

Using Behavioral Science to Increase Women's Participation in Natural Resource Management in Mexico

As countries continue to seek ways to recover from the COVID-19 pandemic, they have the unique opportunity to develop policies aimed at boosting their economies in a way that is more inclusive and sustainable.

One such strategy – adoption of natural resource management (NRM) – has been applied in Mexico, where the majority of its 12 million forest dwellers live in highly marginalized localities. 30 percent of forest dwellers¹ are indigenous people and 85% of indigenous-language speakers nationwide live below the poverty line.²

NRM initiatives can provide the tools for economic recovery and long-term environmental resilience for vulnerable populations in forest and coastal areas. The economic benefits of income generation and jobs are essential to combatting persistent and additional COVID-induced poverty and inequality. And, as the conservation of Mexico's forests is threatened by land use change, unsustainable agricultural practices, and climate change,³ NRM helps ensure these communities, and specifically, women, develop sustainable livelihoods that increase their resilience and preserve local forest resources.

Understanding and Responding to the Gender Gap in Natural Resource Management (NRM)

A persistent gender gap hampers productive activities in forest landscapes, forest-related benefits distribution, and the associated public sector programs. While important efforts have been made to provide more funding to women, in 2020, only 1.15% of the resources of Mexico's main forest sector support program were set aside to exclusively fund women's productive projects⁴. Other



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components of this program are directed to community groups; however, according to the Agrarian National Registry, only 27% of all community right holders are women⁵. That means, forest support programs that target community groups are likely to mainly benefit men. There is also a considerable gender gap within agricultural support programs. According to Mexico's Agriculture Ministry (SADER), only 33.8% of the beneficiaries in the main smallholder agriculture support program, "Producción para el Bienestar", are women⁶, although it is the program with the most women beneficiaries in the country.

While some share of the gender gap regarding participation in NRM programs could be attributed to lack of funding or absence of efforts focused on women, it is important to understand what motivates women to actively participate in these programs and what prevents them from doing so. Understanding these motivations would allow decision makers to better design and deploy future programs and projects.

The World Bank Environment team and Mind, Behavior, and Development (eMBeD) Unit, Rainforest Alliance, and the National Lab for Public Policies at the Mexican Center for Research and Teaching in Economics (CIDE) jointly conducted a Randomized Control Trial (RCT) to assess the behavioral and decision-making processes that impact women's participation in forest sector activities and test promising communication strategies to increase their participation in these areas. The RCT leveraged a special financing window and call for proposals from 2019 from the Dedicated Grant Mechanism for Indigenous Peoples and Local Communities (DGM) Forest Investment Program (FIP), a World Bank project delivered by Rainforest Alliance, building on it with complementary communications strategies. The objective of the RCT was to understand how to overcome behavioral barriers that prevented women from applying to NRM projects, and therefore, to allow for enhanced female participation under the existing NRM and agriculture programs.

This study was commissioned by the Climate Investment Funds' (CIF) Evaluation & Learning (E&L) Initiative, with additional financing from the Forest Carbon Partnership Facility (FCPF).

The Trial

Under the Mexico DGM and directly linked to a call for proposals from Rainforest Alliance to participate in the project, the RCT was implemented on top of this. The RCT hereby was able to build on several innovations of the project and call for proposals, as these already included several new innovative elements to foster the participation of women in NRM and addressed a series of structural barriers that commonly prevented women from applying to previous forest sector programs. For example, land ownership was removed as a requirement to apply. Moreover, acknowledging that fewer women had experience with these types of applications, the general DGM process was implemented in two phases. The first phase included only a short project description, requiring less technical and methodological details than typical proposals. Those who were selected for the second phase were then supported while further developing their proposals with all the necessary technical details. Hence, the project already included provisions beyond offering more finance, but to enable for more demand by women to participate.

In addition, a [behavioral diagnostic](#)⁷, conducted in 2018 by the World Bank to identify barriers to accessing NRM programs that rural women face, showed the importance of reducing the challenges people face when accessing information, the value of a field-based contact to build trust with applicants, particularly women, and the need to appeal directly to women using relatable messaging. Even with the already innovative design from the DGM project and call for proposals, additional communications strategies that take these key points into account could help in reaching out to potential applicants, from hard-to reach localities, especially women. The intervention strategies for this RCT were designed using this knowledge.

The RCT took place in 113 localities from two states (out of five) where the DGM was implemented. The research team selected locations from these two states after applying a series of filters based on forest coverage, cell phone coverage (needed for the trial), availability of census data, population of women, and others.

The RCT was developed in the first phase of the application process. Localities were grouped into clusters that were balanced and randomly assigned to receive one of three communication-based treatment strategies. This process

ensured that the three groups had the same characteristics. Balance was confirmed in terms of marginalization, number of previous forest sector grants, proportion of adult women in the adult population, proportion of women three years or older that speak an indigenous language, and adult population.

The control group received the standard communications strategy of the DGM call for proposals. The communications strategy used radio, community leaders and partners, posters, brochures, and meetings in medium-sized localities near smaller ones that also received invitations to attend. As explained, this standard communication under the DGM was already considered innovative and included several measures to address the gaps in women's participation in forest management. The RCT built on this.

The first treatment group received the same project communications strategy as the control group, plus simplified information and expanded communication channels. This included simplified posters in high-traffic areas in the communities, a helpline, local people with experience supporting outreach to highly marginalized communities, and up to two community meetings in each locality to motivate and support the submission of applications.

The second treatment group received activities for the control and the first treatment group, plus strategies informed by behavioral sciences. They received modified posters with messages that applied behavioral science principles based on identity, social norms, and loss aversion (e.g., mentioning women directly, suggesting many women already applied and work in these types of projects, that it would support their children, and that they would be missing out on an opportunity if they didn't apply); proactive text messages with reminders and motivational messages about the call for proposals; and a checklist for the proposal process.

To analyze the results of the interventions, all submitted applications from the 113 localities selected for the RCT were examined to identify the number of applications sent by locality, the number of women in the teams that sent applications, and the number of applications led by a woman. Additionally, the study ran a representative survey of these localities with local women to assess their knowledge of the program.



The Results



Simple communications strategies can complement even programs that already include a women-centered design. The DGM call for proposals with Rainforest Alliance already contained several innovative elements to foster the participation of women. When looking at the entire call for proposals leveraged for this study in all five states (not just the ones that participated in the RCT), this call received four times the number of women applying as part of teams and 22 more female-led projects than the previous call without this design. Nevertheless, The RCT complements to the call's standard communication strategy had a strong complementary impact on the volume of applications submitted from the subset of localities selected for the RCT. The largest effect on the number of applications can be attributed to the expanded communication channels and simplified information (the first treatment group – rather than the additional components of the second treatment group). In addition, surveyed women in the first and second treatment localities were significantly more likely (by about 8 percentage points) to have heard of the campaign and/or to recognize informational materials than those in the control group.



Messages informed by behavioral science further increased the number of women applying. Unlike the first treatment group, the second treatment group addressed social norms that may have prevented women from applying to forest and agriculture programs and highlighted aspects of their identities related to the program (e.g., normalizing their participation, communicating that many women have applied and worked in these types of activities, and that this would benefit their children and families). These localities saw a statistically significant increase in the total number of women that were part of a team applying, as well as the number of applications in which the team was fully composed of women, as compared to the control and first treatment group.



It is important to note that while the trial interventions increased women's interest and applications for grants, they had no effect in the number of applications selected to receive the grants (from either men or women). There was no significant difference between the control and both treatment groups' success rates. The RCT interventions were not designed to improve the quality of the applications or to assist women groups in the development of the applications.



Policy Implications

The results of this study suggest that the informational hurdles, effort required, and time burden associated with applying to NRM development programs may be significant barriers for potential applicants (both male and female). This appears to be particularly relevant for localities with less experience in forest and agriculture sector program applications.

Therefore, **having easy to understand materials may increase the participation of people who have been historically excluded from these programs.** Furthermore, it benefits those with lower educational levels or with language and other cultural barriers. The expanded communications may also help reach people who are not already motivated to seek this information.

These strategies are particularly valuable as they may be easily replicated by government and non-profit organizations to reach under-represented populations. For example, the 2018 behavioral diagnostic suggested that social norms and women's beliefs may have reduced their willingness to apply. But promising results of this new RCT show that **women may be increasingly encouraged to apply when the communications strategy is designed to directly address social gender-based norms and conveys views about women's strengths and abilities.** Thus, addressing these beliefs, as we did in this RCT, might be key to ensuring a more diverse set of applicants.

The RCT also showed that these complementary strategies were not enough to increase success in accessing the grants. While the design of the call for proposal planned to provide technical assistance to teams in phase two of the proposal's development, this RCT only focused on phase one. The **expansion of these mechanisms earlier in the process should, therefore, be considered to support these groups, as they develop the ideas for their projects to lead to even more women awarded grants from hard-to-reach localities. Technical assistance must be provided long before projects start implementing, but early on to enable potential beneficiaries to meaningfully apply and increase their capacities to articulate project ideas.**


Finally, the Mexico DGM and call for proposals, which already included a women-centered design, received more applications from women than previous windows that did not include a women-centered design. The RCT components - the expanded communication channels, simplified information, and messages informed by behavioral science - increased the participation of women even more. **From our findings, we can conclude that public policies promoting NRM have the potential to overcome gender-based behavioral barriers if they include messaging targeted at women in their design.**


About eMBeD


The Mind, Behavior, and Development Unit (eMBeD), the World Bank's behavioral science team in the Poverty and Equity Global Practice, works closely with project teams, governments, and other partners to diagnose, design, and evaluate behaviorally informed interventions. By collaborating with a worldwide network of scientists and practitioners, the eMBeD team provides answers to important economic and social questions, and contributes to the global effort to eliminate poverty and enhance equity.

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REFERENCES:

1. CONAFOR (2023). Estado que guarda el sector forestal en México 2022.
2. CONEVAL (2021). Medición multidimensional de la pobreza en México 2018 – 2020.
3. World Bank Group (2018). Closing the Gender Gap in Natural Resource Management Programs in Mexico.
4. Madrid and Fernandez (2021) ;Hacia dónde van los apoyos del sector forestal en la nueva administración? Information Note of Consejo Civil Mexicano para la Silvicultura Sostenible.
5. CONAFOR (2023). Estado que guarda el sector forestal en México 2022.
6. Gobierno de México (2023). Producción para el Bienestar: el programa productivo con mayor número de beneficiarias mujeres. [https://www.gob.mx/agricultura/prensa/produccion-para-el-bienestar-el-programa-productivo-con-mayor-numero-de-beneficiarias-mujeres#:~:text=Producci%C3%B3n%20para%20el%20Bienestar%20\(PpB,ciento%20del%20padr%C3%B3n%20total%20de](https://www.gob.mx/agricultura/prensa/produccion-para-el-bienestar-el-programa-productivo-con-mayor-numero-de-beneficiarias-mujeres#:~:text=Producci%C3%B3n%20para%20el%20Bienestar%20(PpB,ciento%20del%20padr%C3%B3n%20total%20de)
7. World Bank Group (2018). Closing the Gender Gap in Natural Resource Management Programs in Mexico