

Closing The Gender Gap

In Natural Resource Management Programs In Mexico



WORLD BANK GROUP
Environment & Natural Resources

eMBed
Mind, Behavior, and
Development Unit





Table of Content

- Acknowledgements4
- Abbreviations.....6
- Executive Summary**.....8
- Introduction.....10
- Report approach.....11
- Qualitative field work background.....11
- Socioeconomic analysis of the villages visited12
- Participants´ description.....12
- Report structure.....13
- Chapter 1: Forests, Landscapes, and REDD+ in Mexico**.....14
 - Forests and forest use in Mexico.....14
 - Land tenure schemes and landownership in Mexico14
 - REDD+ in Mexico15
 - World Bank support in Mexico within the framework of the REDD+ initiative.....16
- Chapter 2: Structural barriers to women's participation in REDD+**.....17
 - Institutional barriers and recommendations.....17
 - Legal barriers and recommendations.....21
 - Economic barriers and recommendations.....23
- Chapter 3: Behavioral barriers to women's participation in REDD+**.....28
 - Automatic decision making.....28
 - Mental models and decision making.....31
 - Social decision making34

Chapter 4: Gender Action Plan: How to design gender-informed REDD+ related activities with a behavioral science lens	39
Goal 1: Overcome structural barriers and “hassle factors” of signing up to REDD+ related activities by supporting administrative processes through simplification, choice architecture and culturally sensitive approaches.....	42
Goal 2: Promote gender mainstreaming through institutional capacity building, policy coherence, gender-disaggregated data collection, mainstreaming frameworks, and budget alignments.....	44
Goal 3: Address issues of land tenure for rural women	47
Goal 4: Increase women representation in assembly meetings and decision-making forums by making them more “gender friendly”.....	48
Goal 5: Increase the number of female and community forestry promotors and technical advisors and the time they spend with the communities to build trust.....	49
Goal 6: Lift women out of the poverty trap by addressing double time-burden and time, poverty and aspiration scarcity scenarios	50
Goal 7: Address prevalent traditional gender roles and structural social norms by inducing normative, long-term empowerment through roles models or agents of change.....	51
Goal 8: Frame social identify to foster female participation.....	53
Goal 9: Offer small incentives for program uptakes and support women in perseverance and commitments through reminders.....	54
Conclusion	55
Appendix: Journey for forest landscape programs in Mexico:	
Identifying women’s behavioral bottlenecks	54
Bibliography	58

Acknowledgements

The project was led and managed by Katharina Siegmann and Zeina Afif. The core team also included Dorothee Georg, Fabiola Hernandez, Julia Lendorfer, and Graciela Reyes-Retana, all with the World Bank, as well as Margarita Gómez García, Behavioral Specialist and Head of the Innovation, Behavioral and Experimentation Unit (UCEX) of the National Laboratory of Public Policy (LNPP) at the Centro de Investigación y Docencia Económicas (CIDE)¹.

The Forest Carbon Partnership Facility (FCPF) greatly contributed to this report with financing, time and intellectual support. The team thanks Ellysar Baroudy and Tamara Bah.

The team thanks Valeria Hickey, Practice Manager of the World Bank Group's Environment and Natural Resources Global Practice, for her support and comments to the report; as well as Jutta Kern, Operations Manager of the World Bank Mexico Office; and Gregor Wolf from the World Bank Mexico Country Management Unit; for their support.

Valuable inputs were received from Angela Armstrong, Senior Natural Resource Management Specialist; Franka Braun, Senior Carbon Finance Specialist; Carlos Perez Brito, Senior Social Development Specialist; Hugo Cardenas, Field Consultant; Varun Gauri, Senior Economist; Joao Montalvao, Economist; and Maria Beatriz Orlando, Lead Social Development Specialist

(listed in alphabetical order), all with the World Bank.

Margarita Gomez Gómez García and her team from CIDE (Daniela Jimenez, Axel Medina, and Eréndira González) were responsible for the preparation and innovative analysis of the behavioral science field diagnostics.

Hugo Cardenas, World Bank Consultant, supported the fieldwork in Chiapas and Yucatan and provided valuable cultural, environmental and social insights on the field regions.

We thank Carlos Gutiérrez Fierres, Alicia Alcala Guerrero, Adan Jimenez, and Céline Gonzalez with the Observatorio de Desarrollo Regional y Promoción Social, A.C. (ODP), a Mexican nonprofit organization. ODP provided support for the stakeholder consultations and data analysis, and also implemented the fieldwork and qualitative data collection.

The team thanks the National Forestry Commission (CONAFOR) for providing data, insights into gender and forestry projects, comments on ideas and drafts and their overall support and endorsement of this report. Specifically, comments were received from Francisco Quiroz Acosta, Berenice Hernandez, Diana Nacibe Chemor Salas, José Armando Alanis de la Rosa, Fabiola Navarrette, Ivette Gonzalez, Jessica Muñoz Muro, and Francisco Moreno.

We thank the experts who took time for interviews before the field work in May and June 2017. Interviews were held with

Jorge Castillo, CONAFOR Forestry Promoter in Quintana Roo; Antonio Lazcano Soto, CONAFOR Operative Supervisor in Chiapas; Gonzalo Novelo Quijano, CONAFOR Operative Manager in Yucatan; Luis Enrique Sosa, CONAFOR Forestry Promoter in Tekax, Yucatan; Mineth Medina, Mexico REDD+ Alliance (MREDD+) in Quintana Roo; Lucia Madrid, Director of the Consejo Civil Mexicano para la Silvi-cultura Sostenible; Elsa Esquivel from Ambio; Carolina Camacho and Víctor López Saavedra from the International Maize and Wheat Improvement Center (CIMMYT); and Lorena Aguilar and Itzá Castañeda from the International Union for Conservation of Nature (IUCN).

The team thanks Maynor Morales Roblero from Chiapas and Basilio Velazquez Chi from Yucatán for translating and interpreting during the field missions.

Infinite thanks go to the ejidos in Tekax (Yucatan), Yaxcaba (Yucatan), Benemérito de los Américas (Chiapas), and Maravilla de Tenejapa (Chiapas) for the time, space, and effort they provided to the research team during field work in June and July 2017. Especially, the following community and ejido members were involved in focus groups and interviews: in Chiapas—Maynor Morales Roblero, Roberto del Carmen Garcia Cancino, Marycruz Ruiz Alvarado, and Angel Mazariegos Gutierrez; in Yucatan—Yessica Rocio Cima Salazar, Jaynet Gonzalez Alvarado, Claudia Carlo Perez, Jesus Antonio Avila Celis, and Rita Margarita Canul Ek.

This document was edited by Michael Alwan, and designed by Lorena Guedes.

It should be cited as: *World Bank. 2018 Closing the gender gap in natural resource management programs in Mexico.* Washington, DC.

¹ <http://cide.edu/>.

Abbreviations

CDI	National Commission for the Development of Indigenous Peoples [Comisión Nacional para el Desarrollo de los Pueblos Indígenas]
CEDRSSA	Research Center for Sustainable Development and Food Sovereignty [Centro de Estudios para el Desarrollo Rural Sustentable y la Soberanía Alimentaria]
CONABIO	Comisión Nacional para el Conocimiento y Uso de la Biodiversidad
CONAFOR	National Forestry Commission [Comisión Nacional Forestal]
CONAPO	Consejo Nacional de Población
CONEVAL	Consejo Nacional de Evaluación de la Política de Desarrollo Social
DGM	Dedicated Grant Mechanism
ENAREDD+	Estrategia Nacional REDD+ de Mexico
ENBioMex	Estrategia Nacional sobre Biodiversidad de México
ENCC	National Strategy on Climate Change 10-20-40 vision
ER-P	Emission Reduction Program
FCC	Forests and Climate Change Project
FCPF	Forest Carbon Partnership Facility
FIP	Forest Investment Partnership
GAP	Gender Action Plan
GHG	greenhouse gas
Ha	Hectares
INEGI	Instituto Nacional de Estadística y Geografía
INIFAP	Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias
INMUJERES	National Institute for Women [Instituto Nacional de las Mujeres]
MRV	measuring, reporting, and verification

NDC	Nationally Determined Contribution
NPV	net present value
OECD	Organisation for Economic Co-operation and Development
PEC	Concurrent Special Program for Sustainable Rural Development 2014-2018
PECC	Special Program on Climate Change 2014-2018
PROCAMPO	Program for Direct Assistance in Agriculture [Programa de Apoyos Directos al Campo]
PROFOR	Program on Forest
PROGAN	Program for the Promotion of Livestock [El Programa de Producción Pecuaria Sustentable y Ordenamiento Ganadero y Apícola]
PROIGUALDAD	National Program for Equal Opportunities and Non-Discrimination against Women 2013-2018
PROMARNAT	Sectoral Program on Environment and Natural Resources 2013-2018
PRONAFOR	National Forestry Program 2014-2018
REDD+	Reducing Emissions from Deforestation and Forest Degradation
R-PP	Readiness Preparation Proposal
SAGARPA	Secretaría de Agricultura, Ganadería, Desarrollo Rural
SDG	Sustainable Development Goal(s)
SEDESOL	Secretaria de Desarrollo Social
SEMARNAT	Secretaria de Medio Ambiente y Recursos Naturales; Environmental Secretary of Mexico
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar
WDR	World Development Report

Executive Summary



Closing the gender gap in natural resource management programs in Mexico

Main Messages

- This report examines perceived and actual gender differences in the use and management of natural resources and the challenges of integrating women into activities related to Reducing Emissions from Deforestation and Forest Degradation (REDD+) or other natural resource management projects in Mexico. Recommendations are aimed at increasing gender inclusiveness in project design and implementation.
- The report applies a behavioral science lens to uncover key psychological, cultural, social, and non-material barriers to women's participation in natural resource projects.
- Barriers to women's participation in REDD+ related activities can be framed as structural (economic, legal, institutional) and behavioral (biases, mental models, gender norms). These barriers exacerbate each other in a vicious cycle.
- Women use natural resources differently than men, which makes them more vulnerable to climate change events, unequal distribution of remuneration and benefits and other structural barriers discussed in chapter 2.
- In the study context, women's participation in productive activities and their participation in communal decision making are correlated. Thus, women's economic participation is vulnerable to gender-exclusive social structures, low social status, and other behavioral barriers discussed in chapter 3.
- These barriers are malleable and can be addressed through structural changes and institutional mechanisms, but also through behavioral science interventions such as framing, simplification, promoting women's agency, and using alternative spaces to communicate with them. See the Gender Action Plan in chapter 4 for details.
- The study reveals that rural women in Mexico prefer to undertake traditional activities, and how these activities should be promoted and advertised providing social and logistical support to assure uptake.
- Gender mainstreamed REDD+ related activities and natural resource management programs offer important opportunities for women's empowerment, sustainable resource management, and community prosperity.

This report examines perceived and actual gender differences in the use and management of natural resources, and the challenges of integrating women into REDD+ related activities or other natural resource management projects. This analysis leads to recommendations for more gender inclusiveness in project design, both in Mexico and elsewhere. More generally, the study aims to contribute to the World Bank’s Gender Strategy and to fulfilling relevant Sustainable Development Goals.

The report applies a behavioral science lens to uncover key psychological, cultural, social, and non-material barriers to women’s participation in REDD+ related activities, particularly at the individual and community level.

Decision-making patterns influenced by mental shortcuts, psychological biases, and social norms are identified. The approach was inspired by the World Bank Group (2015b) *World Development Report 2015: Mind, Society, and Behavior* and the World Bank 2013 report *On Norms and Agency: Conversations about Gender Equality with Women and Men in 20 Countries*. We hope our conclusions can draw attention to women’s critical role in REDD+ activities in Mexico and elsewhere and help enhance gender inclusiveness in project design and implementation.

Women face a variety of barriers to participating in demand-driven REDD+ related activities, which in this report are framed as structural and behavioral.

Structural or “traditional” barriers—economic, legal, institutional, and others—may be identifiable from desk research and interviews. Behavioral, often unconscious barriers—biases, mental models, gender norms, and others—may be revealed by behavioral science diagnostics and field work for identification.

Women use natural resources differently than men, which sets the stage for a variety of structural barriers. Differentiated resource use makes women vulnerable to economic, social, and external environmental influences, especially in rural areas. Such vulnerability affects their economic empowerment, livelihoods, their social spaces, and ultimately their involvement in REDD+ and related initiatives, as discussed in chapter 2.

Women’s economic participation is vulnerable to behavioral barriers such as social status and empowerment. Women’s participation in productive activities and their participation in communal decision making are positively correlated. Thus, women’s economic participation is vulnerable to gender-exclusive social structures, low social status, and other behavioral barriers discussed in chapter 3.

Structural and behavioral barriers exacerbate each other in a vicious cycle.

For example, structural barriers such as poverty traps deplete mental bandwidth, which in turn triggers behavioral biases and diminishes the likelihood of signing up to programs. To the extent that women are disproportionately affected by structural barriers, behaviorally informed policies can thus be particularly effective for women.

The study’s qualitative analysis also reveals activities that rural women in Mexico would prefer to undertake in light of the upcoming forestry programs to be implemented in Mexico by CONAFOR (Mexico’s National Forest Commission) and the World Bank. These include traditional activities such as coffee production, beekeeping, and handcrafting; and small-scale farm activities close to home, such as livestock and agriculture in forest landscapes. These activities should be undertaken with social and logistical support, such as women-accessible venues (like schools or clinics), flexible hours, capacity-building activities, and the integration of the whole family (including the husband) into the value chain.

The report concludes with a Gender Action Plan (GAP). Structural and behavior barriers are malleable. The GAP provides concrete recommendations for the inclusion of a gender perspective and female empowerment in policies, practices, and projects, especially those related to emission reduction programs, natural resource management, and REDD+. When designed to take into consideration gender differences, REDD+ related activities and natural resource management programs can offer important opportunities for women’s empowerment, sustainable resource management, and shared prosperity. See chapter 4 for details.

Introduction

This report aims to understand perceived and actual gender differences in the use and management of natural resources, and the challenges of integrating women into REDD+² related activities or other natural resource management projects.

The analysis leads to recommendations for a more gender-inclusive design of natural resource management programs, both in Mexico and elsewhere.

More generally, the study aims to contribute to the World Bank's Gender Strategy and to fulfilling Sustainable Development Goal (SDG) 5 (Gender Equality and Women's Empowerment) and SDGs 1, 8, 10, 13, 15, and 17. Although the document was written specifically for Mexico's Emission Reduction Program (ER-P) under the Forest Carbon Partnership Facility (FCPF), the conclusions can be applied to other contexts.

As countries develop policies and actions to prepare for or implement REDD+, it is crucial to ensure that these processes are gender sensitive and inclusive.

Project planning should account for gendered, cultural, and socioeconomic differences in forest and natural resource management, and tackle gender inequality and marginalization. REDD+ offers the opportunity to recognize the critical role of women in the conservation and sustainable management of forests. Women's knowledge, skills, and experience are key

to strengthening activities that reduce forest loss and degradation and their integration into REDD+ related activities can boost women's economic status, and at the same time generate more equitable social benefits.

In Mexico, women face a myriad of barriers that limit their participation in REDD+.

In this report, we draw distinctions between barriers as traditionally defined in the literature, and newer behavioral definitions of barriers. Structural and behavioral barriers exacerbate each other in a vicious cycle. For example, 62 percent of Mexican forests are under a legally binding collective ownership system (ejidos and communities)³ and 80 percent of land owners are men, a circumstance with both structural/legal and behavioral/traditional antecedents. Most landowners are men, and only landholders can partake in decision making; therefore, collective land ownership constitutes a traditional or structural barrier to women's participation and representation in the management and conservation of natural resources. A land title is also a prerequisite for applying to most government forest programs, which restricts women's access to incentive programs or subsidies related to infrastructure, credits, and technical assistance. As a result of these structural and behavioral barriers, more men than women apply to and participate in REDD+ related activities and subsequent benefit-sharing models.

² REDD+ (or REDD-plus) refers to the "reduction of emissions from deforestation and forest degradation," including mitigation of and adaptation to climate change through conservation, sustainable management of forests, and enhancement of forest carbon stocks.

³ CONAFOR (2016b).

Women also have double roles and time burdens in the economy by working both in the household and in jobs.

This double time burden has structural and behavioral antecedents and consequences. Women have less free time, face educational disadvantages, and, if heading a household, higher risks of poverty. Structural barriers such as poverty traps deplete mental bandwidth, which in turn triggers behavioral biases and diminishes the likelihood that women will sign up to forestry programs. To the extent that women are disproportionately affected by structural barriers, behaviorally informed policies can thus be particularly effective for women.

Mexico's Emission Reduction Program (ER-P) under the Forest Carbon Partnership Facility (FCPF) offers the opportunity to test the REDD+ approach under an integrated land management program in five states

(Yucatan, Campeche, Quintana Roo, Chiapas, and Jalisco). The ER-P may also generate new activities and approaches to benefit women through its benefit-sharing mechanism (particularly for the second, upcoming stage of implementation). The program specifies that the benefits generated from REDD+ should be context specific, include a gender perspective, and be generationally inclusive. To this end, the ER-P addresses the problem that few women have property rights. The program seeks to actively include women by defining program beneficiaries not only as owners, but also "users"—that is, people living in ejidal and communal lands—including women or women's groups without land tenure.

⁴ World Bank Group (2015b).

Small behavioral elements of program design and implementation can have disproportionate effects on individual choices and actions.

There is incomplete evidence on the behavioral barriers associated with women's participation in REDD+ schemes. Most of the above-mentioned challenges are identified as structural or traditional. Integrating a behavioral analysis into program design can help uncover mental shortcuts (thinking automatically), psychological biases, and mental models (predefined views and interpretation of ourselves and the world around us)⁴ that limit women's participation in REDD+ initiatives. Social and cultural norms can be more powerful than financial or other program incentives, especially in rural communities. In such contexts, behavioral science can provide interesting insights into the complex world women live in governed by traditional role models, gender bias, stereotypes, self-concept, and status quo.

Report approach

The report applies a behavioral science lens to uncover key psychological, cultural, social, and non-material barriers to women's participation in REDD+ related activities, particularly at the individual and community level.

The approach was inspired by the World Bank Group (2015b) *World Development Report 2015: Mind, Society, and Behavior*, and the World Bank 2013 report *On Norms and Agency: Conversations about Gender Equality with Women and Men in 20 Countries*. In the context of REDD+ this report uses country-specific, gender-disaggregated data and analyzes gendered differentials, as defined by the World Bank Group Gender Strategy.

This report was drafted in three stages.

The first stage was extensive desk analysis of research papers, documents, policies, and programs, with an emphasis on the FCPF ER-P states (Jalisco, Chiapas, the three states in the Yucatan Peninsula). Data was gathered on gender, forestry, indigenous peoples, rural communities, behavioral science, and social and financial inclusion. The second stage was field work in the summer of 2017 with 40 ejidos (hereinafter referred to as "communities"⁵) in the ER-P states Chiapas and Yucatan. The team held 16 focus groups to learn about points of view, biases, perceptions, and norms; did 25 deep interviews with

women and men; and drafted around 30 field observation documents to better understand contexts and subconscious behaviors. The third stage of the report was writing a Gender Action Plan (GAP), which provides recommendations and indicators for gender mainstreaming REDD+ related activities and the FCPF ER-P benefit-sharing model, and in general for natural resource management programs.

Qualitative field work background

The field work for this report was undertaken in June and July 2017 in selected municipalities. These include 11 communities in Tekax (Yucatan), 9 communities in Yaxcaba (Yucatan), 9 communities in Benemérito de los Américas (Chiapas), and 11 communities in Maravilla de Tenejapa (Chiapas). The objective of the field work was to understand the underlying socio-cultural context for women in ER-P intervention states. The work explored behavioral barriers, decision-making process, motivations, influencing agents, and other factors women or men consider when deciding upon their participation in REDD+ related activities. (see annex A6 for the process to select field work intervention areas).

⁵ In this report, the terms "ejidos" and "communities" are used interchangeably and broadly referred to as communities, to enhance reader friendliness. The authors would like to point out, however, that ejidos and communities can have differing laws and governance structures. For this report, these differences did not change the outcomes, which is why the authors decided to use them synonymously.

Socioeconomic analysis of the villages visited

The socioeconomic analysis of the villages and inhabitants visited for this field study showed a women-to-men ratio of almost 1-to-1; a mostly homogenous indigenous population in respect to gender but in different numbers according to the communities; a mostly Spanish-speaking indigenous population except for some communities;⁶ a less educated and more illiterate female population; and formal employment much higher among men than women. Overall, these results show a panorama of hardship for these localities compared to the rest of Mexico. This information provides helpful insights into possible policy limitations. For example, the isolation of these localities due to the lack of public transportation poses a challenge for access to social programs when centralized in a municipal office or state delegation offices.⁷

Participants' description

As was the target of the fieldwork, women were the main participants of the focus groups. Other details about the participants are listed below:⁸

- About half of the participants have between 1 and 4 children and the majority are either married or cohabitating with their partner.
- Most participants could read and write (72 percent). However, the communities of Huehuechen Balam and Quetzalcoatl presented high levels of illiteracy.
- About 20 percent of the participants did not receive any education, 26 percent had complete primary, 23 percent had an incomplete primary, and 18 percent had a complete secondary education.

⁶ The highest percentage of non-Spanish-speaking population (in Chiapas, Flor de Cacao, Nueva Reforma, and Salto de Agua; in Yucatan, Yaxcaba and Huechen Balam) was 30 percent.

⁷ See annex A7 for graphics and detailed socioeconomic analysis.

⁸ Ibid.

- Responding to questions about activities, 11 percent of participants answered that they were housewives, 12 percent that they dedicated their time to seaming, 28 percent to agriculture, and the rest to livestock, poultry or swine breeding, and hammock embroidery.
- In the state of Chiapas, only three of the selected communities hold a majority indigenous population of more than 80 percent: Flor de Cacao, Loma Linda, and Salto de Agua. These are followed by Maravilla Tenejapa with 50 percent of indigenous population, followed by the rest of the communities in Chiapas without homogenous distribution of indigenous population (principally ranging from 1 percent to 20 percent). In Yucatan, the indigenous population exceeds 50 percent in almost all of the identified communities, consistent with the state's proportion of indigenous population.

Report structure

Chapter 1 provides an overview on the environmental and legal background to forestry and the unique land tenure system in Mexico and introduces REDD+.

It highlights the important correlation of poverty, marginalization, biodiversity, and deforestation. It underlines that deforestation is mostly due to land use change for agriculture and livestock production, despite negative cost-benefit results for traditional agriculture schemes. The chapter concludes with insights into Mexico's unique land tenure structure and an introduction to REDD+ in Mexico.

Chapter 2 highlights the main structural barriers for women's participation in REDD+ related activities. These barriers are categorized as institutional, legal, and economic. Evidence suggest that women use natural resources differently than men, making them more vulnerable to a variety of negative externalities, especially in rural areas. Women may be more exposed to structural barriers and externalities such as climate change, longer working hours, weaker social status, wage gaps, a lack of gender disaggregated data, poverty traps, lack of land tenure, lack of representation in community decision making, and differences in human endowments (health and education).

Chapter 3 introduces behavioral science and presents the main behavioral science findings. The findings are presented in three models:

01. automatic decision making, relying on narrow, habitual frames and assumptions;
02. mental decision making, using interpretive frames and various conflicting "mental models"; and

03. social decision making and perception, guided by innate preferences, cooperation, and reciprocity.

The behavioral barriers to women's participation in REDD+ related activities include social stigma, traditional gender norms, and a strict role within the community. However, behavior is malleable. Normative, long-term change can be induced in communities using behavioral science interventions such as "framing," agency and assets, alternative communication spaces, and a variety of targeted programs.

Chapter 4 presents the Gender Action Plan (GAP). This chapter can be seen both as a summary of the main findings of previous chapters and as a stand-alone report. The GAP provides concrete goals, recommendations, and indicators for mainstreaming gender into REDD+ and other natural resource management programs.

Chapter 1:

**Forests, Landscapes,
and REDD+ in Mexico.**

This chapter provides an overview of the Mexican forestry sector and highlights the important correlation between poverty, marginalization, biodiversity, and deforestation. It underlines that deforestation is mostly due to land use change for agriculture and livestock production, despite negative cost-benefit results for traditional agriculture schemes. Finally, this chapter provides insights into Mexico’s unique land tenure structure and introduces the history of REDD+ in Mexico.

Forests and forest use in Mexico

The sustainability of Mexico’s forests⁹ is threatened by socioeconomic stresses and climate change. Of Mexico’s 12 million forest dwellers, 88 percent live in highly marginalized localities and 62 percent live in poverty.¹⁰ These poor and marginalized regions¹¹ are characterized by high rates of deforestation, high dependency on natural resources, greater vulnerability to climate change, and less capacity to adapt. Specifically, climate change threatens to disrupt forest uses that are prevalent in rural regions, such as timber and non-timber management, agriculture, and firewood collection. Thus, the conservation and sustainable management of natural resources, including climate change mitigation, is important for sustainable provision of ecosystem services to the poor and vulnerable, as well as for biodiversity and ecological protection (see annex A10).

The main driver of deforestation in Mexico is land-use change related to often unsustainable agricultural practices. Public programs for sustainable use of forest resources are not coordinated between sectors, and local-level organizational capacity and leadership are weak. Moreover, agricultural activities—especially if unsustainable—and workers in this sector are especially vulnerable to climate change. Much of the agriculture-dependent population is rural, poor, and vulnerable.¹² Sustainable REDD+ activities offer social and private returns that surpass those of unsustainable activities,¹³ and thus present unique opportunities to conserve and manage natural resources, while creating benefits at the individual and collective levels.

⁹ See annex A10 for discussion of Mexico’s forests in the context of REDD+.

¹⁰ DOF (2016).

¹¹ Marginalization (depicted in Mexico through a Marginalization Index by the National Population Council (CONAPO)) is defined as situation where parts of a society lack opportunities, access to development, or other detrimental situations, caused by lack of access to education, inadequate housing, and lack of services and goods (CONAPO 2012).

¹² INEGI (2009).

¹³ See annex A9 for the Economic Analysis of the DGM (World Bank Group 2017c).

Land tenure schemes and landownership in Mexico

Mexico has a unique land tenure scheme: the communal property system of comunidades and ejidos. Fifty-three percent of Mexico's total land is communal property, composed of 29,441 ejidos and 2,344 comunidades (communities); and 62 percent of Mexico's forests are under a communal property structure (of the rest, 32 percent belongs to small private owners and 6 percent is public property in the form of forest reserves).¹⁴ (See annex A9, box A9.1, for a comprehensive discussion of Mexico's land tenure system.)

Exclusion from land tenure impinges on women's economic well-being and their right to participate in community assemblies and decision making. Land tenure confers the legal right to vote in **community** assemblies and other decision-making powers. Of the 4.2 million Mexican community members in 2013 with land titles, only 19.8 percent were women.¹⁵ Furthermore, women hold only 12.5 percent of the 350,000 management positions in local assemblies and governing bodies.¹⁶ Often, women can only become landowners through bequest or inheritance of parcels owned by their husband, which explains why the majority of women with land rights are 63 years of age or older and widowed.¹⁷ Ownership and control of land and other assets are important foundations of women's agency. Landholding boosts women's voices and bargaining power in household decision making, improves access to capital, and increases their overall economic independence.¹⁸

REDD+ in Mexico

The Government of Mexico is a pioneer in REDD+. In 2005 the United Nations Framework Convention on Climate Change (UNFCCC) created the framework for the "Reduction of Emissions from Forest Deforestation and Degradation,"

¹⁴ CONAFOR (2016b).

¹⁵ Of these women with land titles, 23 percent are property owners, but do not have rights over common resources; and 42 percent are "settlers," that is, inhabitants recognized by the community assembly without private property rights or common use and without voting rights (Almeida 2009; INMUJERES 2013).

¹⁶ CONABIO (2016).

¹⁷ Aguilar et al. (2014).

¹⁸ World Bank Group (2012: 88).

or REDD. REDD was transformed into REDD+ in 2010, to also include strategies for the management and conservation of forest lands. Today, Mexico has a holistic, nationwide REDD+ Strategy (ENAREDD+), including national monitoring and safeguards systems.¹⁹

ENAREDD+ was designed in consultation with a broad range of stakeholders, including women, local and indigenous communities,²⁰ civil society, academia, business, and government.²¹ The strategy includes specific provisions related to women and gender, mandates state REDD+ strategies to mainstream gender concerns,²² and encourages greater participation of women in community governance and natural resource management.²³ (see annex A10, box A10.2, on the inclusion of women in ENAREDD+ consultations).

Mexico implements REDD+ through an integrated landscape approach that **promotes different, individual activities adapted to state and local needs.** This unique and challenging approach recognizes that each ejido and community is different, with different needs and uses of land and forest, agricultural practices, and forms of social organization (see figure 1.1).²⁴

¹⁹ For detailed information on national institutions and country policies relevant to the REDD+ implementation and the ER-P please refer to Figures A1, A2, and A3 in annex A1. ENAREDD+'s activities are in line with UNFCCC's four requirements for countries to access REDD+ results payments: (1) a national action plan or strategy; (2) a reference level for forest emissions; (3) a national monitoring, reporting, and verification system (MRV); and (4) a safeguards information system.

²⁰ CONAFOR (2016b).

²¹ Protocol available online: www.enaredd.gob.mx.

²² Armijo and Castañeda (2017).

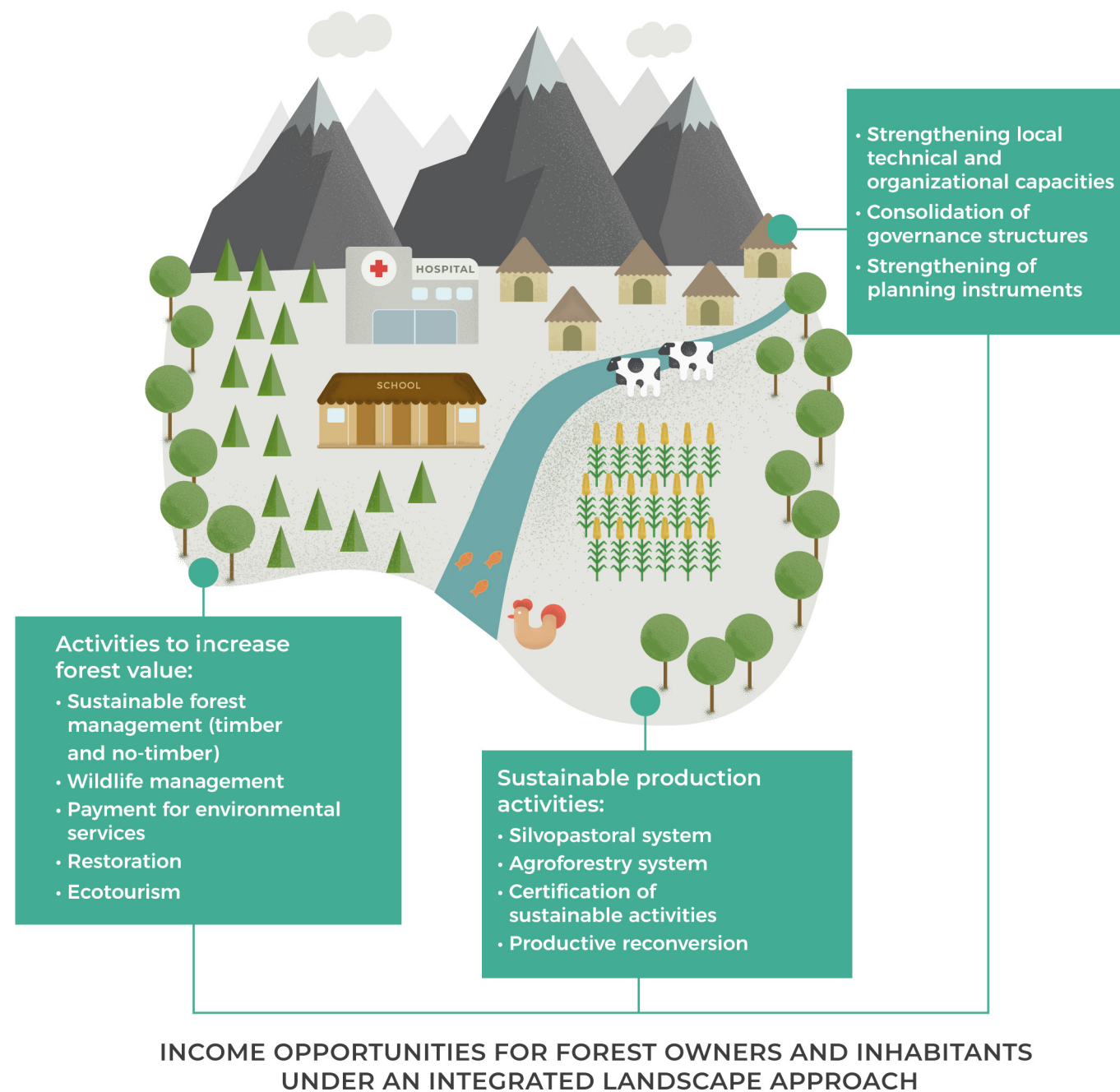
²³ CONAFOR (2016d).

²⁴ See annex A10 for discussion of state REDD+ strategies under ENAREDD+.

Figure 1.1.

REDD+ activities in the context of Mexico

Source: CONAFOR (2016b).



World Bank support in Mexico within the framework of the REDD+ initiative

Together with the World Bank, Mexico is implementing a comprehensive Forest and Climate Change programmatic approach that provides financing for sustainable forest management, including efforts to address key drivers of deforestation and forest degradation.²⁵ Among others, Mexico participates in the Readiness Fund of the FCPF, the FCPF's Carbon Fund portfolio with an Emission Reduction Program (ER-P), and the Forest Investment Program (FIP). Through the ER-P, Mexico seeks to contribute to the zero deforestation objective and reach a 22 percent reduction in GHG target by 2030.

The FCPF also highlights the importance of incorporating gender considerations into REDD+ planning and operation stages. To this end, Mexico's Readiness Preparation Proposal (R-PP) encourages the identification of gender-based inequities related to Investment Programs components and fosters the inclusion of both men and women into benefit-sharing schemes. Mexico's efforts are complemented by the World Bank-developed Regional Action Plan for Gender for the Latin American and Caribbean Region. The plan, together with the overall World Bank Group Gender Strategy,²⁶ seeks to integrate the gender perspective into the Bank's technical assistance projects, financial instruments, and knowledge processes.

²⁵ See annex A10 for a full discussion of World Bank support in Mexico

²⁶ World Bank Group (2015a).

Chapter 2:

**Structural barriers to
women's participation
in REDD+**

This chapter identifies structural barriers to female participation in REDD+, organized by institutional, legal, and economic categories. It shows that differentiated use of natural resources makes women vulnerable to a variety of structural barriers, including low social status, lower remuneration and less benefits, poverty traps, lack of land tenure, lack of representation in community decision making, and differences in human endowments (health and education).

Structural barriers to women's empowerment are set by institutions, policies, legal frameworks, economic systems, or other systems. While barriers identified in this chapter are commonly known and well documented, it is important to reemphasize them in this context as they continue to persist.

Institutional barriers and recommendations

Structural challenge 1:

Lack of infrastructure and the difficulty of providing necessary paperwork on time

Limited public infrastructure and distance to public offices may require several hours or days of travel and hinder community members from transmitting required paperwork.

Lack of infrastructure was mentioned several times during focus groups in Chiapas: a woman pointed out that they never received the cacao and coffee program because *"this community is inaccessible."* Long travel times can also prevent promoters and delegates from presenting programs to targeted beneficiaries. Complicated travel and transfer logistics create time burdens for women (as they are absent from home instead of devoting their time to care-taking or household chores).

The application process to receive grants and subsidies implies an investment of time and resources that is burdensome to men, and even more so for women.

Applications to grants and subsidy programs can be expensive (approximately 6 percent of the annual cost in the case of communities that use forestry).²⁷ Some grants require the verification of land ownership, excluding

²⁷ INECC (2016).

those who lack property rights (particularly women). Some subsidies require online registration, but rural communities often lack Internet access.²⁸ Moreover, the required paperwork needs to be provided in Spanish, which often impedes indigenous women from applying.

Timelines and schedules are an important factor for signing up to programs.

Once operating rules for the application process have been published, the time allowed for applicants to present all relevant documents can vary from one week to three months. Considering the time needed for communal decision making, this might not be adequate. Before any decision can be taken, assemblies need to be convened for an anticipated 8 to 15 days. Often a second meeting is necessary, which means that at least 51 percent of community members are required to meet 8 to 30 days later.²⁹ Some application processes can take even longer, such as registering a change of land use, the change of land titles (for example, from man to woman), or providing women applicants with the right to use land and to partake in REDD+ related activities.

²⁸ In Mexico, only 45 percent of households have a computer and 47 percent access to the Internet (INEGI 2016b).

²⁹ Agrarian Law, Art. 25 and 26.



Structural recommendation #1

Facilitate application processes and accommodate time lines to community decision-making procedures

Simplify and streamline application requirements and supporting administrative processes.

According to the behavioral science framework “EAST,” to encourage a behavior, program administrators need to make it “easy, attractive, social, and timely” (UK BIT 2012). Specific actions to streamline applications and increase women’s enrollment in REDD+ programs could include:

- 01.** Providing documents in indigenous language and requiring less paperwork to reduce the burden women face (including educational disadvantages).
- 02.** Providing women with easily accessible information (using images, infographics, and stories).
- 03.** Providing women feedback mechanisms such as a hotline to support them through the application process.
- 04.** Providing women-only transportation if needed, in groups and during family-accessible times (such as the late afternoon).
- 05.** Accommodating community decision-making timelines.
- 06.** Extending enrollment windows and speeding up application-handling procedures.

A long-term action to facilitate program application and delivery could be the creation of “one stop shops.” These could be opened in locations easily accessible to women such as schools or clinics.

Structural challenge #2: Lack of a comprehensive gender perspective in REDD+

A coherent gender perspective may not be incorporated into REDD+ policy and program design. UN-REDD+ identified four areas for gender mainstreaming in REDD+:

01. understanding gender roles and needs;
02. addressing the use, access, and control over resources, knowledge, and power related to gender;
03. giving women equal representation and ability to influence decision making; and
04. implementing affirmative action to promote gender equity, and monitor and evaluate action impacts.³⁰ In addition, women may not know, and should be informed of, the panoply of opportunities for women that REDD+ activities could offer.³¹

³⁰ Nhantumbo y Chiwona-Karlton (2012).

³¹ As confirmed in interviews, REDD+ related projects that are of interest to women are mostly related to beekeeping, forest supervision, and small farming. The women interviewed suggested that these activities make them feel empowered and competent to undertake REDD+ related activities.

Box 2.1.

Mainstreaming gender in Mexico's natural resource management programs

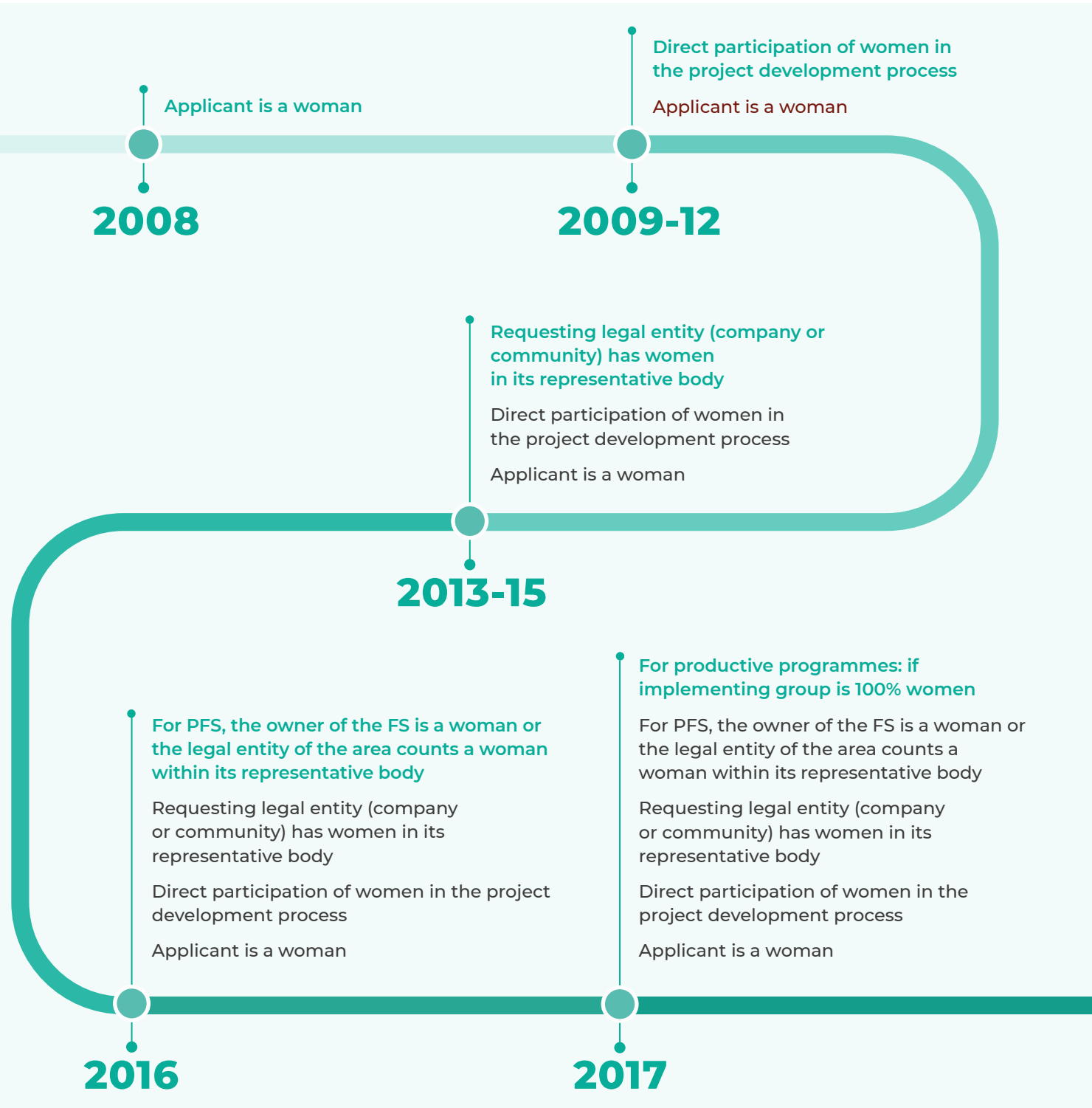
For the past decade, productive REDD+ related activities in Mexico have been fostering the integration of women or groups of women. The Ministry of Agriculture, Rural Development, Fisheries and Food (SAGARPA) explicitly supports women's empowerment through its program to support small-scale producers. Also, through the "Field in our Hands" component, SAGARPA supports women by building capacity and strengthening their role and presence in productive activities through access to technology, innovation, and tools.^a The National Forestry Commission (CONAFOR) has also been working on including gender considerations in the process of granting subsidies since 2008 (see figure B2.1.1 for how the criteria and the gender mainstreaming has evolved). In 2017, the "Productive Forestry Projects for Women"^b program was initiated and has since received 51 applications. However, 41 of these applications failed, mainly for technical errors. In interviews, CONAFOR staff suggested that trained forestry promoters can reduce the failure rate by helping women submit error-free project applications. As this report shows, other institutional barriers for women might include application forms that indigenous women find difficult to read and understand, or the lack of cash or access to credit to provide the necessary counter-financing.

Note: a. Through this component, SAGARPA provides women in poverty between the ages of 18 and 65 years production packages for self-supply (family or school garden, modules for chickens and rabbits), projects for primary production (infrastructure and equipment, genetic material, reproductive specimens, bee hives, and so forth), or capacity-building support (SAGARPA 2016).
b. CONAFOR (2016c).

Figure B2.1.1.

Gender criteria in CONAFOR Operational Guidelines for applications, 2008–17; own elaboration

Source: Own elaboration.



Socioeconomic data is oftentimes not disaggregated by gender, which poses problems for policy makers and program designers trying to improve gender mainstreaming. Data should be collected on national, state, municipal levels, and if possible at the local level, and organized from a gender perspective. This will give policy makers a better overview on poverty, scarcity scenarios, access, agency, endowments, and potential incentives. Gender-disaggregated data can reveal a variety of useful metrics, such as the value of unpaid labor and child care, income at the individual level, the combined income in households, time use, and land ownership (by gender). With these metrics, policy makers could differentiate and quantify the needs and dependencies, constraints, and opportunities of women and men, leading to more effective environmental, and forest production and conservation interventions.

In addition, socioeconomic data for indigenous populations may not be sufficiently disaggregated. The needs of indigenous populations is an important input for REDD+ program design, especially in intervention areas with higher indigenous populations.³² Data disaggregation supports the consideration and strengthening of the role of indigenous women as custodians of culture, language, and beliefs. This focus also helps strengthen women’s roles in the protection of the environment and biodiversity.

REDD+ programs in Mexico should enroll more women. Regarding subsidies allocated to individuals in 2016, CONAFOR assigned 25 percent of the total to women, or US\$11.6 million. Table 2.1 presents the number of women and men who received subsidies for sustainable forest management in the last trimester of 2016.³³ Table 2.1 shows that in the last trimester of 2016³⁴ fewer women received subsidies than men (see box A10.3 in annex 10 for more discussion of enrolling women).

³² Comisión Nacional para el Desarrollo de los Pueblos Indígenas (CDI), UNDP (2006).
³³ CONAFOR (2017). Background to the Gender Perspective in the Forestry Sector.
³⁴ CONAFOR (2017). Background to the Gender Perspective in the Forestry Sector.

Table 2.1.

Share of females (F) and males (M) who received subsidies for sustainable forest management from CONAFOR, by age, during the last trimester in 2016

Source: CONAFOR (2016e).

Note: F = female; M = male; NS = not specified

Region	15–29 years			30–44			60+			Total		TOTAL	Total number		TOTAL			
	F	M	NS	F	M	NS	F	M	NS	F	M		F	M				
Campeche	0.10%	0.00%	0.00%	1.28%	4.23%	0.10%	1.47%	8.55%	0.00%	0.98%	6.88%	0.10%	3.83%	19.67%	23.70%	39	200	241
Chiapas	6.78%	8.26%	0.00%	0.49%	1.18%	0.00%	1.28%	2.56%	0.00%	0.69%	1.67%	0.00%	9.24%	13.67%	22.91%	94	139	233
Jalisco	0.98%	4.13%	0.00%	1.97%	4.33%	0.00%	2.26%	7.77%	0.00%	4.62%	6.00%	0.00%	9.83%	22.22%	32.06%	100	226	326
Quintana Roo	0.29%	0.39%	0.10%	0.29%	1.28%	0.00%	0.49%	2.95%	0.00%	0.29%	1.38%	0.10%	1.38%	6.00%	7.57%	14	61	77
Yucatan	0.10%	0.20%	0.00%	0.10%	2.65%	0.00%	0.20%	5.90%	0.00%	0.29%	4.33%	0.00%	0.69%	13.08%	13.77%	7	133	140
TOTAL											25%	75%	100%	254	759	1,017		



Structural recommendation #2

Mainstream gender at all policy and government levels

Steps should be taken to incorporate a gender perspective into REDD+ from the inception of policy and program design. It is important to link REDD+ policy instruments with existing national development strategies and to promote gender equality and female participation in benefit-sharing schemes.

Disaggregate socioeconomic data by gender. Gender data will give policy makers a better overview on poverty, scarcity scenarios, access, agency, endowments, and potential incentives. Gender-disaggregated data can reveal a variety of useful metrics, such as the value of unpaid labor and child care, income at the individual level, the combined income in households, time use, and land ownership (by gender). With these metrics, policy makers could differentiate and quantify the natural resource needs, constraints, and opportunities of women and men, leading to more effective environmental and forest conservation interventions.

Collect and disaggregate socioeconomic data for indigenous populations (and by gender for this population).

The needs of indigenous populations are an important input for REDD+ program design. Indigenous data supports the consideration and strengthening of the role of indigenous women as custodians of culture, language, and beliefs. This focus also helps strengthen women’s roles in the protection of the environment and biodiversity.

Enroll more women in REDD+ programs in Mexico. Programs should better tackle women’s needs and demands and thus aim at enhancing take up of rural women. See box A10.3 in annex 10 for more discussion of enrolling women.

Structural challenge #3:

Lack of policy coherence across programs, institutions, and levels of government.

REDD+ public programs and investments in the rural sector could be more coherent. There are approximately 12 federal government institutions that provide financial support for forestry and agricultural-related activities.³⁵ Uncoordinated support across programs can fund opposing activities, such as land conservation versus conversion of land to pasture and rangeland.³⁶ (see box A10.4 in annex 10 for discussion of the Mexican Government's work on achieving policy coherence).³⁷

³⁵ García and González (2015).

³⁶ SAGARPA (2016).

³⁷ Alianza México-REDD+ (n.d.).



Structural recommendation #3

Enhance policy coherence across programs, institutions, and levels of government

Efforts should be undertaken to better harmonize objectives and align implementation of the different governmental programs. Achieving policy coherence for sustainable development—which in fact is Sustainable Development Goal 17.14³⁸—is an important priority for Mexico's government and sustainable land management. Analysis of federal policies and their implementation at both the federal and state level could help mitigate distortions or incoherence and ultimately contribute to improving gender empowerment (see annex 10, box A10.4 for details of the Mexican Government's ongoing efforts on policy coherence).

At the same time, economic and technical resources from different sectors working on rural development should be mobilized to identify and then mitigate the most incoherent approaches. It is important to exploit synergies across different policy areas with important development dimensions, such as investment, agriculture, and environment, to create environments conducive to development and sustainable resource management.

³⁸ <http://indicators.report/targets/17-14/>

Legal barriers and recommendations

Structural challenge 4: Lack of land tenure

Lack of land tenure impedes women's participation in REDD+ activities and community governance. Only 19.8 percent of the rural land owners with full community assembly decision making rights are women. Without ownership or control of land, women cannot apply to (most) incentive programs (subsidies) related to infrastructure, credits, and technical assistance; nor can they participate in community decision making and assemblies. The majority of landowning women inherited the land from their husbands and are 60–70 years old. They have limited capacity for hard physical work on the land, and their economic and political outlook tends to be short term.

The gender division of labor and the constitution of the family as an economic entity often contribute to gender inequalities. For example, the move of the female to the male spouse's house makes it counterintuitive for parents to bequeath their land to their daughters. Moreover, landless women cannot attend community assemblies, and so do not receive the information about REDD+ activities that is mainly disseminated in assemblies.³⁹ Absence of property ownership and control matters for women's agency. Assets are an important element to boost voice and bargaining power in household decision making, access to capital, and overall economic independence.⁴⁰

Growing population migration in Mexico increases the responsibilities of rural women, while their legal and economic status remains unchanged.⁴¹

There is increasing migration of populations between 20 and 44 years. In 2014, male migration was 34.2 percent and female migration was 25.6 percent. Men who migrate rarely sign over their land to women, thus not providing their wives (or daughters) with the necessary legal authority to become part of the community's governing bodies, work the lands, and apply for governmental support. For the

³⁹ Méndez López et. al. (2015).

⁴⁰ World Bank Group (2012: 88).

⁴¹ CONAFOR (2014d).

typical laborer who is only a temporary migrant, having a wife at home is cost-efficient, conforms to gender norms, and protects his social standing in the community and kinship structures. However, migration could create new scenarios in which gender and cultural structures may be altered. Women might be able to generate new spaces of interaction that give them possibilities to grow and empower themselves.



Structural recommendation #4

Distribute legal land tenure more equally throughout the population and change customary laws

Ensure that property rights are distributed throughout the population by redistributing land titles or including women on legal land titles. The number of “Agricultural and Industrial Units for Women,” known as “parcels of women” (parcelas de la mujer), exclusive for the productive use of women, is still low. Today only 19 percent of ejido and community land corresponds to these parcels (most of them in Yucatan, the fewest in Chiapas). As stated during an interview for this report, many of these parcels are either far away from the households (thus impeding women from using them daily), are tilled by men, or are used for agricultural purposes (like raising cattle) that traditionally are not women’s duties. The situation could be improved in the following ways:

- **Authorities could try to ensure that women’s parcels are returned to women’s use only, and build women’s capacity to use the land as needed.** If the parcels are too far away from the communities (so that women could not use them without leaving their home unattended), a switch of parcels could be negotiated.
- **Husbands could be encouraged to include their wives on the land title.**
- **A longer-term solution would be to conduct a social and behavioral intervention through educational programs at the community level to prepare for changes in customary law.** An example would be to encourage men to bequeath their land to their wife or daughter in times of death or migration. However, counterintuitive traditions to this normative change should be considered—for example, that the daughter moves to the husband’s house.

Structural challenge #5:

Lack of representation for women and intimidation that prevents their participation in decision-making forums

Institutions often benefit men through decision making, even over products and services that are mostly used by women. In 2016 in Mexico, women held

only 12.5 percent of the 350,000 management positions in local assemblies and governing bodies.⁴² Furthermore, most programs require that the community council participate in the application to and approval of accessing programs. This requirement excludes women, since they usually are not members of the council. Even if women do participate (for example, through a mandatory gender parity rule), their opinions traditionally are not given the same importance as those of men. A woman in a focus group during field work mentioned: “*Not all women form part of the ejido council. We are part of an indigenous community and we (women) are ashamed to raise our hand to participate. The Municipal Commissioner has a rude personality and there are not a lot of opportunities for us to say our opinion.*”

Although community and ejido assemblies are often open to everyone, their organization and dynamics do not favor women’s participation. They often

lack a seating order, operate under the “who is loudest is heard” principle, and intimidate women who are already in a minority during these meetings.⁴³ Furthermore, information about subsidy and advisory programs is disseminated in these communal spaces and if women are not present during the assemblies, they are not informed.

⁴² CONABIO (2016).

⁴³ Interview with CONAFOR (2017).



Structural recommendation #5:

Promote women's representation and participation in decision-making processes

Promote women's attendance and participation in decision-making processes and ensure that women can express themselves freely.

This report finds that women's participation in productive activities and their participation in communal decision making are correlated. Therefore, women's participation in decision-making processes should be promoted, and they should not be hindered by the social structures and entrenched power asymmetries during meetings. Women's participation could be supported in the following ways:

- **Gender parity rates could be stipulated for council debate to open access to women to decision-making arenas.** Such rule changes should be accompanied by social support for women, including by asking communal leaders to help women speak out in meetings and become more confident.
- **Dedicated spaces such as schools or medical facilities could be provided for women to meet and discuss community issues.** Every morning, most women walk their children to the nearest school. Thus, educational facilities could be a space to present programs or activities, without forcing women to leave their home and routine for too long. Furthermore, women must get a periodical medical checkup for receiving Oportunidades, and thus medical facilities could also be a convenient meeting space and presentation forum for information about programs and subsidy schemes that women can apply to. This would help also overcome intention-action gaps.⁴⁴

⁴⁴ "Intention-action gaps" are defined by the World Bank Group (2015b) as: a failure by an individual to follow through on his or her intentions and instead to take an action that, on reflection, the individual would not have wished to take.

Economic barriers and recommendations

Structural challenge #6: Poverty traps for women and female headed households

Female-headed households are poorer and face higher risks of falling into a poverty trap.⁴⁵ They are less likely than male-headed households to have access to land and resources. Twenty-three percent of Mexico's women live in rural areas and in vulnerable conditions with limited access to human endowments such as food, education, health, infrastructure, and employment.⁴⁶ As depicted in table 2.2, in 2015, nearly half of all Mexican women were living in households with a per capita income below the poverty line.⁴⁷

Female-headed households are more likely to have reduced educational levels.

As a study of the Oportunidades Program has shown, it is more common for children and adolescents from female-headed households not to attend school. Girls and young women stop studying to help their mothers with household activities. This implies that these female-headed households cannot comply with the education requirements of the Oportunidades Program and thus do not profit from it.⁴⁸ In general, women undertake more domestic, informal, and unpaid activities than men (one of the additional causes impeding them from signing up for programs to escape from poverty).

⁴⁵ Poverty trap is used in a context where current poverty might be what is causing future poverty. A poverty trap takes place when poor people lack access to capital and credit to help them break out of the poverty cycle. As a result of limited access to resources and opportunities, current poverty can cause future poverty (Kraay and McKenzie 2014).

⁴⁶ INEGI (2016a).

⁴⁷ DOF (2016).

⁴⁸ De la Paz y Salles (2006).

Table 2.2.

Poverty and reduced socioeconomic status of women and female-headed households in Mexico

Sources: INEGI (2014b), INEGI (2015), and DOF (2016).

Note: n.a. = Not applicable

	Female	Male	National Average
Living in poverty (2010), national average	46.3%	46.1% ^a	46%
Living in extreme poverty, national average	10.4%	10.4%	10.4%
Educative disadvantage, national average (difference in access and results of education between men and women; higher is worse)	21.8	19.4	20.6
Head of household (rural) ^b Alimentary insecurity of HH headed by women is 6% higher than those headed by men; 79% of female-headed households have no male partner, but dependent children, making them especially vulnerable. ^c	11%	89%	n.a.
Working in primary sector (agriculture, forestry, fishing)	National: 3.5% Rural: 11%	National: 19% Rural: 89%	13%
Working in tertiary sector (services, commerce, transportation) ^d	National: 79% Rural: 49%	National: 55% Rural: 51%	61%
Working in informal sector, national average	51%	49%	50%
Average monthly income per household in rural areas (2000)	US\$207 female-headed rural households	US\$292 male-headed rural households	US\$280 average rural households
Share of hours spent on domestic chores, national average	71%	29%	53%

^a CONEVAL (2012).

^b Alianza México-REDD+ (2013).

^c Eighty-four percent of the rural female-headed households are led by women aged 30 years or younger, 37.3 percent by women between 30 and 49 years old, 20.9 percent between 50 and 59 years old, and 33.4 percent by women older than 60 years. Source: Alianza México-REDD+ (2013).

^d INEGI (2016c).

Social and gender roles prevent women from doing paid work. The share of women in the economically active population is much lower than that of men. Only 38 percent of women are economically active, compared to 62 percent of men.⁴⁹ The situation of income earners in the household varies regionally. Households with a majority (83 percent) of male “breadwinners” can be found in the southern Pacific region (Chiapas, Guerrero, and Oaxaca) versus 70 percent of male “breadwinners” in the central parts of Mexico (Mexico City, state of Mexico, and Morelos).⁵⁰ This suggests a certain machismo, patriarchal control, and indirect socialization of traditional gender roles in southern (and ER-P) states. Perhaps women are discouraged from working at an early age, when they learn and see that men are the breadwinners (in behavioral science, this phenomenon would be called *salience of gender identity*). The traditional undervaluing of women discourages change, such as investment in women’s education and skills. Thus, the normalcy of patriarchal control and gender inequality is perpetuated.

The wage gap between men and women is especially significant in rural areas.

Measured nationally, 60 percent of women receive a salary above the minimum wage (70 percent of men).⁵¹ In rural areas, however, only 43 percent of women are paid more than minimum wage (and 56 percent of men).⁵² One important driver of economic marginalization in rural areas is the lack of training services for better work. Without job training, rural (and indigenous) women cannot exit low-productivity and informal sectors.

Women fulfill double roles in the economy and bear a double time-burden. When compared to men, women spend more time on household activities and less time on social activities. Traditionally, women are assigned the role of the caretaker, which includes education, housework, and community work (see figure 2.1). Rural women in particular spend 71 percent of their week working in remunerated and nonremunerated activities, compared to 66 percent of the week for men. All in all, women undertake more nonemployment activities and have less free time than men. This might hold them up from signing up to another task, such as a REDD+ related activity.

Women use natural resources differently than men, which sets the stage for a variety of structural barriers. Differentiated resource use makes women vulnerable to economic, social, and external environmental influences, especially in rural areas. Such vulnerability affects their economic empowerment, livelihoods, their social spaces, and ultimately their involvement in REDD+ and related initiatives.

⁴⁹ Percentage points are for formal labor; the informal economy is particularly important for rural women’s livelihoods, but not reflected in statistics for the economically active population.

⁵⁰ De la Paz y Salles (2006).

⁵¹ INEGI (2016c).

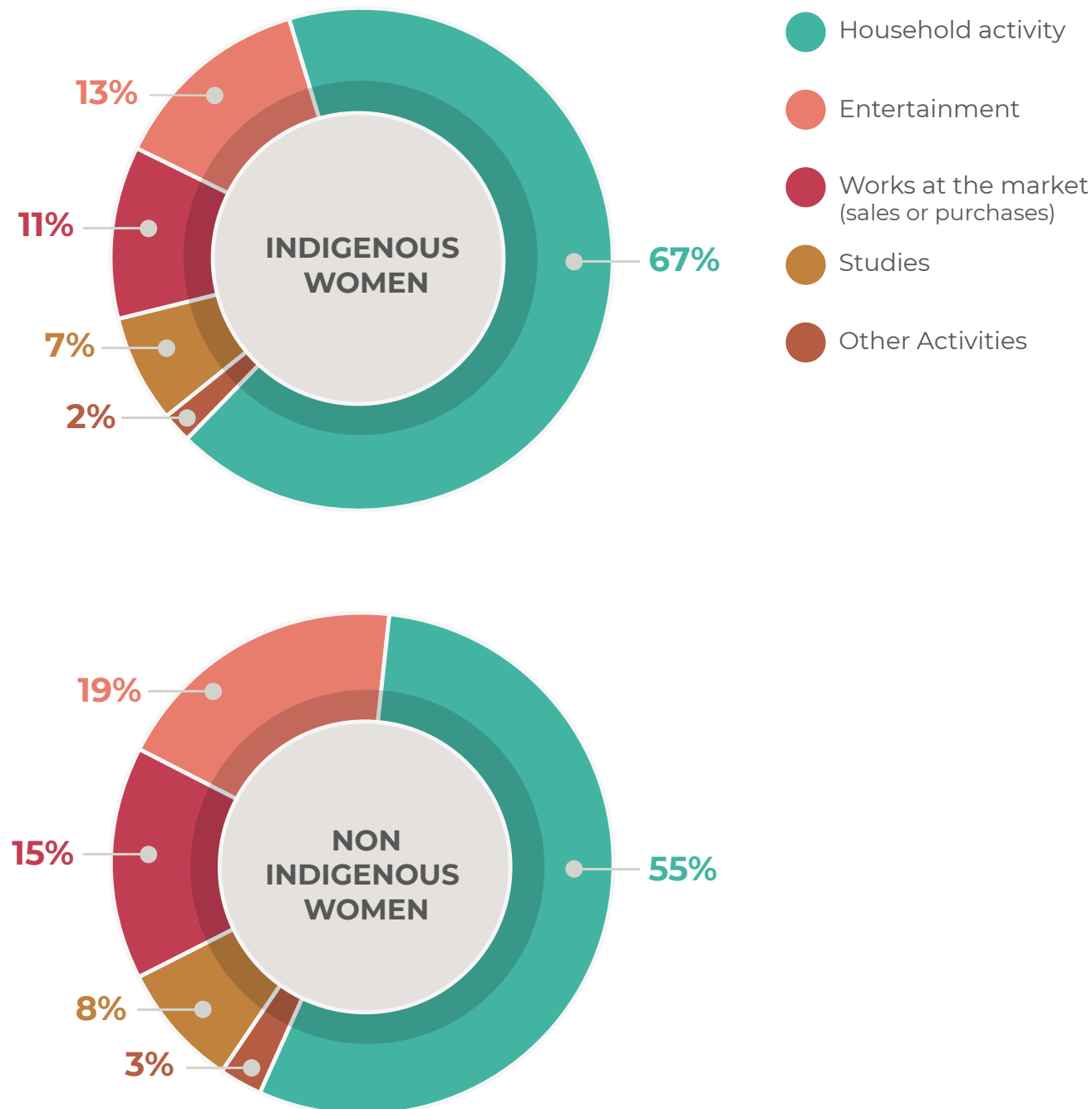
⁵² INEGI (2014a).

Figure 2.1.

Time dedicated to diverse activities in localities of less than 10,000 inhabitants (women aged 12 and above), 2014

Source: IMUJERES (2014).

Note: Reference is made to the resident population of localities with less than 10,000 inhabitants. Time is estimated in weekly hours. Household activity includes: domestic work, the production of goods for exclusive household consumption, care and support for people in the household, support for other households, and community and volunteer work. Entertainment includes: sport, social, community activities for pleasure, and entertainment and the use of mass media. Other activities include: travel to work, job search, and travel to school.



Structural recommendation #6:

Fight the poverty traps resulting from women’s time burdens, economic marginalization, and blunted aspirations

Consider scarcity scenarios and double time-burdens during project design. Offer REDD+ related activities close to women’s homes, so they don’t have to leave their household chores and children unattended. Complement REDD+ activities with innovations that reduce time spent on household tasks. For example, “estufas ahorradoras de leña” (wood-burning “saving stoves”) can reduce the time dedicated to collecting firewood. This would reduce women’s domestic burden and allow them more time for leisure or productive activities.

Additionally, steps should be taken to create a stable market and prices for agricultural products. In Chiapas, some communities travel to Guatemala to sell their products. In Yucatan, access to markets is even more difficult, which is why communities mostly rely on intermediaries to sell their produce, often losing profit or selling below the cost of production.

Recognize and support economic opportunities for women in agriculture and other productive activities. Women help farm some “light crops” (including chili, coffee, pumpkin, and vegetables) that are easy to grow and harvest. These crops present an economic opportunity for women, but they often lack the technical skills to take over cultivation. Women have prominent roles in other agricultural activities such as animal husbandry. This is an economic opportunity—principally in Chiapas—as cattle and meat achieve more stable prices than crops. Such activities would be in line with REDD+ efforts as agroforestry/silvopastoral schemes.⁵³ Other preferred activities for women include forestry programs, coffee, subsidies for handcrafting, and local programs for cultural or traditional activities. Some of these opportunities are women-exclusive and allow conciliating domestic labor with economic or productive activities, without adding an extra time burden.

⁵³ See the ER-P investment plan projects for further reference.



Fight the poverty traps resulting from women's time burdens, economic marginalization, and blunted aspirations

Use choice simplification to free cognitive space⁵⁴ that is limited under a scarcity mindset. Cognitive space is limited under a scarcity mindset. Thus, an overflow of information can cause women to stick to their status quo and ignore new programs.

Reminders (a form of commitment device) could also be used reduce the cognitive costs of decision making and follow-through on decisions.

Reminders can take the form of text messages, verbal reminders in places women assist regularly (church, clinics, schools, etc.), or calls. Reminder options should be designed to avoid unintended conflict with a community's social norms with unintended consequences. Once a woman enrolls in an activity, a system of reminders can help sustain her commitment. When technology-based solutions are not possible (due to lack of infrastructure), alternatives could include short announcements during social meetings or in public places (schools, medical care institutions, and so forth) or text messages.

⁵⁴ Cognitive space or cognitive bandwidth denotes the finite information processing capacity of the brain. Making decisions and challenging decision contexts consumes cognitive bandwidth (World Bank 2015b).

Structural challenge #7: Educational disadvantages

Women receive less education and are often less exposed than men to the world outside of their communities. In particular, indigenous peoples in Mexico still face significant disadvantages in access to health, education, and income opportunities. The overall Human Development Index for Indigenous Peoples in Mexico in 2010 was lower than the national average.⁵⁵ Of the 15 percent of Mexican women who are illiterate, 37 percent are indigenous.⁵⁶ Many only speak an indigenous language and do not speak or understand Spanish. Indigenous men often receive better education or/and have more exposure to Spanish during meetings, assemblies, or working hours.⁵⁷ This makes a strong case for education as the key to empowerment of (indigenous) women. Education and other training can build women's capacity to manage natural and financial resources, and thus enhance their socioeconomic status.⁵⁸

Lack of education can result in barriers when applying to programs: a good policy or program might not succeed if it is not understood and taken up by its target population. Policies, programs, information, and benefits that are only presented in Spanish can further exclude minorities and women. The areas covered in this study suffer further from high levels of illiteracy,⁵⁹ and women tend to have a higher overall illiteracy rate than men (see "Illiteracy" in annex A7 for details).

⁵⁵ UNDP (2010), p. 15.

⁵⁶ INMUJERES (2014).

⁵⁷ Almeida (2009).

⁵⁸ United Nations (2010).

⁵⁹ Please see annex A.7 for a concrete socioeconomic analysis of the communities. All numbers are based on data by INEGI from 2014 (further referred to as INEGI (2014c)).

Box 2.2.

Case study: Structural barriers to women's participation in a CONAFOR project

Enrolling in social programs often requires the completion of forms, which might prove difficult for someone who did not attend school. For example, in 2017 the National Forestry Commission (CONAFOR) program “Productive Forestry Projects for Women” was initiated.^a Of the 51 applications received,^b 10 projects were approved for a total amount of US\$548,223 (the subsidy per project can range from US\$10,000 to US\$100,000) to support manufacturing of furniture, handicrafts, charcoal, and food from forest products. The reasons for not approving the remaining 41 projects vary; they include noncompliance with eligibility criteria, submission of incomplete application, no accreditation of legal ownership of land or lack thereof, or failure to specify the location where support would be applied. The submission of incomplete applications could be explained by: 1) public servants/technical advisors and forestry promoters facing challenges when communicating application processes and addressing barriers that women face; 2) women lacking the capacities to apply; and 3) women not knowing about the existence of the program or lacking detailed information (few women applied to this program). Furthermore, in order to receive this special women-only subsidy, women must contribute between 10 and 50 percent in cash or in kind under the 2017 program. Women often lack cash or access to credit to provide the necessary counter-financing. As of 2016, only 38 percent of rural women had a bank account, and access to financial services was low. Only 11 percent of the rural population requested formal credits and only 5 percent of ejidos and communities engaging in sustainable forest management accessed financial services. Thus, there are important opportunities to make project more gender-inclusive and better target women, something this report is aiming to do.

Source: World Bank (2017c).

Note:

a. CONAFOR (2016c).

b. The highest number of applications from indigenous populations come from the state of Mexico (9 applications), followed by the states of Michoacán, Oaxaca, and Puebla with 4 applications each, Coahuila with 3, and the rest of the applications from other states (2 or less).



Structural recommendation #7:

Provide accessible information on programs

Recognize and mitigate the structural disadvantage posed to women by inaccessible information. The use of images, infographics, and stories could be useful to help women absorb information about grants and subsidies. Programs, funding opportunities and any other benefit-sharing scheme should be presented in the indigenous language, orally, and at locations accessible to women (clinics, schools), especially in states with many indigenous peoples. Culturally sensitive capacity training is also needed and should be given in the afternoons, when women have more or less finished their household chores.

After reviewing the structural barriers, organized in legal, economic, and institutional barriers, the next chapter will present the behavioral barriers that women face when participating in emission reduction programs or productivity schemes.

Chapter 3:

**Behavioral barriers to
women's participation
in REDD+**

This chapter presents the main behavioral science findings regarding women’s decision-making processes, external and internal influences on their behavior patterns, and their decision to partake in REDD-related activities. The analysis follows the World Bank’s World Development Report 2015 framework on the behavioral impacts of automatic thinking, mental models, and social norms.

Box 3.1.

Three models of decision making

The *World Development Report 2015* (World Bank 2015) divides decision making into three models:

- 01. automatic models and decision making**, during which we rely on narrow frames, beliefs, default assumptions, and associations systems that automatically come to mind, and that are generally learned;
- 02. mental decision making**, using interpretive frames provided by “mental models,” which can be of multiple forms, sometimes conflicting, and which can change what an individual perceives and how s/he interprets it; and
- 03. social decision making and perception**, guided by innate preferences, cooperation, and reciprocity. Social norms and their influence, as well as social networks, also fall under this category and influence our decisions as we want to meet others’ expectations and act based on shared identities and collective goals.

In recent years, behavioral science has provided a new approach to understanding public policy challenges, one that considers the individual as a social actor. The field takes into consideration insights from psychology, sociology, anthropology, and economics to define, understand, and predict human behavior. Behavior is driven by biases, heuristics, loss aversion, self-control, and social norms, among others. To date, more than 100 countries are incorporating behavioral insights in the design and implementation of their public policy and programs. Furthermore, many countries such as Australia, the Netherlands, Peru, and the United Kingdom, and institutions such as the OECD, the United Nations, and the World Bank have established units dedicated to leveraging behavioral insights to design better policy and programs.

Behavioral science can work in tandem with standard diagnostic tools to improve the design and implementation of REDD+ related activities. Structural barriers and behavioral barriers exacerbate each other in a vicious cycle: for example, by driving poverty, structural barriers deplete mental bandwidth, which in turn triggers behavioral biases. To the extent that women are disproportionately affected by structural barriers, behaviorally informed policies can thus be particularly effective for women. The combined approach taken in this report to address both behavioral and structural barriers thereby hopes to be effective increasing women's participation in forestry, agricultural, or other REDD+ related activities.

Following the *World Development Report 2015*, this report presents three categories of behavioral challenges to women's participation in REDD+: automatic decision making, mental models and decision making, and social decision making. The three categories are discussed below.

Automatic decision making

Automatic, unconscious choices and external constraints strongly affect decision-making processes. These are often exacerbated by “scarcity effects,” which reduce cognitive bandwidth⁶⁰ and thus intensify automatic decision making. Scarcity exists in poverty contexts in the form of lack of income, limited access to public services, and difficulty meeting basic needs. Behavioral science finds that people tend to perceive scarce resources as more valuable⁶¹ than other readily available resources. Scarcity focuses people's thoughts solely on the lack

⁶⁰ “The brain can process only so much information and make so many decisions at once. Making decisions and challenging decision contexts consume cognitive bandwidth” (World Bank 2015).

⁶¹ Cialdini (2008).

of a certain (essential) resource and resorts to automatic thinking for remaining decisions.⁶² Computational, cognitive capacity—including the ability to pay attention, make good decisions, and resist temptation—is captured by the scarce resource. Thus, people in poverty may make short-sighted decisions that prevent them from breaking the poverty trap. Researchers argue that seemingly bad choices people make in poverty scenarios are not the result of low education, living conditions, or demographic variables, but the result of a scarcity mindset.

⁶² For further reference, see Daniel Kahneman's book *Thinking, Fast and Slow* (2011), which explains two different systems of decision making: System 1, Intuitive/Biased; and System 2, Deliberative/Cognitive.

Box 3.2.

Simplifying the choice environment

In behavioral science, human decision making is deliberative. Much of our thinking is automatic and based on what effortlessly comes to mind, using mental shortcuts. Even minor changes in how choices are presented or contextualized can have a large impact on behavior, and ultimately on the achievement of development goals. Simplifying the choice environment helps people make rational choices and enact behaviors that benefit them.

Understanding how contexts of poverty, hardship, and scarcity affect decision-making processes is important for the analysis of take-up and retention of social programs. Forty-two percent of the Mexican population live in poverty.⁶³ These communities face institutional and resource deficiencies and scarcity, including lack of information, monetary resources, access to education, health services, social security, housing, services, food, and time.

⁶³ CONEVAL (2012).

Behavioral challenge #1: Scarcity scenarios: time, financial, and aspiration scarcities

This report argues that there are three scarcity scenarios affecting women in both Yucatan and Chiapas: *time scarcity* (no free time), *financial scarcity* (poverty that prevents the fulfillment of basic needs), and *aspirations scarcity* (lack of mid-term and long-term goals). All three scenarios influence automatic decision making.

As outlined in structural challenge #5, women suffer from a double time-burden and thus time scarcity. Like many barriers to women's participation, time scarcity has both structural and behavioral aspects; here we focus on the insights provided by behavioral framing. Women are responsible both for their domestic/household work and productive, agricultural, and mostly unpaid work (feeding the cattle or harvesting vegetables) (see box 3.3). By tradition, women feel responsible for taking care of the house, their children, their husbands, and the household and do not perceive this as something negative. While both men and women agree that women are responsible for domestic activities, men underestimate the time and role their wives dedicate to productive work. Men usually report lower (perceived) rates of female involvement in agricultural activities than actual reality—which means no acknowledgment of the double time-burden women face or their contribution to bread-winning. As recorded in the field work, a focus group of nonorganized women expressed: *“Men limit our participation. They do not detect that almost every woman has done agricultural work (...) we can harvest, grow and clean the field.”* This underestimation could increase the psychological stresses of families, keep women out of productive work, and increase the scarcity context.

The second scarcity scenario is the lack of necessary resources to satisfy basic needs: financial scarcity. During the focus groups, women expressed their difficulty in satisfying daily food needs of their family. Both women and men mentioned in field work interviews that they look for additional, nonagricultural activities to earn extra income: *“We are motivated to undertake other activities because we need food on our table. We need to have enough resources to feed our children.”* The focus on satisfying basic needs could cause a tunneling effect, which is when scarcity captures people's attention and limits their cognitive bandwidth for aspirations and ideas that go beyond their daily routine. The family may overlook the best short- and long-term options for generating additional income.

The third scarcity scenario is women's lack of aspiration: aspiration scarcity. During the focus groups, the participants were asked to share their aspirations. The most common aspirations pertained to daily activities and the satisfaction of basic family needs: *“My aspiration is to take care of my child—that's it”*; *“Provide*

food and studies for my children”; and *“Help my husband with the harvest every year.”* Only a few answers differed from daily activities: *“Start my own barbershop”*; *“Build my own greenhouse for planting palm leaf”*; *“Finish my technical-high school degree.”* As with a lack of financial security, a cognitive tunneling effect could hold women back from looking beyond their immediate horizons. Women may not consider the possibilities afforded by subsidies or other governmental programs, nongovernmental interventions, or other recreational activities. Furthermore, gender norms and lack of role models can limit women's aspirations beyond traditional roles

Box 3.3.

What do we know about a day in a rural woman's life?

We asked women in the rural focus group about how they spend their day. The following is a summary of their responses. Women rise with the sun—between 4 and 6 am—and start the day by preparing food and clothing for their children and husband (some families have up to 12 children). Around 7 or 8 am, after breakfast, the husband leaves the house to go to work (mainly agricultural or forestry activities) and the women continue with their domestic activities: cleaning the house, preparing lunch, and playing with their children. In some families where women also do productive activities, they feed cattle or harvest some seeds or leaves. These activities are scheduled to avoid impinging on domestic responsibilities.

In the afternoon, women start preparing dinner to have it ready for their husbands when they return from work (sometimes, husbands also get home for lunch).

At night, women continue with domestic activities or take care of the children and then make necessary preparations for the next day.

Source: Own elaboration from field work



Mitigate scarcity scenarios by reducing complexity and access barriers through simplification, improved choice architecture, and nudging⁶⁴

Improved choice architecture⁶⁵ can support the mitigation of scarcity scenarios. Complexity is not itself a behavioral phenomenon, but can result in behavioral compensations that further reduce access. When confronted with complex information, people tend to make worse, more uninformed, and more irrational decisions than when information is clearly presented.⁶⁶ In fact, the effort of decision-making leads people to the use of heuristics,⁶⁷ which make them more prone to biases, low cognitive performance, or even can deter them from taking any decision at all.

⁶⁴ Automatic decision making can be influenced by something called “choice architecture.” Choice architecture influences decision making by simplifying the presentation of options, by automatically evoking particular associations, or by making one option more salient or easier to choose than the alternatives. Similarly, “nudging” can induce a certain behavior—in this case, a tendency to sign up to programs—by changing the default option, the description, the anchor, or the reference point.

⁶⁵ Such as simplification, reducing options, use of defaults, bundling or partitioning options.

⁶⁶ Gigerenzer and Gaissmair (2011).

⁶⁷ Heuristics are mental shortcuts individuals use to simplify decisions (WDR 2015).

Simplify choice architecture, which could encourage or “nudge”⁶⁸ rural women to sign up to productivity programs. Women and communities under a scarcity scenario may have limited cognitive space and bandwidth, leading them to overlook new options and programs. Especially for poorly educated women in rural areas, program complexity might be perceived as very high. A “choice architecture” to encourage women’s participation could include simpler program presentation, assistance in signing up, and program monitoring. Moreover, choice architecture activities could be undertaken by promoters similar to their communities (exercising *social influence* on potential beneficiaries). Finally, knowledge exchange between men and women from similar communities (to alter social norms) can help increase program uptake and better-informed decision making.

Reduce complexity and access barriers by designing program presentations with culturally sensitive communication tools, and deliver presentations at opportune moments, such as paydays or community meetings days, so that people act on their good intentions at the moment it is easy and accessible for them. Using photographs, videos, direct exchanges, or presentations can help to correct false beliefs about social norms—for example, by providing accurate statistics on women’s chores and economic activities. These media can also be used to provide information about how an individual’s behavior compares to that of peers.

⁶⁸ Nudging is an aspect of choice architecture that alters behavior in a predictable way without forbidding any options or significantly changing economic incentives (World Bank Group 2015b).

Mental models and decision making

Mental models encompass categories, concepts, identities, causal narratives, and worldviews. Mental models can be unconscious grounds of reasoning since they provide default assumptions about the characteristics of people, objects, and relationships, and thus drive stereotypes, social norms, and cultural stigma. A person's self-concept consists of multiple mental models, each associated with specific sets of norms. These norms guide their choices and behaviors.⁶⁹ Gender roles are one of the mental models that women adopt based on the norms around women's roles in the household and community. Collectively shared mental models are persistent and can exert a major influence on individual choices and aggregate social outcomes. However, mental models are also malleable and can be altered by education, programs, or initiatives. In other words, mental models both constrain and enable development. Moreover, individuals have many different and competing mental models that they can bring to bear on a situation, and which one they use depends on the context that activates one mental model rather than another.⁷⁰ Behavioral science offers insights into women's agency by helping to explain the different biases that determine women's self-concept, their self-perception regarding their abilities and capacities to achieve their goals or to start new activities, and their aspirations. By removing barriers for women to have ownership and possess assets and enhancing women's voice and agency, they can become more empowered to participate in programs such as REDD+. Behavioral and normative patterns—and mental models—can be positively changed.⁷¹

In rural areas of Mexico, mental models can result in the exclusion of women from REDD+ participation, and other productive activities. Models such as stereotypes, traditional gender norms, and the historical exclusion of women from decision-making processes can affect women's self-confidence, self-efficacy, and, consequently, their will to get involved in decision-making processes or feel empowered to sign up for programs (see box 3.4). Therefore, one important aim of the data collection was to approach an understanding of mental models in communities—that is, stereotypes, the way the community perceives a woman (“what is a good woman?”), and the way women perceive themselves (self-concept).

⁶⁹ WDR (2015).

⁷⁰ World Bank Group (2015b).

⁷¹ World Bank Group (2008).

Behavioral challenge #2: Gender norms and limited aspirations

Most rural women interviewed in Chiapas and Yucatan view their roles through traditional gender norms. Women recognize that family and their role as mother comes first and is the most important responsibility in their lives. A “good family woman” knows how to raise children and always fulfills her daily and household chores to everyone's satisfaction (a value that was mentioned in all focus groups). Even from a woman's perspective, leaving her house and the community to engage in a productive activity is only acceptable if “*there is no other way to give food to your child*” or “*when your husband abandons you*.” Most of the women acknowledged that their main aspirations are to provide education and food to their children and help their husbands in the harvest. These findings show that from the woman's perspective, being a mother is the most important role in their lives—both in their family and community.

Women's bravery, acknowledged in traditional roles, could be linked to their participation in REDD+ activities.⁷² Women identified themselves during the focus group as “very brave” and those who had been involved in nondomestic activities outside the house were satisfied with the results they had attained. For example, in Sacpukenha, a woman told a story about standing her ground when hunting with her husband. While she was holding the rifle, a deer appeared. Lacking time to hand the rifle over to her husband (the deer would have heard and ran away), she had to make the shot—and did so successfully. There was a common agreement among the women who heard the story that she had been “brave” and “courageous.” Through other stories told during the focus groups, it became evident that the first mover, initially, felt fear about trying something new, but that the fear subsided the moment they tried it and realized that they could succeed. The deer metaphor could be a symbol for other women to get involved in “exclusively male” activities. Women's bravery is already accepted among communities; this identity could be extended to nondomestic activities.

⁷² World Bank (2015b).

Box 3.4.

The effects of identity and gender bias on agency: Achieving gender inclusion through behavioral insights

An individual's self-concept is composed of multiple identities, built by beliefs and perceptions. Two individuals who appear to have the same background may make different decisions depending on how they primarily (or in the moment of the decision) identify themselves—for example by gender, race, ethnicity, religion, class, or another characteristic. Individual motivation and decision-making power is called *agency*.

Behavioral science offers insights into women's agency by highlighting a variety of barriers. These include the biases underlying women's self-concept, women's self-perception regarding their abilities and capacities to achieve their goals or to start new activities, and their aspirations. By removing barriers for women to ownership and assets and enhancing women's voice and agency, they become more empowered, both structurally and behaviorally. Behavioral and normative patterns—and mental models—can be positively changed (World Bank Group 2015a).

Gender bias creates societal norms and roles that deny women the same opportunities as men. Social norms prescribe how women are expected to act or perceive themselves. These expectations affect women's self-concept, self-efficacy, and self-worth. Stereotypes, idealization, and other cognitive biases ultimately determine the social norms upon which women are judged and treated.

Behavioral insights can unveil the barriers that hinder women from achieving voice and agency. Through these insights can we contribute to meeting the World Bank's gender strategy more efficiently and effectively.



Behavioral recommendation #2:

Expand women's self-concept through role models

Increase the number of female forestry promoters or technical advisors to slowly change gender norms that block women from signing up to programs. Of the 353 forestry promoters (*promotores forestales*) in Mexico, only 16 percent (58) are women. Of the 899 technical advisors (*asesores técnicos certificados*) in the ER-P states, 19 percent (175) are women.⁷³

The reasons for this gender disparity include the fact that forests are a predominantly male space, that capacity building for promoters might not have been gender inclusive, and women suffer the above-mentioned structural and behavioral barriers to getting involved in promoting jobs. The low female rate of forestry promoters and technical advisors poses challenges when working with communities. Gender norms might prevent or discourage women from interacting with a male promoter. In remote areas such as Chiapas' Selva Lacandona, women might not talk to male strangers. At the same time, it is difficult for women to relate to the promoters in order to receive social influence or create a cascade effect (see box 3.5), or to look up to the forestry promoters and aspire to follow their career path. It is therefore recommended to increase the number of female forestry promoters or technical advisors. Especially when female promoters are from the same community or localities, this can help: **01.** reframe women's role, **02.** change social bias, **03.** build the trust needed to convince women and men to sign up to REDD+ related activities, and **04.** harness influence.

Encourage group activities for women. Field work and research found that once women are organized in groups or undertake a group activity, they start feeling empowered to become even more informed and partake in decision making. For example, a study conducted in West Bengal, India found that prior exposure to women in leadership roles improved perceptions of female

⁷³ Of the 58 female promoters, 55 percent are in Jalisco, 28 percent in Quintana Roo, 7 percent in Chiapas, 5 percent in Campeche, and 5 percent in Yucatan. For technical advisors: Campeche has 76 advisors in total, 14 being women. Chiapas has 317 advisors in total, 53 being women. Jalisco has 212 advisors in total, 23 being women. Quintana Roo has 123 advisors in total, 44 being women. Yucatan has 117 advisors in total, 41 being women. (Source: E-mail communication from CONAFOR, 2017.)



Expand women's self-concept through role models

leader effectiveness and weakened gender roles stereotypes in both public and domestic spheres.⁷⁴ Therefore, a first step would be to involve more women in groups, which allows them to solve problems requiring collective action. Group activity would slowly change the traditional gender norms of women and communities, for example, through knowledge exchanges, lessons learned, and the integration of women in community decision-making spaces. Organized women (for example, in Yaxcana or Amatlán) are more confident talking in front of men if they feel support from other women. Organized activities permit women to solve collective action problems and have a stronger impact in the decision-making processes.

Associate women's participation in productive activities such as REDD+ to their role as mothers. Connect the two roles by framing productive activities as a family enterprise, through which families would benefit from an increase in income. By connecting the two roles through framing, women might be encouraged to participate in productive activities to contribute to their households' income, hence increasing the opportunities for their offspring, thus contributing to fulfilling their role as caretakers. This association could increase the number of women participating in REDD+ programs and increase women's empowerment

⁷⁴ Beaman et al. (2009).

Social decision making

Social decision making, reflects social preferences, norms, and networks.

Cultural understanding of gender identity and what is “appropriate” behavior for a woman can influence their economic activity choices and their decisions regarding

Box 3.5.

Social influence and cascade effects

Social norms produce *social influence*. People are motivated to adopt a new behavior when other members of their group engage in the same new behavior. For instance, people tend to reduce energy consumption when they know that others in similar households use less energy, and people are more likely to take the stairs rather than the lift when colleagues do the same (Durantini et al. 2010).

Social influence can create a *cascade effect* in a group when adoption of a beneficial new behavior spreads among members (which is the intended outcome of organizing women in groups for beneficiary programs). Here, however, the weight one gives to messages of benefits depends on the source. The more a messenger resembles group members—that is, the smaller the social distance—the more likely that the group will approve the message. Thus, the more alike *promotores* are to the communities, the more likely they can build trust and uptake for their programs.

household responsibilities.⁷⁵ Community norms that value boys more than girls result in families prioritizing the education of male children and viewing girls' education as unnecessary or costly. Similarly, girls can be pressured into certain types of work, feeling that formal or higher-paying jobs are reserved for men.

Social influences often go unnoticed. Knowing how social norms influence behavior can help policy makers design more effective interventions and avoid unexpected pitfalls. Promoters can become more effective by learning how to identify biases underlying stereotypical gender and social norms. Promoters can then work to slowly work around these social norms and expectations among men and women regarding women's participation in REDD+ programs.

⁷⁵ Jewkes, Levin, and Penn-Kekana (2003).

The stereotype of the ideal woman is difficult to change. Social norms can reinforce gender biases by perpetuating the stereotype of the ideal woman in a certain society. The stereotypes continue to exist because of the difficulty of altering them and because acting or thinking differently from the stereotype breaks a social norm. As social individuals, breaking the social norms is something that carries a heavy cost.

Injunctive and descriptive norms can impede women from joining productive activities (see box 3.6). Since few women participate in productivity schemes, rural women might believe that not participating is the norm within the communities. Furthermore, women who break social norms and participate more in economic activities feel pressure from both family and community to continue the “traditional way of life.” Some women who decided to leave the home to work or study often faced social discrimination. A woman from Chiapas mentioned in a focus group: *“It is not easy. When you leave your community, you face a lot of judgments by both men and women. It is common that neighbors say: ‘She just wants to look for a husband’ or ‘She just wants to buy better clothes than everyone’. Some women therefore decide to stay in as it is difficult to deal with social rejection by everyone you know.”* Thus, a prevalent social norm in the communities is that women should stay in their community. This is combined with a strong sense of belonging: some women have never left their village and the family has been there all their life. Although a few women said that *“people are brave for leaving the community,”* a stronger emphasis was put on the rejection people could experience when leaving the community.

Box 3.6.

Descriptive and injunctive norms

Social norms have two components: descriptive norms and injunctive norms. *Descriptive norms* specify what is typical and normal and offer the individual mental shortcuts when taking a decision. Elaborate cognitive processes can be bypassed with descriptive norms and heuristics (“if the majority does it, then it is wise to do so”). *Injunctive norms* are rules or beliefs about morally approved or disapproved behaviors, which help individuals make decisions (Jewkes, Levin, and Penn-Kekana 2003). For both kinds of norms, behaviors that are socially approved in a given time and context might be confused with what is “normal.”

If rural women knew that women in similar communities undertake economic activities or participate in REDD+ programs, they might be encouraged to participate, hence updating their beliefs about the norms. Knowledge exchanges between men and women from different communities could be helpful in this regard.

Behavioral challenge #3: Fixed social identity-

Women are usually perceived to be domestic and economic help for their husbands. In both Chiapas and Yucatan, there is a conservative view of labor: men are the breadwinners, responsible for physical activities and for earning money “to live well.” Women feel they cannot rest until all the household chores are done. Both genders feel responsible for their children. Men fulfill this responsibility as providers through agroforestry labor, and women through their duties at home. From the community perspective, a “good woman” is always respectful, hardworking, and “knows how to cook and clean.” Women’s domestic role is unequivocally strong and uncontested. Men recognize their wives’ work as a contribution, but usually perceive the tasks as “low-value work”—more like a help than a job. A man in Huechem Balam expressed: *“Women’s tasks are not independent work, they are undertaken to help the man with his activities. Many times, women offer to help us with the crops in the fields: we then let them clean the plants or harvest beans.”* Women, however, consider this “help” a real job. They express that they are as capable as men to undertake certain types of agricultural activities (help in the field was mostly undertaken by single mothers or older women), but prefer to help men with lighter activities, like harvesting coffee or vegetables. Women do not feel as capable as men to do heavy agricultural activities, lacking physical strength.

Involving women in activities outside the household changes norms and perceptions. Activities considered “appropriate” for men and women were discussed. One interesting finding was that the more involved women were in organized and paid activities, the more liberal they and their husbands seemed to be or had become. This outcome highlights the possibility of changing self-perceptions and norms bit by bit through the long-term involvement of women in REDD+ related group activities. For example, leaders of organized women groups (including groups that had been involved in productive or REDD+ related activities for a while) questioned the “traditional” discourse that only men should be breadwinners on several occasions. A woman from Chiapas participating in organized activities argued: *“We must have the right to earn our own money (...)*

men should not get mad at the fact that we can work as hard as them.” Table 3.1 presents statements by women about their participation in the decision-making process and remunerated activities. The table shows that the more involved women become in outside activities, the more empowered they become. Empowered women want to participate in outside activities and community councils and earn money.

Table 3.1.

Women’s perception of women’s participation in productive activities and community councils

Source: Own elaboration with data from focus groups and interviews Chiapas and Yucatan fieldwork

Women’s economic status	Activity		
	Women should participate in community councils	Women can earn their own money	Women can undertake activities outside of their house
Organized (forestry or other productive activities)	Strongly agree; they are part of the ejido or community	Strongly agree; it is good for all the family if women earn money	Strongly agree; men can contribute to domestic issues
Nonorganized	Generally, agree; but they can also be represented by their husbands	Agree, but she should earn money without leaving the house unattended for too long	Generally, agree, but she should not disregard her household
Only involved in domestic activities	Women did not answer the question	That’s a man’s task	There is no time to leave the house

The main difference between organized and nonorganized women is their willingness to participate in community councils. It seems that the more involved women are in activities outside of the household, the more interested in decision making they become. In other words, there is a strong correlation between extra-household empowerment and intra-community empowerment. Organized women’s groups we interviewed included handcrafting (“Hamacas program”), beekeeping

(“Abejas Meliponas”), agricultural activities, or eco-tourism. Women stated that since they had started the program, they had also gotten more involved in decision making, seeking better scenarios for improving their livelihoods, and expressing their ideas. Activities that involve various women working together would be socially more acceptable by traditional communities. Table 3.2 presents men’s most common perceptions about: 1) female participation in communities, 2) women’s participation outside the household, and 3) women’s roles inside the household. This table also compares how men’s perspective about women’s roles changes depending on women’s organizational status.

The benefits of women’s participation can change traditional social identities.

Men often resist women’s engagement in council meetings or decision-making processes. However, when it becomes apparent that the whole family benefits from women’s participation in group activities, husbands tend to accept the “new” role. There is a traditional dislike of women undertaking activities by themselves (or worse, with other men). This barrier can be overcome by making the whole family beneficiaries of women’s participation.

Table 3.2.

Men’s perception of women’s participation in productive activities and community councils

Source: Own elaboration with data from Chiapas and Yucatan Fieldwork.

Women’s labor status	Opinion		
	Men’s opinion about women who participate in ejido or community councils	Men’s opinion about women who participate in economic activities outside the home	Men’s opinion about women who participate in economic activities inside the home
Organized in groups	Slowly becoming more acceptable	Very acceptable, they are in company of other women	This participation has always been completely acceptable
Not organized	Not very acceptable, just in specific cases	Acceptable, just conditioned to not disregard house activities	



Target influencers to reframe social norms

Make women's existing social roles relevant to participation in programs through reframing. Our research suggests that some of the main behavioral barriers for women's participation in natural resource management are lack of empowerment, intimidation, and low psychological agency (including self-efficacy and aspiration). These barriers can be overcome by activating existing positive mental models that could override these psychological obstacles.

Enlist influencers such as community leaders or role models to gain the support of both women and men. These leaders can help convince both men and women in the community of the benefits of a program. Female forestry promoters and other successful women can demonstrate to their peers' successful participation in programs or decision-making processes, with the support of their husbands. Examples of peer success can improve women's agency and self-perception and increase men's acceptance of women's participation in nontraditional activities. The husband's approval is a strong determinant for women's decision to participate in programs. Promotion of the benefits of women's inclusion should highlight people who are like the men and women in the target audience; and the less abstract the presentation, the more success can be expected. Photographs, video, direct knowledge exchanges, or presentations can help individuals relate to their peers. Media can be used to correct false beliefs about social norms—for example, providing accurate statistics on women's chores and economic activities.

A possible intervention in the context of REDD+ related activities could be to give men small incentives and recognition if they support their partners to participate in sustainable forest and agricultural activities. This incentive could be awarded by an influencer. While financial incentives, as an intervention, are typically associated with neo-classical economic theory, there are cases in which financial incentives can be "behavioral." When the incentive is small compared with the behavior change it causes—and when it is not enough money to relieve an actual financial constraint or market failure—we classify it as behaviorally motivated. For instance, it seems like a poor calculation to drive to a store across town just to redeem a one-dollar coupon on a grocery item; the experience of receiving an incentive may be more important and relevant than the financial value of the reward itself. In the case of communities, incentives and recognition by the community for effort could play a part in fostering behavior and motivation. The use of a small token, in kind or monetary, could encourage men to support women's participation in economic activities. Another behavioral tool could be the use of public recognition, a lottery, or other incentives to change the behavior of men and women.

Monetary rewards may create a risk of gender violence, wherein men force women to attend programs only to receive the financial incentive. Small rewards or public recognition without money may help mitigate the risk. They would not be significant enough that anybody would force the woman to participate; but such rewards could be representative enough to make participation attractive for the community member. Further studies and close monitoring would be recommended.

Chapter 4:

**Gender Action Plan:
How to design
gender-informed
REDD+ related activities
with a behavioral
science lens**

Based on the desk research and findings from the field, this chapter presents the Gender Action Plan (GAP). Following the principles of a GAP, this chapter will highlight the main barriers for mainstreaming women into REDD+, natural resource management programs in general, and the FCPF ER-P benefit-sharing model in particular. Clear, realistic, and appropriate targets are presented for women’s participation in REDD+ related activities in Mexico. Results are organized into goals, recommendations, and indicators.

A Gender Action Plan (GAP) presents actions and activities that a government, an institution, policy makers, think tanks, or an international organization can develop to promote gender equality within a project or initiative. A GAP first undertakes a diagnosis on the “as is” situation regarding gender (see chapters 1 through 3 of this report). The GAP then provides clear and action-oriented recommendations on how identified gender challenges can be mitigated and considered for project design and implementation.⁷⁶

Note that this GAP does not seek to generalize its findings for all of Mexico. Mexico has rich and extensive diversity—naturally, culturally, socially, politically, and economically. Therefore, this GAP does not seek to recommend a “one size fits all” approach, but rather provide ideas and stimulation for future programs. The behavioral science lens used for this report helps create a psychological and holistic perspective. Specific recommendations, however, should always be tested before being applied on a larger scale.

Summary of the report

The report upon which this GAP is based examines perceived and actual gender differences in the use and management of natural resources, and the challenges of integrating women into REDD+ related activities or other natural resource management projects. This analysis leads to recommendations for more gender inclusiveness in project design, both in Mexico and elsewhere.

More generally, the study aims to contribute to the World Bank’s Gender Strategy and to fulfilling relevant Sustainable Development Goals.

⁷⁶ European Commission (2005).

The report applies a behavioral science lens to uncover key psychological, cultural, social, and non-material barriers to women’s participation in REDD+ related activities, particularly at the individual and community level. Decision-making patterns influenced by mental shortcuts, psychological biases, and social norms are identified. The approach was inspired by the World Bank Group (2015b) *World Development Report 2015: Mind, Society, and Behavior*. We hope our conclusions can draw attention to women’s critical role in REDD+ activities and help enhance gender inclusiveness in project design.

Women face a variety of barriers to participating in demand-driven REDD+ related activities, which in this report are framed as structural and behavioral. Structural or “traditional” barriers—economic, legal, institutional, and others—may be identifiable from desk research and interviews. Behavioral, often unconscious barriers—biases, mental models, gender norms, and others—may be revealed by behavioral science diagnostics and field work for identification.

Women use natural resources differently than men, which sets the stage for a variety of structural barriers. Differentiated resource use makes women vulnerable to economic, social, and external environmental influences, especially in rural areas. Such vulnerability affects their economic empowerment, livelihoods, their social spaces, and ultimately their involvement in REDD+ and related initiatives, as discussed in chapter 2.

Women’s economic participation is vulnerable to behavioral barriers such as social status and empowerment. Women’s participation in productive activities and their participation in communal decision making are correlated. Thus, women’s economic participation is vulnerable to gender-exclusive social structures, low social status, and other behavioral barriers discussed in chapter 3.

Structural and behavioral barriers exacerbate each other in a vicious cycle. for example, structural barriers such as poverty traps deplete mental bandwidth, which in turn triggers behavioral biases and diminishes the likelihood of signing up to programs. To the extent that women are disproportionately affected by structural barriers, behaviorally informed policies can thus be particularly effective for women.

The study’s qualitative analysis also reveals activities that rural women in Mexico would prefer to undertake in light of the upcoming forestry programs to be implemented in Mexico by CONAFOR and the World Bank. These include cultural or traditional activities such as coffee production, beekeeping, and handcrafting; and small-scale farm activities close to home, such as livestock and agriculture in forest landscapes. These activities should be designed and implemented with social and logistical support, such as women-accessible venues (like schools or clinics), flexible hours, capacity-building activities, and the integration of the whole family (including the husband) into the value chain.

The report concludes with this Gender Action Plan (GAP). Structural and behavioral barriers are malleable. The GAP provides concrete recommendations for the inclusion of a gender perspective and female empowerment in policies, practices, and projects, especially those related to natural resource management and REDD+. When designed to take into consideration gender differences, REDD+ related activities and natural resource management programs can offer important opportunities for women’s empowerment, sustainable resource management, and shared prosperity.

Table 4.1.

Overview of the Gender Action Plan goals, recommendations, and indicators

Goal 1: Facilitate application processes and accommodate time lines to community decision-making procedures	
Action/Recommendation:	Indicators:
<ol style="list-style-type: none"> 1. Provide documents in indigenous language and requiring less paperwork to reduce the burden women face (including educational disadvantages). 2. Provide women with easily accessible information (using images, infographics, and stories). 3. Providing women feedback mechanisms such as a hotline to support them through the application process. 4. Provide women-only transportation if needed, in groups and during family-accessible times (such as the late afternoon). 5. Accommodate community decision-making to women-friendly timelines. 6. Extend enrollment windows and speed up application-handling procedures. 	<ul style="list-style-type: none"> · Percentage reduction of the steps needed to complete the application process. (%) · Integrate into the Rules of Operation/call for proposals the exact dates for response times to the applications and the means of dissemination of results (being easily accessible). (yes/no) · Have open office days in application times for questions and clarifications. (yes/no) · Percentage of eligible REDD+ areas that create one-stop shops, in accessible communities, not more than two hours away from each ejido and community on key dates. (%) · Increase time windows for application to allow application schedules to be in line with ejido and community decision-making time lines. (yes/no). · Percentage of the of programs presented in indigenous language (orally) in regions with more than x% of indigenous peoples. (%)

Goal 2: Mainstream gender at all policy and government levels

Action/Recommendation:

1. Incorporate a gender perspective into REDD+ from the inception of policy and program design.
2. Disaggregate socioeconomic data by gender.
3. Collect and disaggregate socioeconomic data for indigenous populations (and by gender for this population).
4. Enroll more women in REDD+ programs in Mexico

Indicators:

- Share of REDD+ ER-P Phase 2 Projects designed to specifically address and include women. (%)
- CONAFOR´s annual budget for gender expert staff and specific gender programs is increased. (\$)
- Gender capacity-building actions for different federal entities designed. (yes/no).
- Number of staff reached in gender capacity training. (number)
- Share of indicators on women's inclusion into federal and state programs that are able to measure direct and indirect beneficiaries. (%)
- Number of opposing subsidy schemes amended and made coherent. (number)
- Number of additional gender disaggregated indicators after x years of intervention. (number)

Goal 3: Enhance policy coherence across programs, institutions, and levels of government

Action/Recommendation:

1. Harmonize objectives and align implementation of the different governmental programs.
2. Mobilize economic and technical resources from different sectors working on rural development to identify and then mitigate the most incoherent approaches.

Indicators:

- A goal for policy coherence (in general or in this case, for sustainable natural resource management) integrated in ministries´ development plans or the National Development Plan of the new government. (yes/no)
- Share of REDD+ instruments such as the Safeguards Information System and the Safeguards Plans in the ER-P states, that include gender sensitive indicators, specific gender disaggregated analysis, and gender monitoring system. (%)

Goal 4: Distribute legal land tenure more equally throughout the population and change customary laws

Action/Recommendation:

1. Ensure that property rights are distributed throughout the population by redistributing land titles or including women on legal land titles.
2. Authorities could try to ensure that women´s parcels are returned to women´s use only, and build women's capacity to use the land as needed.
3. A longer-term solution could include social and behavioral intervention through educational programs at the community level to prepare for changes in customary law.

Indicators:

- Share of new, reestablished *parcelas de la mujer*/ women´s parcels, located closer to the women´s houses. (%)
- Share of targeted women with improved access to land, or better, owning the land. (%)
- Number of new projects supporting small community enterprises, collective forms of land ownership and management, as well as schemes for the redistribution of land tenure titles. (number)

Goal 5: Promote women's representation and participation in decision-making processes

Action/Recommendation:

1. Promote women's attendance and participation in decision-making processes and ensure that women can express themselves freely.
2. Gender parity rates could be stipulated for council debate to open access to women to decision-making arenas.
3. Dedicated spaces such as schools or medical facilities could be provided for women to meet and discuss community issues.

Indicators:

- Share of targeted women participating in community or ejido decision meetings. (%)
- Share of women in each community or ejido rating "satisfied" with their participation in ejido/community councils. (%)
- Number of influencers/role models/agents of change participating in decision-meetings and supporting women to have their voices heard, slowly boosting behavioral change. (number)
- Number of alternative information dissemination areas created per municipality. (number)
- Share of targeted women in community or ejido with knowledge of their rights, programs, and projects. (%)

Goal 6: Fight the poverty traps resulting from women's time burdens, economic marginalization, and blunted aspirations

Action/Recommendation:

1. Consider scarcity scenarios and double time-burdens during project design.
2. Take steps to create a stable market and prices for agricultural products.
3. Recognize and support economic opportunities for women in agriculture and other productive activities.
4. Use choice simplification to free cognitive space that is limited under a scarcity mindset.
5. Use reminders (a form of commitment device) to reduce the cognitive costs of decision making and follow-through on decisions.

Indicators:

- Reduction of daily time devoted to household activities and increase of time devoted to sustainable agroforestry, forest use, and sustainable agricultural activities. (%)
- Increase in women's aspirations according to aspiration questionnaires. (yes/no)
- Share of women with perception of improved decision-making agency. (%)

Goal 7: Provide accessible information on programs

Action/Recommendation:

1. Recognize and mitigate the structural disadvantage posed to women by inaccessible information.

Indicators:

- Number of alternative information dissemination areas created per municipality. (number)
- Share of application forms in indigenous language. (%)

Goal 8: Mitigate scarcity scenarios by reducing complexity and access barriers through simplification, improved choice architecture, and nudging

Action/Recommendation:

1. Simplify choice architecture, which could encourage or “nudge” rural women to sign up to productivity programs.
2. Reduce complexity and access barriers by designing program presentations with culturally sensitive communication tools, and deliver presentations at opportune moments

Indicators:

- Simplified program presentations (number)
- Number of agents of change trained to present programs (number by gender).
- Number of culturally appropriated knowledge exchanges organized. (number by gender).
- Number of presentations delivered at opportune moments, such as paydays or community meetings days, so that people act on their good intentions at the moment it is easy and accessible for them (number)

Goal 9: Expand women’s self-concept through role models

Action/Recommendation:

1. Increase the number of female forestry promoters or technical advisors to slowly change gender norms that block women from signing up to programs.
2. Encourage group activities for women.
3. Associate women’s participation in productive activities such as REDD+ to their role as mothers.

Indicators:

- Share of female technical advisors in each Initiative to Reduce Emissions (IRE) area and per state. (%)
- Share of female forestry promoters in each IRE area and per state. (%)
- Share of technical advisors and community promoters trained with culturally sensitive gender information. (%)
- Female promoters, speaking indigenous language, helping potential beneficiaries to fill out application forms. (number)
- Increase of time spent with each community, to allow the building of trust. (%)
- Increase of the perception of women to feel more empowered according to survey. (scale 1–10)
- Increase of number of targeted women wanting to sign up to REDD+ related activities. (number)
- Increase of number of targeted women successfully participating in to REDD+ related activities. (number)
- Number of targeted woman with a perception of having received direct economic and noneconomic benefits from REDD+ related activities. (number)
- Number of targeted woman with a perception of having received indirect economic and non-economic benefits from REDD+ related activities. (number)

Goal 10: Target influencers to reframe social norms

Action/Recommendation:

1. Make women’s existing social roles relevant to participation in programs through reframing.
2. Enlist influencers such as community leaders or role models to gain the support of both women and men.
3. A possible intervention in the context of REDD+ related activities could be to give men small incentives and recognition if they support their partners to participate in sustainable forest and agricultural activities.

Indicators:

- Number of identified “agents of change” in the communities (number by gender).
- Number of agents of change trained to present programs (number by gender).
- Number of culturally appropriated knowledge exchanges organized. (number by gender).
- Decrease of average age of community and ejido assembly participants. (number by gender).
- Number of targeted women and men who adapt their point of view regarding women’s involvement. (number by gender).
- Number of women successfully participating in to REDD+ related activities. (number)
- Number of targeted woman with a perception of having received direct economic and noneconomic benefits from REDD+ related activities. (number)
- Number of targeted woman with a perception of having received indirect economic and non-economic benefits from REDD+ related activities. (number)
- Number of men perceiving the participation of women in REDD+ related activities and the receipt of the financial incentive as beneficial. (number)
- Difference between women being supported to continue with commitment (e.g., through reminders) and their long-term participation in REDD+ related activities. (number of women/time of participation in programs)

Further steps to mainstream gender into REDD+ related activities

Based on the recommendations provided above and taking into consideration the desk and fieldwork, the following suggestions are offered for gender-mainstreamed programs under the Stage 2 ER-P window and any future REDD+ related activities. Table 4.2 showcases investment program activities that could be windows of opportunity to move toward equitable participation of men and women in REDD+.

Table 4.2.

Activities in the investment programs of the five ER-P states in which women could be included according to research and consultations

Source: Own elaboration, based and adapted from Armijo and Castañeda (2017).

State	Proposed activity for both men and women (some already being implemented)
Campeche	<ul style="list-style-type: none"> Establishing fodder nurseries, germoplasm banks, biofertilizer composting systems Developing productive chains in timber and nontimber forest activities Beekeeping activities such as the construction of boxes, smokers, and packaging and processing of products Consortium of forestry owners producing chewing gum Positioning and training of women as agents of change and as important stakeholders in natural resource management
Chiapas	<ul style="list-style-type: none"> Recognition of women's coffee organizations and chocolate productions Capacity building of women and youth to avoid their exclusion in silvopastoral systems Linking women and youth to strategies for the conservation and enhancement of oak forests that produce firewood or charcoal Participation of women in mitigating the risk of reducing forest diversity caused by favoring pine species in areas of mixed pine and oak forest Extraction and commercialization of nontimber ornamental products such as Xiat palm Positioning and training of women as agents of change and as important stakeholders in natural resource management

State	Proposed activity for both men and women (some already being implemented)
Jalisco	<ul style="list-style-type: none"> Production projects with women and youth for sustainable forest and wildlife management Technical advice for improvement of the Milpa crop-growing system and investment in projects with women and youth to strengthen food security and reduce the pressure on land use Support to entrepreneurial women's projects through the State Ministry for Development and Social Integration Positioning and training of women as agents of change and as important stakeholders in natural resource management
Quintana Roo	<ul style="list-style-type: none"> Acquisition of equipment for beekeeping to support the family economy, focusing on women and youth (especially melipona honey) Consortium of forestry owners producing chewing gum Production of infusions/tea (<i>Brosimum alicastrum</i>) Production of fruit jams from forest trees (successful for the integration of both men and women) Production of wood handicrafts from native forest trees Ecotourism companies Positioning and training of women as agents of change and as important stakeholders in natural resource management
Yucatan	<ul style="list-style-type: none"> Production of sustainable self-supply projects for backyard production Ecotourism by strengthening existing ecotourism centers Consortium of forestry owners producing chewing gum Production and marketing of honey and honey products Production and marketing of chocolate products Extraction of tree products such as charcoal Extraction and commercialization of nontimber ornamental products such as Xiat palm Participation of more women in community nurseries Capacity building of women to participate in livestock projects Capacity building of women to participate in timber forest enterprises Positioning and training of women as agents of change and as important stakeholders in natural resource management

An interesting aspect to consider when evaluating the feasibility of the activities for gender mainstreaming mentioned in Table 4.1 is the opportunity cost to encourage women to work in these areas. Overall opportunity costs would depend on women's location (distance from home), time constraints, the support and capacity building that would be needed, and the opportunity cost of time spent on household chores versus other activities.

- Furthermore, based on the team's research, we would like to recommend some characteristics to be considered in the design of REDD+ related activities and programs. The recommendations include:

- Provide technical information and capacity building to both men and women living in the same household—for example, on tree nursery and forest management trainings. Such assistance could increase market access for women in timber and nontimber forest product value chains.

- Design programs contributing to the social contract and values of the communities, including the whole family.

- Provide long-term capacity building and design long-term interventions (of more than five years) to ensure a long-term follow-up of the results.

- Break the status quo through interventions or new programs by ensuring that women are organized in groups. Organized activities permit women to solve collective action problems and to have a stronger impact in the community's decision-making processes. Organized women (for example, in Yaxcaba or Amatlán) feel more confident talking in front of men if they feel support from other women. It is important to not impose conditionality on women's groups being formally constituted, but also accept loose and informal group activities.

- Include program criteria to prevent leaders or powerful groups from capturing benefits that are intended for communities.

- Develop approaches that foster proactive transparency and reduce risks of corruption through timely and truthful distribution of information, monitoring of resource management, and the establishment of mechanisms for accountability.

- Secure direct provision of goods through asset transfer programs targeting women.

- Build capacity ex ante of the interventions and thereby also induce subtle adaptation of social norms.

- Foster projects where men and women are a team. Examples could include agroforestry, silvopasture, or sustainable management of cacao and chocolate. In the later case, men harvest the crop and women produce the final product. Both harvest and production are REDD+ activities. Such projects could support social contracts within communities and induce long-term equality between women and men.

- Integrate urban gardening and wood-stoves into REDD+ subsidies to help to free women's time (women spend a lot of time tending fire). These activities would also benefit the environment and the household members' health.

- Make sure to design a value chain and provide the necessary input to allow women to generate the ingredients for their product and the total end product themselves.

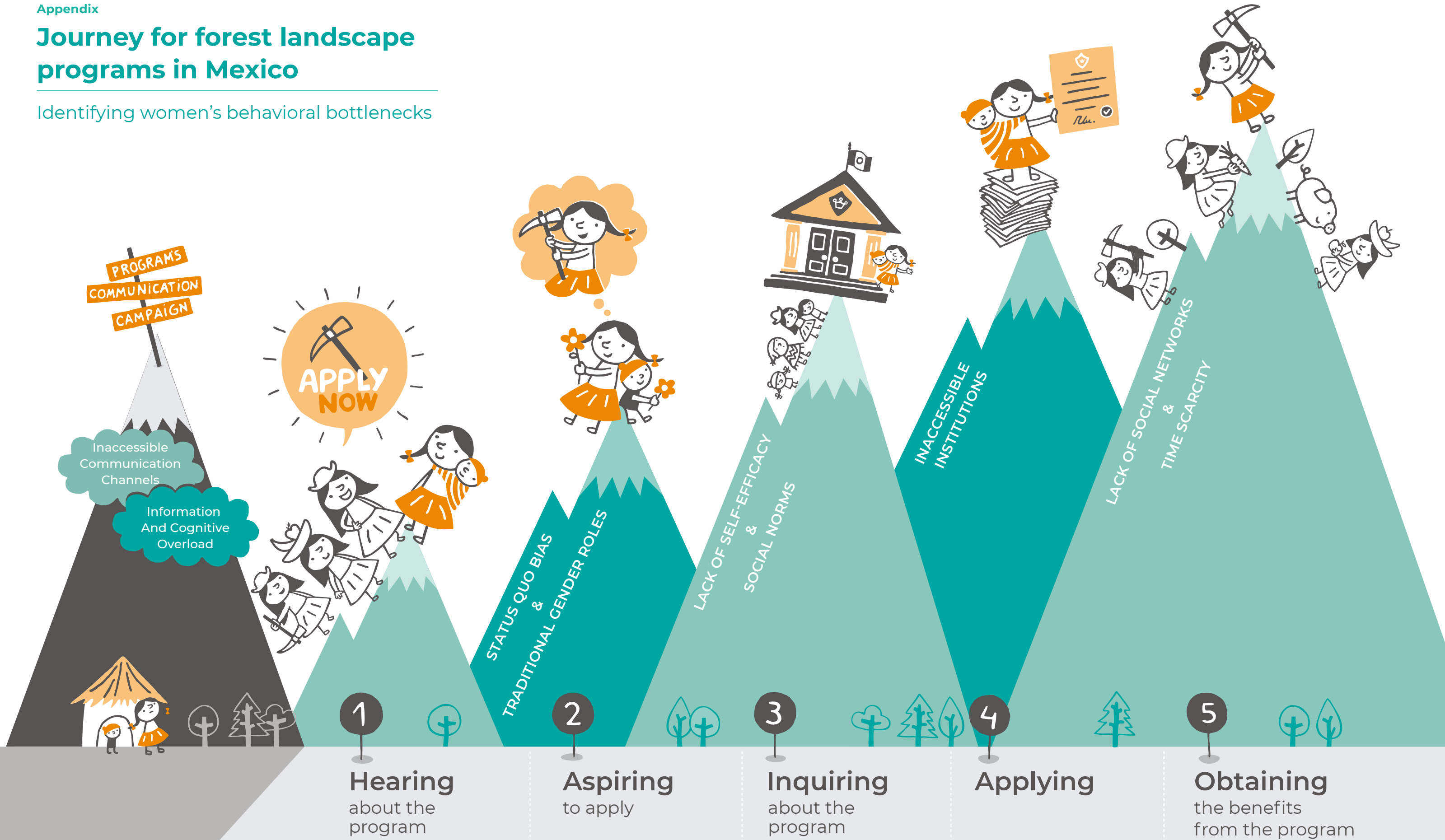
The analysis and recommendations in this report are not just for REDD+ related activities. They could be extended to other productive activities targeting rural women.

Finally, it should be noted again that this Gender Action Plan does not seek to provide findings for all of Mexico. Mexico is a country with rich biodiversity and is enormously diverse naturally, culturally, socially, politically, and economically. One cannot recommend a "one size fits all" approach, but rather ideas and stimulation for future programs.

Behavioral science can help provide a different, psychological, and more holistic perspective. Specific recommendations, however, should always be tested before being applied on a larger scale.

Journey for forest landscape programs in Mexico

Identifying women's behavioral bottlenecks



Bibliography

A

- Aguilar, L., J. Siles, and I. Castañeda. 2014. "Igualdad de género y REDD+: Análisis del marco jurídico y programático." Alianza México-REDD+. <http://www.monitoreoforestal.gob.mx/repositorioidigital/items/show/183>
- Akerlof, G. A., and R. E. y. 2000. "Economics and Identity." *Quarterly Journal of Economics* 115(3): 715–53.
- Alaii, J., G. Nanda, and A. Njeru. 2012. "Fears, Misconceptions, and Side Effects of Modern Contraception in Kenya." Research Brief, FHI 360/C-Change, Washington, DC, USA.
- Alcott, H. 2011. "Social Norms and Energy Conservation." *Journal of Public Economics* 95(9): 1082–95.
- Ariely, D. 2008. *Predictably Irrational*. New York: Harper Collins.
- Alianza México-REDD+ (MREDD+). 2013. "Plan de Acción para la Transversalización de la Perspectiva de Género para REDD+ en México (PAGeREDD+)." Versión Preliminar, abril, 2013. México: MREDD+.
- . 2016. "Género, Bosques y REDD+." México: MREDD+.
- . n.d. "Guía para la búsqueda de subsidios para proyectos con enfoque REDD+." México: MREDD+. <http://www.monitoreoforestal.gob.mx/repositorioidigital/items/show/246>
- Almeida, E. 2009. "Ejidatarias, posesionarias, vecindadas. Mujeres frente a sus derechos de propiedad en tierras ejidales de México." *Revista Estudios Agrarios* (52). http://www.pa.gob.mx/publica/rev_52/analisis/ejidatarias_posesionarias_avecindadas.pdf.

Armijo, N., and I. Castañeda. 2017. "Oficina Global de Género de la Unión Internacional para la Conservación de la Naturaleza (UICN). Igualdad de género en REDD+: Sistematización y lecciones aprendidas en el proceso de preparación en México." Alianza México-REDD+.

<http://admin.biblioteca.alianza-mredd.org/uploads/archivos/2fed5fbcf6906160f9296784b8875790f01a1645.pdf>

Armijo Canto, N., A. Robledo Zaragoza y I. Castañeda Camey. 2015. "Evaluación de género y desarrollo sostenible en la Península de Yucatan, México." Serie Técnica: Gobernanza Forestal y Economía, número 6. San José, Costa Rica: UICN., xvi+64ppx: <http://www.biodiversidad.gob.mx/corredor/cbmm/pdf/9-egeds-py.pdf>.

Ayala Carrillo, M. R., V. Gutiérrez Villalpando y E. Zapata Martelo. 2016. "Género, cambio climático y REDD+: Experiencias en el tiempo." *Terra Latino Americana* 34(1): 139–153.

B

- Bandura, A. 1977. "Self-Efficacy: Toward a Unifying Theory of Behavioral Change." *Psychological Review* 84(2): 191–215.
- . 1997. *Self-Efficacy: The Exercise of Control*. New York: Freeman.
- . 2012. "On the Functional Properties of Perceived Self-Efficacy Revisited." *Journal of Management* 38(1): 9–44.
- Beaman, L. Chattopadhyay, R., Duflo, E., Pande, R., & Topalova, E. 2009. "Powerful Women: Does Exposure Reduce Bias?". *The Quarterly Journal of Economics* 124 (4): 1497–540.
- Benjamin, D. J., J. J. Choi, and G. W. Fisher. 2010. "Religious Identity and Economic Behavior." Working Paper No. w15925. National Bureau of Economic Research, Cambridge, MA.

Bertrand, M. Karlan, A, Mullainathan, S., Shafir, E. & Zinman, J. 2005. "What's Psychology Worth? A Field Experiment in the Consumer Credit Market," Working Paper No. 11892, National Bureau of Economic.

Bertrand, M. 2011. "New Perspectives on Gender." In *Handbook of Labor Economics Volume 4B*, edited by O. Ashenfelter, and D. Card, 1545–92. Amsterdam: Elsevier.

Bohnet, I. 2016. *What Works*. Cambridge: Harvard University Press.

C

Centro de Estudios para el Desarrollo Rural Sustentable y la Soberanía Alimentaria (CEDRSSA). 2015. "La Población Indígena en el México Rural: situación actual y perspectivas." Mexico: CEDRSSA. www.cedrssa.gob.mx/includes/asp/download.asp?iddocumento=3028&idurl=4843

Cialdini, R. B. 2008. *Influence: Science and Practice*, 5th ed. Boston: Pearson.

Comisión Nacional Forestal (CONAFOR). 2007. "Programa Nacional de Dendroenergía 2007-2012. Coordinación General de Producción y Productividad." Mexico: CONAFOR. <http://www.conafor.gob.mx:8080/documentos/docs/4/1585Programa%20Nacional%20Dendroenergia.pdf>.

———. 2014a. Programa Nacional Forestal 2014-2018 (PRONAFOR). Mexico: CONAFOR. http://www.dof.gob.mx/nota_detalle.php?codigo=5342498&fecha=28/04/2014

———. 2014b. Versión para consulta de la Estrategia Nacional REDD+ (ENAREDD+). Mexico: CONAFOR. http://www.conafor.gob.mx:8080/documentos/docs/35/5559Elementos%20para%20el%20diseño%20de%20la%20Estrategia%20Nacional%20para%20REDD_.pdf

———. 2014c. "Análisis de Atención a Pueblos Indígenas en el Sector Forestal: Tercera Fase. Coordinación de Salvaguardas." Mexico: CONAFOR.

———. 2014d "Program for the Institutional Attention to Indigenous Peoples and the Mainstreaming of the Gender Perspective 2014-2018. [Programa Específico de Intervención Institucional para la Atención a Pueblos Indígenas y la Transversalización de la Perspectiva de Género 2014-2018.]" Mexico: CONAFOR.

———. 2015. "Mexico's Forest Reference Emission Level Proposal. Modified." Mexico: CONAFOR. http://redd.unfccc.int/files/frel_mexico_modified.pdf.

———. 2016a. "Paquete de preparación REDD+ (R-package, por su acrónimo en inglés) ante el Fondo Cooperativo para el Carbono de los Bosques FCPF." Mexico: CONAFOR. <https://www.forestcarbonpartnership.org/sites/fcp/files/2016/Apr/R-Package%20Mexico%20Spanish.pdf>.

———. 2016b. "Documento de la Iniciativa de Reducción de Emisiones al Fondo de Carbono del FCPF." Mexico: CONAFOR. http://www.gob.mx/cms/uploads/attachment/file/177934/Documento_de_la_Iniciativa_de_Reduccio_n_de_Emisiones__IRE_.pdf.

———. 2016c. "Reglas de Operación del Programa Nacional Forestal 2017." Mexico: CONAFOR. http://www.dof.gob.mx/nota_detalle.php?codigo=5467941&fecha=28/12/2016.

———. 2016d. "Informe Final de la Consulta Indígena." Mexico: CONAFOR.

———. 2016e. "Anexo 13 del Avance de programas presupuestarios con erogaciones para la igualdad entre mujeres y hombres. Población atendida en el 4to trimestre de 2016." Mexico: CONAFOR.

———. 2017. "Presentación Antecedentes de la Perspectiva de Género en el Sector Forestal." Mexico: CONAFOR.

———. n.d. "El papel de promotor. Marco de referencia y metodología de trabajo del promotor." Mexico: CONAFOR. <http://www.conafor.gob.mx:8080/documentos/docs/37/4013El%20papel%20del%20promotor.pdf>

Comisión Nacional para el Conocimiento y Uso de la Biodiversidad (CONABIO). 2016. "Estrategia Nacional sobre Biodiversidad de México (ENBioMex) y Plan de Acción 2016-2030," 53-55. CONABIO, México. http://www.biodiversidad.gob.mx/pais/pdf/ENBIOMEX_baja.pdf.

Consejo Nacional de Población (CONAPO). 2012. "Índice de Marginación por localidad 1010." México: CONAPO. http://www.conapo.gob.mx/work/models/CONAPO/indices_margina/2010/documentoprincipal/Capitulo01.pdf.

———. 2015. "Índices de Marginación." México: CONAPO. http://www.conapo.gob.mx/es/CONAPO/Datos_Abiertos_del_Indice_de_Marginacion.

Comisión Nacional para el Desarrollo de los Pueblos Indígenas (CDI), UNDP. 2006. "Regiones Indígenas de México." México: CDI, UNDP. http://www.cdi.gob.mx/regiones/regiones_indigenas_cdi.pdf.

Consejo Nacional de Evaluación de la Política de Desarrollo Social (CONEVAL). 2012. "Pobreza y género en México, hacia un Sistema de Indicadores." México: D. F. Coneval. http://www.coneval.org.mx/Informes/Coordinacion/INFORMES_Y_PUBLICACIONES_PDF/PobrezayGeneroenweb.pdf.

Contreras, G. G., and J. G. Ceballos. 2015. "Protocolo para la elaboración de un Plan de Gestión Territorial en México." San José, Costa Rica: UICN-PPY, xii + 58pp. https://www.iucn.org/sites/dev/files/content/documents/2016/ppy_plan_de_gestion_territorial_0.pdf.

D

Devoto, F., E. Duflo, P. Dupas, W. Pariente, and V. Pons. 2011. "Happiness On Tap: Piped Water Adoption in Urban Morocco. Working paper No. w16933. National Bureau of Economic Research, Cambridge, MA.

De la Paz, M. y V. Salles. 2006. "El Programa Oportunidades examinado desde el género." Programa Oportunidades, UNIFEM y el Colegio de México. <http://ogp.colmex.mx/libreria/OportunidadesOGP.pdf>

De las Salas, G. 2002. "Los Bosques secundarios de América Tropical: perspectivas para su manejo sostenible." *Le Point Sur*. http://bft.cirad.fr/cd/BFT_272_63-73.pdf.

Diario Oficial de la Federación (DOF) (2016). "Acuerdo por el que se emiten las Reglas de Operación del Programa de Fomento a la Economía Social para el ejercicio fiscal 2017." Mexico: DOF. http://www.dof.gob.mx/nota_detalle.php?codigo=5468210&fecha=30/12/2016.

Dolan R. J., D. K. Campbell-Meiklejohn, D. R. Bach, A. Roepstorff, and C. D. Frith. 2010. "How the Opinion of Others Affects Our Valuation of Objects." *Curr. Biol.* 20: 1165-1170. 10.1016/j.cub.2010.04.05.

Durantini, M. R., D. Albarracín, A. L. Mitchell, A. N. Earl, and J. C. Gillette. 2010. "Conceptualizing the Influence of Social Agents of Behavior Change: A Meta-Analysis of the Effectiveness of HIV-Prevention Interventionists for Different Groups." *Psychological Bulletin* 132(2): 212-48. <https://doi.org/10.1037/0033-2909.132.2.212>.

E

European Commission (EC). 2005. "Gender Action Plan: A Compendium of Good Practices.: Brussels: EC.

Elster, J. 1989. "Social Norms and Economic Theory." *Journal of Economic Perspectives* 3(4): 99-117.

Entidad de las Naciones Unidas para la Igualdad de Género y el Empoderamiento de las Mujeres (ONU Mujeres) e Instituto Nacional de las Mujeres (INMUJERES) (2014). "Presupuestos con perspectiva de género en el nivel federal y estatal en México." México: ONU y INMUJERES. <http://www.unwomen.org/-/media/headquarters/attachments/sections/library/publications/2015/budgets%20with%20a%20gender%20perspective%20at%20federal%20and%20state%20levels%20in%20mexico.pdf?vs=4546>.

F

Food and Agriculture Organization of the United Nations (FAO). 2013. "Guía de Capacitación. Investigación del Género y el Cambio Climático en la Agricultura y la Seguridad Alimentaria para el Desarrollo. Segunda Edición." Rome: FAO. <http://www.fao.org/3/a-i3385s.pdf>.

———. "Agriculture, Forestry and other Land Use Emissions by Sources and Removals by Sinks 1990–2011 Analysis." Rome: FAO. <http://www.fao.org/docrep/019/i3671e/i3671e.pdf>.

———. "Global Forest Resources Assessment." Rome: FAO. <http://www.fao.org/forest-resources-assessment/en/>.

G

Gobierno de la Republica. 2013. "Plan Nacional de Desarrollo 2013-2018 (PND)," p. 11. México. <http://pnd.gob.mx/wp-content/uploads/2013/05/PND-Introduccion.pdf>.

Government of Mexico. 1992. *Ley Agraria/Agrarian Law*. http://www.diputados.gob.mx/LeyesBiblio/pdf/13_270317.pdf.

Gigerenzer, G., and W. Gaissmaier. 2011. "Heuristic Decision Making." *Annual Review of Psychology* 62: 451–82.

H

Heise, L. 2011. "What Works to Prevent Partner Violence? An Evidence Overview." Working paper (version 2.0). Centre for Gender Violence and Health, London School of Hygiene and Tropical Medicine. <https://www.oecd.org/derec/49872444.pdf>.

Hou, M. Y., S. Hurwitz, E. Kavanagh, J. Fortin, and A. B. Goldberg. 2010. "Using Daily Text-Message Reminders to Improve Adherence with Oral Contraceptives: A Randomized Controlled Trial." *Obstetrics & Gynecology* 116(3): 633–40.

I

Instituto Mexicano para la Competitividad A.C. (IMCO) y Banco Mundial (forthcoming 2018). "El Sector Forestal en México: Entendiendo su rol en el Desarrollo Económico." IMCO and World Bank.

Instituto Nacional de Ecología y Cambio Climático (INECC) y Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT). 2015. "Primer Informe Bienal de Actualización ante la Convención Marco de las Naciones Unidas sobre el Cambio Climático." INECC/SEMARNAT, México. http://unfccc.int/essential_background/library/items/3599.php?rec=j&priref=7805#beg.

Instituto Nacional de Ecología y Cambio Climático (INECC) (2016). "Beneficios y costos de la participación en los programas de desarrollo forestal relacionados con las medidas de las Contribuciones Nacionalmente Determinadas (CND). Informe final." México, D.F.: Instituto Nacional de Ecología y Cambio Climático.

Instituto Nacional de Estadística, Geografía e Informática (INEGI). 2002. "La Mujer en el México Rural." Mexico: INEGI. http://internet.contenidos.inegi.org.mx/contenidos/productos/prod_serv/contenidos/espanol/bvinegi/productos/historicos/2104/702825496623/702825496623_1.pdf.

———. 2009. "Estados Unidos Mexicanos, Censo Agropecuario 2007, VIII Censo Agrícola, Ganadero y Forestal, Aguascalientes." Mexico: INEGI.

———. 2010. "México en Cifras, Información Nacional, por Entidad Federativas y Municipios." Mexico: INEGI. <http://www3.inegi.org.mx/sistemas/mexicocifras/default.aspx?src=462&e=2>.

———. 2011. "Censo de Población y Vivienda 2010 (Principales resultados por localidad)." Mexico: INEGI. <http://www3.inegi.org.mx/sistemas/scitel/Default?ev=5>.

- . 2013. “Encuesta Nacional sobre la Dinámica de las Relaciones en los Hogares (2011). Panorama de violencia contra las mujeres en Estados Unidos Mexicanos.” Mexico: INEGI. http://internet.contenidos.inegi.org.mx/contenidos/Productos/prod_serv/contenidos/espanol/bvinegi/productos/estudios/sociodemografico/mujeresrural/2011/EUM/702825051266_1.pdf.
- . 2014a. “Encuesta Nacional de Ocupación y Empleo (ENOE), población de 15 años y más de edad.” Mexico: INEGI. <http://www.beta.inegi.org.mx/proyectos/enchogares/regulares/enoe/>.
- . 2014b. “Encuesta Nacional de Uso del Tiempo (ENUT).” Mexico: INEGI. <http://www.beta.inegi.org.mx/proyectos/enchogares/especiales/enut/2014/>.
- . 2014c. “Characteristics of Localities and Urban Environment 2014.” Mexico: INEGI.
- . 2015. “Encuesta Nacional de los Hogares (ENH) 2015.” Mexico: INEGI. <http://www.beta.inegi.org.mx/proyectos/enchogares/regulares/enh/2015/default.html>.
- . 2016a. “Encuesta Nacional sobre Disponibilidad y Uso de Tecnologías de la Información en los Hogares (ENDUTIH) 2016.” Mexico: INEGI. <http://www.beta.inegi.org.mx/proyectos/enchogares/regulares/dutih/2016/default.html>.
- . 2016b. “Encuesta Intercensal 2015 en México.” Mexico: INEGI. <http://www.beta.inegi.org.mx/proyectos/enchogares/especiales/intercensal/>.
- . 2016c. “Anuario estadístico y geográfico de los Estados Unidos Mexicanos 2016.” Mexico: INEGI. http://internet.contenidos.inegi.org.mx/contenidos/productos/prod_serv/contenidos/espanol/bvinegi/productos/nueva_estruc/AEGPEF_2016/702825087357.pdf.
- . 2017. “Clasificación de INEGI, Serie V de Uso de Suelo y Vegetación.” Mexico: INEGI. <http://www.inegi.org.mx/geo/contenidos/recnat/usosuelo/>.

———. 2017. “Características de las localidades y del entorno urbano 2014.” Mexico: INEGI. <http://www.beta.inegi.org.mx/proyectos/encotras/cleu/2014/>.

———. 2017. “Marco Geoestadística Nacional.” Mexico: INEGI. <http://www.beta.inegi.org.mx/app/biblioteca/ficha.html?upc=889463142683>.

Instituto Nacional de las Mujeres (INMUJERES). 2013. “Programa Nacional para la Igualdad de Oportunidades y no Discriminación contra las mujeres 2013–2018 (PROIGUALDAD).” México: INMUJERES. http://www.dof.gob.mx/nota_detalle.php?codigo=5312418&fecha=30/08/2013.

———. 2014. “Población indígena: una mirada de género desde la Encuesta Nacional sobre Uso del Tiempo 2014.” México: INMUJERES. http://internet.contenidos.inegi.org.mx/contenidos/productos/prod_serv/contenidos/espanol/bvinegi/productos/nueva_estruc/702825075545.pdf

Instituto Nacional de las Mujeres (INMUJERES) e Instituto Nacional de Estadística, Geografía e Informática (INEGI) (2013). “Mujeres y hombres en México 2013. Mexico: INMUJERES y INEGI. http://cedoc.inmujeres.gob.mx/documentos_download/101234.pdf.

J

Jewkes, R. K., J. B. Levin, and L. A. Penn-Kekana. 2003. “Gender Inequalities, Intimate Partner Violence and HIV Preventive Practices: Findings of a South African Cross-Sectional Study.” *Social Science & Medicine* 56(1): 125–34.

K

Kahneman, D. 2011. *Thinking, Fast and Slow*. New York: Farrar, Straus and Giroux.

Kahneman, D., and A. Tversky. 1981. “The Framing of Decisions and the Psychology of Choice.” *Science* 211(4481): 453–58.

Kraay, A., and D. McKenzie. 2014. “Do Poverty Traps Exist? Assessing the Evidence.” *Journal of Economic Perspectives* 28(3): 127–48.

M

Madrian, B. C., and D. F. Shea. 2001. "The Power of Suggestion: Inertia in 401 (k) Participation and Savings Behavior." *The Quarterly Journal of Economics* 116(4): 1149–87.

Martínez Romero, E., E. Torres Zapata y H. Galletti. 2016. "Gobernanza Forestal en la Península de Yucatan." México: Comisión Nacional Forestal. <http://bibliotecasibe.ecosur.mx/sibe/book/000058231>.

Méndez-López, M.E., E. García-Frapolli, I. Ruiz-Mallén, L. Porter-Bolland, and V. Reyes-García. 2015. "From Paper to Forest: Local Motives for Participation in Different Conservation Initiatives. Case Studies in Southeastern Mexico." *Environmental Management* 56: 695. <https://doi.org/10.1007/s00267-015-0522-0>.

Muñoz, C., and J. Ortega. 2013. "National Report for Mexico. Follow-up of REDD+ Finance 2009–2012 [México: Seguimiento al Financiamiento para REDD+ Período 2009–2014]." REDDX. http://forest-trends.org/publication_details.php?publicationID=5367.

Muñoz Boudet, A. M., P. Petesch, and C. Turk. 2013. "On norms and agency: Conversations about gender equality with women and men in 20 countries". The World Bank. <https://openknowledge.worldbank.org/handle/10986/13818>

N

Nettleman, M. D., H. Chung, J. Brewer, A. Ayoola, and P. L. Reed. 2007. "Reasons for Unprotected Intercourse: Analysis of the PRAMS Survey." *Contraception* 75(5): 361–66.

Nhantumbo, I., and L. Chiwona-Karltun. 2012. "His REDD+, Her REDD+: How Integrating Gender Can Improve Readiness." IIED Briefing Papers. <http://pubs.iied.org/17136IIED>.

O

Organization for Economic Co-operation and

Development (OECD). 2013. "Evaluaciones de la OCDE sobre el desempeño ambiental: México 2013." OECD Publishing. <http://biblioteca.semarnat.gob.mx/janium/Documentos/Ciga/Libros2013/CD001724.pdf>. Ostrom, E. 2000. "Collective Action and the Evolution of Social Norms." *Journal of Economic Perspectives* 14(3): 137–58.

P

Programa de Naciones Unidas para el Desarrollo (PNUD). 2015. "Índice de Desarrollo Humano para las entidades federativas." Mexico: PNUD. <http://www.mx.undp.org/content/mexico/es/home/library/poverty/indice-de-desarrollo-humano-para-las-entidades-federativas--mexi.html>.

Program on Forest (PROFOR). 2017. "Gender and Forest Landscapes: Enhancing Development Impacts of Projects and Programs." https://www.climateinvestmentfunds.org/sites/default/files/profor_brief_gender_and_forest_landscapes.pdf.

R

Registro Agrario Nacional. 2017. "Padrón e Historial de Núcleos Agrarios." Mexico: RAN. <https://phina.ran.gob.mx/index.php>.

Rubin, S. E., J. Fletcher, T. Stein, P. Segall-Gutierrez, and M. Gold. 2011. "Determinants of Intrauterine Contraception Provision among US Family Physicians: A National Survey of Knowledge, Attitudes and Practice." *Contraception* 83(5): 472–78.

Rutenberg, N., and S. C. Watkins. 1997. "The Buzz Outside the Clinics: Conversations and Contraception in Nyanza Province, Kenya." *Studies in Family Planning* 28(4): 290–307.

Rodríguez-Muñoz, G., E. Zapata-Martelo, M. Rodríguez, V. Vázquez-García, B. Martínez-Corona, and I. Vizcarra-Bordi. 2012. "Traditional Knowledge, Access, Use and Transformation of Wild Edible Fungi in Santa Catarina Del Monte, Estado De México [Saberes tradicionales, acceso, uso y transformación de hongos silvestres comestibles en

Santa Catarina del Monte, Estado de México].” Agricultura, sociedad y desarrollo, abril-junio 2012. <http://www.colpos.mx/asyd/volumen9/numero2/asd-esp-06.pdf>.

S

Samek, A. (2015). “A University-Wide Field Experiment on Gender Differences in Job Entry Decisions.” SSRN Electronic Journal. 10.2139/ssrn.2579257.

Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación (SAGARPA). 2013. “Programa Sectorial de Desarrollo Agropecuario, Pesquero y Alimentario 2013–2018.” Mexico: SAGARPA. [http://www.sagarpa.gob.mx/ganaderia/Documents/2015/MANUALES%20Y%20PLANES/Programa_Sectorial_SAGARPA_2013-2018%20\(1\).pdf](http://www.sagarpa.gob.mx/ganaderia/Documents/2015/MANUALES%20Y%20PLANES/Programa_Sectorial_SAGARPA_2013-2018%20(1).pdf).

———. 2016. “Reglas de Operación de los Programas de la Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación, para el ejercicio 2017.” Mexico: SAGARPA. http://www.gob.mx/cms/uploads/attachment/file/177829/DOF_-_Disposiciones_RO_2017.pdf.

Secretaría del Trabajo y Prevención Social (STPS). 2016. “Estadísticas del Sector, Información por Entidad Federativa.” Mexico: STPS. http://www.stps.gob.mx/bp/secciones/conoce/areas_atencion/areas_atencion/web/menu_infsector.html.

SEMARNAT-CAM. n.d. “Estrategia para la Reducción de Emisiones por Deforestación y Degradación Forestal del Estado de Campeche. Versión 5-10-20.” <http://www.gcftaskforce.org/documents/GCFF/database/Campeche%20EEREDD+.pdf>.

Serna de la Garza, J. M. 2005. “El régimen constitucional de la propiedad en México.” Instituto de Investigaciones Jurídicas de la UNAM. <http://bibliohistorico.juridicas.unam.mx/libros/5/2398/19.pdf>.

Shah, A. K., S. Mullainathan, and E. Shafir. 2013. “Some Consequences of Having Too Little.” *Science* 338(6107): 682–85. <https://doi.org/10.1126/science.1222426>.

Shahnaz, R., and M.N.U. Khan. 2013. “A Baseline Report

on The Empowerment and Livelihood of Adolescents (ELA) Programme of BRAC in Partnership with UNICEF.” BRAC. <http://www.brac.net/>.

Shih, M., T. L. Pittinsky, and N. Ambady. 1999. “Stereotype Susceptibility: Identity Salience and Shifts in Quantitative Performance.” *Psychological Science* 10(1): 80–83.

Sunstein C.R. 1996. “Social Norms and Social Roles.” *Columbia Law Review* 96(4): 903–68.

Streck, C., B. Murray, A. Aquino, L. Durschinger, M. Estrada, C. Parker, and A. Zeleke. 2015. “Financing “Land Use Mitigation: A Practical Guide for Decision- Makers.” Prepared with support from cooperative agreement #S-LMAQM-13-CA-1128 with U.S. Department of State. https://www.winrock.org/wp-content/uploads/2016/05/Winrock-FinancingLandUseMitigation_7-22-2015.pdf.

T

Thaddeus, S., and D. Maine. 1994. “Too Far to Walk: Maternal Mortality in Context.” *Social Science & Medicine* 38(8): 1091–1110.

U

Universidad Nacional Autónoma de México (UNAM). 2016. “Género y Medio Ambiente en México: una antología.” México: Centro Regional de Investigaciones Multidisciplinarias. <http://www.crim.unam.mx/web/node/1577>.

Unión Internacional para la Conservación de la Naturaleza (IUCN) Oficina Global de Género. 2015. “Acceso de las mujeres a la propiedad de la tierra y sus recursos.” IUCN. https://portals.iucn.org/union/sites/union/files/doc/factsheet_tenencia_int.pdf.

United Nations. 2010. “Gender and Indigenous Peoples.” Office of the Special Adviser on Gender Issues and Advancement of Women and the Secretariat of the United Nations Permanent Forum on Indigenous

Issues. New York: United Nations. <http://www.un.org/esa/socdev/unpfii/documents/Briefing%20Notes%20Gender%20and%20Indigenous%20Women.pdf>.

———. 2017. “Sustainable Development Knowledge Platform (2017).” New York: United Nations. <https://sustainabledevelopment.un.org/sdg17>.

United Nations Development Program (UNDP). 2010. “Informe sobre Desarrollo Humano de los Pueblos Indígenas en México. El reto de la desigualdad de oportunidades.” Mexico: UNDP.

V

Vazquez, G. V. 2001. “Género y tenencia de la tierra en el ejido mexicano: ¿la costumbre o la ley del Estado?” Mexico: Procuraduría Agraria. <http://www.pa.gob.mx/publica/pdf/pa071805.pdf>

W

Women Watch. n.d. “Women, Gender Equality and Climate Change.” http://www.un.org/womenwatch/feature/climate_change/#1.

World Bank Group. 2008. “Module 10: Gender and Natural Resources Management, Overview.” Washington, DC: World Bank. <http://siteresources.worldbank.org/INTGENAGRLIVSOUBOOK/Resources/Module10.pdf>.

———. 2012. *World Development Report 2012: Gender Equality and Development*. Washington, DC: World Bank.

———. 2015a. “World Bank Group Gender Strategy (FY16–23): Gender Equality, Poverty Reduction and Inclusive Growth (English).” Washington, DC: World Bank Group. <http://documents.worldbank.org/curated/en/820851467992505410/World-Bank-Group-gender-strategy-FY16-23-gender-equality-poverty-reduction-and-inclusive-growth>.

———. 2015b. *World Development Report 2015: Mind, Society, and Behavior*. Washington, DC: World Bank. <https://openknowledge.worldbank.org/handle/10986/20597>

———. 2016a. “World Bank Group Forest Action Plan FY16–20.” World Bank, Washington, DC. <https://openknowledge.worldbank.org/handle/10986/24026>. License: CC BY 3.0 IGO.

———. 2017a. “Poverty and Equity. Country Dashboard.” World Bank, Washington, DC. <http://povertydata.worldbank.org/poverty/country/MEX>.

———. 2017b. “GDP Per Capita in USD.” Mexico: World Bank Group. <http://datos.bancomundial.org/indicador/NY.GDP.PCAP.CD?locations=MX>.

———. 2017c. “Dedicated Grant Mechanism for Indigenous Peoples and Local Communities in Mexico Project.” World Bank, Washington, DC.

World Bank Group. n.d. “Rural Poverty Headcount Ratio at National Poverty Lines (% of Rural Population).” World Bank, Washington, DC. <http://data.worldbank.org/indicator/SI.POV.RUHC?end=2014&locations=MX&start=1960&view=chart>.

World Bank, International Finance Corporation (IFC), and the Multilateral Investment Guarantee Agency (MIGA). 2016b. “World Bank Group Climate Change Action Plan 2016–2020.” Washington, DC: World Bank. <https://openknowledge.worldbank.org/handle/10986/24451>.

Wuepper, D., and J. Sauer. 2016. “Explaining the Performance of Contract Farming in Ghana: The Role of Self Efficacy and Social Capital.” *Food Policy* 62: 11–27.

1. CONEVAL (2012).

2. Alianza México-REDD+ (2013).

3. Eighty-four percent of the rural female-headed households are led by women aged 30 years or younger, 37.3 percent by women between 30 and 49 years old, 20.9 percent between 50 and 59 years old, and 33.4 percent by women older than 60 years. Source: Alianza México-REDD+ (2013).

4. INEGI (2016c).

