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FINANCING SUSTAINABLE LANDSCAPES THROUGH SMALL PRODUCERS IN MEXICO

Analysis of barriers and opportunities

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ACRONYMS

AFD	Agence Française de Développement
AFOLU	Agriculture, Forestry, and Other Land Use
AMUCSS	Asociación Mexicana de Uniones de Crédito del Sector Social
CEPCO	Coordinadora Estatal de Productores de Café de Oaxaca
CFE	Community Forest Enterprises
CO2	Carbon dioxide
CONABIO	Comisión Nacional para el Conocimiento y Uso de la Biodiversidad
CONAFOR	Comisión Nacional Forestal
CONANP	Comisión Nacional de Áreas Naturales Protegidas
CSR	Corporate Social Responsibility
DFI	Development Finance Institution
EI	Environmental Incentives
FEGA	Fondo Especial de Asistencia Técnica y Garantía para Créditos Agropecuarios
FINAGRO	Financiera Nacional Agropecuaria
FINDECA	Financiando el Desarrollo del Campo
FIP	Forest Investment Program
FIRA	Fideicomisos Instituidos en Relación con la Agricultura
FMCN	Fondo Mexicano para la Conservación de la Naturaleza
FND	Financiera Nacional de Desarrollo
FOMIN	Fondo Multilateral de Inversiones
FSC	Forest Stewardship Council
GHG	Greenhouse Gas Emissions
GIZ	Gesellschaft für Internationale Zusammenarbeit
IDB	Inter-American Development Bank
IDH	Sustainable Trade Initiative
IFAD	International Fund for Agricultural Development
IKI	International Climate Initiative
MSME	Micro, Small, and Medium-sized Enterprise
NGO	Non-governmental Organization
PES	Payment for Ecosystem Services
PROGAN	Programa Producción pecuaria sustentable y ordenamiento ganadero y apícola
SADER	Secretariat of Agriculture and Rural Development
SEMARNAT	Secretariat of Environment and Natural Resources
SME	Small and Medium-sized Enterprise
USAID	United States Agency for International Development

METHODOLOGY

This study aimed to identify barriers to financing sustainable landscapes through small producers in Mexico and to propose recommendations to overcome these barriers. This included three sub-objectives: (i) understand past, present, and planned financial instruments and initiatives focused on sustainable land activities in Mexico, (ii) identify the barriers to financing for sustainable land activities that small producers face, and (iii) develop recommendations to overcome these barriers. While financing was the primary focus, the study took into account other conditions (e.g., market access, public policy) that underpin sustainable land activities. The study also aimed to understand barriers and develop recommendations at the landscape level—looking across a matrix of productive systems—rather than focusing too narrowly on one value chain. This systems-based, landscape approach is critical to understanding the complex dynamics that drive land use change and how to change them.

The study focused on small producers within three regions: Selva Maya in the Yucatán Peninsula, Selva Lacandona in Chiapas, and La Mascota in Jalisco. These three areas were selected given their large contribution to Mexico's natural capital and the predominance of small producers in the agriculture, forestry, and other land use (AFOLU) sector. Geospatial analysis has shown that these areas are particularly important given their deforestation rates, greenhouse gas (GHG) capture and emissions, and national biodiversity conservation priorities. Within these regions, the study focused on small producers working in three areas within the AFOLU sector: (i) forestry, (ii) livestock, and (iii) agroforestry. These priority segments were selected based on their potential to help reduce net GHG emissions in the focus regions, within a broader approach to landscape management.

USAID, Environmental Incentives, and Dalberg conducted this study throughout January and February of 2020. This included several analytical pieces of work:

- Desk review of 60+ past, present, and planned financial instruments and initiatives focused on sustainable land activities in Mexico
- 50+ interviews with producers, financial institutions and intermediaries, private sector companies, civil society and NGOs, funders, donors, and government (please see full list in Annex E)
- Field research in Selva Maya and Selva Lacandona
- Presentation and discussion of preliminary findings at the *Foro Latinoamericano de Inversión de Impacto (FLII)* in Mérida, Yucatán (February 18-20, 2020)

The study proactively took into account the gendered dimensions of financing for sustainable landscapes in Mexico. This gender lens was applied through:

- The understanding of the context. This study used sex-disaggregated analysis and data (where available) to understand participation in sustainable land activities and access to financing.
- The analytical approach and methodologies. The study analyzed the extent to which relevant financial instruments and initiatives have (i) reached small producers across genders (i.e., men and women), and (ii) tailored their approaches accordingly. The interview program aimed to balance perspectives across genders: nearly 40% of interviewees were women, although fewer were at the producer level given men disproportionately oversee production activities in the focus regions. Each interview included questions to explore how and why gender gaps exist and persist.
- The design and delivery of recommendations. Lastly, the recommendations considered the needs and realities of people across genders and put a primacy on enabling the agency of women, men, and youth. To do so, the study considered opportunities broader than production.

Overall, the study aims to catalyze financing to support sustainable landscapes in Mexico. The findings are a starting point for further discussion, refinement, and collaboration across partners.

EXECUTIVE SUMMARY

Mexico's natural landscapes are disappearing. In the past three years, Mexico has lost an average of over 280,000 hectares of forest cover—an area larger than Mexico City—each year, driven in part by agricultural expansion and extensive livestock production. This loss has environmental consequences that also harm social and economic well-being, including: an increase in greenhouse gas emissions (GHG), the loss of water regulation, and the loss of economic opportunities for communities and companies alike.

Reversing this trend requires working with small producers who manage a large share of these natural landscapes. For example, 61% of forests fall under communal land ownership arrangements (e.g., ejidos). As a result, smallholder farmers; micro, small, and medium-sized enterprises (MSME); and community and forestry enterprises (CFE)—herein referred to as "small producers"—play a critical role in implementing sustainable land activities. These activities include the management and protection of forests, afforestation and reforestation, and more sustainable agricultural and livestock practices. Today, men disproportionately oversee these activities.

For small producers, transitioning to and scaling sustainable land activities requires a range of conditions. For example, small producers need training and consistent support to transition from extensive livestock farming to a silvopastoral system. They also need access to markets that recognize and value sustainable products and environmental services—which are growing but still nascent. Further, in Mexico specifically, there is a need for strong social structures and cohesion to coordinate and change productive activities within ejidos and communities. Enabling public policies and coordination of actors is equally important. These conditions must come together to drive sustainable change; each condition alone is necessary but not sufficient.

Financing plays a particularly critical role in altering the economic incentives that drive land use change. Small producers need upfront and ongoing resources to manage their land sustainably. Without financing, producers cannot realize revenues from sustainable land activities. Without revenues, natural landscapes are under-valued. And without value, there is a strong economic incentive to convert land to more productive uses (e.g., agriculture and extensive livestock). Given these market failures and gaps, protecting natural landscapes requires market-based solutions to catalyze investment.

Yet many barriers impede financing today: small producers not only face barriers to access any type of financing, but also additional hurdles specific to financing for sustainable land activities. Specific barriers include:

- Demand-side: First, producers perceive few economic incentives to invest in sustainable land activities (e.g., sustainable forestry, silvopastoral livestock production) given lack of near-term benefits. Specifically, cost savings take several years to realize, and markets give limited preference and/or premium to sustainable products. Second, there is little demand for credit to support sustainable land activities given the reliance on government agriculture and forestry subsidies, previous bad experiences with the financial sector (e.g., confiscation of sawmills from ejidos due to default), and cultural aversion to the risk of credit. Third, even when appetite for financing exists, producers often lack the requisite technical, financial, management, and organizational capacities. This includes a lack of strong social structures and cohesion—or social capital—to coordinate, change, and scale productive activities within ejidos and communities. Moreover, there is a limited support system (e.g., "incubators" and company development programs) tailored to the unique needs of rural producers who want to implement more sustainable business activities.

- Supply-side: The dominance of subsidies distorts the market by discouraging producers from seeking other financing options. Outside of subsidies, many financial institutions and investors do not finance sustainable production given the small transaction size, risk (perceived or real), and longer time horizons to realize returns. Moreover, financial products that exist have low penetration in rural areas (e.g., commercial banks are over three hours away from some rural areas) and/or are not adapted to the needs of producers implementing sustainable land activities (e.g., longer time horizon to see profits in forestry, different growing seasons and rotations in agroforestry). And perhaps most importantly, even perfectly designed financial products cannot succeed in isolation. Producers need support to develop "investable" businesses and projects, and access to markets is critical.
- Ecosystem: There are gaps in the enabling conditions needed to mobilize and deploy financing for sustainable land activities. This includes low access to inclusive markets, gaps in public policies, lack of incentives that promote sustainable production over production in general; and weak data and information systems needed to identify, monitor, and quantify sustainable land activities and their impacts. Lastly, coordination between actors working on sustainable landscapes is insufficient, which has resulted in duplication of efforts and failure to mobilize follow-on investment (e.g., from the private sector).

These barriers are common across many small producers but manifest themselves differently across value chains, regions, and genders. Across value chains, there are differing levels of producer capabilities, government support, and access to inclusive markets. For example, sustainable cocoa producers are able to organize and sell their output at a premium, whereas sustainable wood and cattle (i.e., with Forestry Stewardship Council certification or using silvopastoral systems, respectively) receive a standard price. Across regions, there are differences in terms of strength of local governance and coordination and presence of financial intermediaries working with rural producers. Across genders, women face additional barriers to accessing finance to transition to sustainable practices. Specifically, women are less likely to be "ejidatarias" with land titles, less involved in production activities, and under-represented in communal leadership structures. Youth also have fewer assets, given that many ejido rights belong to older generations. Overall, these nuances highlight the importance of tailored interventions.

While past and ongoing efforts have identified promising models to address these barriers, there is a need for increased scale and sustainability. The government of Mexico, development funders, and development finance institutions (DFIs) have supported a range of financing initiatives that primarily use grants and subsidies, with some loans and credit. These programs have achieved important results in terms of coordination (e.g., via Reducing Emissions from Deforestation and Forest Degradation, REDD+) and demonstrating viable models. These models include extending credit to small producers (e.g., EmFoCo y Desarrollo, Forest Investment Program, Proinfor); local micro-finance schemes (e.g., Asociación Mexicana de Uniones de Crédito del Sector Social); and end-to-end intermediaries supporting capacity building, aggregation, market access, and fundraising (e.g., Ejido Verde).[1] Over the next decade, it is critical to build on these models while simultaneously increasing sustainability and scale.

[1] Please see Annex B for more information on these efforts.

Looking forward, improving financing for sustainable landscapes requires holistic action. This includes demand-side, supply-side, and ecosystem-level interventions. Different recommendations will be relevant for different small producers—based on value chain, region, gender, and in particular, their level of business maturity. Therefore, recommendations will require further tailoring at the regional and local levels. The key recommendations include:

- **Demand-side: Improve the "investability" of sustainable land activities by increasing small producers' demand for, access to, and ability to manage appropriate financing—beyond grants and subsidies.** To date, a large share of financing has gone to a minority of producers with mature production and business capacities. Therefore, increasing support for more small producers is critical in order to mobilize and deploy financing at scale. Key recommendations include (i) improving and scaling end-to-end support for small producers and (ii) investing in project development to build a stronger pipeline of investable opportunities.
- **Supply-side: Increase the availability and reach of appropriate, tailored financial products that help small producers invest in sustainable land activities**. Financing needs to be more commercial (e.g., non-grant products), more patient, better-adapted to producer needs, and "bundled" with other types of interventions. There is also an untapped potential to scale up financing from private sector buyers through strong market agreements and commercialization processes that recognize the value of sustainable products (e.g., wood certified by Forest Stewardship Council, beef from silvopastoral systems, coffee and cocoa from agroforestry systems). Key recommendations include: (i) scale-up financing for sustainable land activities via financial intermediaries and (ii) crowd in more sustainability-focused private sector buyers to finance small producers. For both, there is potential to use development finance to catalyze private investment via blended arrangements.
- **Ecosystem: Create enabling conditions to better mobilize and deploy financing to small producers working on sustainable land activities**. A lot more than financial mechanisms is required to attract and maintain long-term investment in sustainable land activities. Key recommendations include: (i) support income-generating activities higher up in value chains and outside of production, (ii) develop and implement enabling public policies, (iii) strengthen data and monitoring for sustainable land activities, and (iv) dedicate time and resources to improve coordination. Many of these recommendations relate to strengthening access to inclusive markets.

Across these recommendations, it is critical to take a landscape approach; to leverage local expertise, partners, and past lessons; and to take market-based approaches that engage producers and the private sector. Moreover, the recommendations must be implemented together: a successful financing scheme will require demand-side interventions to support producers and the design of investable projects, supply-side interventions to mobilize appropriate financing from intermediaries and off-takers, and ecosystem interventions to connect these pieces together.

Moreover, taking these ideas forward requires a change in mindset. While the recommendations build on learnings and successful models from previous decades, they also highlight the need for new solutions and ways of working. In particular, the findings highlight the need for a "step change" in four critical areas:

- How to support. Shift from a narrower focus on capacity development to models that provide long-term, continuous support to producers.
- How to finance. Focus on financial products outside of grants and subsidies in order to promote long-term financial access and health.
- How to scale. Focus on developing companies, cooperatives, and projects with greater scale that can receive financing and serve traditional markets.

- How to partner. Better connect producers and communities to sustainability-focused private sector companies and investors

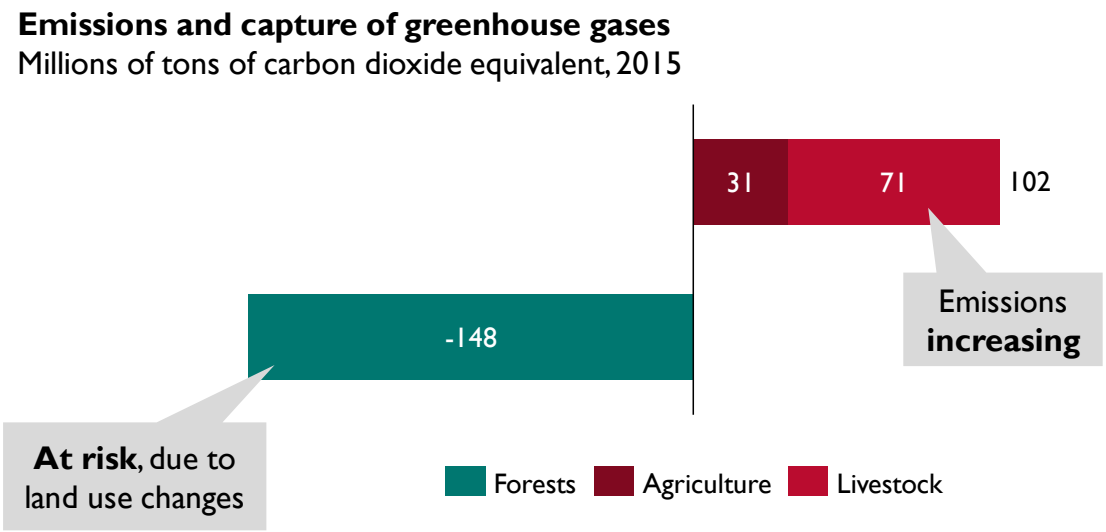
Overall, this report aims to synthesize barriers to inform USAID and other partners' strategies to finance sustainable landscapes. This report takes stock of progress to date, the current situation, and priorities for the future. In some areas—such as capacity development and loan intermediation—there is a need to focus on replicating and scaling models that have shown promise. In other areas—including support services for producers, project development, and private sector off-take and financing agreements—there is a need to create new models to fill gaps. By promoting these market-based solutions, it is possible to catalyze investment needed to protect natural landscapes over the long term.

SECTION 1: SUSTAINABLE LANDSCAPES IN MEXICO

LAND MANAGEMENT TODAY

Natural landscapes in Mexico are at risk. Today, the agriculture, forestry, and other land use (AFOLU) sector has a net capture[2] of greenhouse gas (GHG) emissions equivalent to 22% of Mexico's total emissions.[3] However, this net capture is decreasing due to current land management practices. Since 2000, Mexico has lost between 150,000 and 300,000 hectares of forest cover each year, driven primarily by agricultural and livestock expansion, illegal logging, and urbanization, among other factors.[4] In the same period, over 15 million hectares—an area equivalent to the state of Coahuila—have undergone degradation (i.e., a loss of tree cover less than the threshold for deforestation). Deforestation and degradation are particularly rampant in the tropical forests of south and southeastern Mexico, in states such as Campeche, Yucatán, Quintana Roo, and Chiapas.[5] Beyond GHG emissions, these land use changes also threaten biodiversity and have negative health and economic impacts— ranging from the loss of water regulation to the loss of livelihoods and profits for communities, companies, and society as a whole.

Figure 1: Net GHG emissions from AFOLU sector[6]



Better protecting natural landscapes requires scaling *sustainable land activities*. These activities fall into three categories of "natural climate solutions," which increase carbon storage or reduce GHG

[2] Carbon capture—or sequestration—is the process by which atmospheric carbon dioxide is taken up by trees, grasses, and other plants through photosynthesis and stored as carbon in biomass (trunks, branches, foliage, and roots) and soils. United States Department of Agriculture Forest Service, "Carbon Sequestration," accessed 2020
[3] Gobierno de México, "Inventario Nacional de Emisiones de Gases y Compuestos de Efecto Invernadero," 2015
[4] Hansen *et al.*, "Tree Cover Loss and Gain Area," 2013
[5] El País, "México Perdió 250.000 Hectáreas de Bosques en 2016," 2017
[6] Gobierno de México, "Inventario Nacional de Emisiones de Gases y Compuestos de Efecto Invernadero," 2015

emissions in landscapes.[7] First, activities related to the management and protection of forests aim to conserve and sustainably manage timber and non-timber products from forests and to reduce the causes of deforestation and degradation—including the expansion of livestock and agricultural lands. Second, reforestation and afforestation activities aim to restore vegetation to deforested and non-forest areas, respectively.[8] Lastly, sustainable agricultural and livestock practices aim to reduce emissions that come from agricultural and livestock activities, outside of land use (e.g., enteric fermentation[9]). In Mexico and globally, natural climate solutions focused on forest management and protection, reforestation, and afforestation—the first two types of sustainable land activities shown in Figure 2 below—offer the greatest potential benefits for reducing GHG emissions.[10] These activities also have economic benefits: the AFOLU sector accounted for over 3% of GDP in Mexico in 2019.[11]

Figure 2: Types of sustainable land activities

FOREST MANAGEMENT AND PROTECTION	REFORESTATION AND AFFORESTATION	IMPROVEMENT IN AGRO AND LIVESTOCK PRACTICES
• Harvest timber and non-timber products sustainably • Reduce the causes of deforestation and degradation—including expansion of livestock and agricultural lands, illegal logging, wildfires, and pests and disease	• Increase forest coverage and quality	• Increase the capture of CO_2 in agricultural lands • Reduce emissions from agricultural and livestock lands per hectare

THE ROLE OF SMALL PRODUCERS

Implementing sustainable land activities requires close collaboration with small producers who manage a large share of natural landscapes in Mexico. This includes smallholder farmers;

[7] The Nature Conservancy, "Natural Solutions to Climate Change," 2017
[8] Reforestation is the process of planting native trees in a forest area that has been depleted. Afforestation is the process of planting trees in an area without trees to create a forest.
[9] Animal digestive process that produces methane as a by-product.
[10] KOIS Invest, "Financing Sustainable Land Use," 2019
[11] GDP in 2013 constant prices. INEGI "Sistema de Cuentas Nacionales de México. Producto Interno Bruto Trimestral," 2020

community forestry enterprises (CFEs); and production-focused micro, small, and medium-sized enterprises (MSMEs). Roughly 61% of forest land falls under collective land tenure arrangements or harvesting agreements managed by ejidos,[12] communities, and micro-enterprises.[13] For agricultural land, including livestock, about 50% of farmers are smallholders.[14] Stopping deforestation, degradation, and unsustainable agricultural and livestock practices therefore requires the support of these groups. Furthermore, working with smallholders, SMEs, and CFEs—as compared to larger producers and landowners—can provide important secondary benefits in terms of livelihoods generation, biodiversity conservation, and gender equity.

Small producers working in forestry, agroforestry, and livestock all play a critical role in reducing GHG emissions. This assessment focused on these three groups of producers—or "segments"[15]—that offer high potential impact (as measured by reduction in GHG emissions and secondary benefits) and feasibility to drive change. Each segment includes producers who already implement or could start to implement sustainable practices. All three segments are linked to the major driver of AFOLU GHG emissions in Mexico: land use change due to expansion of agricultural and, especially, livestock activities.[16] The first segment includes established CFEs and SMEs that could implement sustainable forestry practices, including timber and non-timber forest products (e.g., Ejido Tres Garantías in Quintana Roo). The second segment includes small-scale producer associations that could scale integrated agroforestry systems, primarily for coffee and cacao (e.g., Alianza de Cacaoteros de la Selva in Chiapas). The third segment includes small-scale livestock producers who could transition to silvopastoral systems that can drive reforestation and afforestation, reduce land expansion, and reduce emissions from livestock practices (e.g., various members of the RedSilvo in Chiapas). Figure 3 below summarizes additional details on the regional distribution, potential impact, and feasibility of each segment; Annex A contains additional data.

Within these segments, men and women play different roles. On average, men are more involved in production. They are more likely to have land titles, leadership positions within the community (e.g., in ejido assemblies), and oversight over production activities. Meanwhile, women play a more active role in managing the household and in economic activities outside of primary production (e.g., working in a shop). Women have lower participation in traditional production activities (e.g., harvesting trees) and fewer assets (e.g., parcels within the ejido). Similarly, youth also have fewer assets given older generations hold most ejido rights. This has driven youth to abandon rural activities and look for options in more profitable sectors (e.g., working in hotels). As a result, sustainable land activities currently depend disproportionately

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[12] In Mexico, an ejido is a piece of land managed communally, through a system supported by the government.
[13] Some 30% of the country's forests are privately owned; the remaining 7-12% of the forests are state-owned, national forests, and forest reserves. Lucía Madrid, Juan Manuel Núñez, Gabriela Quiroz y Yosu Rodríguez, "La propiedad social forestal en México," 2009
[14] FAO, "The economic lives of smallholder farmers," 2015
[15] Smallholders, SMEs, and CFEs involved in land management in Mexico are diverse, varying in terms of type of land activity (e.g., management and protection of forests vs. livestock production) and individual characteristics (e.g., maturity, size, structure, organization). These "segments" aim to capture these nuances.
[16] Ecosistemas, "Los procesos y causas del cambio en la cobertura forestal de la Península Yucatán, México," 2017; please see Annex A for additional analysis on drivers of GHG by region.

on men. However, it is important to recognize that all sources of household income—whether related to production or not—can help reduce family-level and community-level incentives that drive land use change.

Figure 3: Priority segments for assessment[17]

*Potential for impact (i.e., potential to reduce GHG, size of financing gap); **Feasibility of overcoming barriers and developing successful solutions

THE NEED FOR FINANCING

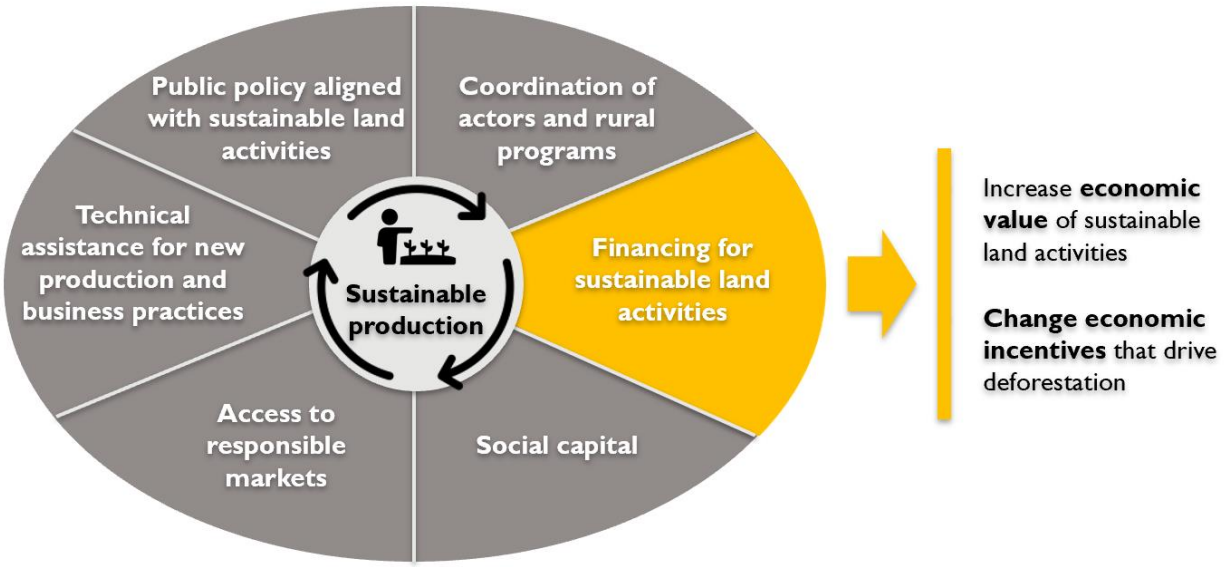
For small producers to transition to more sustainable land management a range of conditions must be met. For example, small producers need training and consistent support to transition from extensive livestock farming to a silvopastoral system. They also need access to markets that recognize and value sustainable products—which are nascent but growing due to increasing concerns around climate change. This requires promoting changes in how private companies source and market their products (e.g., commitments to deforestation-free supply chains). Further, in Mexico specifically, there is a need for strong social structures and cohesion to coordinate and change productive activities within ejidos and communities. Public policy plays a critical role in enabling and incentivizing sustainable practices, and success hinges upon active coordination across the public sector, private sector, and civil society. Figure 4 below summarizes all of these conditions that must come together to drive sustainable change; each condition alone is necessary but not sufficient.

One of these conditions is financing: producers need upfront and ongoing resources to manage their land sustainably. Upfront, changing production practices requires tailored financing for inputs (e.g., tree seedlings), productive assets (e.g., water tanks for silvopastoral systems, chainsaws for

[17] Ratings of impact and feasibility are directional. Ratings of impact are based on GHG emissions/capture and financing analysis in each region, shown in Annex A. Ratings of feasibility are qualitative, based on early interviews.

sustainable forestry), labor, and the initial opportunity cost of not continuing other revenue-generating production activities. Beyond upfront investment, sustainable land activities require growth capital and greater volumes of working capital to scale. The time horizon of financing is also critical, given that many sustainable land activities do not produce returns for the first 3–10 years after transitioning. Further, financing can help drive and reinforce other necessary conditions (e.g., coordination between public and private partners) for sustainable land management.

Figure 4: Key conditions required for sustainable land management



Financing is particularly critical in altering the economic incentives that drive land use change. Today, natural landscapes in Mexico are under-valued due to a range of market gaps and failures, including: lack of access to markets—especially to inclusive markets with a demand for sustainable products—over-regulation, and lack of producer capabilities. For example, timber production in Mexico is lower now than two decades ago, and the wood and timber industry has lost power and scale constantly throughout the century. Against this backdrop, there are strong economic incentives to convert land to uses with higher returns in the short term (e.g., agriculture and livestock over forestry) and/or to maintain unsustainable land management practices (e.g., extensive livestock production over silvopastoral systems). Countering these incentives requires increasing the value of natural landscapes; increasing the value requires increasing revenues; and increasing revenues requires capital.

Protecting natural landscapes therefore requires market-based solutions to catalyze investment over the long term. Section 2 analyzes the barriers that are preventing financing from reaching producers today, and Section 3 proposes recommendations to overcome them. Beyond financing, the study takes into account other interrelated conditions, such as access to markets and technical assistance.

SECTION 2: FINANCING GAPS AND BARRIERS

Rural populations, including small producers, encounter many barriers to access any type of financing in Mexico. Traditional financial institutions have limited coverage and offer few tailored products in rural areas due, in part, to limited physical presence, poor connectivity, and lack of understanding of producers' business (e.g., seasonality, risks). Moreover, local financial institutions lack scale in terms of financing they can provide and people they can serve. As a result, less than a quarter of people in rural areas received credit in 2018 (21% of women and 23% of men versus 33% of women and 39% of men in urban areas).[18]

Barriers to accessing financing are even steeper for sustainable land activities. In terms of demand, producers perceive low economic incentives in the near-term and have other pressing necessities—such as the need to provide for families—that impede sustainable land activities. On the supply side, very few financial institutions offer products with a focus on sustainable land activities.

The section below outlines the primary demand-side, supply-side, and ecosystem barriers that small producers face in accessing financing for sustainable land activities. While the analysis focused on Selva Maya in the Yucatán Peninsula, Selva Lacandona in Chiapas, and Mascota in Jalisco, many of the barriers apply more broadly throughout Mexico.

DEMAND-SIDE BARRIERS

Demand-side barriers reduce small producers' appetite and ability to invest in the transition to sustainable land activities. Key barriers include perceived lack of economic incentives, low appetite for loans, low capabilities and support services, and poor internal organization among producer groups. The paragraphs below provide additional detail on each barrier.

Lack of economic incentives: Producers perceive low economic incentives to invest in sustainable land activities. They do not perceive and/or measure cost savings, and markets do not offer a significant—or in most cases, any—premium for sustainable products. For instance, certified sustainable wood sells for similar prices to non-certified wood, and the livestock industry does not have a well-known sustainability certification program.[19] Meanwhile, many producers are not aware of other non-price benefits. For example, in forestry, Forest Stewardship Council (FSC) certification can increase access to some markets, and some buyers prioritize wood with FSC certification over non-certified products. Long-term benefits may include lower production costs and improved productivity—given the sustainable production shifts many inputs to those readily available on-site (e.g., grass for cattle, labor rather than agrochemicals for other products). Yet even if producers are aware of these benefits, many do not believe the advantages outweigh upfront expenses and additional risk (see ***Low Incentives for Silvopastoral Ranching*** box).

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[18] INEGI, "Encuesta Nacional de Inclusión Financiera," 2018

[19] There have been some efforts to develop a certification or market recognition scheme, such as RedSilvo in Chiapas or Carne del Monte in Yucatán.

LOW INCENTIVES FOR SILVOPASTORAL RANCHING

Don Carlos, a cattle farmer with 18 cows in Chiapas, recognizes the benefits that a silvopastoral ranch may have on the environment and in lowering his costs in the long run. However, he knows that if he wants to invest in changing his land to silvopastoral production (e.g., purchasing fencing to divide his parcel, planting trees, building water tanks in each plot) he will have to make a significant investment over the next three years, which will yield low immediate returns. The local market is controlled by a single buyer, who works closely with local *coyotes* (intermediaries) to pay a standard price for all cows, regardless of ranching practices. This makes the transition less attractive.

Low appetite for loans: Producers see little need for financial services (e.g., loans) given widespread government subsidies and cultural factors. All of the producers interviewed had access to one or more government programs that provide subsidies, but lack the support needed to help them transition to other financial products. Moreover, many financial products are not designed to meet producer needs (e.g., high costs, periodic payments not aligned with agricultural seasons), a history of negative experiences with loans, and a pervasive distrust of financial institutions further erode producers appetite for financial services. Therefore, many producers prefer using their own resources rather than taking on additional risk (see ***Investing in a Sawmill*** box).

INVESTING IN A SAWMILL

One of the largest ejidos in Selva Maya has abandoned one of its two sawmills. After the cart for the sawmill broke, the ejido applied for subsidies from CONAFOR to replace it. However, CONAFOR was unable to provide funds for the current year. Instead of looking for different options to replace the cart (e.g., bank loans), the ejido elected to wait for CONAFOR to provide funds. When asked recently about looking for a bank loan, the ejido's president referred to a bad experience with a bank in the past. After the ejido defaulted on a loan, the bank was forced to confiscate tractors owned by the ejido—donated through a past government program. Members of the ejido preferred not to risk this happening again and would rather wait until the following year for the government to provide funds. As a result, the ejido now extracts less value from the forest, which increases the risk of forest abandonment or deforestation for more productive activities.

Low capabilities and support services: Producers often lack sufficient technical, financial, and business training—even more so for women. First, many producers lack technical knowledge on how to transition to sustainable practices, as well as how to transform and add value to their products. Financial education is limited, which makes it difficult for producers to access financing and later fulfill related responsibilities. Further, producers lack knowledge of business planning and how to work together to achieve scale, which is particularly critical in forestry. This makes it difficult to structure and maintain revenue-generating, investable operations. The small number of women that engage in productive activities and are members of forestry assemblies have not had the same access to training programs as their male counterparts—which has resulted in lower skill development. Moreover, many existing capacity development programs are not fully addressing the aforementioned needs. While many government and NGO-supported programs provide technical assistance, they do not provide this in a holistic way (e.g., they offer technical education but no financial training) and/or lack customized, long-term support (e.g.,

they are one-off courses in groups). Lastly, there is a limited support system (e.g., "incubators" and company development programs) tailored to the unique needs of rural producers who want to implement more sustainable business activities.

Poor internal organization: In Mexico, most land managed by small producers is managed through communal arrangements, including ejidos. As a result, the community makes important decisions regarding land distribution and management that impact all producers and activities (e.g., the amount of land the ejido will protect as forest vs. amount of land it will assign to productive activities). This is particularly relevant in forestry, where CFEs oversee production in communal lands.[20] Given the numerous members, aligning incentives can be complex. Ejidos decide how to manage their forests by vote, but members are not always in agreement regarding decisions taken (e.g., whether to re-invest profits in productive activities). Furthermore, not all ejido members have a strong incentive to protect or maintain forests. For instance, older members—or members whose main source of income is different from forestry (e.g., stores in town)—may prefer to extract and sell wood with almost no value added to reduce risk and effort. This puts pressure on the forest, as extracting wood with limited transformation produces minimal earnings, making other activities that require land use change more attractive (e.g., yielding rights to developers for construction on the land).

Lower assets, less participation in productive activities, and lower access to leadership roles exacerbate most of these barriers for women. While there are differences across ejidos, on average, fewer women have assets (e.g., land titles), voting rights in the ejido, or membership to ejido boards. Women have less participation and agency than men, given this under-representation. For example, several interviewees noted that ejidos making progress on integrating women still only have ~20-30% female members, and women lack interest and authority in productive activities, driven by cultural norms. These conditions create additional hurdles for women to access financial products and to influence investment decisions, including those related to sustainable land management. Moreover, technicians and organizations that support ejidos have observed that men often take leadership over efforts that specifically aim to include women in productive activities (e.g., a program selects women to participate in a certain productive activity, but in reality, their husbands or other male family members oversee the activity).

SUPPLY-SIDE BARRIERS

Supply-side actors have limited desire and/or ability to finance small producers, and few focus on supporting sustainable land activities. Supply-side actors include anyone that does or could finance small producers: first-level financial institutions (e.g., commercial banks, local financial intermediaries), second-level financial institutions (e.g., local, national, and multilateral development banks), private sector buyers (i.e., actors higher up in the value chain that could provide value chain financing), and government institutions.[21] Primary supply-side barriers include low appetite to serve small

[20] Meanwhile, some decisions about agriculture and livestock are taken by individuals within their parcels.
[21] There are actors that provide services to farmers, such as NGOs, that are not considered as supply-side actors because they do not provide financing. However, partnering with these actors is key for some recommendations, as detailed in section 3.

producers due to cost and risk, long time horizons of investments, financial products that are poorly tailored to the needs of sustainable land activities, and a lack of integrated support. The paragraphs below provide additional detail on each barrier.

High cost to serve small producers: Analyzing a loan for a small producer—typically at a small ticket size—represents an opportunity cost for banks, which could be analyzing larger loans within the AFOLU sector and/or other sectors. Moreover, given that most financial institutions lack a physical presence in remote rural areas—and existing intermediaries lack the necessary scale to reach many producers—banks would need to invest in infrastructure to serve this sector.

High risk to serve small producers: Financial institutions see small producers as highly risky, driven by producers' vulnerability to price fluctuations, extreme weather events, lack of credit history, and lack of assets to serve as guarantees. This high perception of risk makes banks price their services to producers at premiums, in order to meet risk-return analyses, which makes the loan even more expensive for small producers (i.e., high interest rates).

Because few financial institutions are interested in the sector, subsidies remain the predominant source of funding for producers. This exacerbates producers' dependence (as mentioned in demand-side barriers) given subsidies are often the only viable funding that reaches them.

Long time horizons: Beyond challenges serving small producers, many sustainable land investments are not attractive given longer time horizons needed to generate returns. Livestock producers, for example, have to invest in their lands for approximately three years to transition to silvopastoral systems. Agriculture producers switching to more sustainable crops or methods must wait a similar amount of time—with some variability depending on what they produce. Forestry producers, meanwhile, must wait a minimum of 2-3 years before they can extract wood from new forests. Cycles for non-timber forest products (e.g., resin) can extend even longer. Long time horizons not only require patient capital but also involve risk given that producers must sustain practices to deliver returns to investors.

Lack of tailored financial products: Of the financial products that do exist, few cater to producer needs. Financial products lack appropriate payment structures (e.g., they require monthly payments while producers receive payments twice a year), have onerous requirements (e.g., land titles, high guarantees), have high interest rates, lack focus and tailoring for sustainable land financing, and do not offer appropriate ticket sizes (see ***A Loan Too Big for a Forestry Ejido*** box).

A LOAN TOO BIG FOR A FORESTRY EJIDO

An ejido in Quintana Roo requested a loan from a commercial bank for working capital and technology improvements to support sustainable forestry. The ejido originally requested a loan for ~USD 25,000. However, after a long process with the bank, the bank approved a loan for ~USD 50,000 and would not approve a loan for less. This created distrust and frustration among the ejido members, who ultimately decided not to take the loan. The ejido is now applying for government subsidies to fulfill its capital needs.

Lack of integrated support: Finally, even a perfect financial product is insufficient to help producers transition to and maintain sustainable land activities. Capital provided to producers must be accompanied with support and access to markets to holistically address producer needs. As discussed, in the demand-side barriers, producers expressed the need for consistent longer-term support in areas such as technical assistance in sustainable production practices (e.g., planting the right types of trees in the right places, designing silvopastoral farms adequately, ensuring trees survive), financial education (e.g., planning and managing loans), and business management skills (e.g., reinvesting profits). Moreover, these needs differ for men and women, given that many women have a different baseline level of capabilities and participation in production, as previously mentioned. Yet financial institutions' main focus is providing finance to producers, rather than supporting technical assistance and other needs. Therefore, financing small producers often requires partnerships between financiers and organizations who provide other services (e.g., specialized extension workers, capacity building, linkage to markets) or more specialized financing arrangements (e.g., value chain financing that also provides market linkages). Moreover, as mentioned in the demand-side barriers, few support options exist that are tailored to the unique needs of rural producers who want to implement and scale sustainable land activities.

ECOSYSTEM BARRIERS

Ecosystem barriers stifle efforts to catalyze and scale financing for sustainable land activities. These include limited market power for small producers, lack of coordination (across public sector, private sector, and civil society), policy gaps and variable enforcement, and weak data and information systems.

Limited market power for small producers: Many value chains have few buyers, who are closely coordinated with intermediaries (*coyotes*) to purchase from small producers. This creates a bottleneck in the value chain that gives more negotiating power to intermediaries and producers. Moreover, buyers have direct influence on production practices farmers implement in a region. For example, for livestock in Chiapas, there are only 2-3 major buyers that control a large share of the market and have limited interest in sustainable land practices. Similar dynamics are present in forestry and agriculture value chains.

Lack of coordination: Institutions such as government, donors, NGOs, and local financial intermediaries often reach producers with conflicting or duplicative efforts. As a result, producers are constantly shifting their priorities depending on the resources or programs available, negatively impacting outcomes and results. This is partly driven by different visions regarding producer needs and the future of each sector, as well as shifts in these visions.[22] For example, a government institution can reach producers with a program that fosters sugarcane plantations, while other efforts (whether from government, donors, or NGOs) pay producers to conserve forests. There is also a lack of continuity in financing efforts as small producers mature and grow. For instance, different actors do not coordinate with each other to "graduate" producers from a grant program to a credit program, and there are gaps between grant programs and other types of financing available. This leads to projects not reaching

[22] Government programs often change direction when there are leadership changes, and donor priorities shift. Both can create confusing signals for support organizations (e.g., NGOs).

scale and/or de facto abandonment of previous efforts (see ***Lack of Continuity After Grant Funding Ends*** box).[23,24]

LACK OF CONTINUITY AFTER GRANT FUNDING ENDS

From 2008-2018, CONABIO supported many programs through its Corredor Biológico Mesoamericano initiative. This led to many promising results in priority regions, including the uptake of silvopastoral practices in Maravilla Tenejapa. Don Eberto wants to continue these practices but lacks support to do so. He is unsure about what he will do if his equipment (e.g., the machine that grinds grass to prepare food for cattle) breaks as he has never accessed a loan and believes doing so is too risky. Therefore, there is a possibility that Don Eberto and others return to previous practices, jeopardizing the long-term impact of 10 years of investment.

Policy gaps: There are untapped opportunities to enable and incentivize sustainable land activities. First, some public policies and programs focus on increasing productivity without adequate focus specifically on sustainable production. Relatedly, agricultural subsidies often conflict with conservation programs (e.g., CONAFOR payment for ecosystem services, PES). Second, some policies lack market-based approaches. In particular, CONAFOR PES pays producers to not harvest forests at all, rather than to harvest forests sustainably, which could further increase incomes. Sembrando Vida,[25] which is in its initial phase of implementation, has not yet established a plan for the commercialization of products. In most subsidy-focused programs, producers struggle to graduate to financial services. Third, for women, many of these policies and programs have requirements for female participation but do not use a more nuanced approach to support women and the unique situations they face.[26] Lastly, policies can be difficult to understand and are irregularly enforced, making them challenging to navigate for producers.[27]

Weak data and information systems: There are several types of data and information systems relevant to sustainable land activities, including product traceability, forest cover, and GHG emissions. Most of these data systems lack granularity and are not commonly updated due in part to the lack of infrastructure to compile, disseminate, and reuse quality data. Some systems are not

[23] Gestión y Política Pública, "Integración de la política ambiental en México: El caso de la política agropecuaria," 2014

[24] For instance, important efforts such as REDD+, EmFoCo y Desarrollo, and programs within the Corredor Biológico Mesoamericano recently ended or were reduced, after many institutions had spent several years and millions of dollars working to support their implementation. Continuation of activities from these programs is unclear, as no other organization or mechanism has continued support, and the extent to which producers can continue activities on their own is limited.

[25] Sembrando Vida is a government program centered around increasing productivity, creating temporary employment for producers, and investing in natural and social capital—in 19 states across Mexico.

[26] For example, supporting non-land-intensive activities (detailed further in recommendation 3.1) that women oversee (e.g., opening a store) could reduce incentives to scale land-intensive activities. Or, focusing on women's economic empowerment cold help women participate more in production.

[27] For example, most ejidos apply to CONAFOR for funds for several activities such as engaging in production, planning and mapping resource extraction, or understanding the conditions of biodiversity, based on an annual open tender. This tender call is difficult to understand for most ejido members, as it is highly technical, has complex operation rules—for what is and is not being funded—and has tight timelines. This has created a business of advisors or forestry technicians who help producers navigate this complex ecosystem. Moreover, advisors acknowledge that sometimes policies can be implemented arbitrarily, leading to shutdowns of operations or additional costs.

easily accessible for producers and buyers. Moreover, weak data and information systems at all levels (e.g., farm, municipal, state, national) hamper the creation and/or implementation of potential tools that add value and promote sustainable land activities. For example, lack of quality data at farm and value chain level reduces the ability of producers to trace their products and precludes certification for some value chains, such as livestock. Meanwhile, lack of strong, affordable monitoring systems (e.g., for forest cover) impedes producers from accessing to carbon credits and offset markets.

SEGMENT-SPECIFIC BARRIERS

In addition to the barriers above, the table below summarizes key segment-specific barriers for forestry, agroforestry, and livestock. Annex C provides additional detail on these barriers.

	FORESTRY[28]	AGROFORESTRY	LIVESTOCK
DEMAND	**Depressed wood markets** • Illegal lodging is creating downward pressures on timber prices • When wood prices are low, producers pause productive activities in forests • This can lead to forest abandonment and/or deforestation	**Limited scale of small producers** • Most agriculture happens in parcels within ejidos • This leads to an inability to reach economies of scale, which affects input costs and competitiveness	**High upfront costs** • Most cattle land is degraded • High amount of financing is necessary to transition to silvopastoral systems
SUPPLY	**Limited support for sustainable forestry** • PES pays producers to not harvest forests, which eliminates a potential source of income	**Limited financing to aggregate and certify** • Some associations are willing to pay higher prices for sustainable products, such as coffee and cocoa	**Limited financing for sustainable practices**

[28] Forest barriers can vary depending on regions and ecosystem, as this defines the type of wood that is harvested and commercialized. For instance, in the Yucatán Peninsula, wood is of tropical variety—this means most wood is used for natural carbon (i.e., fires) and some wood (e.g., mahogany) has commercial value; while in Jalisco most forests are pine and oak forests—where most wood has commercial value.

	• This can lead to abandonment and a higher likelihood of fires	• However, they lack working capital to pay a higher price to producers upfront—and therefore pay a normal price for a large share of the products	• Past subsidies (e.g., PROGAN[29]) and some financing today risks encouraging livestock expansion (e.g., credits to purchase new animals) • Few sustainable land activity credit programs have focused on livestock producers
ECOSYSTEM	**Low incentives to protect forests in private lands** • Forest regulation has limited purview in private parcels (e.g., acahuales[30]) • Parcel wood cannot be sold legally **Overregulation** • Acquiring permits is difficult • This creates extra costs (e.g., the need for specialists), limits revenue (e.g., reduces producers' competitiveness) and drives uncertainty in timing	**Expensive certification** • Certificates for individual coffee producers can be expensive • To make them more viable, producers must first create or join cooperatives or groups • Without the certificates, the value for agroforestry products is not recognized in markets	**Limited traceability** • Monitoring and certifications systems for silvopastoral practices are weak • This makes it difficult to ensure that investment will obtain purchasing preference and/or premium, making producers reluctant to transition

LESSONS FROM PAST EFFORTS

Over the past decade, many initiatives have aimed to address these barriers. Public sector, private sector, development funders, and civil society actors have invested over USD one billion in the past year alone to help finance sustainable landscapes.[31]

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[29] PROGAN was the "*Programa Producción pecuaria sustentable y ordenamiento ganadero y apícola*" that provided financing to livestock farmers to increase productivity, through support for sustainable technological practices of production, technical assistance, and training.

[30] Acahuales are nascent or secondary forests that are growing back into primary forests. Please refer to Annex C for further context.

[31] Please refer to Annex B for more detail. The compendium of 50+ existing efforts, while detailed, is not exhaustive. Therefore, drawing detailed conclusions, such as dollars spent by each group or composition, would be inaccurate. However, trends show that government provided the most funds, followed by donors, and then private sector.

Most government programs are structured as grants/subsidies. Key programs include CONAFOR's PES—whereby the government, not a market actor, pays communities an average of ~USD 88 per hectare per year to conserve land[32]—and the Secretaria de Bienestar's Sembrando Vida program—which provides a monthly payment of USD 250 per 2.5 deforested hectares to small-scale producers to plant crops and trees. [33] Sembrando Vida demonstrates a shift in government policies to focus on the most vulnerable producers who were often left out of previous rural subsidy programs.

Donors and multilaterals have primarily used grants to improve the livelihoods of vulnerable communities—including women—and to strengthen the institutional capacity of local governments. These actors have been critical proponents of sustainable land activities in Mexico, through important initiatives such as the Forest Investment Program (FIP)—which brought together multiple donors (e.g., World Bank, Interamerican Development Bank), supported communities for over 10 years, and provided almost USD 60 million in funds to improve market access and increase resilience of forest-dwelling communities and their forests. Going forward, donor programs could be strengthened in two key areas:

- Expanding scope and coordination: Donors search for strong measurable impact and scale of results. This can skew their focus towards more developed producers, leading many development funders to focus on the same producers and producer associations in the south of Mexico and Jalisco, which has had limited impact on a national scale. Given these actors' close collaboration with the government, these programs have also been susceptible to shifts in public priorities. Currently, the efforts of donors and multilaterals are at an inflection point, as current government priorities remain unclear in many key areas (e.g., forestry, agriculture).
- Designing interventions with clear "exit strategies:" Some donors lack a clear "exit strategy" after their programs end. Having an exit strategy means donors have a clear plan of how the results of a project will be sustained after funding ends. Not having one risks the sustainability of results.

Local and global NGOs and civil society actors—such as Rainforest Alliance and Fondo Mexicano para la Conservación de la Naturaleza (FMCN)—are the main implementers of financing, capacity building, and market linkage projects. Their activities are directly influenced by the priorities of funders.

In the private sector, a handful of small-scale, sub-regional programs exist, mostly focused on supplier development and corporate and social responsibility (CSR). Actors range from large companies such as Danone to forestry-focused companies such as Ka'ax Mayas. Most of these programs are small-scale and focus on single crops rather than a landscape approach. Several financial institutions focused on serving producers are gaining traction, such as La Asociación Mexicana de Uniones de Crédito del Sector Social (AMUCSS) and FINDECA.

For more details on efforts listed above, please see the link to the online compendium in Annex B.

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[32] CONAFOR, "Programa Apoyos para el Desarrollo Forestal Sustentable," 2017
[33] Secretaria de Bienestar, "Programa Sembrando Vida," 2020

From these efforts, a number of learnings and promising models have emerged:

- Financing CFEs, SMEs, and producer associations can be financially viable. For example, local financial providers such as AMUCSS and FINDECA have been able to provide financing to small producers in an economically viable way. For example, AMUCSS has been operating for over 25 years, and in 2019 provided ~USD 24 million in loans, ~USD 5 million in liquidity, and serviced over 45 thousand people.[34] These financial intermediaries have been built through strong partnerships with local producers, who have engaged with everyone from the design team up to the management, in order to ensure that the intermediaries effectively support producers' needs. Results have been positive, and these institutions have become an important bridge for working with communities and providing them with other services (e.g., technical assistance).
- Long-term efforts that link producers to markets have proven successful in increasing access to financing and sustainability. Ejido Verde, The Sustainable Trade Initiative (IDH, based on initials in Dutch), and other programs have provided long-term support to producers that helps them access markets and foster sustainable land activities. For instance, Ejido Verde supports producers with holistic services to access pine resin markets (e.g., capacity development, access to the right inputs) and financing through off-take agreements. This model has proven its ability to provide long-lasting support (it first launched in 2009) and ability to scale: today it has reforested over 3,000 hectares of forest and has generated a source of income for more than 1,200 people.[35] Moreover, Ejido Verde operates as a company and can, therefore, recover at least some of the costs of its operations, rather than solely depending on grants.
- Efforts that promote collaboration between stakeholders can reduce fragmentation and increase efficacy. REDD+, Juntas Intermunicipales, and Conservación de Cuencas are credited with creating important platforms where national and local actors support each other. Having a broader view of the system and its needs has enabled many of these actors to take a landscape approach.[36] For example, Juntas Intermunicipales coordinate efforts in specific regions to ensure that they serve a cohesive vision and support actors that are providing additive services to the communities.[37] Due to government change and external factors, some of these programs are ending or have significantly diminished (e.g., REDD+), creating a gap that will need to be filled in order to continue the momentum these programs have generated.

For the next decade, it is critical to build on learning while seeking to increase sustainability and scale of programs. As summarized above, most interventions have relied on grants and subsidies—with some loans—and have lacked clear strategies to mobilize follow-on investment over the long term. The majority of programs still lack a market-based approach that meaningfully and sustainably engages the private sector to ensure impact continues after initiatives end. Moreover, funding from the government is now decreasing while uncertainty rises, given funding for important programs has ended (e.g., EmFoco y Desarrollo), and budgets for key agencies and programs are decreasing (e.g., CONAFOR). This highlights the importance of identifying, developing, and implementing market-based solutions that can achieve long-

[34] AMUCSS, "Integra productores rurales, S.C. Integración Financiera Rural," 2020

[35] IDB, "IDB Invest and Ejido Verde promote the reforestation of degraded lands and the development of ejidal communities in Mexico," 2019

[36] Please refer to principles in section 3 for landscape approach definition.

[37] Juntas Intermunicipales are public actors that convene and coordinate efforts focused on a specific region. For instance, a junta can gather multiple municipalities and help monitor its natural resources, support producer needs, and coordinate efforts of government, development institutions, and investors in the region.

term impact at greater scale. This requires engaging more proactively with sustainable production markets and the private sector, as described in section 3.

SECTION 3: RECOMMENDATIONS AND NEXT STEPS

Improving financing for sustainable land activities requires holistic action. Addressing only one side of the equation (e.g., supply-side barriers or demand-side barriers) via a piecemeal or siloed approach will not deliver impact at scale. Further, while past efforts have delivered promising results during their implementation period, there is a risk that impact disappears after program support ends. Using a more holistic approach to design, implement, and maintain solutions is therefore core to achieving sustainability and scale.

GUIDING PRINCIPLES

Going forward, four guiding principles can help strengthen the design, implementation, and long-term impact of interventions:

- Leverage local expertise and past lessons: Numerous programs already exist. Therefore, new interventions can build on existing programs that have worked well or have created successful components, such as the strong presence of rural technicians (i.e., dedicated to accessing and implementing government programs for producers). Moreover, it is critical to replicate and scale solutions that work rather than re-inventing the wheel.
- Partner where possible: Partnerships enable stakeholders to bring in diverse skill sets and resources which increase the quality of interventions. For instance, commercial banks or NGOs can partner with small local financial intermediaries to draw on their reach in rural areas and local knowledge of credit-worthy producers. Also, interventions focused on increasing capabilities can leverage forestry and agriculture technicians that already exist.
- Design to sustain and scale: Building clear exit strategies from inception can increase the likelihood of activities continuing and scaling after programs end. For example, interventions based on grant financing could include a long-term vision of how they will lead producers to non-grant financing, such as credits or off-take agreements. Ultimately, sustainability hinges on designing more market-based solutions that generate revenues and/or engage the private sector.
- Address root causes with a landscape approach: Landscape-level management takes into account a matrix of productive systems and balances competing land use demands to maximize well-being for people and the environment.[38] This can deliver benefits in terms of producer resilience (e.g., via diversification of revenues), climate resilience, food security, biodiversity, and sustainability of local economies and markets. Within a landscape approach, actors must consider the range of underlying issues that affect the landscape—and how they interact with each other. For instance, a host of factors—such as weak social capital, cultural norms around gender, or low education levels—can limit access to financing. Therefore, it is critical to design financing interventions that

[38] This is in contrast to taking a value chain or sector-based approach (e.g., forestry, livestock, agriculture) that may miss potential synergies and trade-offs. For instance, a project only focusing on agriculture may err on pushing toward single productive systems and monoculture to increase farmer profitability.

consider a broader set of challenges and to pair them with supporting interventions (e.g., policy advocacy).

These principles cut across the recommendations.

The recommendations below aim to improve the demand for, the supply of, and the broader conditions that enable financing for sustainable landscapes. The recommendations address key themes emerging from the barriers analysis and align to the guiding principles above.[39] The sections below summarize the recommendations, and within each, provide additional detail on the related interventions and potential roles for partners to drive the recommendations forward. While the recommendations are broadly applicable to the three priority segments of small producers in this study, specific interventions and potential partners will vary based on value chain, region, gender—and in particular—level of producer maturity. Therefore, recommendations will require further tailoring at the regional and local levels; these needs are noted throughout.

DEMAND-SIDE RECOMMENDATIONS

Overall objective: Improve the "investability" of sustainable land activities by increasing small producers' demand for, access to, and ability to manage appropriate financing—beyond grants and subsidies.

RECOMMENDATION 1.1: IMPROVE AND SCALE END-TO-END SUPPORT FOR SMALL PRODUCERS

What are we solving for? To become more creditworthy and "investable," sustainable producers need integrated support that addresses their financial, business, organizational, and technical needs.[40] Therefore, technical assistance that takes a "one-size-fits-all" approach is often inadequate. Rather, it is critical for support programs to (i) build producer capabilities on integrated topics that go beyond production or their specific value chain (e.g., biodiversity), (ii) take responsibility for certain activities (e.g., commercialization processes) rather than expecting small producers to learn and master a wide range of new skills, (iii) avoid ad hoc trainings with limited follow-on, and (iv) engage sustainability-focused private sector companies to ensure that support services add long-term value for producers (e.g., by opening access to markets).

Specific recommendations:

- **Tailor support to help producers scale.** To mobilize financing, programs should focus on helping producers reach scale and to develop viable companies. To do so, programs must consider duration of support, format, target audience, and topics required:
    - **Duration:** Programs must adapt timing and expectations to the nuances of producers' work. For instance, forestry requires longer-term support given a forestry program has a time horizon of

[39] These recommendations are not comprehensive but rather highlight the ideas with more promise and potential. For example, other ideas considered include payment for ecosystem services (PES) and more extensive certification programs.
[40] For example: opening a bank account, constituting a legal entity, collaborating with other producers and communities, or processing goods for market readiness (e.g., wood should be properly fumigated and cut into planks before exported).

two to three decades.[41] Livestock producers switching to silvopastoral systems need consistent ongoing support to make more strategic investment decisions each year and to problem solve if challenges arise (e.g., if equipment breaks).

- **Format**: Programs needed to consider producer needs, such as language, literacy levels, and access to technology in the communities where producers reside. For example, many members of ejidos in Quintana Roo are older; programs must therefore account for proper communication techniques with stakeholders of this age (e.g., basic technology use, indigenous language).
- **Target audience**: Programs must segment producers to tailor services to their context and needs. This includes taking into consideration producers' potential to access markets and to develop viable companies. Programs should also take into consideration the existing dynamics between male and female ejido members, the power distribution, and cultural dynamics.[42]
- **Topics**: Key producer needs include:
  - Technical: Producers and some local forestry technicians need more expertise on how to transition from conventional production to sustainable land activities within a landscape approach.[43]
  - Financial: Producers need improved knowledge on how to access and manage financial products and tools, beyond subsidies and grants. This can be an opportunity to empower women in communities, as several interviewees mentioned that women are seen as more responsible with finances, compared to men.[44]
  - Business: Producers need support to understand their production costs and how to make investment decisions (e.g., what constitutes an attractive opportunity).[45]
  - Organizational: Ejidos, in particular, need improved internal management skills to make group decisions, which is particularly critical for sustainable forest management. Therefore, programs need to include training and support in group management and internal governance to increase the administrative effectiveness of ejidos.[46] Such interventions can also improve women's agency, by creating quotas and roles for women.[47]

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[41] Some support programs that exist today are 2-3 years.
[42] Doing so can help better integrate women into positions of power within the ejido (e.g., members of the board, treasurers).
[43] For example, one donor mentioned that during the roll-out of a large sustainable livestock project, they found that almost no local technicians had the knowledge of what was required to transform grasslands into silvopastoral systems. Therefore, they had to train technicians on how to provide correct and actionable support to producers.
[44] For example, many producers are afraid of credits and prefer to use their own resources—even though limited—rather than take on the risks of something they do not understand well.
[45] For example, producers in one ejido in Quintana Roo were unaware of how much it costs them to produce and sell wood to local and international markets. This lack of clarity stifled their ability to make investment decisions and explore new market opportunities. Ultimately, the farmers divested from wood-producing activities and instead sold the rights to harvest and transform the wood to third parties.
[46] For example, most decisions still take place by vote. When asked about potential changes to the internal governance, one ejido expressed a desire to create new decision-making structures and to improve business management.
[47] For example, the International Fund for Agricultural Development (IFAD) has recognized that fostering women's participation and leadership in farmer and producer organizations and other decision-making bodies through the establishment of quotas and gender-sensitive organizational development is a successful approach to increase women's economic

Further, there is an opportunity to reinforce direct support services—as described above—with digital models to increase reach and follow-up over time.[48]

- **Mobilize resources to increase the sustainability and scale of support services for producers.** Funding is needed from different sources—such as private sector buyers, donors, government, and innovative mechanisms (e.g., carbon credits)—to support the models described above over the longer term. This could be done through creation of a dedicated technical assistance financing facility or matching fund. Resources should focus on scaling existing models that have demonstrated success, and where needed, launching new efforts that fill gaps (e.g., creating incubators that provide end-to-end support and help link producers to markets).

Key actors and potential roles:

NGOs and public and private universities:

- Design and deliver end-to-end support services to producers; as needed, partner with each other to ensure integrated support for producers
- Integrate support services with markets (e.g., see IDH example in Annex D)
- Partner with financial intermediaries to provide support services alongside their financial products

Government:

- Add key topics to existing programs provided through public institutions (e.g., SADER, CONAFOR)
- Partner with other providers (NGOs, private companies, and other actors) to ensure integrated support for producers

Private sector - local financial institutions (e.g., AMUCSS, FINDECA):

- Partner with other actors who can provide support services (e.g., loans with relevant technical assistance) to go alongside financial products
- Where possible, integrate support services into portfolio; for example, FINDECA has a designated person in each cooperative to closely monitor the loan and to support members with repayment

Private sector actors higher up in the value chain (e.g., coffee processors/exporters, dairy companies)

- Co-create and co-fund support services to ensure producers are learning key topics for market integration

Donors:

- Provide funding to scale end-to-end support services and crowd in additional funding
- Help create networks of providers of support services to encourage collaboration and maintain standards
- Prioritize providers (NGOs, private companies, and other actors) that have clear linkages to market

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empowerment, representation and decision-making, and workload balance. IFAD, "Gender equality and women's empowerment," 2015

[48] Science, "Realizing the potential of digital development: The case of agricultural advice," 2019

RECOMMENDATION 1.2: SCALE PROJECT DEVELOPMENT EFFORTS

What are we solving for? Many investors, including development finance institutions and commercial investors, are looking for larger sustainable land investment opportunities (e.g., ticket sizes over USD 5-10 million). Yet few of these ticket sizes exist today in Mexico, and there is limited investment in "project development" to change this.[49] This lack of investment is particularly acute for projects that involve small producers and communities.[50] Therefore, it is critical to increase funding for existing or new actors who can play the project development role, based on their connections with communities, investors, and markets. With dedicated time and resources, these actors can identify project opportunities, organize producers and communities, and structure and manage the appropriate financing and investment models (e.g., carbon credits, credit schemes). Doing so can create a pipeline of viable and attractive sustainable land investment opportunities that meet investor interests and criteria—relieving a key roadblock that impedes financing today.

Specific recommendations:

- **Fund project development efforts, potentially through a dedicated facility.** Actors who can play the project development role (e.g., Ejido Verde, El Buen Socio) already exist but require dedicated funding to do so. Dedicated funding for project preparation could also help crowd in new actors—such as conservation specialists who want to implement carbon credit financing schemes at scale—who need more support to bring their projects to fruition. Moreover, a dedicated facility that serves as a "one-stop shop" to support project development and preparation could help increase coordination, share learnings, and support scaling successful models. Project development funding can also enforce best practices in project design, including: co-creating with communities to ensure their participation and buy-in; including women in the process; and taking a landscape approach.[51,52] Project developers could also help support small producers, as discussed under recommendation 1.1.

Key actors and roles:

Private sector actors well-positioned to work on project development:

- Develop projects that support sustainable land activities at greater scale (e.g., Ejido Verde model for pine resin)

Private sector – financial intermediary:

- Support in structuring a dedicated facility for project preparation and development, with support of donors and development funders

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[49] The structuring and preparation of an activity for commercial operations.
[50] Several project development efforts are focused on larger, private landowners.
[51] There are many examples of project preparation facilities in infrastructure and green financing. Determining the structure and operations of a similar facility for sustainable land activities would require further exploration.
[52] For example, including a gender equality framework that guides how projects should include women. The World Bank has developed a Gender-Responsive PPP Legal and Regulatory Framework to guide project preparation in infrastructure. The World Bank Group, "Applying a Gender Lens throughout the PPP Project Cycle," accessed 2020

NGO:

- Develop projects that support sustainable land activities at greater scale (e.g., Ejido Verde model for pine resin)

Donors:

- Provide grant capital to fund project preparation and development, via existing or new actors
- Help crowd in other types of financing (e.g., from multilaterals, bilaterals, private sector) to support project preparation and development
- Support in structuring a dedicated facility for project preparation and development, with private sector

SUPPLY-SIDE RECOMMENDATIONS

Overall objective: Increase the availability and reach of appropriate, tailored financial products—beyond grants and subsidies—that help small producers implement sustainable land activities.

RECOMMENDATION 2.1: SCALE UP FINANCING FOR SUSTAINABLE LAND ACTIVITIES VIA FINANCIAL INSTITUTIONS AND OTHER INTERMEDIARIES

What are we solving for? There are many financial institutions, such as AMUCSS or FINDECA, who are already serving rural communities. Many of these institutions were born out of producer initiatives and therefore understand the priorities and needs of small producers and have connections with rural communities.[53] As a result, these institutions are well-positioned to finance small producers and companies, as compared to more traditional financial institutions. However, many of these "target" financial institutions are small scale, lack an explicit focus on sustainable land activities—rather than production in general—and primarily provide credits and savings products for working capital needs. Therefore, it is critical to help these institutions grow, strengthen their operations, and increase their "green" focus. This requires improving business planning, better designing and tailoring financial products offered, and where needed, expanding access to capital.

In addition to financial institutions working with rural communities, there are also new funds, facilities, and other private sector intermediaries (e.g., Neek Capital, Loom Capital) who seek to invest in sustainable land activities. Going forward, these intermediaries will require investment to scale their work.

Specific recommendations:

- **Provide technical assistance to strengthen the reach and operations of target financial institutions.** Support should focus on helping institutions (i) improve their expertise in sustainable land activities—including ways they can include landscape considerations in their products or services;

[53] For example: FINDECA was built from the bottom up out of CEPCO, a cooperative of coffee producers in Oaxaca. Currently, FINDECA can only provide loans to producers that are backed by lines of credit and donations from donors and the government. Through support and legal guidance, FINDECA could potentially expand its portfolio of services to not only provide loans for coffee production, but also savings products and soft loans for agroforestry. FINDECA could also catalyze its growth to reach more farmers in other regions and value chains: although FINDECA has the expertise and potential to diversify, over 90% of its work today is in coffee.

(ii) conduct business planning to reach scale—including ways to integrate a more diverse set of clients such as youth and women; and (iii) manage risk appropriately. On the latter point: expansion of lending will require institutions to create risk management facilities. To do so, smaller-scale intermediaries could partner with each other to consolidate access to government guarantees (e.g., as AMUCSS does to access the Fondo Especial de Asistencia Técnica y Garantía para Créditos Agropecuarios, FEGA). Moreover, working with these intermediaries to finance larger producer groups and companies can help deliver impact at scale.[54]

- **Design tailored financial products for sustainable land activities.** This requires supporting target financial institutions to design tailored financial mechanisms that (i) specifically support sustainable land activities within a landscape approach (e.g., "green loans" that link credit products and interest rates to improved land management practices,[55] soft loans with grace periods for livestock producers transitioning to silvopastoral production[56]) and (ii) respond to the needs of producers.[57] When designing these products, it is critical to consider the distinct financing needs of women and youth—who have lower levels of involvement in production activities, on average, but lead on other critical activities in communities (e.g., non-production activities that can help protect landscapes; see recommendation 3.1).
- **Mobilize capital toward financial institutions and other intermediaries that work with small producers**. This includes financial institutions, such as AMUCSS and FINDECA, as well as other financial intermediaries (e.g., dedicated funds). For financial institutions, this could be done by (i) providing lines of credit or guarantees, with set conditions to lend to small producers implementing sustainable land activities or (ii) helping financial institutions access other asset classes (e.g., bonds).[58] For other financial intermediaries, there is an opportunity to support existing funds[59] or create new funds and facilities that can invest directly; this can help reduce transaction costs for investors and provide appropriate financing sizes for intermediaries.[60] Lastly, there is an opportunity to explore mechanisms that direct other types of capital (e.g., remittances, carbon finance, matching funds) toward sustainable land activities. All of these mechanisms should have set conditions to promote sustainable land activities within a landscape approach and to tailor strategies to reach women.

Key actors and roles:

Private sector – Local financial institutions already working with producers (e.g., AMUCSS, FINDECA, Credimich):

- Provide tailored financial products to companies and producers for sustainable land activities
- Ensure financial products are paired with strong technical assistance and market linkages, often through partnerships with providers of support services (NGOs, private sector, government)

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[54] For example, Proinfor—run by KfW—is looking for larger investment opportunities, not just to provide working capital.
[55] Landscapes for People, Food and Nature, "Financing Strategies for Integrated Landscape Investment," 2014
[56] A soft loan is a loan with a below-market rate of interest with favorable terms to the borrower, such as grace periods.
[57] For example, loans that align with revenue cycles for each value chain, have feasible guarantee requirements, and help transition producers from subsidies to credits.
[58] For example, FIRA has received certification from the Climate Bonds Initiative to emit green bonds for forestry. The IDB has supported these efforts.
[59] The eco.business Fund is one example.
[60] Transaction sizes available today from DFIs and investors are too big for many intermediaries. Some intermediaries noted it is easier for them to raise grants than to secure financing for the commercial parts of their operations.

Private sector – funds, facilities, and other intermediaries (e.g., Loom Capital, Neek Capital):

- Raise funds from different actors (e.g., private sector, impact investors, DFIs, development funders) to support sustainable land activities
- Finance companies and producers implementing sustainable land activities (e.g., via direct investment and self-liquidating equity models)

Private sector – investors (e.g., pension funds)

- Invest in funds, facilities, and other intermediaries financing sustainable land activities

Government financial institutions (e.g., FIRA, FND):

- Provide financing to first-level local financial intermediaries
- Provide tailored financial products to producers to finance sustainable land activities
- Ensure financial products are paired with strong technical assistance and market linkages, often through partnerships with providers of support services (NGOs, private sector, government)

Donors and DFIs:

- Provide lines of credit to financial institutions
- Provide guarantees to financial institutions to de-risk lending to certain segments
- Invest directly in funds, facilities, and other intermediaries—using first-loss and blended finance structures that reduce risk and help crowd in more commercial investment
- Fund technical assistance for financial institutions and other intermediaries to expand reach, strengthen operations, and design tailored financial products for sustainable land activities
- Help fund integrated support services for producers, paired with financial products (see recommendation 1.1)

RECOMMENDATION 2.2: CROWD IN PRIVATE SECTOR TO SUPPORT SMALL PRODUCERS IN ACCESSING FINANCE AND MARKETS

What are we solving for? Private sector buyers have the incentives and the capabilities to provide financing to small producers to support sustainable land activities. Yet today, off-take agreements and value chain financing between buyers and small producers are uncommon and market integration remains low. When available, off-take agreements are known to provide poor terms for producers due to an imbalance of power. Moreover, many small producers are not ready to sell their products or work directly in national and international value chains. Therefore, it is critical to invest more time and resources to forge off-take agreements between more sustainable/ethical buyers and small producers, where buyers provide financing and support to producers (see recommendation 1.1.), and producers provide sustainable products at a quality and volume that meets buyers' requirements. This requires finding the right buyers, developing producers' capacities, structuring equitable agreements, and providing implementation support. Such efforts could help scale an untapped source of financing, while allowing the full value chain to benefit from more market share and/or premiums.

Specific recommendations:

- **Foster relationships between large buyers and small producers.** This requires advocating to large buyers to change the way they engage with small producers and to better value the benefits to

their business, outside of CSR.[61] Doing so requires structuring off-take and financing agreements with producers—often with grant funding—and preparing producers to participate in these competitive value chains (see recommendation 1.1).[62] This may require re-structuring value chains, given that most are highly fragmented with multiple intermediaries. If incentives are well-aligned, producers can commit to sustainable land activities and deliver products to buyers.

- **Support small buyers purchasing from producers working in sustainable land activities.** This will require working with smaller, local buyers to scale their businesses and shape their relationships with small producers. First, small buyers may require grant support to develop off-take partnerships with small producers.[63] Second, unlike large buyers, many small buyers require capital (e.g., equity, debt) to scale operations and reach more producers implementing sustainable land activities.[64] Lastly, some small buyers may require technical assistance to manage their growth in a sustainable way that properly manages their risk.

Key actors and roles:

Large private sector actors (e.g., Walmart, Home Depot, Ikea):

- Integrate small producers into value chains and structure off-take agreements
- Set requirements for sustainable land activities
- Provide financing for sustainable land activities of small producers

Smaller private sector actors (e.g., Ejido Verde):

- Structure off-take agreements with smaller producers
- Set requirements for sustainable land activities
- Provide financing for sustainable land activities of small producers

Donors:

- Provide blended or first-loss capital to spur investment in off-take schemes; this could be done through a matching fund with private sector companies[65]
- Convene private sector actors into programs that integrate small producers
- Advocate for inclusion of sustainable land practices in procurement process with the private sector

NGOs:

- Provider support to producers to meet standards to integrate into larger value chains
- Aggregate to provide scale and ensure quality/sustainability standards

Lastly, while not discussed in-depth here, the analysis suggested additional opportunities to mobilize carbon financing.

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[61] Such as diversifying input sources.
[62] Actors such as Rainforest Alliance are already working on efforts to broker such relationships.
[63] For example, AgDevCo helped broker off-take agreements in Malawi, between Illovo and a sugarcane cooperative. NIRAS, "Understanding the role of finance in creating a successful farming cooperative," 2019
[64] For instance, IDB financed Ejido Verde to support its operations. IDB, "IDB Invest and Ejido Verde promote the reforestation of degraded lands and the development of ejidal communities in Mexico," 2019
[65] For example, AgDevCo—a specialist investor in African agribusinesses—has a Smallholder Development Unit that provides matching funds to companies to help then set up off-take agreements with smallholder farmers.

ECOSYSTEM RECOMMENDATIONS

Overall objective: Create enabling conditions (e.g., policy, coordination, data) to better access, mobilize, and deploy financing to small producers.

RECOMMENDATION 3.1: SUPPORT INCOME-GENERATING ACTIVITIES TO DIVERSIFY HOUSEHOLD INCOMES AND REDUCE PRESSURE ON LAND-INTENSIVE ACTIVITIES

What are we solving for? Household rural incomes are highly dependent on land-intensive income activities that promote land use change (e.g., agriculture, wood, livestock). A fall in prices of land-intensive products drives small producers to increase the amount of land deforested to compensate for the loss of income, via output quantity increase (i.e., deforest more land to make way for more production). Supporting households in diversifying their incomes through non-land-intensive activities (e.g., gum, honey, product transformation, in-town shops) can help reduce incentives that drive deforestation. As most ejido members are older men, there is an opportunity to diversify household incomes by integrating and empowering women and youth. This can reduce dependency of rural households on forest resource extraction.[66]

Specific recommendations:

- **Fund programs to promote income-generating activities outside of primary production, with focus on women and youth**. For instance, models to better integrate women into higher parts of the value chain (e.g., designing and commercializing furniture made from wood extracted by their ejidos) have proven successful in Quintana Roo. Women and youth can also work in other activities outside production value chains, such as tourism.

Key actors and roles:

NGOs, private sector, and other potential program implementers:

- Design programs to increase household income outside of primary production, with focus on women and youth, thereby reducing economic incentives to deforest

Donors and government:

- Provide funding to create programs
- Support implementers in the design of programs, to ensure strong incentives to stop deforestation and promote reforestation and afforestation

RECOMMENDATION 3.2: HELP SHAPE AND IMPLEMENT ENABLING PUBLIC POLICIES

What are we solving for? Public policy is a critical lever to promote sustainable land activities. Specifically, it is critical to (i) ensure agricultural and other relevant policies have a sustainability lens (e.g.,

[66] Prabodh Illukpitiya, "Role of income diversification in protecting natural forests: Evidence from rural households in forest margins of Sri Lanka," 2008

re-evaluating some subsidies that promote agricultural expansion[67]), (ii) update policies to reflect the constantly-evolving realities of small producers (e.g., the value of PES payments compared to other subsidies[68]), and (iii) strengthen linkages to markets and private sector actors (e.g., via more dedicated support for commercialization processes for sustainable products). Given the federal government is the largest funder of AFOLU activities in Mexico, continuous improvement of policy development and implementation can have widespread impact on the financing landscape.

Specific recommendations:

- **Collaborate with the local and national government to create or adjust key policies and programs that enable sustainable land activities.** In particular, there may be an opportunity to build upon existing policies and programs (notably, CONAFOR PES and Sembrando Vida) that have scaled to reach thousands of producers, and therefore provide platforms to implement recommendations included in this document (such as recommendation 1.1). The government could also work with other partners to fill policy gaps, such as fire management in response to budget cuts or improvements in nation-wide programs.[69] It is particularly critical to involve producers and the private sector to help shape and implement policies.

Key actors and roles:

Government:

- More actively engage producers, private sector, and other partners to design and implement policies that specifically support sustainable land activities
- Use existing policies and programs (e.g., CONAFOR PES, Sembrando Vida) to deploy additional interventions

Donors, NGOs, private sector, producers, financial institutions, and others:

- Actively engage with the government to help design and implement public policies that support sustainable land activities

RECOMMENDATION 3.3: STRENGTHEN DATA AND INFORMATION FOR SUSTAINABLE LAND ACTIVITIES

What are we solving for? Financing sustainable land activities depends on strong data and information systems to trace products, monitor practices over time, and quantify impacts (e.g., GHG emissions reductions). Today, data systems only exist at a smaller scale for certain value chains (e.g., coffee) and still face challenges in terms of transaction costs, quality, and long-term sustainability. Therefore, it is critical to invest in better data and information systems, with a focus on (i) mechanisms that improve traceability

[67] In Quintana Roo, for example, there is a conflict between SADER subsidies that support sugarcane plantations and CONAFOR PES.

[68] PES payments are based payments on corn prices, which are low compared to other production activities that drive deforestation, such as livestock or palm oil.

[69] Steep drops in budgets of institutions such as CONAFOR, CONABIO, and CONANP have led to the cancellation of key programs such as Programa de Empleo Temporal, which helped reduce forest fires. Collaboration across different actors could help develop solutions to fill these gaps that expose producers to risk and jeopardize the continuity of key programs. There are also opportunities to improve Sembrando Vida, based on lessons from the first year of implementation.

of sustainable products, especially for livestock, and (ii) improve data systems to better monitor and quantify the value of ecosystem services from land (e.g., carbon sinks, natural carbon removal, and livelihood support). Furthermore, these improvements in data systems can help improve decision-making, secure access to markets for sustainable products, and mobilize more finance (e.g., access to carbon finance) for private and public actors.

Specific recommendations:

- **Explore roll-out of certification for livestock in Mexico.** This would require first researching if and how consumer demand for sustainable livestock products could be increased nationally and in places where demand is already high (e.g., China, USA). Then, funding would be needed to improve traceability and to design and implement a certification system adequate for target markets.[70] Mexico could learn from examples of other countries already doing this. For instance, Argentina has a strong silvopastoral certification market that is recognized in important international markets, such as China. Currently, Argentina is exporting ~37% of total silvopastoral beef there.[71] In Mexico, efforts to certify silvopastoral meat are starting, which can be supported and scaled after proof-of-concept. For example, Neek Capital is supporting Rancho Carne del Monte to develop a certificate.[72]
- **Invest in data systems to support better decision-making and new revenues.** This requires supporting emerging technologies (e.g., emerging techniques based on satellite imagery and artificial intelligence) to better track sustainable land activities and their impact on GHG emissions and capture. This technology is critical to scaling carbon financing as the offset market grows. Moreover, there is an exciting opportunity to explore ways to aggregate small producers to (i) integrate them into these markets (e.g., by aggregating them through project development efforts—see recommendation 1.2); and (ii) work on instruments that channel benefits back to producers and help them distribute them within their communities. Finally, the success of data interventions hinges on the active involvement of communities and their trust towards the private sector. Communities must see the benefits of data efforts and sustainable resource management.

Key actors and roles:

Private sector (e.g., Certimex) or NGO (e.g., Rainforest Alliance) certification agency:

- Design and implement a certification for silvopastoral production

Private sector data companies:

- Support in the implementation and design of new data tools (e.g., monitoring of biodiversity, impact studies for urban expansion)
- Mine data for different uses (e.g., innovation, startups)

Funders and government:

- Fund improvements of data systems

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[70] Unlike other products (e.g., FSC for wood, Rainforest/UTZ for coffee), livestock lacks certification programs for farmers that use silvopastoral production. For instance, many of the farmers in Chiapas sell their cows as calves to intermediaries. When coyotes buy the calves, it is difficult to keep track of where they go, after they have been sold to farms for feedlotting.
[71] Dialogo Chino, "Can 'silvopastoral' farming benefit consumers, cattle and the climate?," 2019
[72] This certification is still being created.

- Use data to mobilize carbon financing

RECOMMENDATION 3.4: DEDICATE TIME AND RESOURCES TO IMPROVE COORDINATION

Overview: Financing sustainable landscapes hinges on improved coordination between different actors, levels of government, and geographic areas. Yet coordination does not happen on its own.[73] Improving coordination requires dedicated time and resources to continuously understand what various actors are doing, to identify opportunities to better collaborate (e.g., avoiding silos), and then to facilitate landscape-level collaboration and partnerships. By doing so, partners can increase their impact by avoiding duplication, focusing on key gaps, and learning from each other.

Specific recommendations:

- **Invest in coordination structures**. To do so, public sector, private sector, donors, and other actors could come together to designate and fund a "coordination manager" focused on overseeing sustainable land activities. This could include organizing bi-annual meetings, developing an accountability framework to track progress, and addressing key obstacles. Coordination must happen at two levels: (i) landscape, which includes strengthening or creating structures at the local/regional level; and (ii) national, which can help align national efforts to local interests. Coordination structures can also help align efforts around key topics, such as women's economic empowerment. Inspiration can come from Juntas Intermunicipales in Jalisco and Yucatán, which have effectively aligned interests of different actors for a specific region. These Juntas are considered public institutions but have also been effective in engaging other actors and mobilizing resources from multiple sources.

Key actors and roles:

NGOs, private sector, or other national or local partners:

- Act as "coordination manager" for specific region(s)
- Act as "coordination manager" at the national level, on a rotating basis

Donors, government, private sector:

- Fund the "coordination manager" in each region, through grants and/or fee-based membership

THE PATH FORWARD

Many of the barriers synthesized in this report have persisted for decades. This report, therefore, aims to better (i) distill barriers to understand driving forces and root causes, (ii) organize barriers into supply, demand, and ecosystem to help identify the actors involved and their roles, and (iii) start to understand how these barriers interact with each other at the landscape level.

Beyond the specific recommendations, overcoming these barriers requires a change in mindset. The recommendations in this report build on learnings and successful models from previous

[73] For example, a Mexican company with a social focus worked to coordinate different actors working on sustainable landscapes but did not receive remuneration for the time and effort their team was investing. This negatively impacted the company's operations, and as a result, the company reduced the scope of its coordinating efforts.

decades, but also highlight the need for new solutions and ways of working. In particular, the report highlights the need for a "step-change" in four critical areas:

- How to support. Strategies need to shift from a narrower focus on capacity development to models that provide long-term, continuous support to producers. Producers do not want a one-off training; they want someone to call when a challenge arises. Moreover, producers do not need to "do it all." Rather, other actors can take on specific responsibilities—including financing, business planning, and legal and accounting support—to allow producers to focus on their core business: producing high-quality, sustainable products.
- How to finance. Strategies need increased focus on financial products outside of grants and subsidies in order to promote long-term financial access and health. This does not mean cutting grants and subsidies—which still play a critical role for the most vulnerable producers—but rather using grants and subsidies as a starting point to help producers learn about and transition to other financial products, when appropriate.
- How to scale. Interventions need to focus on developing companies, cooperatives, and projects with greater scale that can receive financing and serve traditional markets. This requires more investment in project development and financing vehicles (e.g., funds) that can reach thousands of producers across thousands of hectares.
- How to partner. In many ways, financing sustainable landscapes hinges on better connecting communities to private sector companies and investors. Specifically, more dedicated efforts are needed to restructure value chains and to secure off-take agreements with private sector buyers—who can not only help finance small producers, but also provide technical assistance and connect them to markets that demand their products. Currently, this role of the private sector in supporting sustainable land activities is untapped.

Moreover, the recommendations in this report must be implemented together. A successful financing scheme will require demand-side interventions to support producers and the design of investable projects, supply-side interventions to mobilize appropriate financing from intermediaries and off-takers, and ecosystem interventions to connect these pieces together.

Overall, this report takes stock of progress to date, the current situation, and priorities for the future. In some areas—such as capacity development and loan intermediation—there is a need to focus on replicating and scaling models that have shown promise. In other areas—including support services for producers, project development, and private sector off-take and financing agreements—there is a need to create new models to fill gaps. Further, there is a need to continue ongoing efforts to coordinate, improve data and information, and strengthen public policies. Across the board, it is important to take a landscape view and focus on market-based approaches that can deliver sustainability and scale. These recommendations serve as a starting point for USAID and its partners to collaboratively develop and adapt individual and collective strategies to better protect Mexico's natural landscapes over the next decade.

ANNEXES

ANNEX A: AFOLU REGIONAL ANALYSIS

The figures below analyze the key characteristics and drivers of GHG emissions in each focus region for the study. Please note that analysis is not exhaustive, and there are some data gaps.

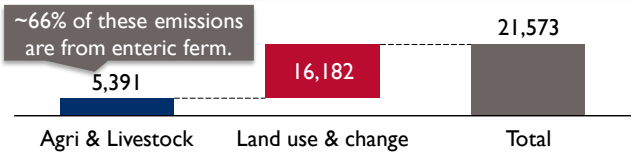
CHIAPAS | Deforestation is a large driver of GHG emissions, largely driven by land expansion for livestock

CHARACTERISTICS

- **~1.9 million hectares of forests;** ~26% of total state area[1]
- **Broad range of forest types**: from lowland to highland tropical forest, pine and oak forests in high altitudes, and plains with grasslands
- **Lost over 68 thousand hectares of forest** in 2016, making it the state with the highest amount of deforestation in Mexico[1]
- **Most land is community-owned ejidos –** in 2014 there were 3,100 ejidos that covered 3.5 million hectares (~47% of total state area)[2]
- **Population**
  - 51% rural[3]
  - 27% are indigenous[3]
  - 76% are poor[4]

POTENTIAL IMPACT

Agriculture, livestock & land net emissions[5]
Greenhouse Gas Emissions Gg CO2-equivalent, 2005



GHG emissions:

- **The largest driver of GHG emissions is land use change** (75%), of which ~70% is deforestation driven by livestock activities[5]
- **Enteric fermentation** drives most livestock and agricultural emissions (i.e., an emission from livestock)[6]

Financing: there is large need for inexpensive, readily available credit to support more subsistence-focused producers undertaking more sustainable practices

1. Cuarto Poder, "Chiapas ha perdido el 55 por ciento de sus bosques," est. 2016. 2. CEDRSSA, "La propiedad social rural y su perfil productivo," 2015. 3. INEGI, "Información por entidad," 2020. 4. CONEVAL, "Comunicado de prensa 10," 2018. 5. Programa de Acción Ante el Cambio Climático del Estado de Chiapas, "Inventario Estatal de Gases de Efecto Invernadero del Estado de Chiapas," est. 2005. 6. Covaleda et al., "Escenarios de mitigación de emisiones para el sector rural del Estado de Chiapas utilizando modelos de estados y transiciones," 2018.

JALISCO | Livestock is a key driver of GHG emissions; forests sequester ~50% of total AFOLU GHG emissions

CHARACTERISTICS

~4.6 million hectares of forests; ~58% of total state area[1]

Mainly pine and oak forests and dry jungles

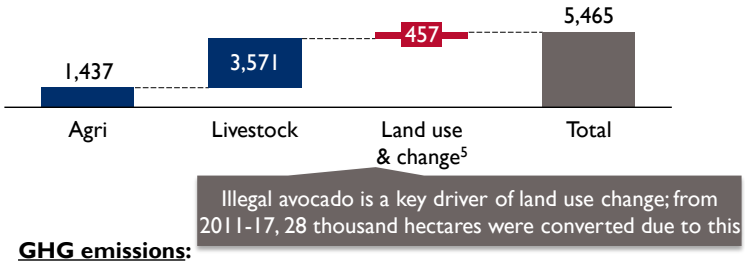
Lost ~5 thousand hectares of forest from 2011-14; and ~91 thousand hectares were degraded, from primary to secondary vegetation during the same period[1]

Most land is privately owned

Population
- 13% rural[2]
- <1% are indigenous[2]
- 28% are poor[3]

POTENTIAL IMPACT

Agriculture, livestock & land net emissions[4]
Greenhouse Gas Emissions Gg CO2-equivalent, 2014



GHG emissions:
- **Livestock accounts for 65% of total AFOLU emissions**; most comes from enteric fermentation (63% of livestock emissions)
- **Land conversion and degradation** drive GHG emissions that are offset by **considerable forest sequestration**[1]

Financing: need greater access to credit tailored to needs of small and micro producers—not only agri-industrial operations

1. Strategos, "Análisis del cambio de uso de suelo y vegetación en Jalisco (2011-2014)," 2018. 2. INEGI, "Información por entidad," 2020. 3. CONEVAL, "Comunicado de prensa 10," 2018. 4. Carbon Trust, "Inventario Estatal de Emisiones de Gases y Compuestos de Efecto Invernadero," 2014. 5. We understand this as the only category that captures emissions. In Jalisco it's estimated to capture ~4,300 Gg CO2-e.

YUCATAN PENNINSULA | Key driver of GHG emissions is land change, given large sequestration from forests

CHARACTERISTICS

~10.7 million hectares of forests; ~71% of total state area[1]

Mainly tropical rainforest (~70%)[1]

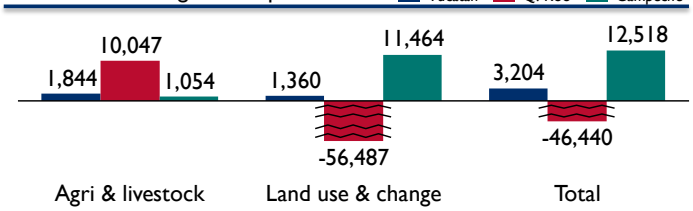
High levels of deforestation; in 2016 Campeche had the second highest amount of deforestation (56 thousand ha.) and Q. Roo the third (39 thousand ha.) in the country[2]

Most forest lands are ejidos; agri-land is mostly semiprivate/corporate

Population
- 16% rural[3]
- 22% are indigenous[3]
- 37% are poor[4]

POTENTIAL IMPACT

Agriculture, livestock & land net emissions[5,6,7]
GHG emissions Gg CO2-eq., ~2010



Additional context on GHG emissions
- Negative net emissions are **driven by the land capture of GHG by land in Quintana Roo** (-56 thousand GHG CO2-e)[4,5,6]
- **Highest GHG emissions** are from **land change in Campeche** (11 thousand GHG CO2-e) and **agri and livestock in Quintana Roo** (10 thousand GHG CO2-e)[4,5,6]

Financing: poor access to credit is major challenge; credit provided by one large timber company has created quasi-monopsony

1. CONAFOR, "Anexo 2. Información de las condiciones ambientales de los Estados y sus áreas de intervención en el marco de la IRE.," est. 2013. 2. Cuarto Poder, "Chiapas ha perdido el 55 por ciento de sus bosques," est. 2016. 3. INEGI, "Información por entidad," 2020. 4. SEDUMA, "Inventario de Gases de Efecto Invernadero, Yucatan," 2005. 5. Gob de Q. Roo, "Inventario Estatal de Emisiones de Gases De Efecto Invernadero Quintana Roo," 2010. 6. CCPY, "Inventario de Emisiones de Gases de Efecto Invernadero Campeche," 2015.

ANNEX B: FINANCIAL INSTRUMENTS TO SUPPORT SUSTAINABLE LANDSCAPES

The figures below summarize key financing instruments and initiatives that exist today or are planned for the future. For a full summary of 50+ instruments and initiatives, please see the online compendium.

GOVERNMENT (1/2)

MAIN ACTORS[1]

- CONABIO
- CONAFOR
- CONANP
- FIRA
- FINAGRO
- SADER (national & local)
- SEMARNAT
- Secretaría de Bienestar (national & local)

FINANCING

- Mostly **subsidies** and some **loan programs** (e.g., FIRA)
- Main govt funds for sustainable land (SEMARNAT, CONAFOR, Bienestar) **are USD ~1.2 billion per year**[2,3]

FOCUS REGIONS

- **Most work is national**
- **Some projects target regions/states** and are supported by local secretaries (e.g., Sembrando Vida works in 19 states)[2]

1. Programs included here are when the lead actor is considered a govt institution. 2. Government of Mexico, "Gasto Público por Ramo," 2018. 3. Government of Mexico, "Lineamientos de Operación del Programa Sembrando Vida," 2019.

GOVERNMENT (2/2)

KEY PROGRAMS[1]

- **Sembrando Vida – Secretaría de Bienestar (2019-ongoing, USD ~800 million annual):** pays USD ~250 a month to farmers. Main objectives: (i) restore degraded lands, strengthen food security, and (ii) increase job creation and social capital
- **Payment for Ecosystem Services – CONAFOR (2003-ongoing, ~USD 2.5 million annual):** pays average of USD 88 per hectare per year to private and ejido landowners to conserve forests

PRIORITIES

- **Agriculture & livestock:** 7 of the 12 govt initiatives reviewed focus on agriculture and/or livestock to improve practices (e.g., improving cattle residue management with technology) and reduce emissions, mostly with vulnerable populations
- **Conservation:** The five other initiatives were mostly led by CONAFOR and CONANP, focused on programs such as payment for conservation and prevention of plagues and fires

KEY LEARNINGS/RESULTS

- The govt learned that demand-driven programs risk excluding the most vulnerable populations, hence the new federal govt **is designing more push-driven programs**, such as Sembrando Vida, to reach the most vulnerable

TRENDS

- **Funding in key institutions is being cut;** for example, CONAFOR's budget fell 63% from 2016-19[2]
- **The govt has made announcements to focus more subsidies on small producers,** backed by the launch of Sembrando Vida in 2019

1. Non-exhaustive. 2. Serendipia, "Embate a la CONAFOR," 2019

DONORS & MULTILATERALS (1/2)

MAIN ACTORS[1]

- AFD
- Avery Dension Foundation
- FOMIN
- Ford Foundation
- Fundación G. Rio Arronte
- GiZ
- IDB
- IFAD
- IKI
- KfW
- USAID
- World Bank

FINANCING

- Mostly **grants** and some **loan** programs (e.g., Forest Investment Program)
- Budgets of 16 studied programs **range from USD 2.5 million** for three years **to USD 400 million** for five years[2]

FOCUS REGIONS

- **Most programs focus on specific regions** – 11 of the 16 programs from donors and multilaterals studied focus on areas in the southern states or Jalisco[3]

1. Programs included here are when the lead actor is considered a donor/multilateral. 2. Some funds from these programs go to govt institutions. 3. Results from sample may be skewed, given focus in methodology

DONORS & MULTILATERALS (2/2)

KEY PROGRAMS[1]

- **Forest Investment Program (FIP) – Main Funders: World Bank, FOMIN, & IDB (2012-ongoing, USD 60 million total):** Works with local executing agencies (e.g., CONAFOR, FND) to reduce rural poverty, halt deforestation and degradation, and support sustainable Forest Management
- **Mexico REDD+ - USAID (2012-2017, USD 27 million total):** strengthen rural development and prepare country for REDD+ implementation

PRIORITIES

- **SHF/CFEs/SMEs:** All programs studied that focused on working with producers focused on smaller/more vulnerable populations, mostly through training, access to inputs and financial support
- **Institutions:** All other programs focused on strengthening local institutions
- **Gender:** 7 of the 16 programs studied include gender objectives. For example, Economia Social by IFAD requires at least 30% of recipients to be women

KEY LEARNINGS/RESULTS

- **REDD+ introduced new perspective for sustainable land activity initiatives**, such as gender, territorial, and governance issues[2]
- **Some programs have shown promising results in strengthening institutions,** such as FIP and the Yucatan jurisdictional program

TRENDS

- **Important initiatives have recently ended** and their future is unclear, such as REDD+ prep and EmFoCo y Desarrollo – the latter funded by IDB
- **New initiative are being explored,** such as a USD 25 million initiative by KfW

1. Non-exhaustive. 2. REDD+ strengthened the creation of *"Juntas Intermunicipales"* which helped cement these perspectives in the sector through them.

NGOs & CIVIL SOCIETY (1/2)

MAIN ACTORS[1]

- AMUCCS
- Nuup
- Climate and Land Use Alliance
- FMCN
- Rainforest Alliance

FINANCING

Provide a mix of **grants and credits**

FOCUS REGIONS[2]

- **Focus on specific sub-regions** (e.g., Sierras de Jalisco, Sierras de Chiapas, Selva Maya), mostly in the middle and south of Mexico

1. Programs included here are when the lead actor is considered an NGO/Civil Society. 2. Results from sample may be skewed, given focus in methodology

NGOs & CIVIL SOCIETY (2/2)

KEY PROGRAMS[1]

- **Conservación de Cuencas Costeras – FMCN (2014-2019):** FMCN received funds from multiple funding sources—including CONAFOR, CONANP, INECC—to provide training and PES to forest communities and local institutions in key sub-regions[2]
- **EmFoCo y Desarrollo – FMCN (2013-2019):** Provided access to credit and technical assistance to promote sustainable production of SMEs and CFEs

PRIORITIES

- **Forestry and conservation:** Programs mainly focus on working with forestry communities on capacity building for sustainable production and conservation efforts
- **Gender**: Most programs studied include an explicit gender lens – for instance *"Conservación de Cuencas Costeras en el Contexto del Cambio Climático" and "Emfoco y Desarrollo"* both include gender components (e.g., reaching certain targets of women)

KEY LEARNINGS/RESULTS

- *Conservación de Cuencas* fostered **cooperation**, by actively engaging all levels of actors in the value chain (e.g., from forestry communities to govt officials)
- ***EmFoCo y Desarrollo* disbursed credits to unbanked groups**, demonstrating that financing CFEs for sustainable land activities was viable

TRENDS

- **NGOs and non-profits** may begin to feel funding restraints, because of govt budget cuts and reprioritization, and halt of funding from donors and multilaterals

1. Non-exhaustive 2. Piaxtla, Presidio, Baluarte (in Sinaloa); Acaponeta, San Pedro, Cuale (in Nayarit); Ameca, Las Juntas, Pitillal and El Tuito in Jalisco; Tuxpan, Antigua, Jamapa, Huazuntlán, Temoloapa (Veracruz); Usumacingta (in Tabasco)

PRIVATE SECTOR (1/2)

MAIN ACTORS[1]

- Danone
- Bimbo
- Proteak
- Toks

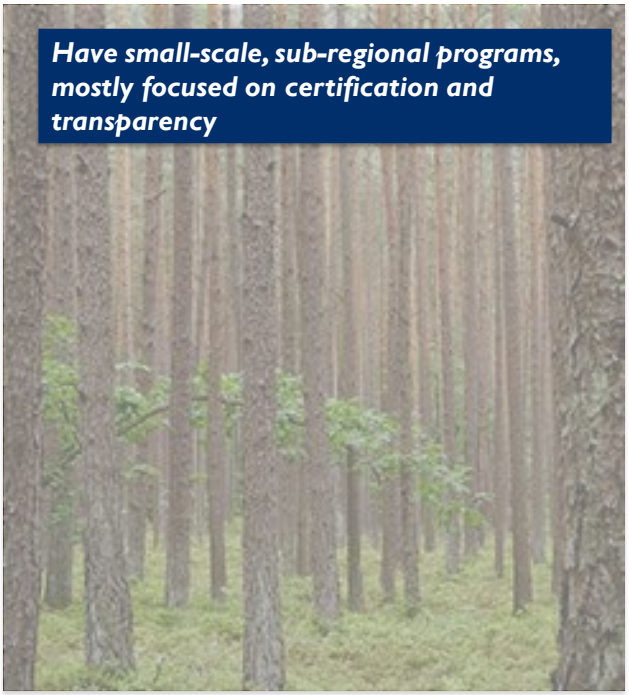
FINANCING

Mostly **equity** (e.g., seed capital) and **loans**

FOCUS REGIONS

- **Focus on specific sub-regions** (e.g., Marques de Comillas, Sinaloa, Morelos), across Mexico

1. Programs included here are when the lead actor is considered a private sector actor



PRIVATE SECTOR (2/2)

KEY PROGRAMS[1]

- **Breaking barriers – Toks (2017-ongoing):** With IDB's SAFE platform and Rainforest Alliance's support, Toks supported ~1,000 smallholder coffee and cacao farmers to get certified by Rainforest Alliance—after, Toks procured certified goods for their coffee stores
- **Implementation of low- or zero-deforestation palm oil – BIMBO (2016-ongoing):** With funds from the Earthworm Foundation, palm oil producers are supported to increase traceability to ensure best environmental practices

PRIORITIES

- **Transparency and certification:** Various private sector programs focus on improving the traceability of goods from production-to-market
- **Core business alignment:** Some private sector efforts focus on activities they can easily include in their core business (e.g., coffee and cacao suppliers for Toks' coffee shops)

KEY LEARNINGS/RESULTS

- **Most initiatives from the private sector with SMEs, CFEs, and SHFs come from CSR**, mostly driven by contractual obligations and/or positive public image

TRENDS

- **The private sector is expected to follow the lead of the govt and multilaterals**, as it has done so in past years—which highlights opportunities for govt and international cooperation **to help set the agenda**

1. Non-exhaustive.

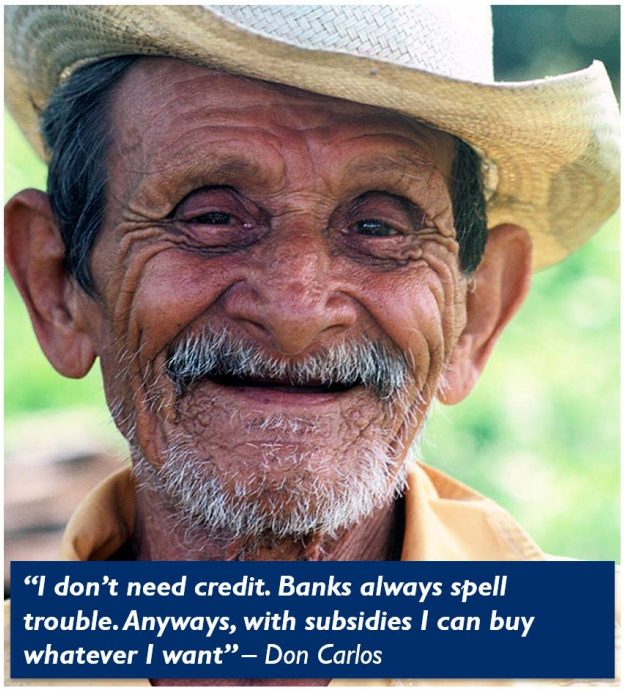
ANNEX C: FINANCING GAPS AND BARRIERS

The figures below summarize the experiences of two types of small producers interviewed during the study. Please note these examples are illustrative and personally identifiable information has been removed.

STAKEHOLDER SPOTLIGHT

DON CARLOS

- **Livestock farmer from** Maravilla Tenejapa, Chiapas
- Owns **~18 heads** de cattle and **~10 hectares**
- Has some **agricultural lands**, but uses them for **self-consumption**
- Has worked in **the countryside his entire life**
- **Has never had a credit**



"I don't need credit. Banks always spell trouble. Anyways, with subsidies I can buy whatever I want" *– Don Carlos*

Don Carlos doesn't see the economic value of sustainable management, and finds credit too risky to access

DEMAND

Low incentives to invest in silvopastoral system

"I sell all cattle to the same person, it doesn't matter how we raise them. I take them all to the coyote, who resells them."

Low appetite to take loans

"I participate in subsidy programs. I would rather use my own resources and not depend on a credit."

Lack of financial and business knowledge

"I have never had a bank account. I don't really understand very well how they work."

STAKEHOLDER SPOTLIGHT

DOÑA MARÍA

- **Producer i**n Calakmul, Campeche
- Active **participant** in her **ejido's assembly**
- Her parcel has **maize, fruits and products** for self-consumption
- **Her ejido participates in forestry**; with little wood conversion
- Her income is from **harnessing wood resources and receiving Payment for Environmental Services**
- She manages finances in her home

"We're about 30 women ejidatarias (out of 100). There are two of us with positions in the assembly. We almost always let the men decide, because they know about these things."
– Doña María

There is a lack of attractive financing options for producers

SUPPLY

Banking options are unattractive

"Banks are really far away from me. The nearest one is three and a half hours away. Besides, the interest rates they offer are very high."

Financial products do not adapt to needs

"Someone from the bank offered us credits, which were useless because they require monthly payments, we get paid twice a year."

Ecosystem

Little coordination

First someone comes and tells me to plant one thing. Then someone tells me to plant something else. I'll do it if they provide support."

Overregulation

"Getting a wood permit can take up to a year. And any change to the process takes at least a couple of months."

The sub-sections below provide additional detail on barriers for each priority segment studied in the assessment.

FORESTRY-SPECIFIC BARRIERS

Forests are at risk of degradation or deforestation because producers are unable to extract sufficient value from them. This is partly driven by lack of capital that can change incentives, which leads to (i) forest abandonment by communities, exposing forests to illegal logging or fires, or (ii) deforestation or degradation, as land is used for other economic activities such as tourism or livestock. Both of these drivers increase the emissions and also reduce sequestration of greenhouse gases.

Depressed wood markets drive down the value producers are able to extract from forests, which impedes investment in sustainable land activities. Low wood prices can initiate a vicious cycle that leads producers to abandon sustainable forest management. A drop in income can prompt producers to stop investing in wood-transformation activities such as sawmills or other machinery for extraction and refinement. As a result, producers lose capacity to add value to wood, driving their income down still further as they are forced to commercialize less valuable wood. Ultimately, this can lead to forest abandonment or deforestation to clear space for other economic activities.

On the supply side, subsidies and financing programs do not encourage sustainable land activities. Payment for ecosystem services do not incentivize a sustainable land management model; rather, they pay producers not to harvest forests—which reduces potential sources of income over the longer term. Moreover, these payments may target forests that are not at high risk of deforestation (e.g., land on a hill that is hard to reach and deforest). This can lead to forest abandonment, which increases the likelihood of forest fires (as dead wood dries and becomes more flammable) and illegal logging (as no one is actively managing the forest).

One ecosystem-level barrier is limited protection for secondary forests (acahuales) on parceled land.[74] Ejidos are commonly divided into two parts: forests—that is, legally recognized forests regulated by CONAFOR—and private parcels—which are not regulated by any specific agency. Forests left in parcels, as secondary forests growing in these terrains (acahuales), are in grave danger as they fall beyond the purview of CONAFOR and other environmental agencies, are not legally recognized as forests, and if left unattended for a certain number of years the land owner loses property over the land (i.e., they have incentives to deforest to not lose property). Because any wood extracted from them cannot be legally commercialized (i.e., it has less value for the owner as it can only be commercialized illegally), forests on private parcels are likely to be put to other economically more productive uses.

[74] An acahual is defined as a piece of land comprised mostly of secondary vegetation at different degrees of maturity. They are originated by migratory agriculture and according to production rotation, they will become an agriculture field again in the medium or long.

Another ecosystem barrier is overregulation of forest areas, which also hinders sustainable practices. Forest areas require operating permits that can take long periods to obtain. Government institutions keep a close watch on forest operations and have been known to suspend operations if strict requirements are not met. This has stifled the competitiveness of the Mexican forestry sector by creating extra costs—such as fees for technical experts to help navigate these requirements—and high levels of uncertainty, about future support or programs, for producers. At the same time, impunity and lack of law enforcement put forests at risk.

OBTAINING A FORESTRY PERMIT

Ejidos in Selva Maya report that it takes over a year to receive a forest management permit to extract wood. These permits are commonly delayed because revisions to the permit take months to complete, and must be physically sent to and from Cancun. Beyond this, producers claim that not complying with stringent checks and, sometimes, unmet demands for extra-official payments can lead to the immediate shutdown of their operations.

AGROFORESTRY-SPECIFIC BARRIERS

Agroforestry requires upfront investments to plant trees and shift practices. Without these investments, poor agricultural practices have higher gas emissions and lose sequestration opportunities, due to lack of capital to transform production. For instance, coffee farmers may produce coffee without planting trees that could provide shade and sequester carbon. Farmers focused on other products may continue to expand, causing deforestation.

Lack of financing for collection centers (centros de acopio, in Spanish) also reduces the value of products developed with sustainable land practices. Some producer associations that are willing to pay higher prices to aggregate products (e.g., cocoa) before re-selling them to another buyer do not have sufficient financing to pay a higher price for all of the sustainable products that are available. This means they must pay a lower price, or producers sell the remaining product to coyotes (intermediaries). Producer associations also lack sufficient financing to invest in transformation, which could improve prices.

Scale of production represents the primary demand-side barrier to sustainable agroforestry practice. Most agriculture happens on farmers' individual parcels, within the ejido. This limits the potential scale farmers can reach, restricting production to self-consumption or local markets. Limited scale increases costs, as farmers cannot achieve economies of scale, and reduces the capital these activities can raise.

LIVESTOCK-SPECIFIC BARRIERS

Lack of financing hinders livestock farmers' ability to switch to silvopastoral production. This partly drives GHG emissions through (i) deforestation to expand grassland for cattle, as traditional livestock farmers have a low ratio of cattle per hectare, and (ii) poor livestock practices—for instance, providing cattle with feed that increases the amount of GHG cows produce.

High upfront costs—and lack of financing to cover them—are the greatest demand-side barriers that impede transition to sustainable livestock practices. Years of extensive cattle farming and deforestation have left much of the available cattle land extremely degraded. This makes the required upfront investment of transitioning to sustainable practices very high. For instance, in regions such as Boca de Chajul, cattle farmers would require a level of financing that is difficult to justify given the uncertainty of capturing, and patience required, to achieve any meaningful return on investment. Longstanding livestock practices have put the sector in a vicious circle of degradation, low productivity, and expansion to new areas which are in turn degraded.

Limited traceability represents a barrier to sustainable practices for the entire livestock ecosystem. Weak monitoring and no certification systems hamper recognition of better practices in the market. Moreover, lack of traceability mechanisms makes it difficult for actors in the value chain to invest in silvopastoral practices—without a reliable mechanism to justify charging a premium, investors cannot ensure that these practices confer any additional value to the product that would generate a return on their investment.

ANNEX D: RECOMMENDATIONS AND NEXT STEPS

The figures below provide brief overviews of two existing solutions—amongst many—that influenced the recommendations in the study.

BRIEF OVERVIEW: ALIANZA SELVA MAYA 2011-PRESENT

Description

- Collective of five ejidos in Quintana Roo focused on the production and sale of precious timber and hardwoods
- The alliance spans over 200,000 hectares and includes over 1,000 families

How it works

- The alliance serves as an aggregator, sharing technical services and information
- The alliance allows ejidos to negotiate together, arrange production agreements cohesively, and to undertake ambitious and modern forestry methods

Results achieved

- FSC Certification
- Integrated value-adding activities locally
- Creation of long-term partnerships across the value chain
- Enhanced administrative and business capacities

Strengths

- The collective nature of the alliance allows for stronger negotiation with markets and civil society
- The forestry methods used are technically strong and ambitious, in terms of sustainability and conservation

Challenges

- It has been difficult to integrate women into forestry activities within the alliance
- Not all ejidos continue to invest in harvesting their forest, losing interest in this work (e.g., Bacalar is now more focused on tourism)

Sources: Stakeholder interviews; FSC, "ALIANZA SELVA MAYA," 2020

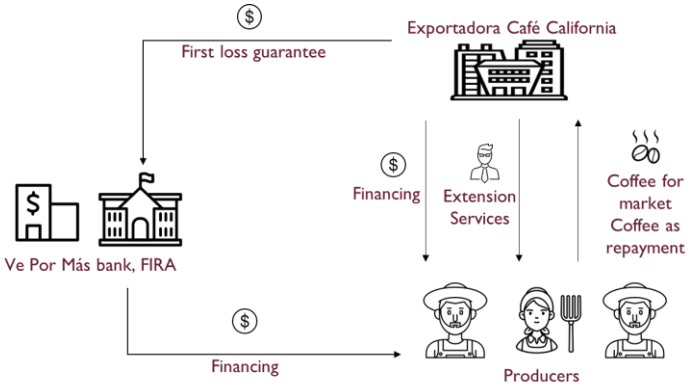
BRIEF OVERVIEW: EXPORTADORA CAFÉ CALIFORNIA 2014-PRESENT

Description

- IDH is working with Exportadora Café California (ECC), a market-leading exporter, to support sustainable coffee production in Chiapas, Veracruz, and Puebla

How it works

- ECC provides financing and technical assistance for certification to producers, via ECC officers
- As part of the service bundle, farmers have access to loans, extension services, inputs, insurance, certification, and tree rejuvenation
- ECC also provides 5% first loss guarantee to banks to support additional lending to producers
- ECC purchases the coffee from producers to re-sell



Results achieved

- Over 100,000 hectares forested with sustainable production
- Over 2,600 families benefited
- Producers are receiving $4,000 in net income per year, which is competitive in the region

Strengths

- Producers are paid $6.50 a day, even during times of low productivity
- Extension officers have positioned themselves as a key channel between producers and buyers

Challenges

- Coffee requires a long time horizon (~3 years) before reaching productivity and delivering returns
- Exclusivity to sale to ECC is not requires, so sometimes producers sell to coyotes or other buyers

Sources: IDH, "Case Report: Exportadora Café California, México," 2018

ANNEX E: STAKEHOLDERS INTERVIEWED

#	Name	Title	Organization
Donors & multilaterals			
1	Karla Barclay	Project Coordinator	Agence Française de Développement (AfD)
2	Alonso Martínez Caballero	Advisor in Environmental Economy and Financing	Biodiversity Finance Initiative (BIOFIN)
3	Daniela Torres	National Coordinator for Biodiversity Finances Initiative	Biodiversity Finance Initiative (BIOFIN)
4	Rubén Perezpeña Sánchez	Climate Change & Sustainability	Inter-American Development Bank (IDB)
5	Gmelina Ramírez	Climate Change Senior Specialist	Inter-American Development Bank (IDB)
6	Citlali Cortés Montaño	Senior Program Coordinator, Forests and Biodiversity	Kreditanstalt für Wiederaufbau (KfW)
7	Katharina Siegmann	Environmental Specialist	World Bank
Government			
8	Xóchitl Ramírez	Project Coordinator	CONABIO
9	Fernando Camacho	General Director of Institutional Development and Promotion	CONANP
10	Allan Vazquez Arciniega	Advisor	Financiera Nacional de Desarrollo
11	Armando González Barragán	Advisor	Financiera Nacional de Desarrollo
12	Claudia Ibbeth Escoto Vázquez	Technical Coordinator	Financiera Nacional de Desarrollo
13	Rocío López Arredondo	Advisor	Financiera Nacional de Desarrollo

#	Name	Title	Organization
14	Rodrigo Ismael Martínez Soreque	Development Manager	Financiera Nacional de Desarrollo
15	Vania Karina Salazar Reyes	Support	Financiera Nacional de Desarrollo
16	Juan Manuel Mauricio Leguízamo	Senior Counselor	Secretaría de Desarrollo Agropecuario, Rural e Indígena
17	Carmen Gómez	Director of Biological Corridors and Basins	Secretaría de Medio Ambiente y Desarrollo Territorial
18	Carlos Castillo	General Director for Cooperation and Bilateral Economic Relations	Secretaría de Relaciones Exteriores (SRE)
19	Georgina Scarlata	Economic Affairs Officer	US Embassy in Mexico
NGOs, foundations, and civil society			
20	Alfonso Argüelles	Director	Alianza Selva Maya
21	Helene Roy	Principal	AVENIR Impact Investing Solutions
22	Benito Díaz	Coordinator	CAMADDS A.C.
23	Sergio Madrid	Executive Director	Consejo Civil Mexicano para la Silvicultura Sustentable
24	Emma Ligia	Director	Intellicop Sociedad Cooperativa
25	David Kaimowitz	Director Natural Resources and Climate Change/Senior Adviser	Ford Foundation/Climate and Land Use Alliance
26	Pina Gervassi	Climate Director	Forest Stewardship Council (FSC)
27	Concepción Molina-Islas	General Coordinator for Environment Program	Fundación Carlos Slim
28	Juan Roberto Báez	Consultant	Independent

#	Name	Title	Organization
29	María Martínez Murillo	Consultant	Independent (formerly The Nature Conservancy)
30	Minneth Medina	Director	Junta Intermunicipal Biocultural del Puuc México
31	Edgar González Godoy	General Director	Rainforest Alliance
32	Sonila Cook	Member of the Board of Directors	Rainforest Alliance
33	Santiago Machado	Director	Rainforest Alliance/Espacios Naturales y Desarrollo Sustentable
34	Daniel Sánchez	Private Sector Engagement Director	Reforestamos
35	Ernesto Herrera	General Director	Reforestamos
36	Lina López	Coordinadora	Patrimonio Natural
37	Claudia Palafox	Technical Officer/Director	Trópica Rural Latinoamericana
38	Victoria Santos	Director	OEPFZM
39	Hugo Galleti	Director	Sociedad de Productores Forestales Ejidales de Quintana Roo
40	Alejandro Hernandez	Coordinador de Territorios Sostenibles	The Nature Conservancy
41	Liliana Dávila	Directora	The Nature Conservancy
Financial institutions, intermediaries, and other private sector			
42	Claudio García	Director General Accion Banamex	Citibanamex
43	Eduardo Alcántara	Analista de sustentabilidad	Citibanamex
44	Karla Breceda	Founder and director	El Buen Socio
45	María Luisa Chávez	Co-founder and Director of Institutional Relations	El Buen Socio

#	Name	Title	Organization
46	Eduardo Juárez Mejía	Director	FINDECA
47	Hector Martínez	Founding Partner	Loom Capital
48	Aldo Azuara	Employee	Maderas Azuara
49	José Luis Castro	Director	Neek Capital
50	María Luisa Luque Sánchez	Co-Founder	Nuup
51	Vincent Lagacé	Co-Founder and Executive Director	Nuup
52	Ian Deshmukh PhD	Senior Technical Adviser	ProLand/Tetratech
53	Mark Donahue	Senior Associate	Proland/Tetratech
54	Omar Nacif Serio	CEO	Proteak
Small producers and communities			
55	Pedro Pablo Chuy	President	Ejido Caobas
56	Luis Chuy	Producer	Sociedad de Productores Forestales Ejidales de Quintana Roo
57	David Marroquín	Director	Ejido Galacia/Canto de la Selva Hotel
58	Focus Group, 12 members	--	Ejido Galacia
59	Commissioner and Steering Committee	--	Ejido Tres Garantías
60	Individual conversation	--	Ejido Boca de Chajul
61	Discussion, 3 members	--	Ejido Los Divorciados
62	Focus group, 4 members, and	--	Ejido Maravilla Tenejapa

#	Name	Title	Organization
	individual conversations		
63	Individual conversation	--	Ejido Noh Bec