (PCU) and the Regional Technical Units, as well as overall M&E of project activities, including the mid-term and final evaluations.

Key Institutional Actors

23. The project will be implemented through the PCU, to be hosted at SEMARNAT under the FCC, and seven Regional Technical Units (Annex 2 presents details on the institutional arrangements). The project will promote coordination at the national, state, and local levels between SAGARPA, SEMARNAT, CONABIO, CONAFOR, CONANP, FIRA, and INECC. At the regional level, the project will operate through Local Territorial Platforms, which will integrate the project's Regional Technical Units (Unidades Técnicas Regionales), producer-based organizations and communities, financial agents, territorial development agencies, and other local actors such as local government. The territorial development agencies, selected based on their technical capacity, will facilitate capacity-building activities and the process of consolidating local platforms, support the formulation of BRPL plans and, and accompany POs in the preparation of subproject proposals and annual operation plans. Annex Figure 1.3 illustrates the project implementation arrangements at the regional level.

Annex Figure 1.3: Implementation of the Sustainable Productive Landscapes Project at the regional Level



24. SEMARNAT, CONAFOR, CONANP, SAGARPA, and FIRA will offer their regional infrastructure to facilitate operations of the project's Regional Technical Units and will ensure smooth communication between project components. The costs of infrastructure and logistical, technical, and administrative support will be considered part of the counterpart funding from the Government of Mexico. Subcomponent C2.2 will be co-executed



between SEMARNAT and FIRA. Annex Table 1.2 displays the range of actors and institutions and their respective roles in project activities by component and subcomponent.

Annex Table 1.2: Sustainable Productive Landscapes Project: Main implementing actors and their activities for each component of the project

Component	Subcomponent	Main activity	Key institutions
Component 1. Capacity Strengthening for Sustainable Landscape Management	<i>Subcomponent C1.1.</i> Enabling Environment for Sustainable Productive Landscape Management	Institutional coordination via the harmonization of policies and programs and the strengthening of inter- institutional platforms	SEMARNAT (and associated agencies: CONABIO, CONAFOR, CONANP), SAGARPA, INECC, Ministry of Finance, FIRA
		Training, workshops, and development of guidelines targeting policy makers and technical staff	NAFIN, INECC, SEMARNAT (and associated agencies: CONABIO, CONAFOR, CONANP), Ministry of Finance; collaboration with cooperating agencies (e.g., AFD, GIZ, etc.)
		Enhanced incentive mechanisms to support integrated landscape management	SEMARNAT (and associated agencies: CONABIO, CONAFOR, CONANP), and SAGARPA
	<i>Subcomponent C1.2.</i> Local Capacities for Enhanced Landscape Governance, Management and Business Development	Broad alliances at the landscape/territorial level	NAFIN, INECC, SEMARNAT (and associated agencies: CONABIO, CONAFOR, CONANP), SAGARPA, Ministry of Finance; collaboration with cooperating agencies (e.g., AFD, GIZ, etc.)
		Business alliances for subproject investments	SEMARNAT (and associated agencies: CONABIO, CONAFOR, CONANP), SAGARPA, and Territorial Development Agencies
Component 2. Investments into Biodiversity-Friendly and Climate-Smart Production Systems	<i>Subcomponent C2.1.</i> Knowledge Sharing and Market Development	Support to knowledge sharing (innovation network), business development, and market-linkages	SEMARNAT (and associated agencies: CONABIO, CONAFOR, CONANP), SAGARPA, and Territorial Development Agencies
	<i>Subcomponent C2.2.</i> Mitigating credit risk for subprojects to access commercial finance	Implementation and operation of a partial credit guarantee fund	FIRA/FEGA (and financial intermediaries) in close coordination with SEMARNAT/NAFIN-FCC
Component 3. Project Management, Monitoring, and Evaluation		Support for implementation, monitoring, and evaluation	SEMARNAT (PCU and support units to FCC); NAFIN; project technical committee



ANNEX 2: IMPLEMENTATION ARRANGEMENTS

COUNTRY : Mexico

Mexico: Sustainable Productive Landscapes

Project Institutional and Implementation Arrangements

1. The Sustainable Productive Landscapes Project (TPS Project) will be jointly implemented by the Climate Change Fund/Trust (Fondo para el Cambio Climático, FCC), and the Ministry of Environment and Natural Resources (Secretaría de Medio Ambiente y Recursos Naturales, SEMARNAT). The Instituted Trust Funds for Agriculture (Fideicomisos Instituidos en Relación con la Agricultura, FIRA) will manage project funds for the credit guarantee, under operational and financial management arrangements agreed with the World Bank. Participation of other agencies in the implementation of project activities will be carried out through coordinating mechanisms, agreed with the Work Bank, to be specified as part of the project's Institutional Arrangements. These other agencies include the Ministry of Agriculture, Livestock, Rural Development, Fisheries, and Food (Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación, SAGARPA), the National Commission for the Knowledge and the Use of Biodiversity (Comisión Nacional para el Conocimiento y Uso de la Biodiversidad CONABIO), the National Forestry Commission (Comisión Nacional Forestal, CONAFOR), the National Commission for Natural Protected Areas (Comisión Nacional de Áreas Naturales Protegidas CONANP), and the National Institute of Ecology and Climate Change (Instituto Nacional de Ecología y Cambio Climático, INECC).
2. **Climate Change Fund (FCC).** The main objective of the FCC—a public trust fund instituted in November 2012 under the Climate Change General Law (Ley General de Cambio Climático)—is to channel funds received from the public and private sector to implement climate change adaptation and mitigation measures. The Ministry of Finance (Secretaría de Hacienda y Crédito Público—SHCP) acts as the trustee of the fund. FCC is governed by a high-level **inter-ministerial commission** on climate change (Comisión Intersecretarial de Cambio Climático, CGCC), chaired by the Head of SEMARNAT. At the operational level, a **Technical Commission** of the FCC, also chaired by SEMARNAT, is responsible for approving the operating rules and annual operating budget of the FCC, as well as any modification to them (the procedure is for the FCC Technical Commission to request a ruling from the CGCC on those decisions). The FCC Technical Commission includes representatives of several federal ministries (Finance, Economy, Interior, Social Development, Transport and Communications, Energy, and Agriculture). Nacional Financiera (NAFIN) is the fiduciary institution (trustee) managing FCC funds.
3. Overall responsibility for FCC lies with SEMARNAT (General Directorate of Policy and Climate Change). Within SEMARNAT, the General Directorate of Planning and Evaluation of the Under-ministry of Planning and Public Policy will be the Responsible Unit (RU) for the project to the World Bank. Within this Responsible Unit, an Executive Unit will be established for the TPS Project to house its PCU. An FCC support unit within SEMARNAT is in charge of preparing financial reports and provides administrative and technical support to the portfolio of projects funded by FCC; that unit will also provide support to the PCU.
4. **The Instituted Trust Funds for Agriculture (FIRA).** FIRA functions as a second-tier financial institution within the agricultural sector in Mexico. It is constituted by four development trusts: Guarantee and Development Fund for Agriculture, Livestock and Poultry (FONDO), the Special Fund for Agricultural Financing (FEFA), the Guarantee and Promotion Fund for Fishing Activities (FOPESCA), and the Special Fund for Technical Assistance



and Guarantees for Agricultural Loans (FEGA).³⁴ The trust funds do not consolidate their balance sheets but operate under a single administrative entity. The partial credit guarantee will be managed through FEGA.

5. **TPS Directive Committee.** A Project Technical Committee will be established to implement the TPS Project. The committee will include representatives of each partner institution (SEMARNAT, SAGARPA, CONAFOR, CONABIO, INECC, CONANP, and FIRA). The Project Technical Committee will operate under the rules defined in the POM and will be set up prior to the signing of the Grant.

6. The Project Directive Committee will have the following main functions and responsibilities: i) advise the project on strategic direction and support activities; ii) pre-approve the project's annual work plan and budget and ensure that they are aligned with the PDO and institutional roles and responsibilities (final endorsement/approval of these documents is the responsibility of the FFC Technical Committee); iii) ensure effective collaboration and cooperation among all key stakeholders, including at the regional level; iv) review the PCU Implementation Progress Reports and advise the project on the effectiveness of ongoing activities and any adjustments that need to be made to the annual work plan; v) approve the POM and its subsequent amendments, and resolve unexpected issues and conflicts not anticipated in the POM.

7. **The Project Coordinating Unit (PCU)** will be housed in the Executive Unit for the TPS Project within the General Directorate of Planning and Evaluation of the Under-ministry of Planning and Public Policy/SEMARNAT. It will include a team of technical experts and administrative staff under the overall guidance of a General Coordinator/Manager. The PCU will prepare and oversee the execution of the annual work plan and the budget (approved by the Project Technical Committee, acceptable to the World Bank Group, and endorsed by the FFC Technical Committee), procurement, financial management, and overall technical supervision of Project implementation in the 7 regions and 14 project intervention sites. The existing structures within SEMARNAT that host and support the FCC will also provide oversight of the PCU. The Project Coordinator/Manager will be a professional with extensive experience in leading initiatives linking the development of economic opportunities with conservation objectives.

8. At the regional level, the project will operate through seven Regional Technical Units responsible for regional institutional coordination, monitoring processes, and safeguard compliance. These units will supervise the work performed by service providers (such as the Territorial Development Agencies). The project staff based at the PCU and Regional Technical Units (RTUs) would include 19 technical staff (9 specialized and 7 support staff); 3 administrative staff (with specialization), and 7 regional coordinators (1 per region). Job descriptions for staff at the PCU and RTUs will be included in the POM.

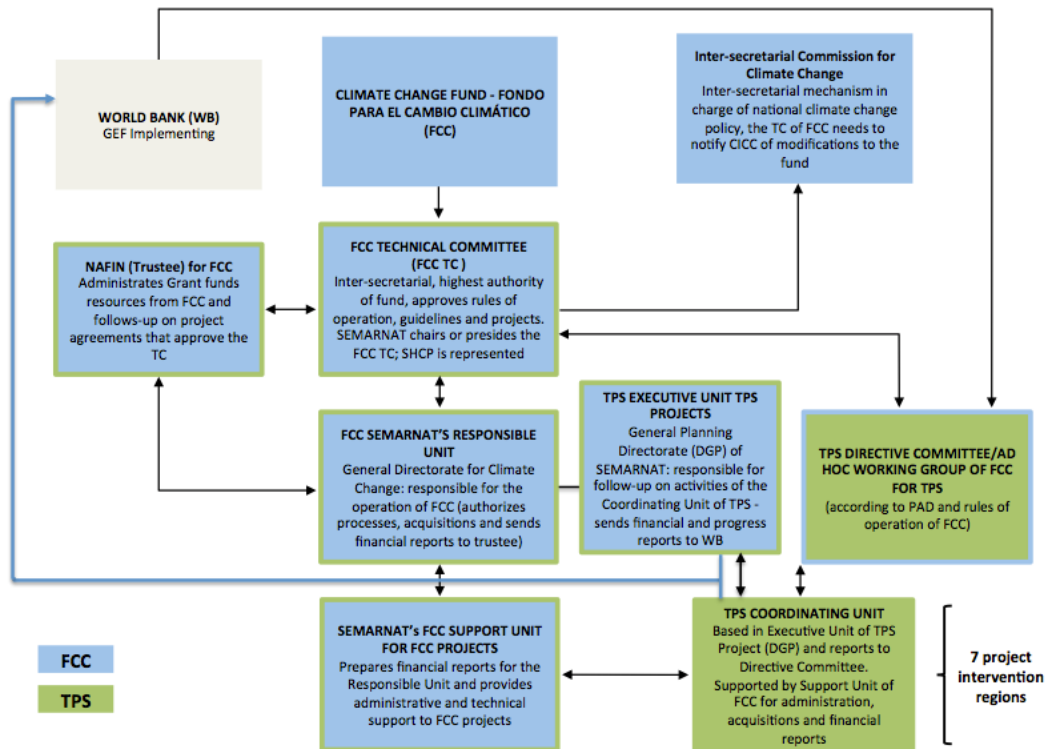
9. **Subprojects.** The project will support subprojects prepared by organized producers under Component 1 and implemented under Component 2. The subprojects will be financed through grants (for training, extension related to innovation networks, technical assistance, and small-scale collective goods) and credit schemes, backed up by the PCG fund capitalized with GEF Grant funds, to be managed by FIRA and implemented through FIRA's network of financial intermediaries.

³⁴ FONDO (Fondo de Garantía y Fomento para la Agricultura, Ganadería y Avicultura), FEFA (Fondo Especial de Financiamiento Agrícola), FOPESCA (Fondo de Garantía y Fomento para las Actividades Pesqueras), and FEGA (Fondo Especial de Asistencia Técnica y Garantía para Créditos).



10. Annex Figure 2.1 shows how the project fits within the FCC/SEMARNAT institutional organizational structure.

Annex Figure 2.1: Placement of Sustainable Productive Landscapes Project within the FCC–SEMARNAT organizational structure



Financial Management

11. **Summary.** The financial management (FM) risk for this project is deemed Substantial. For FM and implementation in general, this project poses significant challenges, not least because it strives to harmonize divergent landscape policies across federal, state, and local (municipal) levels, which will require major coordination efforts among agencies, authorities, and existing programs at the national and subnational level and across different sectors. The project will also rely on a variety of actors at the community level to develop and implement landscape management plans. GEF resources will complement other financial resources, including producers' own resources, support from the public sector, and/or credit from financial institutions and other actors. Financial inclusion (access to private or public credit institutions) will be fostered, along with the development of market instruments for the public and private sector to promote sustainable production and linkages to existing commercial markets. Funds from AFD and GIZ will support complementary activities that are not part of the project.

12. **Implementing entity.** The FCC and SEMARNAT will jointly implement the project, through the PCU. CONABIO, INECC, CONAFOR, CONANP, will lead the project's M&E efforts in relation to biodiversity, carbon monitoring, and forest monitoring. A number of other agencies will also participate in implementation through specific coordinating mechanisms, approved by the World Bank. The FCC is receiving support from the UNDP Biodiversity Finance Initiative (BIOFIN) to strengthen its institutional capacity to receive, manage, and channel



resources for biodiversity more efficiently. FIRA will also participate in implementation, as a recipient of Grant proceeds that will be used to capitalize and manage the credit guarantee fund that will open access to credit for small-scale producers who generally have no credit history. FIRA (through FEGA) will manage project funds for the PCG fund, through a specific account set up at FEGA, which will be managed under operational and financial arrangements agreed with the World Bank.

13. **The FCC will be responsible for overall operation of project activities.** GEF funds will flow through this public trust fund, while SEMARNAT will be responsible for exercising technical oversight. NAFIN will act as the fiduciary institution (trustee) for the FCC, and will manage and apply GEF funds for project activities. Apart from UNDP and through its BIOFIN initiatives, other donors, such as AFD and KfW, have expressed interest in granting climate funds to Mexico through the FCC.

14. **Although FIRA has more than 60 years of experience in facilitating access to credit and guarantees for agriculture projects, it has no recent experience in implementing World Bank financed projects.** Adequate operational and financial management procedures will be agreed with the World Bank for the management and application of Grant proceeds used to guarantee credit extended for subprojects, and incorporated in the POM.

15. **Financial administration.** NAFIN, as the fiduciary institution (trustee) for the FCC, will manage and apply GEF funds for project activities.

16. **Budgeting.** The FCC will receive GEF funds to finance project activities. GEF funds will be received as advances to a designated account to be set-up at NAFIN, which is the fiduciary institution for the FCC (see Annex Figure 2.2 and the accompanying section on the flow of funds). The PCU will prepare annual budget and work plans for the project, which will be reviewed and approved by the FCC Technical Committee, as noted. The PCU will monitor budget execution. The project will receive parallel financing from other sources, which will also be managed and incorporated in the FCC budgeting system.

17. **Accounting and budget systems.** As a public trust fund, the FCC keeps accounting records and issues periodic financial statements. Project GEF funds will be managed through a separate bank account and transactions will be incorporated in the accounting records in use by the FCC. Project GEF financial information will be incorporated, recorded, and reported separately in the FCC financial records and statements.

18. Financial reporting arrangements will ensure that the total project investment from all financing sources is reflected in the project financial reports and audited financial statements. Unaudited Interim Financial Reports for the project will be prepared by the PCU in SEMARNAT, and will include all financing sources. Counterpart funds (beneficiaries' contributions to subprojects) will also be reflected in the project's financial reports and statements. The Interim Financial Reports will be prepared based on the general standardized financial report model agreed with the Ministry of Public Administration (Secretaría de la Función Pública, SPF), which will be adjusted, as needed, to incorporate the project's financial information.

19. Implementation arrangements will require FIRA to provide information on the partial guarantee fund, including account statements to monitor the use of the Grant proceeds that finance the guarantee fund. The internal credit and recovery procedures and policies of FIRA will be applied to manage the guarantee fund, in terms acceptable to the World Bank. These procedures and policies will be incorporated into the POM.

20. **Internal control and internal auditing.** As a public trust fund, the FCC is subject to the Federal Public Administration Internal Control Standards issued by SPF, which as a whole provide sound internal control arrangements for the project. However, as part of the BIOFIN initiative to strengthen FCC, the internal control environment is being reviewed and will need to be assessed as part of the broader FCC FM and institutional capacity assessment, once the BIOFIN process is completed.

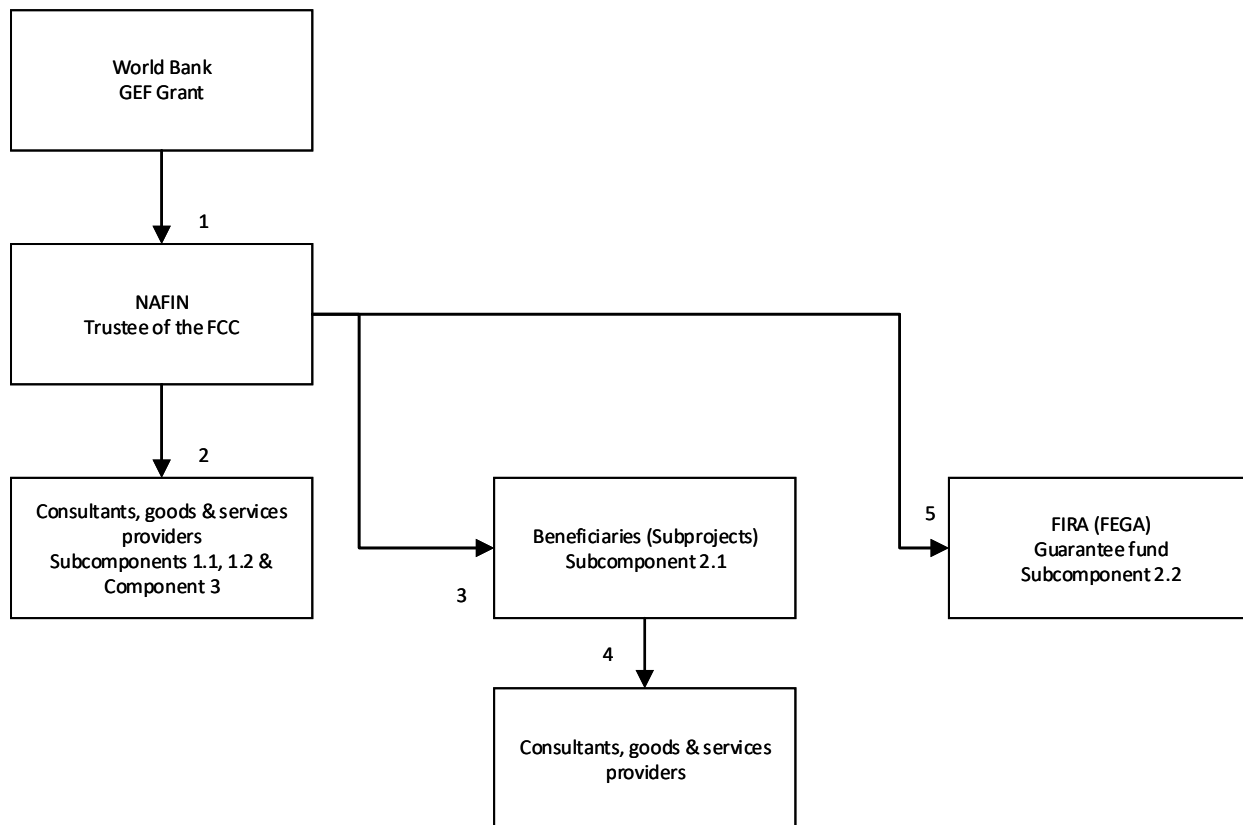


21. FIRA (through FEGA) will maintain adequate internal controls and procedures to account for the use of Grant proceeds managed in the guarantee fund. These internal controls and procedures will be incorporated in the POM and implemented in terms acceptable to the World Bank.

22. **Flow of funds.** As noted, GEF funds will flow through the FCC. A designated account will be opened and managed by NAFIN as the fiduciary institution for this public trust fund. Annex Figure 2.2 depicts the flow of funds, and Annex Figure 2.3 depicts the flow of FM information.

Annex Figure 2.2: Flow of funds, Sustainable Productive Landscapes Project

Flow of Funds (solid lines)



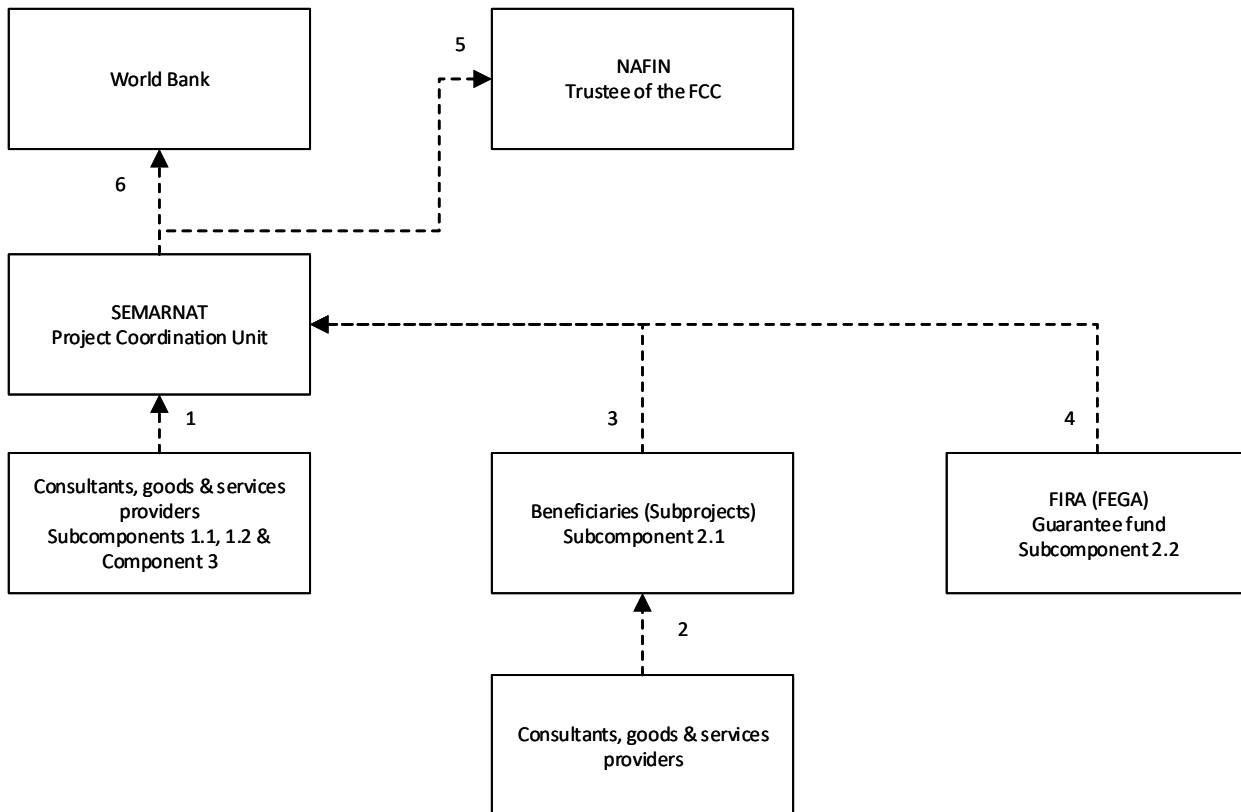
Notes:

- The World Bank will advance grant proceeds to NAFIN, trustee of the FCC.
- NAFIN, trustee of the FCC, will make payments to consultants, service providers for:
 - a. Subcomponent C1.1.
 - b. Subcomponent C1.2.
 - c. Component 3 (financing the PCU and M&E).
- NAFIN, trustee of the FCC, will transfer Grant proceeds for supporting producer associations (subprojects) under Subcomponent C2.1.
- Subprojects will also be financed with beneficiaries' counterpart and Government of Mexico funds from the FCC.
- Producer associations (subprojects) will make payments to consultants and providers.
- NAFIN, trustee of the FCC, will transfer to Grant funds to FIRA to create the guarantee fund (Subcomponent C2.2).



Annex Figure 2.3: Flow of FM information, Sustainable Productive Landscapes Project

Flow of information and supporting documentation (broken lines)



Notes:

- Consultants and service providers will provide supporting documentation to the PCU.
- Consultants and service providers will provide supporting documentation to producer associations (subprojects).
- Beneficiaries (subprojects) will provide supporting documentation to the PCU.
- FIRA will provide information on the account for the guarantee fund to the PCU (including statements of account), to report on the use of Grant proceeds.
- PCU will provide supporting documentation to SEMARNAT on payments made for eligible expenses.
- SEMARNAT will inform the FCC (through NAFIN, its fiduciary agent), on the use of project proceeds.
- SEMARNAT will submit applications requesting advances for disbursement of Grant funds to the World Bank.



Disbursements

23. Annex Table 2.1 lists disbursement methods and documentation required.

Annex Table 2.1: Disbursement procedures, Sustainable Productive Landscapes Project

Disbursement method	The following disbursement methods may be used under the loan: <ul style="list-style-type: none"> • Reimbursement. • Advance to Designated Account (to include Designated Account information).
Supporting documentation	Statements of Expenditure (SOEs), invoices, and receipts.
Retroactive expenditures	Eligible payments must meet the following conditions: <ul style="list-style-type: none"> ▪ Made during a period of one year before the date of the Grant agreement. ▪ They do not exceed 20 percent of the Grant amount. ▪ Retroactive expenditures will be subject to the same systems, controls, and eligibility filters described above. Those expenditures would also be subject to the regular project external audit (see below).

24. **External Audit.** Annual audits on project financial statements and eligibility of expenditures will be performed by an independent auditor, under audit terms of reference acceptable to the World Bank. The scope of the audit will include review of the proper use and application of funds managed under the guarantee fund.

Procurement

25. Procurement will be conducted per the World Bank Procurement “Regulations for Borrowers under Investment Project Financing,” dated July 1, 2016 and revised on November 2017 for the supply of civil works, goods, consultants, and non-consultant services. Procurement activities under Components 1 and 3 will be undertaken directly by an implementing unit to be created in SEMARNAT, the institution responsible for general execution of the project. Beneficiaries (formally organized producers) will be responsible for the procurement under Component 2.1 following Commercial Practices and Community Driven Development approaches as detailed in the POM. The World Bank’s Standard Procurement Documents will govern the procurement of World Bank–financed Open International Competitive Procurement, which is not expected under these components. When approaching the national market, as agreed in the Procurement Plan dated January 30, 2018, the harmonized procedures and documents agreed by the World Bank with SFP and the Inter-American Development Bank will be used.

26. Procurement Regulations do not apply to Subcomponent 2.2 (US\$6.0 million). These resources will be applied to the capitalization of a credit guarantee fund to be managed by FIRA in accordance with its credit rules.

27. **Procurement Arrangements.** A Project Procurement Strategy for Development (PPSD) was prepared and identified the appropriate selection methods, market approach, and type of review by the World Bank, as follows:

28. Goods and non-consulting services will be procured following Request for Bids, Request for Quotations, and Direct Selection methods. Under the Open International competitive procurement approach, the World Bank’s Standard Procurement Documents will apply. When approaching the national market, the Open National Procurement approach, using the harmonized documents agreed by the World Bank with the SFP and the Inter-American Development Bank will be used.



29. Consulting services will be procured following Quality and Cost Based Selection, Fixed Budget Based Selection, Least Cost Bases Selection, Quality Based Selection, Consultant’s Qualification Based Selection, Direct Selection, and Individual Consultants methods. Under the International Market Approach, the World Bank’s Request for Proposals standard document will apply. When approaching the national market, the harmonized Request for Proposals agreed by the World Bank with the SFP and the Inter-American Development Bank will be used.

30. **Procurement under subprojects will be conducted by formally organized producers.** The eligible expenditures will comprise investments to improve technologies and practices for producers as described in each one of the Components following commercial practices and the Community-Driven Development (CDD) approach, which will include Request for Quotations and Local Competitive Bidding. The implementing unit in SEMARNAT will be responsible for monitoring and supervising the procurement activities conducted by the beneficiaries, including the designation of a staff member responsible for procurement, who will support, supervise, and monitor procurement activities by beneficiaries, under terms of reference acceptable to the World Bank.

Risk Mitigation Plan

Annex Table 2.2: Procurement improvement action plan for the Sustainable Productive Landscapes Project

Risks - Areas for improvement	Mitigation actions	When
A PPSD and a Project Procurement Plan	A comprehensive PPSD and a detailed Procurement Plan have been prepared.	Before Negotiations
Responsibilities related to procurement activities	The Project Operational Manual shall contain: <ul style="list-style-type: none"> • A clear definition of the processes, roles, and responsibilities of the staff related to the implementation of the Procurement activities. • With respect to subprojects (commercial practices and Community-Driven Development), the final Operational Manual shall include: <ul style="list-style-type: none"> - Simplified capacity assessment methodology for the beneficiaries, which will be conducted by SEMARNAT. - Eligible expenditures under commercial practices and CDD. - Procurement methods that will apply under commercial practices and CDD. - Simplified templates for commercial practices and CDD (Procurement Plan, request for quotations, contracts, etc.). - Supervision arrangements under subprojects. - Audit arrangements 	The POM will be ready before Effectiveness. The sections related to procurement of subprojects will be ready before undertaken call for subproject proposals.
Staff with expertise in procurement	A Procurement Specialist with terms of reference acceptable to the Bank shall be incorporated into the implementing unit in SEMARNAT.	As agreed in the Procurement Plan
Procurement activities implemented through beneficiaries	The agreements signed between SEMARNAT and each one of the organized beneficiaries shall include a statement in which the beneficiaries agree that the procurement of civil works, goods, and services will be carried out in accordance with the procedures set forth in the Operational Manual. Training for the beneficiaries shall be conducted by SEMARNAT and the World Bank.	During project implementation

Environmental and Social (including safeguards)

31. SEMARNAT will be responsible for coordinating the preparation of reports on the project’s application of safeguards and their monitoring, while the World Bank safeguards team will provide technical support to government



counterparts. SEMARNAT and the other partner institutions have many years of experience with projects funded by multilateral agencies and bilateral donors and more specifically with implementing World Bank safeguards. The partner institutions (CONABIO, CONAFOR, CONANP, and INECC) have complementary and differentiated responsibilities for the management of natural resources and forestry actions, ecosystem and biodiversity conservation, and climate change, and they possess sound experience in biological and social monitoring. Much of this experience has involved working with indigenous people and rural producers who live in or make use of the seven priority regions targeted by this project. SAGARPA, as the Ministry of Agriculture, will contribute to the implementation of rural development programs, including direct support to producers. Safeguard implementation, monitoring, and oversight will be led and coordinated by SEMARNAT. For investments under the partial credit guarantee and subprojects, SEMARNAT will coordinate safeguard responsibilities together with FIRA.

32. The project safeguard requirements are a central part of the “policies and terms & conditions of use” for the credit guarantee fund applying to the lenders (users of the guarantee fund). Those policies, terms, and conditions of use specify the typology of investments to be supported by the credit guarantee. FIRA operationalizes such policies and conditions through its internal network systems, and through a two-step control process (carried out by two different units). The agency also monitors compliance during loan implementation on 80 percent of its credit and guarantees portfolio balance. These processes are complementary to the safeguard implementation and monitoring of subprojects to be developed by the PCU, through the Territorial Development Agencies and Regional Technical Units. CONAFOR, CONABIO, and FIRA’s social and environmental capacities together provide additional reinforcements for monitoring the implementation of safeguards and reporting to the PCU. The project design includes staff and budget for safeguard implementation.

33. Any investment carried out by the partner institutions within the context of the TPS Project will need to be aligned with the project’s safeguard framework. SEMARNAT will ensure that such responsibilities are clearly defined in the coordinating agreements to be established with the partner agencies. Furthermore, those coordination arrangements and responsibilities need to be clearly highlighted in the POM and will be formalized through coordinating agreements, found acceptable to the Bank.

Monitoring and Evaluation

34. The M&E approach for this project consists of three elements: (i) monitoring project outcomes (PDO results and intermediate indicators, and financial and procurement outcomes, including the performance of the guarantee fund); (ii) monitoring of biodiversity, land degradation, sustainable forest management, and carbon-related outcomes; and (iii) an unbiased impact evaluation of project impacts to capture mid- to long-term causal impacts on environmental, productive, and socio-economic factors. The costs of the M&E approach, including the impact evaluation, have been incorporated into the project design in Components 1 and 3. Under Component 1, the project will strengthen institutional and local capacity for local M&E of sustainable productive landscapes. An M&E unit within the Project Coordinating Unit (PCU) of SEMARNAT will assume responsibility for monitoring and for collecting relevant project data. CONABIO and CONAFOR will be responsible for monitoring environmental outcomes of biodiversity and connectivity; the CONABIO and CONAFOR teams developed capacity in this area through prior projects. CONAFOR will guide the process of monitoring forest degradation and, together with INECC, will be responsible for GHG accounting and monitoring, in coordination with SEMARNAT. The indicators measured through the monitoring systems of CONABIO, CONAFOR, and INECC will feed into the main M&E system housed in SEMARNAT. An important activity for meeting the monitoring requirements of the project, supported under Component 1, is the strengthening of pre-existing national monitoring systems, such as the National Monitoring, Reporting, and Verification System for REDD+ and the National Biodiversity Monitoring System. Part of this activity will include methodological studies on measuring carbon



outcomes and the development of local capacity for measurement to comply with UNFCCC measurement, reporting, and verification frameworks. The carbon methodology, along with methodologies developed for monitoring biodiversity and other environmental outcomes, will be used to verify and update the existing baseline within the first year and a half of project implementation.

Monitoring and Evaluation Systems

35. A comprehensive information system will be developed for the project and will consist of three components. An Information Management Subsystem and Processes will organize and aggregate information on inputs, outputs, and outcomes (intermediate indicators) for each component of the project. That subsystem will be linked to the Subsystem for Monitoring and Evaluation of Results to perform monitoring and ongoing assessments of progress under the project in terms of PDO indicators, including compliance with safeguards. A third subsystem will monitor the main environmental impacts of the project (conservation of biodiversity and climate change mitigation). This subsystem will also monitor forest degradation as a proxy of land degradation and will integrate information from the National Biodiversity Monitoring System (of CONABIO and CONAFOR), information produced by INECC for the agricultural and livestock sector, and the National Forest Monitoring System, including the National Monitoring, Reporting, and Verification System for the LULUCF³⁵ sector and REDD+ (CONAFOR)—among other relevant information.

CONABIO, CONANP, and CONAFOR—Evaluation of biodiversity and connectivity

36. CONABIO, CONANP, and CONAFOR will strengthen and use the National Biodiversity Monitoring System (both SAR-MOD and SAC-MOD; see below) to systemize field data and GIS-based data from the monitoring of biological and connectivity outcomes. At baseline, tools for monitoring biodiversity will be developed; they will have the capability to define the relationship between sustainable production systems and species of biological concern. More importantly, pre-baseline, the CONABIO, CONANP, CONAFOR and INECC monitoring teams will identify monitoring parameters—including degradation, land use change, habitat (forest) cover, and habitat fragmentation (loss of continuity/connectivity)—to be measured using remote sensing. Information will be collected through a Multiscale Monitoring Network and will capture outcomes at the landscape level and habitat level, as well as conservation at the corridor level and species level. All of this information will be entered into the National Biodiversity Monitoring System. All institutions involved will design the Multiscale Monitoring Network.

- The **SAR-MOD system** (High Resolution System - Monitoring of Ecosystem Diversity in Natural Protected Areas of Mexico) is used to support the planning and management of the conservation of biological diversity in Mexico's protected areas and contributes to the recovery of ecosystems in the face of climate change and other pressures.³⁶ SAR-MOD is managed by CONANP, and assembles data on numerous attributes of biodiversity for specific sites, selected based on its sampling methodology; analysis of those data makes it possible to detect medium- and long-term changes in ecosystem integrity and biodiversity. To assess changes in biodiversity in the project regions, SAR-MOD will require baseline data from those areas. The SAR-MOD system complements the wide coverage of the SAC-MOD system, since it uses the same methods for wildlife registration, and in addition it includes counts of bird species and methods for registering vegetation and soil variables. Because SAR-MOD is applied for periods of 15 days, twice each year, it is regarded as a high-resolution system capable of providing detailed information about what happens with biodiversity in each sampling site.
- The **SAC-MOD system** (Wide Coverage System for Monitoring Diversity) was designed by CONABIO and CONAFOR to complement the data of the National Forest and Soil Inventory (INFyS), which includes

³⁵ Land Use, Land-Use Change, and Forestry.

³⁶ See Andreasen et al. (2001), Unnasch et al. (2009), and Kupfer and Gao (2011).



measurements of more than 100 variables on the structure and composition of vegetation at 26,000 points nationwide every 5 years. Because the scale of SAC-MOD is based on the INFyS infrastructure (Biodiversity Module B), it has a national scale that complements the lack of SAR-MOD coverage for the project areas, and will allow a vision of connectivity between these areas.

CONAFOR/INECC—Evaluation for GHG accounting and monitoring

37. INECC and CONAFOR will be responsible for implementing the **GHG accounting and monitoring** approach of the project, which includes: (i) an ex-ante assessment of the project's potential for climate change mitigation (to define an impact goal of mitigation); (ii) the verification or determination of a net GHG emissions baseline (or reference level) in the implementation area of the project; and (iii) the monitoring of GHG emissions and capture at a local level in order to quantify the real mitigation impact in the project's areas. This analysis will be performed by using and strengthening the monitoring systems for the AFOLU sector (mainly the NMRVS for REDD+), and ensuring consistency, as much as possible, with the National GHG and Compounds Inventory in the framework of the National Communications to the UNFCCC.

38. INECC and CONAFOR periodically conduct national inventories of GHG emissions and compounds (INEGYCEI) for the AFOLU sector, using the 2006 methodology of the Intergovernmental Panel on Climate Change. Based on INECC and CONAFOR source data and applying the 2006 methodology to the AFOLU sector, GHG emissions and removals will be estimated in the 14 intervention sites of the TPS Project. Those estimates will be compared with the potential reductions estimated for the project using the EX-ACT model, to align both results and specify the emission reduction potential of the TPS Project. This task will require close coordination with INECC and CONAFOR specialists. The project will reinforce CONAFOR/INECC activities to improve the estimates at the subnational level; possible areas of support include: improved monitoring of changes in land cover (maps of high spatial and temporal resolution); development and application of methodological innovations to estimate the increase in carbon stocks due to sustainable forest management (at a higher cartographic scale); visual interpretation activities in the framework of the Activity Data component; multi-scale analysis to estimate the project's emission reduction (or mitigation) potential; improved estimates of forest degradation; and evaluation and mapping of deforestation drivers in selected project intervention sites (at a higher spatial resolution). The prioritization of areas to be strengthened will be done during implementation, and will consider financial complementarity among different projects.

CONAFOR—Evaluation for the measurement of land degradation

39. To measure the forest degradation as a proxy of land degradation, CONAFOR will use and strengthen the methodologies and inputs available from the National Monitoring, Reporting, and Verification System for the LULUCF sector and the National Strategy for Reducing Emissions from Degradation and Deforestation (REDD+), which is an institutional system that can provide information for monitoring at national and subnational scales, including projects such as this one. Approaches that offer higher precision and spatial resolution will be explored through the development of methodologies that combine information from the field and remote sensing. These approaches will be applied as a general approach to monitoring the project's 14 intervention sites (3 million hectares, as well as the 200,000 hectares under integrated landscape management). CONAFOR will use the field data available with the National Forestry and Soil Inventory sites and the Permanent Monitoring Sites in Productive Forest Landscapes. In addition, the National Monitoring, Reporting, and Verification System will collect data from a sample of plots for monitoring forest degradation in the project implementation area. All of this field information will be used to calibrate forest degradation models, which will correlate remote sensing information (both optical and radar) to evaluate the following general indicators: rate of variation in vegetative cover, rate of variation in the degraded surface area, rate of variation in tons of forest biomass, and reduced emissions in project areas. For land degradation baselines can be defined in the TPS territories. Indicators directly related to forest management activities can be measured periodically and assessed against those



baselines (the frequency of measurement will depend on each indicator). Such indicators could include: (i) variation in the volume of timber production, (ii) variation in the area under authorized management, and 3) surface area where some certification of good forest management has been adopted.

SEMARNAT–Evaluation of TPS Project impacts

40. Socio-economic and environmental impact evaluations will be undertaken (with surveys carried out at baseline, mid-term, and at the end of the project) to measure the causal linkages between the project's activities and outcomes. This evaluation includes the measurement of links between the promotion of biodiversity/environmentally-friendly production practices on the one hand, and/or access to financial and market instruments on the other, and the expansion of market opportunities for producers. Socio-economic data collected for the impact evaluation through surveys at the landscape, community, PO, and producer (farmer) levels will be integrated with spatially explicit environmental and biodiversity data (assembled through the cooperation between institutions collecting those data using their own systems). In this way, data collected on land-use changes using GIS (for example) can be overlaid with data on the outcomes for producers and producer associations collected through the field surveys. When necessary, the PCU will seek expert advice to ensure that sufficient information is collected during the baseline assessment to permit the impact evaluation to be adequately carried out. The PCU will also work to guarantee sufficient overlap between the environmental and socio-economic data to ensure that the environmental data is collected at a scale that allows it to be used in conjunction with micro-level socio-economic data.

Role of Partners (if applicable)

41. Detailed roles of partners will be described under the coordinating agreements to be established with each institution.

42. **SEMARNAT: Implementing Agency.** SEMARNAT, Mexico's environment ministry, is charged with protecting, restoring, and conserving the ecosystems, natural resources, assets, and environmental services of Mexico, with the goal of fostering sustainable development. SEMARNAT is an implementing institution for this project in conjunction with the FCC.

Partner Institutions

43. **National Commission for Knowledge and Use of Biodiversity (CONABIO).** The mission of CONABIO is to promote, coordinate, support, and carry out activities aimed at increasing awareness of biodiversity and its conservation and sustainable use for the benefit of society. CONABIO was conceived as an applied research organization dedicated to sponsoring basic research that generates and compiles information on biodiversity, develops capacity in biodiversity informatics, and acts as a publicly accessible source of information and knowledge on biodiversity. CONABIO is responsible for monitoring the project's biodiversity outcomes.

44. **The National Forestry Commission of Mexico (CONAFOR).** This a government agency (under SEMARNAT) develops, supports, and promotes the conservation and restoration of Mexico's forests, and it participates in the development of plans, programs, and policies for sustainable forestry development. Its roles in the project are to conduct forest monitoring, support forest-related investments, and contribute to the harmonization of programs.

45. **National Institute of Ecology and Climate Change (INECC).** This agency is responsible for the generation of scientific and technical information on environmental issues and for training human resources to promote the sustainable use of natural resources. Its role in the project is to support the monitoring of GHG emissions.

46. **The National Forestry Commission for Natural Protected Areas (CONANP).** This agency manages Mexico's 173 natural areas (covering 25,000,000 hectares, with varying protected area status). Its roles in the project are to monitor protected areas, support forest-related investments, and contribute to harmonizing programs.



47. **Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA).** SAGARPA's objectives are to: (i) increase human development of Mexican citizens in rural and coastal areas; (ii) supply domestic markets with quality, healthy, safe, and accessible foods from Mexico's farms and fisheries; (iii) improve producer incomes by increasing Mexico's presence in global markets, promoting value-adding processes, and fostering biofuel production; (iv) reverse ecosystem degradation through actions to preserve water, soils, and biodiversity; and (v) promote the harmonious development of rural territories. Within the project, SAGARPA's role is to support productive investments and the harmonization of programs.

48. **Instituted Trust Funds to Agriculture (FIRA).** FIRA's role is amply discussed earlier in this Annex.



ANNEX 3: IMPLEMENTATION SUPPORT PLAN

COUNTRY : Mexico

Mexico: Sustainable Productive Landscapes

Strategy and Approach for Implementation Support

1. Implementation support for the project will focus on functions and activities typically monitored by World Bank task teams during supervision, including technical activities, management functions (administration, FM, procurement), and compliance with safeguard policies. Special attention will be directed to ensuring the timely implementation of the risk mitigation measures identified in the SORT matrix. The implementation support strategy is flexible and likely to be amended during implementation in response to the evolving needs of the project, including changes in the institutional context.
2. The Implementation Support Strategy includes the following main elements:
 - **Timely support.** World Bank implementation support will begin immediately after Grant approval, to help the Borrower achieve effectiveness in a timely manner. Doing so will involve formally establishing the PCU and recruiting key staff, and signing agreements with co-implementing partners/agencies.
 - **Continuously strengthening capacities.** Although some capacities are installed at SEMARNAT, the institution will need support, particularly for fiduciary capacity. World Bank operations, fiduciary, and safeguards training will be provided early on to PCU staff. In addition to carrying out their usual implementation support functions, World Bank fiduciary and safeguard specialists will be available to provide close support and detailed, hands-on guidance to their counterparts during the initial months following effectiveness. The World Bank Procurement Specialist and World Bank Financial Management Specialist assigned to the project are both based in Mexico, so in addition to joining regular missions, they will be available to provide timely support as needed.
 - **Continuously assessing the effectiveness of implementation arrangements.** Some risks are associated with the implementing agencies, specifically in terms of effective institutional coordination nationally and at the local/regional level. Some project activities are relatively challenging, especially activities to support coordinating platforms at the regional level to prioritize investments and approaches at the landscape level, which will require the establishment of new relationships with relevant partners. For that reason, the World Bank team will continuously assess the effectiveness of the coordination arrangements. An in-depth review of such arrangements will be carried out at the end of the first year of implementation.

Implementation Support Plan and Resource Requirements

3. The areas on which implementation support activities will focus are summarized in Annex Table 3.1, which also lists skill requirements. Annex Table 3.2 focus on the mix of skills needed for implementing the project.

Implementation Support Plan and Resource Requirements



Annex Table 3.1: Implementation support focal activities and skill requirements, Sustainable Productive Landscapes Project

Time	Focus	Skills needed	Resource estimate	Partner role
First 12 months	<ul style="list-style-type: none"> • Project establishment • Establishment of fiduciary systems • Communications strategy development and implementation • Environmental and social aspects in place • Establishment of Technical Committees/PCU • Establishment of cooperation agreements with partners, etc. • Setting-up M&E system 	<ul style="list-style-type: none"> • Task Team Leader • Environmental Specialist • Agribusiness/Agriculture Specialist • Procurement Specialist • Social Specialist • FM Specialist • Climate Finance Specialist • Carbon Measurement Specialist 	20 staff weeks	
13–60 months	<ul style="list-style-type: none"> • Program implementation • Communication activities • Monitoring • Reporting 	<ul style="list-style-type: none"> • Task Team Leader • Environmental Specialist • Agribusiness/Agriculture Specialist • Procurement Specialist • Social Specialist • FM Specialist • Climate Finance Specialist • Carbon Measurement Specialist 	60 staff weeks	

Annex Table 3.2: Skill mix required to implement the Sustainable Productive Landscapes Project

Skills needed	Number of staff weeks	Number of trips	Comments
Safeguards (social and environmental)	Bank supervision will require 5 staff weeks (mainly senior technical staff)	Two local trips per fiscal year	
Technical expertise enhancement (M&E, technical support, climate finance, etc.)	Bank supervision will require 10 staff weeks (mainly senior technical staff)	Two trips per fiscal year	
Institutional capacity strengthening (FM, procurement, disbursement)	Bank supervision will require 5 staff weeks (mix of junior and senior technical staff)	Two trips per fiscal year	



ANNEX 4: FIRA AND FEGA ASSESSMENT

COUNTRY: Mexico Mexico: Sustainable Productive Landscapes

- The PCG will be managed by the second-tier development financial institution, FIRA, through its existing guarantee fund, FEGA. This annex provides supplementary information assessing these two institutions.** This assessment is based on conference calls with FIRA as well as written documentation, including FIRA's annual report, financial statements, website, and evaluations performed by external entities (Universidad Autónoma Chapingo, Colegio de Tlaxcala, S&P Global).
- FIRA, a second-tier development finance institution, was launched in 1954.** FIRA offers second-tier lending, guarantees, insurance, training, and technical assistance. It is comprised by four development trusts: FONDO, FEFA, FOPESCA, and FEGA, which do not consolidate their balance sheets but operate under a single administrative entity. FIRA has a staff of more than 1,000 and 143 branches, of which more than 40 percent are located in communities with fewer than 50,000 residents. It operates through a network of 81 financial intermediaries that includes banks as well as non-bank financial institutions (commercial banks as well as non-deposit-taking financial institutions such as credit unions and SOFOMES). FIRA is governed by a board with representatives from the federal government, regulatory bodies, commercial banks, agricultural industries, and a wide array of agricultural organizations representing small-scale and large-scale farmers.
- FIRA and FEGA are subject to the prudential oversight of CNBV.** The CNBV supervises financial performance as well as risk management practices, governance, IT systems, and internal control and audit arrangements. The team did not hold discussions with oversight authorities, but the regulator's website does not list any sanctions imposed on FIRA (<https://sanciones.cnbv.gob.mx/>).
- FIRA offers a diverse range of products and services to support development of the rural sector.** It provides short-term and long-term credit in pesos and US dollars through financial intermediaries at competitive interest rates. Credit guarantees are provided to banks as a way to share the risk with lending institutions and to facilitate access to bank credit by rural producers. FIRA also uses financial derivatives and structured financing to manage the risk involved in everyday operations.
- FEGA, established within FIRA in 1972, aims to promote creditworthiness and technological development to enhance the competitiveness and sustainability of local producers.** Among other tools such as technical assistance and technology transfer, FEFA offers guarantees to private credit entities and recovery of credits provided for agriculture, livestock, and poultry; discount financial instruments backed by credit to local producers; credit to private credit entities that cater to local producers; permanent technical assistance on agricultural credit management; and demonstration and training centers in techniques for agriculture, agroindustry, and fisheries.
- The trusts under FIRA appear to demonstrate adequate financial performance. FEFA and FOPESCA have negligible levels of debt, and capital has been adequate both for FONDO and FEGA.** FIRA income statements present consistently positive results in its four trusts. FEFA has posted credit losses well below the premiums it charged. Moreover, FEFA's return on equity has also kept ahead of inflation, as required



by local legislation. See Annex Tables 4.1 and 4.2.

7. The review of FIRA and FEGA did not raise concern about the capacity of FIRA to implement the Project through FEGA.

Annex Table 4.1: FIRA–Net income by trust (thousand MXN)

	2014	2015	2016	Jan–Sep2017
FONDO	290,222	181,968	283,634	377,765
FEFA	928,527	1,156,731	1,397,612	1,672,898
FOPESCA	26,940	31,640	44,393	78,417
FEGA	797,780	480,756	1,193,354	924,625

Annex Table 4.2: FEGA–Income statement summary (thousand MXN)

	2014	2015	2016	Jan–Sep2017
Financial Margin	678,750	527,129	748,531	811,987
Preventive estimation for credit losses	-164,524	-447,567	-29,685	-207,779
Adjusted Financial Margin	514,226	79,562	718,846	604,208
Fees and premiums charged	437,830	583,593	667,907	567,290
Operating Margin	797,780	480,756	1,193,354	924,625
Net Income	797,780	480,756	1,193,354	924,625
ROE	5.01%	2.91%	6.79%	6.73%
ROA	4.98%	2.89%	6.62%	6.66%
CPI Inflation (Dec/Dec)	4.08%	2.13%	3.36%	6.35%



ANNEX 5: GREENHOUSE GAS ACCOUNTING ANALYSIS

COUNTRY: Mexico
Mexico: Sustainable Productive Landscapes

Background and Methodology

1. In its 2012 Environment Strategy, the World Bank adopted a corporate mandate to conduct greenhouse gas (GHG) emissions accounting for investment project financing. The quantification of GHG emissions is an important step in managing and ultimately reducing GHG emissions, and it is becoming a common practice for many international financial institutions. The World Bank adopted the Ex-Ante Carbon-balance Tool (EX-ACT), which was developed by FAO in 2010 to assess the impact of agricultural investment lending on GHG emissions and carbon sequestration. EX-ACT allows the assessment of a project's net carbon balance, defined as the net balance of CO₂ equivalent of GHG emitted or sequestered as a result of project implementation *compared to a without-project scenario*. EX-ACT estimates the carbon stock changes (emissions or sinks), expressed in equivalent tons of CO₂ per hectare and year.

2. The Sustainable Productive Landscapes Project aims to strengthen sustainable management of productive landscapes and increase economic opportunities for rural producers in priority areas of Mexico. The Ex-ACT tool was used to assess the GHG impacts associated with the investment activities.

Application of EX-ACT

3. **Project boundaries.** The GHG accounting analysis considers activities under Components 1 and 2. Component 1 targets the harmonization of public programs and local governance for productive landscapes with the aim of reducing deforestation and improving biodiversity and ecosystem services. Component 2 includes activities to promote sustainable systems.

4. **Basic assumptions.** The climate varies significantly across the seven regions covered by the project. For the GHG analysis, the seven regions were classified by climate type, ranging from warm temperate and dry climates to tropical moist climates. The dominant soil type for the project is HAC (High Activity Clay) soil. The implementation period of the project is five years. The without-project scenario is assumed to be equal to a "business-as-usual" or "no project" scenario. This default assumption is deemed reasonable, as changes in agricultural activity depend crucially on the information, knowledge, and technology available to beneficiaries, and new information, knowledge, and technology will be major contributions of this project.

5. **Inputs to the analysis.** A total area of 3 million hectares is targeted by the project. Component 1 is mainly expected to result in a reduction of deforestation and the conservation of sustainable forest and grassland management. Component 2 will carry out activities focusing on sustainable forest management, sustainable ranching, and agro-silvopastoral, sustainable honey, sustainable coffee, sustainable cacao, and intercropped maize system on a target area of 200,000 hectares. Annex Table 5.1 provides detailed information on assumptions and inputs to the GHG accounting analysis. Tier 2 Emission Factors were applied for above- and below-ground carbon by region and forest coverage.



Annex Table 5.1: Input data for GHG accounting

Activity		Description
Avoided deforestation		Governance programs, landscape management plans, and capacity building are expected to reduce drivers for deforestation, such as incidental fires and illegal logging, resulting in reduced deforestation, leading to a reduction of deforestation by 23% on 1.3 million ha.
Sustainable Forest Management and Conservation practices		Of the 1.5 million ha under conservation practices targeted by the project, 110,000 ha will be supported by the project to maintain sustainable forest and grassland management practices, resulting in avoided degradation and fires, and increasing carbon stocks.
Productive systems	Sustainable forest management	Forest management activities are implemented, targeting reduced degradation of forests.
	Annual systems (i.e., maize)	Improved agricultural practices will be implemented in all cropping systems (annual and perennial).
	Perennial systems (i.e., coffee, cacao)	Improved agricultural practices (i.e., reducing burning of residues) are expected in the perennial crops of coffee and cacao. Agroforestry systems will be introduced.
	Grassland and livestock	Silvopastoral systems are expected to be introduced on existing grasslands. Capacity building in sustainable extensive ranching is assumed to reduce degradation of pastures.

Results

6. **Net carbon balance.** The net carbon balance quantifies GHGs emitted or sequestered as a result of the project compared to the without-project scenario. Over the implementation period of 5 years, the project constitutes a carbon sink of 1.87 million tCO₂e, with an average reduction in GHG emissions of 0.37 million tCO₂e per year. The largest contributors to the expected reduction in emissions are conservation practices and avoided deforestation on approximately 1.3 million hectares as a result of public and local governance programs as well as sustainable forest management. The introduction of agroforestry and silvopastoral systems as well as improved agricultural practices in coffee, cacao, and maize production also constitute a carbon sink.

7. While the target for the total net reduction in GHG emissions applied to the project comes from the EX-ACT tool, using country-level tier-2 emission factors of above- and below-ground carbon by region and forest type, national estimates and comparability were considered as well. A working group consisting of CONAFOR, INECC, and CONABIO developed national estimates using a national tool. Using the identical emission factors provided by EX-ACT, the national tool estimated that 1.5 million hectares under conservation practices would yield 910,315 tCO₂e over 5 years, compared to 917,315 tCO₂e over 5 years estimated using the EX-ACT. On the other hand, the national estimates for avoided deforestation on 1.3 million hectares found a reduction of 452,609 tCO₂e over 5 years compared to the EX-ACT estimate of 693,257 tCO₂e over 5 years. Therefore, the net GHG emissions value calculated by the working group is 1,362,924 for 5 year (910,315 tCO₂e+ 452,609 tCO₂e), arising from avoided deforestation and conservation. The EX-ACT results are presented in Annex Table 5.2.



Annex Table 5.2: Greenhouse gas accounting results for the Sustainable Productive Landscapes Project, estimated using the EX-ACT tool

Region	Avoided deforestation	Conservation practices	Productive systems	Total net GHG emission
	<i>[t CO₂e over project lifetime of 5 years]</i>			
Chihuahua – Durango	-4,375	-500,632	-63,853	-568,860
Coahuila	-217,549	-170	-2,160	-219,880
Jalisco	-31,949	-137,262	-14,496	-183,707
Sierra Madre Oriental	-9,186	-19,312	-28,169	-56,666
Oaxaca	-33,165	-26,074	-2,848	-62,087
Cuenca De Usumacinta	-35,181	-26,270	-140,471	-201,922
Península de Yucatán	-361,852	-207,502	-2,551	-571,905
TOTAL [t CO₂e]	-693,257	-917,221	-254,548	-1,865,027

8. The difference here of 34.7% (higher using EX-ACT) comes from the inclusion of default values of (i) leaf litter carbon, (ii) organic carbon in soil, and (iii) carbon from dead organic matter (standing dead trees, stumps, and fallen woody material). Although a more conservative national estimate suggests these values to be 23% of the total emission reduction under deforestation, this assessment uses the EX-ACT defaults. The national calculations do not consider emissions aligned with productive systems, which equal 254,548 using the EX-ACT tool. Therefore, the estimates for the GHG-related indicator to be included in the results framework for the project will be disaggregated, to separate values achieved with national emission factors and those determined based on default factors (for which national factors are not available). The project proposes developing a more detailed baseline estimate during implementation. For that reason, the total net GHG emission target is subject to change as that baseline is established, and also as a result of the improved capacity to be supported by the project.



ANNEX 6: INCREMENTAL ECONOMIC ANALYSIS

COUNTRY: Mexico

Mexico: Sustainable Productive Landscapes

1. The main investment component of the Sustainable Productive Landscapes Project is designed to provide opportunities for communities dependent on forests and natural landscapes for their livelihoods to shift toward the sustainable use of land under productive activities. These opportunities include investments in agricultural commercialization that bring producers together through their organizations and link them to value chains that support sustainable management (such as investments in collection centers for sustainably produced crops or sawmills for managed forestry). They also include direct investments in sustainable management practices, in capacity building to instill entrepreneurial skills, and in technical assistance. The integration of all of these investments through the project should generate greater scope for producers, through their organizations, to develop sustainable productive activities.
2. The project takes an innovative landscape-level approach, through Component 1, incremental benefits would be derived within the project's geographical areas through the incorporation of "sustainability criteria" into at least eight publicly funded programs or policies falling within the agriculture, environment, and forestry scope of influence. This activity would have large incremental environmental, social, and economic impacts on future projects designed for productive operations in the area. Through inter-ministerial/inter-agency coordination and collaboration, the value added to territorial outcomes would be maximized compared to the baseline scenario in which agencies act separately, and in particular the development of mutually agreed guidelines by SAGARPA and SEMARNAT for governance models that incorporate land use planning and sustainable production systems create additionality. Similarly, through Component 2, which promotes capacities for sustainable landscape management among local actors in 14 project sites, the project provides marginal benefits through assistance in developing plans for biodiverse and resilient productive landscapes. The value of these activities cannot be quantified, yet the incrementality with the project is clear when compared to a scenario of uncoordinated action by different governmental agencies, producer groups, producers, and other entities operating in a given area.

Additionality of the Project

3. Several of the target areas include rural low-income forestry/agricultural communities on the fringes of forested areas and/or biological corridors. Poor land use and management are common in these areas, including forest degradation through overexploitation, illegal logging, forest fires; overgrazing, leading to degradation and erosion of soil in steep areas; conversion of forest areas for temporary agriculture and expansion of the agricultural frontier; overuse of agrochemicals and pesticides without proper management, leading to soil degradation; increase of invasive species in forested areas; unsustainable touristic and recreational use; hunting and exploitation of species, leading to changes in ecosystem equilibrium, as well as a loss of ecosystem services, including biodiversity loss.
4. It is assumed that in the scenario without the project, beneficiaries, namely POs and producers, would lack the resources and technical knowledge that would allow them to understand the contribution



of traditional practices to environmental degradation, and to understand the economic benefits in terms of improved productivity and output from changing behavior within each system.

5. The project creates additionality by: (i) enabling beneficiaries to gain access to assistance, credit, and technological innovation; (ii) fostering the transformation and value aggregation of economic activities, through strengthening access to markets for biodiversity-friendly/sustainably produced goods; (iii) linking local, regional, and federal actors to POs and producers to derive benefits of information and knowledge exchange on biodiversity, sustainable productive practices, climate-smart agricultural practices, and legislation to generate behavioral changes in implementation of productive changes.

6. The additionality assumptions listed here for the project are expected to be accurate, given that in the absence of a “treatment” or other confounding factors, beneficiaries would: (i) lack access to the credit markets, as provided through the FIRA credit fund, and lack incentives for adopting sustainable practices; (ii) not benefit from integrated landscape management plans that prioritize actions for conservation and improvements of landscapes through targeted actions; (iii) not learn or receive targeted plans and ideas or technical assistance for implementing sustainable practices; and (iv) lack access to markets such as those provided through the Project’s commercialization and marketing activities.

7. Annex Table 6.1 below summarizes the additionality of the proposed project activities in relation to the deviation from the baseline scenario; it also shows the expected environmental and socio-economic benefits resulting from transitioning toward more sustainable production patterns. The analysis in the following pages focuses on assessing the economic and financial benefits of moving from the baseline toward more sustainable productive systems and enterprises.

Annex Table 6.1: Productive activities and benefits (additionality) by type of sustainable landscape management

Productive system	Proposed activities supported under the project	Deviation from baseline scenario and expected benefits	
		Environmental benefits	Socio-economic benefits
Forests with productive potential (timber)	<ul style="list-style-type: none"> • Develop and execute forest management plans. • Develop associative forms that make forest management more efficient. • Incorporate criteria for the conservation of biodiversity (especially species at risk) and land management in forest exploitation. • Identify and establish appropriate practices in the stages of preparation, use, and abandonment of the site. • Carry out measures to prevent and mitigate environmental impacts. • Establish and apply the necessary measures to prevent, control, and fight fires, pests, and forest diseases. • Establish and execute restoration actions. 	<ul style="list-style-type: none"> • Contribute to maintaining habitat connectivity. • Maintain the heterogeneity of the landscape. • Protect critical ecosystems, such as bodies of water. • Maintain the structural complexity of the forest. • Establish limits of the susceptible areas of management. • Establish areas of free mobility for wildlife populations. • Prevent the disappearance, reduction, or fragmentation of habitats. • Prevent increases in deforestation and maintain more stable habitats for wildlife. 	<ul style="list-style-type: none"> • Contribute to strengthening economic growth, productivity, and profitability of producer organizations, forestry communities, and producers. • Improve activities, processes, and the community economy. • Strengthen local capacities and social, cultural participation in support of conservation. • Increase capacities to access differentiated markets.



Productive system	Proposed activities supported under the project	Deviation from baseline scenario and expected benefits	
		Environmental benefits	Socio-economic benefits
	<ul style="list-style-type: none"> • Consolidate Permanent Forest Areas (Áreas Forestales Permanentes) or Forest Management Units (Unidades de Manejo Forestal). • Develop and consolidate equipment and infrastructure (including sawmills). • Sustain principles and criteria of forest certification systems. • Strengthen forest performance monitoring systems. 		
Forests not used for timber/under conservation	<ul style="list-style-type: none"> • Develop studies of populations of non-timber species with commercial value. • Train technical service providers and producers in the management of wildlife. • Prioritize the management and use of habitat. • Manage secondary plant succession in the areas recovering from agricultural use (<i>acahuales</i>). • Maintain and promote native species providing a diverse range of products (fruit trees, fodder, food, firewood, medicinal products, etc.). • Incorporate the management of diverse ecosystems in forest management. 	<ul style="list-style-type: none"> • Diversify forest production. • Recover forest lands in agricultural areas. • Guarantee the integrity of ecosystems. 	<ul style="list-style-type: none"> • Expand marketing strategies based on product diversification. • Increase monetary income from the use of forests and jungles. • Increase competitive capacities in the management of natural resources at the community level.
Agroforestry – basic cultivation (corn, beans, fruit trees)	<ul style="list-style-type: none"> • Training and technical assistance for intercropping (<i>milpa</i>) and family gardens (diversified production). • Promote agroforestry systems. • Recover the management of biodiversity in family gardens. • Establish rainwater management systems and restore water tables. • Conserve seed of locally adapted (<i>criollo</i>) varieties. • Maintain the <i>milpa</i> concept of diversified production. • Eradicate agricultural practices that cause environmental degradation. 	<ul style="list-style-type: none"> • In-situ conservation of agrobiodiversity and the evolution of native species. • Reduction of pest and disease damage. • Avoid the risk of ecosystem services deteriorating or diminishing. • Reduce or avoid deforestation and the degradation of natural resources. 	<ul style="list-style-type: none"> • Improved food security and diets. • Conservation of the social value of native cultivars. • Recognition of traditional knowledge. • Decreased risk due to climatic events, alongside increased income and productivity for producers. • Improved links to more diverse markets as a result of surplus production.
Agroforestry – extensive livestock ranching, silvopastoral activities	<ul style="list-style-type: none"> • Increase food production based on the diversification of pastures and legumes. • Incorporate food processing technologies. • Semi-established herd structure. • Incorporate living fences and divide pastures to manage pasture area and rotate grazing animals. 	<ul style="list-style-type: none"> • Reduce the use of fire in paddocks. • Reduce GHGs. • Intensify animal production by increasing yield (and thus reducing paddock area). • Incorporate various species in livestock management. • Incorporate trees (at low density) in deforested areas. 	<ul style="list-style-type: none"> • Increased income and wealth (more assets in animal production units). • Increased sustainable productivity. • Increased need for labor, which generates employment. • Stronger technical capacity to manage natural resources and livestock.



Productive system	Proposed activities supported under the project	Deviation from baseline scenario and expected benefits	
		Environmental benefits	Socio-economic benefits
	<ul style="list-style-type: none"> • Manage and conserve water sources. • Monitor the incorporation of agroforestry practices. • Incorporate the value of conservation in the livestock production chain. 	<ul style="list-style-type: none"> • Reduce impacts on soils from overgrazing. • Reduce deforestation in areas adjacent to pastures. • Manage streams and waterways. • Increase resilience to effects of climatic events. 	<ul style="list-style-type: none"> • Reduced production costs. • Diversification of income from byproducts derived from silvopastoral production (sales of food from silos, stakes for planting, sales of fodder and seed, etc.).
Agroforestry – beekeeping/honey production	<ul style="list-style-type: none"> • Provide technical assistance in managing apiaries. • Increase organic honey production by learning principles of landscape management. • Promote the management of native bees (<i>Melipona</i> spp.). • Develop the differentiation of types of honey and associated products or derivatives. • Improve coordination of the links along the value chain for agroforestry products (e.g., collection centers, honey processing) 	<ul style="list-style-type: none"> • Preserve biodiversity in the <i>pecoreo</i> areas (areas where bees forage for pollen and nectar). • Guarantee pollination. • Decrease the risk of deforestation. • Contribute to natural regeneration. 	<ul style="list-style-type: none"> • Stronger social organization through territorial management. • Improved productivity derived from pollination. • Improved options for landless producers. • Diversified production and profits. • Improved capacities and competitiveness. • Differentiated and specialized markets are accessed with a greater possibility of generating profits. • Increased income and wealth (more assets in production units). • Beauty of the landscape is increased and recovered.
Agroforestry – commercial cultivation (coffee and cacao)	<ul style="list-style-type: none"> • Enrichment with native and fruit species. • Individual or community nurseries (with varieties with favorable agroclimatic response and local varieties tolerant to rust). • Program of renovation, gradual and according to productive capacity (with varieties with favorable agroclimatic response and local varieties tolerant to rust). • Pest control and management. • Community agreements for the exploitation of other species within the agroforestry system. • Strengthening and maintaining basic infrastructure (drying yards, storage warehouses). • Strengthening agro-industry (financing schemes to acquire specialized machinery to guarantee added value). • Continuous training in agroforestry, agro-industrial, and commercial management. 	<ul style="list-style-type: none"> • Maintenance of ecosystem services (biodiversity, water quality, etc.). • Increase in soil fertility. • Decrease in forest fires. • Reduction of CO₂ emissions and, where appropriate, gradual increase. • Increased connectivity. • Increase resilience to climatic events. 	<ul style="list-style-type: none"> • Production steadily maintained throughout the year (rather than seasonal production based on a single product). • Men and women incorporated into the rural economy. • Slow changes in forest land use. • Guaranteed ecosystem services. • Stronger niche markets for high-quality products. • Stronger local governance. • Increased income and wealth (more assets in production units).



Productive system	Proposed activities supported under the project	Deviation from baseline scenario and expected benefits	
		Environmental benefits	Socio-economic benefits
Wildlife management units (UMAs)	<ul style="list-style-type: none"> • Study of populations of valuable species. • Technical support to develop studies on species population dynamics and the relationship between reproduction and overexploitation. • Seek financing and other support (technical) to establish Environmental Management Units (UMAs). • Support polygon mapping of areas to be used • Development of habitat management plans and development management plans. • Training in the management of species of interest for UMAs (options, advantages and limitations, costs and benefits). • Training on the status of species (number of individuals, biological cycles, food habits, habitat conditions, and health status of the population within each unit). • Development of monitoring capacity and plans. • Product certification. • Training to complete documentation required to register UMAs. 	<ul style="list-style-type: none"> • The use of natural resources, in a controlled and supervised way that guarantees their conservation. • Land considered idle can be dedicated to conservation, generating environmental goods and services of incalculable value. • Environmental degradation slowed, possibly reversed. • Viable population numbers maintained. 	<ul style="list-style-type: none"> • Social and economic development of local communities, and in general, of the owners of the resource, are favored by the establishment of UMAs; local communities assume responsibility for UMAs and their proper functioning. • Coexistence and the integral development of the community are promoted, generating support and resources to satisfy the basic needs of the population. • Autonomous management promoted as communities decide how to develop productive subprojects to use natural resources sustainably. • Economic alternatives such as ecotourism are generated. • Improved environmental education.
Ecotourism	<ul style="list-style-type: none"> • Diagnosis of ecotouristic attributes. • Rehabilitation of ecotourism centers. • Identification of target markets and adequate promotion. • Expand information on biological value. • Connect with niche markets. • Strengthen business and service capabilities. • Equip tourist centers. • Design tourist products. • Agreements to generate local processes for providing tourism services and use of resources. • Promotion of links with ecotourism. 	<ul style="list-style-type: none"> • Conservation of biodiversity based on its scenic values. • Tree cover maintained and landscape restoration encouraged. 	<ul style="list-style-type: none"> • Jobs generated that can incorporate vulnerable groups. • Forested area assessed for tourist education and hiking. • Strengthened governance based on agreements for the use of common resources. • Income generated without exploiting land. • Potential for the valorization of culture. • Contribution to knowledge of local biodiversity based on interpretive guides. • Solid waste management.

Economic analysis of potential activities under specific interventions to achieve sustainability

8. The economic analysis of the proposed project was based on seven sustainable productive systems that will be the focus of important investments under the project, mainly under Component 2: sustainable forest management, sustainable ranching, and sustainable honey, cacao, coffee, agro-silvopastoral, and



intercropped maize systems. The project will also invest in management units for wildlife conservation (UMAs) and ecotourism. These latter two efforts are difficult to evaluate, as an economic valuation on a per hectare basis is difficult to make. Even so, positive incremental returns are expected from these systems, and their estimated returns represent the lower bound of the economic benefits anticipated from the Project. Through the systems evaluated for an investment of US\$36 million, leveraged through a loan guarantee fund of US\$6 million of GEF financing and counterpart funding of US\$6.05 million, also leveraged for the loan guarantee fund, for Subcomponent 2.2, the expected net present value (NPV) is estimated at US\$15.33 million, or an economic internal rate of return of 22%. Benefits are expected in terms of value addition via the improved production resulting from the application of better and more sustainable production practices and technologies, along with associated broader social and environmental benefits (such as improving land/soil productivity). Financial benefits are expected from (i) increasing sustainable investments through access to credit and (ii) penetration into more remunerative domestic and international markets.

9. A detailed estimate of the return on investment is presented below. It is based on the estimated increase in profitability from the adoption of sustainable productive practices in the seven systems, relative to the situation that would have prevailed in the absence of the project. The estimates are based on cost-benefit information from scientific studies and costs provided by government entities. The investments will cover 200,000 hectares of sustainable productive landscape, 150,000 of which will be in sustainable community forest management, yielding the highest rates of return. The tables that follow present estimates of the distribution of land area and beneficiaries within each region, as well as the area covered by each of the seven systems.

10. The cost-benefit analysis did not include externalities or incremental benefits from environmental services, which will be obtained during project implementation as part of M&E. The benefits are expected to arise from using the best production practices, from ending the expansion of the agricultural frontier, and from restored and conserved landscapes that lead to improved welfare locally, regionally, and globally. Additional incremental benefits obtained through Component 1 are expected to be extremely large but cannot be quantified yet; they will arise from aligning programs and policies around sustainability criteria (biodiversity conservation, climate change mitigation, sustainable management of forests and productive activities, and the associated provision of ecosystem services). The development of territorial plans in the 7 regions and 14 sites is also expected to contribute significantly to environmental benefits, resulting in economic benefits that will be measured over the course of implementation. The incremental benefits from the mitigation of GHG emissions are also expected to be positive and significant, and will be monitored closely during implementation.

11. The Project focuses on nine types of sustainable, market-oriented production chains in the intervention sites:

- i. Sustainable forest management.
- ii. Sustainable extensive ranching.
- iii. Agro-silvopastoral systems.
- iv. Sustainable/biodiversity-friendly honey packaging and commercialization.
- v. Coffee collection centers for sustainably produced coffee and commercialization.
- vi. Cacao collection centers for sustainably produced cocoa and commercialization.
- vii. Packaging and commercialization of intercropped maize.



12. The following systems are not included in the economic and financial analysis (because their economic valuation presents difficulties), but they will be included in the project:

- viii. Environmental Management Units for wildlife conservation (UMAs).
- ix. Ecotourism.

Evaluating the systems

13. **Sustainable forest management.** To promote sustainable forest management, POs will be able to obtain capital for building sawmills that purchase sustainably produced timber and for subsequent value chain development. These investments would be managed by CONAFOR. The idea is to work with POs within an entire forestry community (10,000 hectares on average) to achieve economies of scale in sustainable production. Based on the target of 150,000 hectares, the project would work with 15 forestry communities to provide capital for 15 sawmills. A single sawmill costs approximately US\$450,000, implying a total investment in credit of US\$6,750,000 from FIRA for these investments. The cost-benefit ratio taken from the literature³⁷ is 1.22, and evaluated over a 15-year period. A discount rate of 12% is considered, corresponding to the integrated management of community forest concession systems. Annex Table 6.2 presents details on the project investment in sustainable forest management.

Annex Table 6.2: Sustainable forest management

Share of GEF project Grant used for guarantee	US\$3,375,000
Percentage of GEF funds from Component 3	56.25%
Cost-benefit index from literature	1.22
Discount rate	12%
Estimated hectares under productive landscapes	150,000 ha
Number of forestry communities benefitting	15

14. **Sustainable extensive ranching.** To sustainably manage extensive livestock production, producers will directly apply technological packages for cattle ranching, cattle fattening, and milk production that will increase productivity of livestock in a given area with management of pastures and trees. These projects would be managed by SAGARPA. The total proposed investment in credit for sustainable livestock management is US\$2,161,820, which would cover 5,621 hectares at a cost per hectare of US\$384.62. The cost-benefit ratio taken from the literature³⁸ is 1.16, applied over 15 years. See Annex Table 6.3.

³⁷ Average costs derived from the analysis of "Benefits and Costs of Participation in Forest Development Programs Related to Measures of Nationally Determined Contributions (CND)," 2016. Accessed in October 2017: https://www.gob.mx/cms/uploads/attachment/file/199516/1_CGCV_2016_Beneficios_y_costos_de_desarrollo_forestal_CDMEX.pdf.

³⁸ Average index derived from "Estudios Socioeconómicos y Ambientales de la Ganadería en México," 2015. Accessed in October 2017: <http://ciestaam.edu.mx/estudios-socioeconomicos-ambientales-la-ganaderia/>

**Annex Table 6.3: Sustainable extensive ranching**

Share of GEF project Grant used for guarantee	US\$432,364.16
Percentage of GEF funds from Component 3	7.21%
Cost-benefit index from literature	1.16
Discount rate	12%
Estimated hectares under productive landscapes	5,621 ha
Number of producer beneficiaries	637

15. **Agro-silvopastoral systems.** In this system as well, direct investments in production through SAGARPA are proposed, in the form of packages for purchasing animals and applying sustainable technology with management of pastures and trees. The total estimated investment in credit is US\$1,158,054, covering 4,909 hectares at a cost of US\$235.90 per hectare. A cost-benefit ratio of 1.2³⁹ is applied over 15 years. See Annex Table 6.4.

Annex Table 6.4: Agro-silvopastoral systems

Share of GEF project Grant used for guarantee	US\$231,610.98
Percentage of GEF funds from Component 3	3.86%
Cost-benefit index from literature	1.2
Discount rate	12%
Estimated hectares under productive landscapes	4,909 ha
Number of producer beneficiaries	1,636

16. **Sustainable/biodiversity-friendly honey collection, packaging, and commercialization.** This activity would establish 80 centers on 22,729 hectares (a production areas of 281 hectares per center) for the collection and packaging of sustainably produced/biodiversity-friendly honey for intermediate and final consumption and would enable producers to benefit from commercial credit. In other words, although the project proposes making an indirect investment in the collection centers, POs will receive incentives in the form of training in the sustainable production and collection of honey, and individual producers will be able to receive credit directly from FIRA. This system would also be supervised by SAGARPA. The total estimated investment in credit from the FIRA fund is estimated at US\$5,252,194, for a cost per hectare of US\$231. A cost benefit ratio of 1.23 is applied, with a 12% discount rate. See Annex Table 6.5.

Annex Table 6.5: Sustainable honey production

Share of GEF project Grant used for guarantee	US\$1,050,438.93
Percentage of GEF funds from Component 3	17.51%
Cost-benefit index from literature	1.23
Discount rate	12%
Estimated hectares under productive landscapes	22,729 ha
Number of producer beneficiaries	44,458

17. **Coffee collection centers for sustainably produced coffee and commercialization.** POs would receive credit to create 7–8 centers on 6,253 hectares (each center covering 833 hectares) for the collection, processing, and refinement of sustainably produced coffee. In turn, POs will work with territorial development agents to obtain technical assistance. Individual producers will also be able to obtain financial and technical support, including access to credit through FIRA. The total proposed

³⁹ Profit-cost relationship with updated flows taken from “Sistema Silvopastoral Intensivo (SSPi),” 2013. Accessed in October 2017: <http://www.ucol.mx/revaia/portal/pdf/2013/sept/3.pdf>.



investment in credit from the FIRA fund is US\$270,228, approximately US\$43 per hectare or US\$36,000 per center. The cost-benefit ratio is 1.34,⁴⁰ with a discount rate of 12%. See Annex Table 6.6.

Annex Table 6.6: Sustainable coffee production

Share of GEF project Grant used for guarantee	US\$54,045.52
Percentage of GEF funds from Component 3	0.90%
Cost-benefit index from literature	1.34
Discount rate	12%
Estimated hectares under productive landscapes	6,253 ha
Number of producer beneficiaries	2,595

18. Cacao collection centers for sustainably produced cacao and commercialization. As with coffee, the cacao system would allow producers to capture the benefits of commercialization. The estimated number of collection centers for cacao is 11–12, each covering 500 hectares for a total estimated coverage of 5,848 hectares. The cost per hectare is estimated at US\$90; the cost per center is US\$45,000. The total proposed investment in credit from the FIRA fund is US\$526,356. The estimated cost-benefit ratio is 1.29,⁴¹ with a discount rate of 12%. See Annex Table 6.7.

Annex Table 6.7: Sustainable cacao production

Share of GEF project Grant used for guarantee	US\$105,271.27
Percentage of GEF funds from Component 3	1.75%
Cost-benefit index from literature	1.29
Discount rate	12%
Estimated hectares under productive landscapes	5,848 ha
Number of producer beneficiaries	585

19. Packaging and commercialization of intercropped maize. Typical sustainable production of maize requires some intercropping with other plants such as beans and squash, a system referred to as *milpa*. The proposal is to improve the quality of maize production by using new commercial packaging technologies. This system will cover 4,640 hectares and will also be managed by SAGARPA. The total proposed investment in credit from the FIRA fund is US\$2,087,943. The cost-benefit ratio is 1.56,⁴² with a 12% discount rate. The estimated cost per technology is US\$450. See Annex Table 6.8.

Annex Table 6.8: Intercropped maize

Share of GEF project Grant used for guarantee	US\$417,588.78
Percentage of GEF funds from Component 3	6.95%
Cost-benefit index from literature	1.56
Discount rate	12%
Estimated hectares under productive landscapes	4,640 ha
Number of producer beneficiaries	4,516

⁴⁰ The cost-benefit ratio was estimated in relation to average coffee production in Mexico over 2000–12. Data taken from “La producción de café en México: Ventana de oportunidad para el sector agrícola de Chiapas,” 2015. Accessed October 2017: http://www.espacioimasd.unach.mx/articulos/num7/pdf/produccion_cafe.pdf.

⁴¹ Estimated costs reference the year 2000 in relation to the cost/benefit reported in “Programa estratégico de necesidades de investigación y transferencia de tecnología para la cadena agroindustrial de cacao en México,” 2003. Accessed October 2017: <http://www.cofupro.org.mx/cofupro/Publicacion/Archivos/penit94.pdf>.

⁴² Average index derived from the performance of the 5 states with the highest production value and area sown in 2013, according to “Empresas familiares y cultivo de maíz: Caracterización de costos de producción y relación costo beneficio,” 2015. Accessed in October 2017: <http://132.248.9.34/hevila/Staobillekilaltalekilabel/2015/no9/3.pdf>.



20. **Management units for wildlife conservation (UMAs) and ecotourism.** The coverage of these systems is not known, and they are difficult to value, but it is assumed that US\$200,208, or 3.34% of GEF resources, will be used to provide a guarantee for FIRA for UMAs, and US\$133,472, or 2.22%, will be used to provide a guarantee for ecotourism activities that can be funded through FIRA credit.

Sustainable productive landscape area and number of beneficiaries, by region and type of activity

21. Annex Tables 6.9 and 6.10 present the area and number of beneficiaries in each region where sustainable productive activities in forestry will be undertaken. Annex Table 6.10 presents the same information for all of the other types of sustainable productive activities.

Annex Table 6.9: Estimated area and number of beneficiaries reached by sustainable productive activities in forestry, by region

Region	Productive activities	Hectares with sustainable practices	Average number of hectares per producers	Number of beneficiary communities	
1	Chihuahua–Durango	Sustainable forestry management	81,000	10,000	8
3	Jalisco	Sustainable forestry management	25,000	10,000	3
4	Sierra Madre Oriental	Sustainable forestry management	19,000	10,000	2
5	Oaxaca	Sustainable forestry management	5,000	10,000	1
6	Cuenca del Usumacinta	Sustainable forestry management	20,000	10,000	2
Total		150,000			15

Annex Table 6.10: Estimated area and number of beneficiaries reached by sustainable productive activities in all other systems (excluding forestry, UMAs, and ecotourism), by region

Region	Productive activities	Hectares with sustainable practices	Average number of hectares per producers	Number of indirect beneficiaries	Number of direct beneficiaries for credit (assuming 38% take up)	
1	Chihuahua–Durango	Sustainable extensive ranching	500.00	6.50	77	29.00
2	Coahuila	Sustainable extensive ranching	500.00	6.50	77	29.00
3	Jalisco	Sustainable coffee	500.00	2.00	250	95.00
4	Sierra Madre Oriental	Intercropped maize	4,000.00	1.50	2,667	1,013.00
		Sustainable honey production	13,229.00	0.50	26,458	10,054.00
		Sustainable coffee	3,253.00	2.20	1,479	562.00
5	Oaxaca	Sustainable coffee	500.00	2.50	200	76.00
		Sustainable honey production	1,000.00	0.50	2,000	760.00
		Intercropped maize	640.00	3.00	213	81.00
6	Cuenca de Usumacinta	Sustainable extensive ranching	1,405.18	10.00	141	73.32.00
		Sustainable cacao	5,848.41	10.00	585	304.20
		Agro-silvopastoral	4,909.15	3.00	1,636	850.72
		Sustainable coffee	1,563.19	3.00	521	270.92
		Sustainable honey production	5,682.27	0.75	7,576	3,939.52
7	Yucatan Peninsula	Sustainable extensive ranching	500.00	7.00	71	27.00
		Sustainable honey production	1,000.00	1.00	1,000	380.00
Total		50,000.00		52,792	20,061.00	



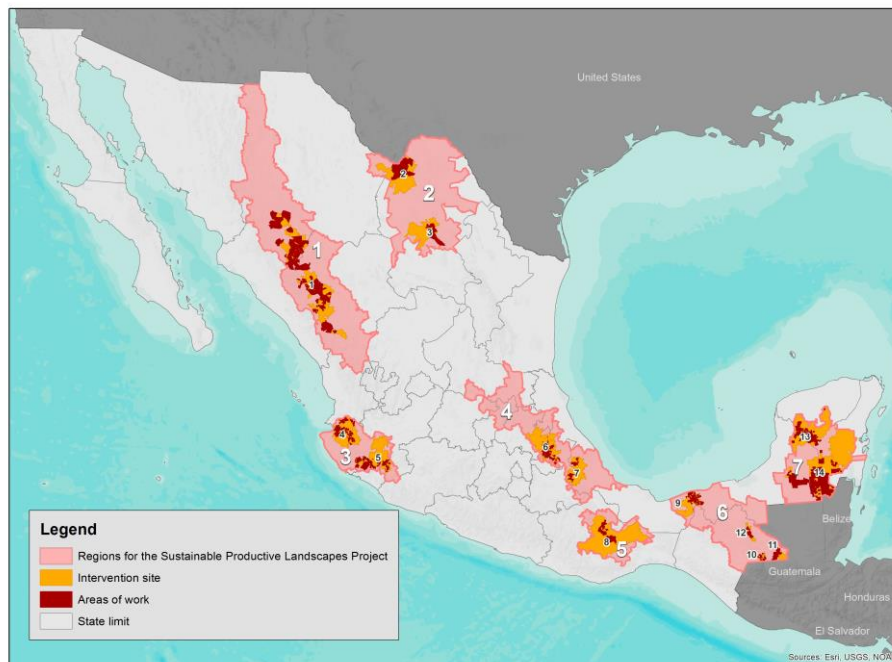
ANNEX 7: SITE SELECTION METHODOLOGY

COUNTRY: Mexico

Mexico: Sustainable Productive Landscapes

1. The project will be implemented across seven priority regions (Annex Figure 7.1),⁴³ identified based on criteria that included their representativeness as priority sites for biodiversity conservation, ecological connectivity, land and forestry management activities, climate vulnerability and anthropogenic threats (land degradation, deforestation, forest degradation), ecosystem services, and agricultural production activities: **(1) Chihuahua-Durango, (2) Coahuila, (3) Jalisco, (4) Sierra Madre Oriental, (5) Sierra Norte de Oaxaca, (6) Usumacinta Basin, and (7) Yucatán Peninsula**. Within these regions, 14 priority intervention areas have been selected for the project, comprising about 3 million hectares, covering 15 states, 106 municipalities, and 569 agrarian units (ejidos and agrarian communities). These areas overlap with 29 protected areas (18 federal state, 6 local state, 4 certified, and 1 private).

Annex Figure 7.1. Priority regions for the Sustainable Productive Landscapes Project



Process for selecting priority regions

⁴³ *Priority regions* include regions that are priorities for terrestrial biodiversity conservation, where the different agencies participating in the project have programs of work. These broader regions are “first-level reference zones” that are useful for scale analysis, and without which it would be difficult to understand local processes, capacities, and problems. They also constitute a reference point for extrapolating results generated by concrete project actions. *Intervention sites* include sites within the priority regions, corresponding to specific zones in which the inter-agency activities will be implemented. Productive alliances will be created to meet the multi-faceted goals established within the project framework. These sites were selected using information from the participating agencies.



2. Various institutions involved with the project (CONAFOR, CONANP, CONABIO, SAGARPA, INECC, SEMARNAT) provided information to define the priority regions selected for the project. Annex Table 7.1 summarizes the criteria that were used.

Annex Table 7.1: Criteria used to define priority regions for the Sustainable Productive Landscapes Project

Region	Criteria
Chihuahua–Durango	Defined primarily by its importance for biological connectivity, areas with forestry management plans, and biological importance according to the Biodiversity Information System. The region was delimited by municipalities that belong to both states that have areas with forest management and are within the Corridor of Sierra Madre Occidental, defined by CONANP.
Coahuila	Defined by activities in forest management and priority activities in pastoral lands of Coahuila, defined by CONANP. The region is delimited by municipalities that belong to the state and are within the Corridor of Desierto Chihuahuense, defined by CONANP.
Jalisco	Defined by coordination activities carried out by four inter-municipal councils of the State of Jalisco (JICOSUR, JIRA, JISOC Y JIRCO) and the three institutions (CONABIO, CONANP, and CONAFOR), based on forestry management and Natural Protected Areas, and criteria related to high biodiversity in the Ameca biocultural landscape.
Sierra Madre Oriental	Defined by municipal limits that fall within the ecological corridor of Sierra Madre Oriental; including municipalities in the State of Veracruz, that make up the priority basins of Tuxpan, Cazonces, Tecolutla, and Nautla Rivers, which empty into the Gulf of Mexico. The region also coincides with the limit of the marine reef corridor of Veracruz. These municipalities are important for forest management and high biodiversity, as well.
Sierra Norte de Oaxaca	Defined by high biodiversity, forest management within the Corridor of Oaxaca, and the presence of priority ecosystems, primarily in mountainous forests.
Usumacinta Basin	Defined by municipalities that make up the basin of the Usumacinta River, which crosses the States of Tabasco and Chiapas, and are recognized as having high levels of biological wealth, including priority landscapes such as Lacandona and Centla.
Yucatan Peninsula	This region is the only project region that is not defined by municipalities, owing to their very large size. Instead it is defined by ejidos with considerable experience in forest management in areas of high biodiversity.

3. The first step was to standardize the cartography provided by the different governmental agencies, using a geographic information system (GIS) and the Lambert Conformal Conical Projection and Datum World Geodetic System 84 parameters. The regions were defined and characterized through a series of iterations in which maps were overlaid and areas and percentages of areas were calculated.

4. For this process, CONABIO provided maps that included sites with high levels of biodiversity. The biological criteria used by CONABIO to define priority terrestrial regions in Mexico followed the methodology of Arriaga et al. (2000).⁴⁴ Threats and tangible conservation opportunities were included as additional criteria to further define the boundaries generated by CONABIO. The national scientific community provided inputs to validate these geographic limits. The delimitation process carried out in CONABIO was based on an analysis of the physical environment, including topography (1:250,000), the presence of drainage divides, edaphic and geological substratum, and type of vegetation (1:1,000,000), as well as other regional characteristics such as the areas under National Protected Areas System and the watershed divisions.

⁴⁴ Arriaga, L., J.M. Espinoza, C. Aguilar, E. Martínez, L. Gómez and E. Loa (coordinators) (2000), *Regiones terrestres prioritarias de México*. Comisión Nacional para el Conocimiento y uso de la Biodiversidad, Mexico City.



5. CONANP identified criteria for establishing high-priority sites for connectivity between natural protected areas: (a) gaps analysis for terrestrial conservation and the index for ecological similarity coordinated by CONANP and CONABIO (CONABIO et al. 2007, 2010), which generated medium, high, and extreme priority sites; (b) prioritization of vegetation, taking into account the representativeness of the types of vegetation in protected areas and the historic loss of area under protection; (c) fragmentation, corresponding to morphological spatial pattern analysis: forest core, fragment, perforation, edge, etc.; and (d) connectivity in reference to the distance between protected areas and the risk of deforestation.

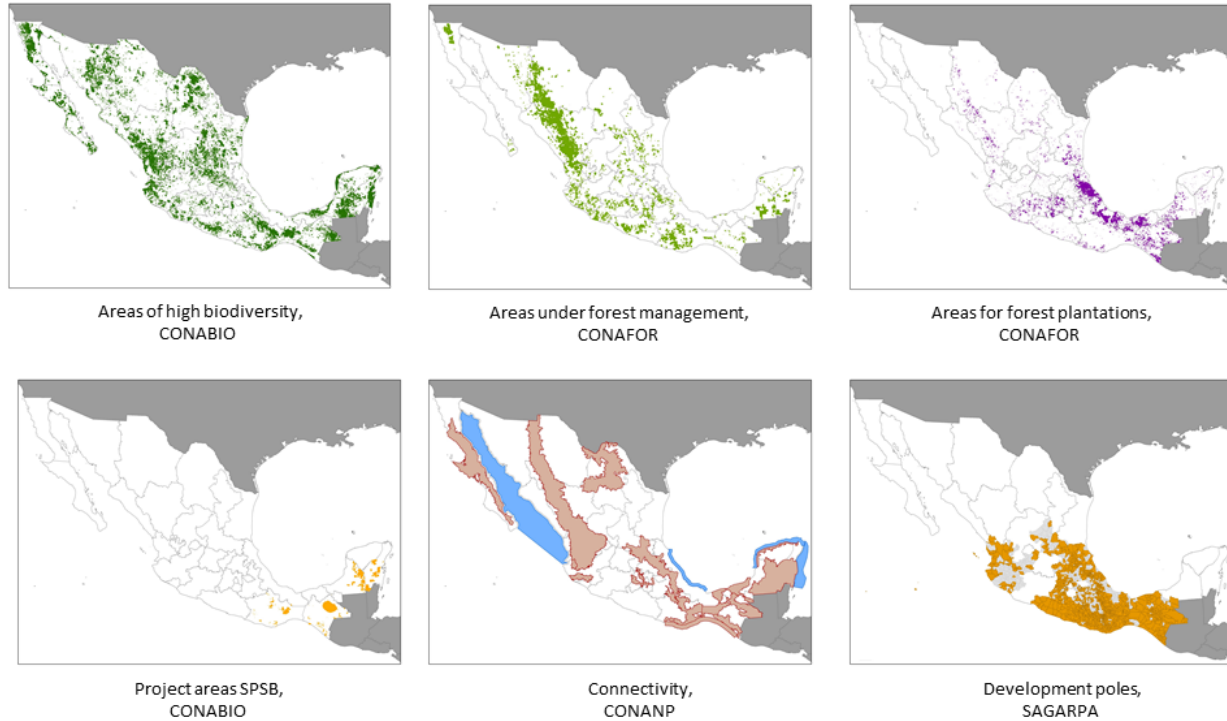
6. CONAFOR provided maps of forest plantations and forests with productive areas (key geographical information outlining the main forest areas of Mexico) as well as information on anthropogenic soil degradation. Forest zoning data (conservation and restricted or prohibited use zones, production zones, restoration zones) and the National Forestry Inventory, overlaid with states and registered forestry production associations, allowed the delineation of Forest Management Units, which are the basic unit of management for sustainable forestry production in Mexico. Zones were also assessed according to their (a) potential for timber production; (b) historic evidence of forest use; (c) links with the forest industry or location near industrial sites for the transformation of raw forest materials; (d) availability of specialized technical assistance for forestry use and development of the forestry industry; (e) established and functioning forestry production organizations (strong local governance); and (f) basic studies and information that facilitate the characterization and identification of development opportunities. The extent of soil degradation caused by environmental factors (chemical degradation, wind and water erosion, biological degradation) interacting with soil types, topography, and climate, as well as human factors such as agricultural and livestock activities (overgrazing), were also spatially identified and integrated into the maps.

7. Lastly, SAGARPA provided maps of national focal areas for rural development, where the ministry is coordinating large-scale technological interventions to boost agricultural and livestock productivity. The focal areas are selected based on criteria of infrastructure, mobility, and urban-rural connectivity, and interventions in those areas are intended to stimulate the development of strategic agro-clusters.

8. Annex Figure 7.2 shows some of the maps that were superimposed to select the priority regions based on areas that met the different criteria and variables provided by each participating institution. One of the most important processes in managing all of this information was to link the maps of forest management, forest plantations, and the regions in which the Sustainable Productive Systems and Biodiversity Project (previous GEF project) is implemented, together with the maps of biodiversity, connectivity, and development poles. This exercise identified areas that are important for their productive capacity and biological wealth.



Annex Figure 7.2: Maps with selection criteria for Sustainable Productive Landscapes Project



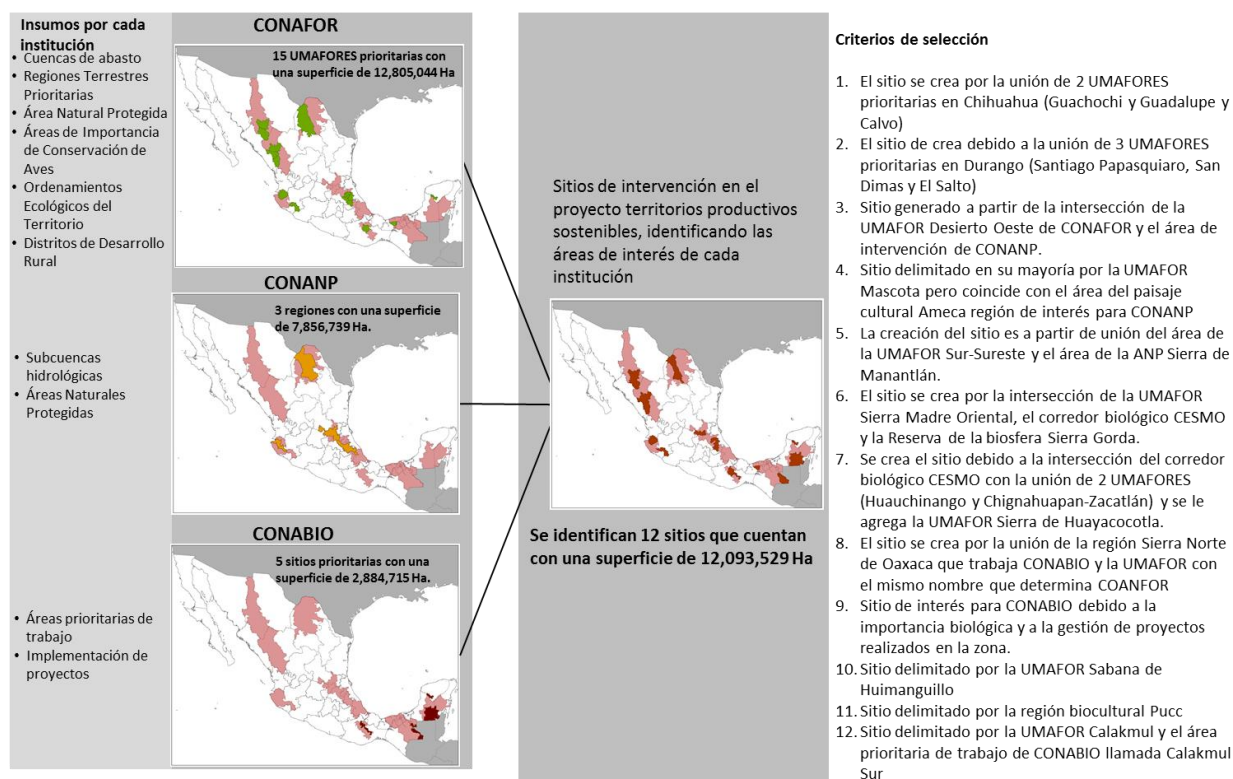
Process for selecting intervention sites

9. The same mapping approach was followed to select intervention sites within each region. Overlaps were identified in 12 specific areas that represent 12,093,529 hectares or 27 percent of the total area of the 7 priority regions. Within those 12 areas, 14 specific sites were selected for interventions under the Sustainable Productive Landscapes Project, based on the critical characteristics in each region discussed previously.

10. Annex Figure 7.3 illustrates site selection process. The 14 sites cover an area of 3,659,252 hectares, of which 3,000,000 hectares are within the scope of federal, state, and local landscape platforms concerned with conservation and land use change, including landscape management plans. Of this, 200,000 hectares will be directly affected by project investments in productive activities at the producer group and producer levels. Annex Table 7.2 provides geolocation details of the 7 priority regions in the 14 intervention sites selected.



Annex Figure 7.3: Process for selecting intervention sites for the Sustainable Productive Landscapes Project



Annex Table 7.2: Geolocation details for 7 priority regions and 14 intervention sites, Sustainable Productive Landscapes Project

Region	Area (ha)	No. municipalities	Intervention site	No. municipalities	Total no. of agrarian units	Area (ha)	No. of agrarian units in selected area of work	Area in selected areas of work(ha)
Chihuahua–Durango	15,129,921	39	1	14	122	2,352,327	65	1,067,068
Coahuila	9,094,730	18	2	2	25	984,829	11	285,182
			3	4	21	644,330	11	133,382
Jalisco	3,401,942	52	4	12	73	662,565	33	137,794
			5	35	212	777,960	56	146,444
Sierra Madre Oriental	6,442,970	267	6	45	331	715,264	106	70,071
			7	40	189	415,317	23	35,178
Oaxaca	2,687,831	188	8	159	287	1,663,146	22	91,928
Cuenca del Usumacinta	6,034,306	69	9	6	149	355,964	80	54,680
			10	1	17	54,567	10	17,266
			11	2	29	130,675	15	53,307
			12	2	16	68,241	9	25,793
Península de Yucatán	5,636,834	18	13	10	186	1,100,074	58	199,401
			14	6	206	2,286,166	70	682,506
Total		651		338	1,863	12,211,424	569	3,000,000



ANNEX 8: SITUATIONAL ANALYSIS PER INTERVENTION SITE

COUNTRY: Mexico

Mexico: Sustainable Productive Landscapes

REGION/SITE	A. Ecoregions (Level 4)/Coverages	B. Focus on biodiversity (species and status)	C. Current issues (land degradation, forest management, biodiversity, and climate change)	D. Drivers	E. Possible Courses of action	F. Additionality rationale	G. Efforts by GEF and WB in the TPS intervention sites
CHIHUAHUA-DURANGO							
Site 1	3 Ecoregions (98% mountain range covered with coniferous, oak and mixed forests) Forest coverage 76%	Of a total of 2,263 species reported in the SNIB, 145 are found in NOM 059 and 485 in IUCN's Red List Some species of global importance for their conservation: Marbled Peeping Frog (<i>Eleutherodactylus saxatilis</i>) Imperial Woodpecker (<i>Campephilus imperialis</i>) Maroon-Fronted Parrot (<i>Rhynchopsitta terrisi</i>) Sierra Madre Sparrow (<i>Xenospiza baileyi</i>) Greater Long-Nosed Bat (<i>Leptonycteris nivalis</i>) Sonoran Palmetto (<i>Sabal uresana</i>) Feathery Thorns	Tree loss: 0.7%, and biodiversity due to forest degradation Land degradation: Low-Moderate Low competitiveness in forest management, lack of added value in chains Dramatic changes in weather. Degradation of tree cover caused by fragmented efforts, lack of governance mechanisms, isolation of logging sites, lack of cooperative schemes, and poor forest management. Limited access to	Unsustainable uses of forests Limited biodiversity-related criteria in forest management plans Degradation of the forest mass (for example, forest fires) Lack of competitiveness in forest value chains	Strengthening the forest supply chain Added value to forest by-products and waste Use of credit (financial instruments) for infrastructure financing Integral landscape management Integrated fire management practices, requirements Forest use and management Energy forests	The business schemes of farmer organizations are strengthened by making investments for the development of production capabilities, which in conjunction with adequate financing facilities and the development of best agroforestry management practices would add value, create jobs and diversify production on a sustainable basis.	Background of GEF Projects with executing agencies: CONANP, CONAFOR. SINAP 1 and 2 (GEF-WB) PROCYMAF 1 and 2 (GEF,WB) Background of GEF Projects with executing agencies: CONANP, CONAFOR. SINAP 1 and 2 (GEF-WB) PROCYMAF 1 and 2 (GEF,WB) WORLD BANK/CONAFOR Project ""Strengthening Entrepreneurship



		Cactus (<i>Mammillaria pennispinosa</i>) Coneto Cactus (<i>Mammillaria theresae</i>)	financing		Support to community-based tourism activities, diversified/sustainable cattle ranching and wildlife management areas. Support to conservation farming and cattle ranching activities (ecological agriculture, grassland and pasture management)		in Productive Forest Landscapes Project”
COAHUILA							
Site 2	3 Ecoregions (49% Plains in the Chihuahuan Desert central area covered with xerophytic microphilic-halophytic vegetation) Forests and vegetation: 92%	Intervention Site 2 has 321 species that are on the IUCN Red List, 145 species on the NOM059 list of a total of 1,093 species reported in the SNIB. For Intervention Site 3, SNIB has a total of 1,179 species, and the	Tree loss: 7,4% (2) - 11,5% (3) Unsustainable or illegal development of non-timber products and products with no sustainability bases (candelilla shrubs, lechuguilla, oregano,	Unsustainable extraction and harvesting (extraction of candelilla shrubs without population studies results in poor forestry programs and loss of xeric shrubs).	Sustainable cattle ranching systems that rely on soil and water conservation practices Adoption of energy-efficient technologies and use of renewable energies	The project will enhance forestry activities and create enabling conditions to diversify management and use of species on sustainable bases (e.g., candelilla shrubs,	Background of GEF Projects with executing agencies: CONAFOR-CONANP. SINAP 1 and 2 (GEF-WB) WORLD BANK/CONAFOR



<p>Site 3</p>	<p>4 Ecoregions (51% Knolls and low-lying mountain ranges in the north Chihuahuan Desert with xerophilous microphile-rosetophilic scrubs) Forests and vegetation: 87%</p>	<p>NOM059 list contains only 113 species and the IUCN Red List contains 410 species.</p> <p>Examples of species of global importance in the region include:</p> <p>Blue-Spotted Spiny Lizard (<i>Sceloporus cyanostictus</i>) Coahuilan Box Turtle (<i>Terrapene Coahuila</i>) Thick-Billed Parrot (<i>Rhynchopsitta pachyrhyncha</i>) Maroon-Fronted Parrot (<i>Rhynchopsitta terrisi</i>) Mexican Prairie Dog (<i>Cynomys mexicanus</i>) Lesser Long-Nosed Bat (<i>Leptonycteris yerbabuena</i>) Aguirre's Cactus (<i>Acharagma aguirreanum</i>) Bulbspined Little Prickly Pear (<i>Grusonia bulbispina</i>)</p>	<p>etc.).</p> <p>Land degradation is Low-Moderate</p> <p>Extreme weather events</p> <p>Unsustainably managed extensive cattle ranching</p>	<p>Land use changes for grazing purposes (desert conditions).</p> <p>Over-exploitation of commercial species due to ignorance of unsafe conditions.</p> <p>Farming and cattle ranching activities that encroach into natural habitats</p>	<p>Wildlife Management in key species in extensive WMAs, both for fauna and flora.</p> <p>Strengthening the value chains of non-timber forest species that achieve zero deforestation, development of companies and financing mechanisms.</p> <p>Sustainable cattle ranching</p> <p>Forestry and cattle ranching management</p> <p>Non-timber forestry activities, including medicinal plants.</p> <p>Specialized tourism with a focus on particular segments (extreme sports, nature, rural tourism, bird watching, etc.)</p>	<p>lechuguilla, oregano). Production management in the region will be improved through assessments of land use capacity, provided that the framework for integrated landscape management ensures that cattle ranching takes priority in less vulnerable areas.</p>	<p>Project “Strengthening Business in Productive Landscapes”</p>
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JALISCO							
Site 4	<p>7 Ecoregions (60% Jalisco's Western Mountain Range covered with coniferous, oak and mixed forests) Forests and vegetation: 59%</p>	<p>For Intervention Site 4, of a total of 2,242 species reported in the SNIB, 187 are found in NOM 059 and 654 in IUCN's Red List.</p> <p>For Intervention Site 5, SNIB has a total of 4,455 species, and the NOM059 list contains only 339 species and the IUCN Red List contains 904 species.</p> <p>Examples of species of global importance in the region include:</p>	<p>Tree loss: 0,9% (4) and 2,5% (5).</p> <p>Land degradation is Moderate.</p> <p>Risks of natural disasters</p> <p>Production activities: timber and non-timber forest activities; agriculture (avocado, berries, coffee, pitaya, cane, agave) and cattle ranching, tourism (some ecological initiatives).</p>	<p>Cattle ranching in areas covered with tropical deciduous and conifer forests.</p> <p>Over-exploitation and illegal logging are the most important factors driving forest degradation and loss of biodiversity.</p> <p>Intensification of agriculture, increased use of agrochemicals (without specific management practices), which</p>	<p>Production change by implementing forestry/cattle ranching and agroforestry systems</p> <p>Promotion of agroecological practices in commercial agriculture areas</p> <p>Use of production systems that feed into local markets with export potential and financial instruments provided by inter-municipal councils.</p>	<p>A virtuous relationship between rural and urban areas is fostered by advancing local PES mechanisms, ecotourism, local markets and diversified businesses.</p> <p>Governance schemes are promoted by strengthening, for instance, inter-municipal councils.</p>	<p>Background of GEF Projects with executing agencies: CONAFOR, CONAFOR-CONABIO. SINAP 1 and 2 (GEF-WB) PROCYMAF 1 and 2 (GEF,WB)</p> <p>WORLD BANK/CONAFOR Project "Strengthening Entrepreneurship in Productive Forest Landscapes Project"</p>



<p>Site 5</p>	<p>11 Ecoregions (37% Knolls and mountain ranges covered with coniferous, oak and mixed forests) Forests and vegetation: 47%</p>	<p>Smith's Pygmy Robber Frog (<i>Craugastor hobartsmithi</i>) Tancitaran Dusky Rattlesnake (<i>Crotalus pusillus</i>) Lilac-Crowned Parrot (<i>Amazona finschi</i>) Yellow Headed Parrot (<i>Amazona oratrix</i>) Imperial Woodpecker (<i>Campephilus imperialis</i>) Jaliscan Spiny Pocket Mouse (<i>Heteromys spectabilis</i>) Lesser Long-Nosed Bat (<i>Leptonycteris yerbabuena</i>) Magdalena Rat (<i>Xenomys nelsoni</i>) Snowball Cactus (<i>Rhamnus capreifolia</i>) Mameyito (<i>Saurauia serrata</i>)</p>	<p>Illegal forestry, extraction of precious woods, water pollution, rogue logging. Unsustainably managed mining, agriculture and cattle ranching; Land use change (avocado in forest areas) and soil degradation resulting from agrochemicals. Declining timber and non-timber forestry</p>	<p>causes chemical and physical degradation of soils. Urban areas have a significant impact on the integrity of ecosystems, mainly by discharging municipal and industrial waste into rivers and water bodies.</p>	<p>Production diversification through ecotourism associated with local value chains Support to Maize Intercropped with Fruit Trees (MIAF) sub-projects.</p>	<p>Commercial agriculture develops steadily as a result of sustainability requirements based on bio-labeled products and certification of good organic production practices Development of financial instruments to support local value chains and markets generates economies of scale based on local production.</p>	
<p>EASTERN SIERRA MADRE</p>							
<p>Site 6</p>	<p>7 Ecoregions (40% Knolls and mountain ranges covered with coniferous, oak and mixed forests) Forests and vegetation: 31%</p>	<p>Intervention Site 6 has 665 species that are on the IUCN Red List, 230 species on the NOM059 list of a total of 3,587 species reported in the SNIB. For Intervention Site 7, SNIB has a total of 5,245 species, and the NOM059 list contains only 230 species and</p>	<p>Tree loss: 2,4% (6) AND 1% (7) Production activities: forestry, coffee crops, milpa (both sustainable and unsustainable), handicrafting, aquaculture, and cattle ranching.</p>	<p>Farming/cattle ranching and encroachment of agriculture Extensive cattle ranching involves deforestation and land erosion. Limited and scattered policies on small farms</p>	<p>Agroforestry change of conventional cattle ranching and farming (shade-grown coffee, Maize Intercropped with Fruit Trees (MIAF) and forestry/cattle ranching systems) Development of agroecological practices</p>	<p>Capitalize on best practices and experiences related to integrated landscape management through innovation networks will enable the region to reduce degradation and</p>	<p>Background of GEF Projects with executing agencies: CONAFOR, CONANP, FMCN-WB. Coastal basins in the context of climate change (C6) WORLD</p>
<p>Site 7</p>	<p>9 Ecoregions (49% Knolls and</p>		<p>Uncontrolled burning</p>				



	<p>mountain ranges covered with coniferous, oak and mixed forests) Forests and vegetation: 30%</p>	<p>the IUCN Red List contains 1,076 species.</p> <p>Examples of species of global importance in the region include:</p> <p>Giant False Brook Salamander (<i>Isthmura gigantea</i>) Kemp’s Ridley Turtle (<i>Lepidochelys kempii</i>) Red-Crowned Parrot (<i>Amazona viridigenalis</i>) Black-Polled Yellowthroat (<i>Geothlypis speciosa</i>) Black-Handed Spider Monkey (<i>Ateles geoffroyi</i>) Mexican Agouti (<i>Dasyprocta mexicana</i>) Perote Deer Mouse (<i>Peromyscus bullatus</i>) Tepejilote ancho (<i>Chamaedorea klotzschiana</i>) Snowball Cactus (<i>Mammillaria humboldtii</i>)</p>	<p>and illegal logging.</p> <p>Intensive agriculture (potato and corn), with a change in land use and rogue logging as a result.</p> <p>Land degradation varies from High to Severe</p> <p>Illegal logging and scattered developments. "Diffuse" land tenure</p> <p>Weather events (changing sowing dates, shorter growing cycles)</p> <p>“Ejidos” (communal lands) in small areas covering various production activities: forestry, coffee crops, handicrafting, aquaculture, and cattle ranching.</p> <p>Threats to biodiversity due to uncontrolled burning, illegal trafficking in species and illegal logging.</p>	<p>facing regional organization issues</p> <p>Excessive use of agrochemicals that cause soil degradation (acidification) and chemical contamination of water bodies</p> <p>Unsustainable tourism</p> <p>Illegal trade in flora and fauna species</p> <p>Forest fires</p>	<p>(biofertilizers, green fertilizers, etc.)</p> <p>Integrated fire management practices, requirements</p> <p>Diversified forest use that reconciles</p> <p>Ecotourism, Wildlife Management (WMA) and environmental services schemes.</p> <p>Strengthening the links of value chains, especially those related to forest management and provision of tourism services.</p> <p>Advancement of Payments for Environmental Services (PES).</p> <p>Specialized tourism with a focus on particular segments (nature, rural tourism, bird watching, etc.)</p>	<p>make progress regarding development of local governance schemes.</p>	<p>BANK/CONAFOR Project “Strengthening Entrepreneurship in Productive Forest Landscapes Project”</p>
<p>OAXACA</p>							



<p>Site 8</p>	<p>7 Ecoregions (43% Mountain ranges covered with coniferous, oak and mixed forests in Guerrero and Oaxaca) Forests and vegetation: 50%</p>	<p>Of a total of 5,832 species reported in the SNIB, 434 are found in NOM 059 and 1,292 in IUCN's Red List</p> <p>Some species of global importance for their conservation:</p> <p>Montane Robber Frog (<i>Craugastor lineatus</i>) Mount Zempoaltepec Alligator Lizard (<i>Abronia fuscolabialis</i>) Sierra Juarez Alligator Lizard (<i>Mesaspis juarezi</i>) Yellow-Headed Parrot (<i>Amazona oratrix</i>) Oaxaca Hummingbird (<i>Eupherusa cyanophrys</i>) Ecuadorian Mantled Howling Monkey (<i>Alouatta palliata</i>) Black-Handed Spider Monkey (<i>Ateles geoffroyi</i>) Mexican Agouti (<i>Dasyprocta mexicana</i>)</p>	<p>Tree loss: 5.6%</p> <p>Production activities: agriculture (coffee, honey, cocoa, cane, mezcal, fruits), aquaculture, forest management, and ecotourism.</p> <p>Conflicts and threats: mining activities and land disputes.</p> <p>Land degradation is Low-Moderate</p> <p>Development of community-based forestry, but involving issues related to land conflicts and customary practice</p> <p>Significant variety of timber and non-timber species, many of which command high market values.</p>	<p>Hunting and unsustainable use of species.</p> <p>Unsustainable and illegal development of dry tropical forests.</p> <p>Intensification of agricultural activities.</p> <p>Loss of ecosystem services and flow of matter and energy in ecosystems.</p> <p>Soil erosion.</p> <p>Deforestation for timber-related production.</p> <p>Deliberate fires to establish pastures and farming fields</p>	<p>Enhanced forest management</p> <p>Use of biodiversity-related criteria in production systems</p> <p>Shade-grown coffee based on forest management, ecotourism (e.g. wildlife watching), use of forest by-products to generate energy, MIAF.</p> <p>Voluntary conservation areas (biocultural reserves)</p> <p>Promotion of production diversification projects Strengthening of value chains and generation of added value</p> <p>Complimentary funding schemes for PES</p>	<p>The project will advance sustainable use of biodiversity while taking into account traditional practices and introduction of technological innovations in forest management.</p> <p>It will also promote transformation and aggregation of value of economic activities by strengthening cooperative schemes and business practices.</p> <p>The project will be supported by local, regional and federal institutions in order to share information on biodiversity, production practices, and legislation to help fine-tune project</p>	<p>Background of GEF Projects with executing agencies: CONAFOR, CONABIO, CONAFOR-CONABIO. CBM-M, SPSB, PROCYMAF 1 AND 2 (GEF,WB)</p> <p>WORLD BANK/CONAFOR Project "Strengthening Entrepreneurship in Productive Forest Landscapes Project"</p>
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						implementation. It will also provide recommendations for the sustainable use and development of biodiversity while respecting the values and traditions of indigenous communities.	
USUMACINTA							
Site 9	2 Ecoregions (90% High evergreen forest in the Gulf Coastal Plain) Forests and vegetation: 4%	For Site 9 a total of 1,436 species have been reported in the SNIB, with 582 in NOM 059 and 334 in IUCN's Red List	Tree loss: 9,9%-27,9% Land degradation: Moderate - High (acidification and erosion)	Poor agricultural practices (logging and burning) and shorter periods of fallow.	Establishment of agroforestry systems (e.g. MIAF) for the production of staple foods	The project will improve change of the extensive and single-crop in agroforestry activities.	Background of GEF Projects with executing agencies: CONAFOR, CONAFOR-CONANP, CONABIO, CONABIO-CONANP, CONAFOR-CONABIO, CONABIO-CONAFOR-CONANP CBM-M, SPSB, PROCYMAF 1 AND 2 (GEF,WB)
Site 10	1 Ecoregion (100% High evergreen forest on the slopes of southern Sierra Madre Gulf) Forests and vegetation: 67%	For Site 10 a total of 708 species have been reported in the SNIB, with 65 in NOM 059 and 370 in IUCN's Red List	Lack of alternatives for diversified use of forests Vulnerability to natural disasters (floods and forest fires)	Encroachment of extensive cattle ranching. Introduction of new, improved crops based on non-contextualized public policies (e.g., palm oil, hairy lychee, and rubber in highlands and evergreen forests).	Enhanced beekeeping and cocoa growing practices. Landscape recovery Forestry/cattle rancing change, orchards, MIAF	Likewise, it will improve use of biodiversity-friendly practices that reduce use of pesticides and agrochemicals and eliminate slash-and-burn practices. The project will be based on regional ecological regulations and the ability of lands to avoid further degradation.	
Site 11	1 Ecoregion (100% High evergreen forest on the slope of southern Sierra Madre Gulf) Forests and vegetation: 60%	For Site 11 a total of 1,396 species have been reported in the SNIB, with 117 in NOM 059 and 491 in IUCN's Red List	The region includes high biological richness areas in the middle part of the basin and areas with degraded soils associated with wetlands that are typical of coastal	Exhaustion of optimal forest resources with subsequent change	Introduction of agroecological practices and management of commercial crops		
Site 12	2 Ecoregions (52% High evergreen forest on the slopes of southern Sierra Madre Gulf)	For Site 12 a total of 1,337 species have been reported in the SNIB, with 176 in			Diversified use of tropical forests		



	<p>Forests and vegetation: 51%</p>	<p>NOM 059 and 316 in IUCN's Red List</p> <p>Examples of species of global importance for their conservation:</p> <p>Black-Eyed Leaf Frog (<i>Agalychnis moreletii</i>) Green Turtle (<i>Chelonia mydas</i>) Yellow-Headed Parrot (<i>Amazona oratrix</i>) Horned Guan (<i>Oreophasis derbianus</i>) Golden-Cheeked Warbler (<i>Setophaga chrysoparia</i>) Azure-Rumped Tanager (<i>Tangara cabanisi</i>) Ecuadorian Mantled Howling Monkey (<i>Alouatta palliata</i>)</p> <p>Black-Handed Spider Monkey (<i>Ateles geoffroyi</i>) Chiapan Climbing Rat (<i>Tylomys bullaris</i>) Mexican Royal Palm (<i>Roystonea dunlapiana</i>) Macdougall Orchid Cactus (<i>Disocactus macdougallii</i>)</p>	<p>plains in the low-lying lands.</p> <p>Commercial cattle ranching and farming exert significant pressure; forest management that fails to tap into biological wealth and lack of alternatives for the restoration of degraded lands.</p>	<p>in land use for agriculture.</p> <p>Death and removal due to the introduction of invasive alien species, primarily pathogens and disease vectors affecting wildlife (<i>Batrachohytrium dendrobatidis</i>, which affects amphibians and reptiles and is responsible for extinctions in some countries).</p> <p>Illegal trafficking in wild flora and fauna species</p>	<p>Ecological restoration of terrestrial and aquatic ecosystems based on the management of native species</p> <p>Voluntary conservation areas (biocultural reserves).</p> <p>Diversification of production activities by promoting ecotourism and establishment of local markets and streamlined marketing systems integrated with intermediate cities</p> <p>Strengthening multi-specific value chains for sustainable cattle ranching and forestry (Mexican forest plantation model)</p>	<p>A major component of the project will focus on the development of production options that do not rely on land, as well as the transformation and added value of primary production.</p>	
<p>YUCATAN PENINSULA</p>							



<p>Site 13</p>	<p>2 Ecoregions (99% Central Yucatan Plain with medium semideciduous forest) Forests and vegetation: 87%</p>	<p>Intervention Site 13 has 495 species that are on the IUCN Red List, 129 species on the NOM059 list of a total of 1,879 species reported in the SNIB.</p>		<p>Unsustainable development of wild timber and non-timber species.</p>	<p>Integrated forest management Agro-forestry management</p>	<p>The project will seek coordination of public policies for the appropriate implementation of programs and projects at the regional level.</p>	
<p>Site 14</p>	<p>3 Ecoregions (68% Knolls in southern Yucatan with high and medium sub evergreen forests Forests and vegetation: 91%</p>	<p>For Intervention Site 14, SNIB has a total of 2,895 species, and the NOM059 list contains only 129 species and the IUCN Red List contains 719 species.</p> <p>Examples of species of global importance in the region include:</p> <p>Yellow-Headed Parrot (<i>Amazona oratrix</i>) Golden-Cheeked Warbler (<i>Setophaga chrysoparia</i>) Black Howler Monkey (<i>Alouatta villosa</i>) Spider Monkey (<i>Ateles geoffroyi ssp. Yucatanensis</i>) Mexican Agouti (<i>Dasyprocta mexicana</i>) Baird's Tapir (<i>Tapirella bairdii</i>) Mexican Royal Palm (<i>Roystonea dunlapiana</i>) Gaumer Cactus</p>	<p>Tree loss: 7,5% (13) and 6,2% (14)</p> <p>Production activities: beekeeping, agriculture, forest management, and chewing gum. Agroforestry and tourism</p> <p>Conflicts and threats: mechanized industrial agriculture, land use change, poor use of agrochemicals, and extensive cattle ranching.</p> <p>Timber smuggling and illegal logging.</p>	<p>Changes in the use of forest or conservation areas to agriculture, mainly for extensive cattle ranching (bovines) and mechanized agriculture.</p> <p>Loss of habitat due to encroachment of agriculture (bovines, sugarcane and chili).</p> <p>Uncontrolled and unregulated use of agrochemicals (organophosphates and organochlorines).</p> <p>Poaching and species trafficking.</p> <p>Introduction of exotic species.</p> <p>Alteration of water quality in groundwater</p>	<p>Reforestation with native species</p> <p>Voluntary conservation areas</p> <p>Use of production systems that feed into local markets with export potential and financial instruments provided by local government authorities</p> <p>Management of second growth forests for energy purposes</p> <p>Complimentary funding schemes for PES</p> <p>Integrate cooperative schemes that make it possible to market and export precious woods</p> <p>Optional sub-projects on ecotourism (wildlife watching), water harvesting, MIAF, beekeeping.</p>	<p>It also aims at the integrated development of forests and their biodiversity, as well as the associated by-products. To this end, an important component will include strengthening of regional organizations and establishment and interconnection of land governance networks and arrangements, as well as local sector-specific committees and councils.</p>	<p>Background of GEF Projects with executing agencies: CONAFOR-CONANP, CONABIO, CONABIO-CONANP, CONAFOR-CONABIO, CONABIO-CONAFOR-CONANP. CBM-M, SPSB, SINAP 1 and 2 (GEF-WB) PROCYMAF 1 and 2 (GEF,WB)</p>



		<i>(Pterocereus gaumeri)</i> Fiddlewood (<i>Vitex gaumeri</i>) <i>Zanthoxylum procerum</i>		systems caused by municipal waste due to lack of integrated drainage and sewerage systems and water treatment. Death of wildlife. Illegal land tenure registration. Encroachment of urban areas and tourist projects.	Production chain for beekeeping.		
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