

**Researchers**

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**Timeline**

2021-2022

**Sample Size**

90 landowners

**Research Implemented by IPA**

Yes

# Redesigning Payments for Ecosystem Services in Mexico to Increase Cost-Effectiveness

## Abstract

Deforestation is the second largest human source of carbon dioxide emissions. Mexico has a "payments for ecosystem services" (PES) program to provide economic incentives to landowners to minimize deforestation, but budget cuts have been recurring over the past years. Researchers are conducting a pilot study in one municipality of Selva Lacandona (Chiapas) to find ways to improve the cost-effectiveness of the program.

## Policy Issue

Global warming and environmental issues are becoming increasingly important in the fight against poverty. Evidence suggests that the adverse effects of global warming are affecting and will continue to disproportionately affect people living in poverty.<sup>[1]</sup> Among human activities, deforestation is the second largest human source of carbon dioxide emissions, surpassed only by the burning of fossil fuels. In this context, it is imperative to have rigorous evidence of the best strategies to protect the environment, without limiting the livelihoods of the most vulnerable. Previous evidence suggests financial incentives to landowners can reduce deforestation, however more evidence is needed to make these programs more cost effective.

## Context of the Evaluation

Mexico is one of the countries with the largest biodiversity in the world. Its geographical location, its orographic and geological complexity, and its variety in climates allow 70 percent of the total extension of the territory to present almost all types of natural vegetation.<sup>[2]</sup> At the same time, Mexico occupies one of the first places in deforestation rates in the world.<sup>[3]</sup> In 2003, the Mexican government launched its national "payments for ecosystem services" (PES) with the objective of reducing deforestation, mitigating climate change and generating other environmental benefits (e.g., water, biodiversity).

The voluntary program provides eligible landowners with economic incentives to compensate for the opportunity costs of conservation and the costs that landowners incur when they implement good environmental practices. The PES is the world's second-largest program in terms of forest area enrolled and public spending and some studies have found it effective at reducing deforestation and rural poverty. However, PES's annual funding has declined more than half in the past years, with further budget cuts expected. This creates a need and opportunity to study whether design innovations can improve cost-effectiveness, enabling the limited budget to achieve more.

## Details of the Intervention

In Mexico, researchers are conducting a one-year pilot study among rejected PES applicants to determine the cost-effectiveness of the current variant of the program. The research team will select 90 landowners who meet all official criteria for participation in the program, but have been rejected due to budget constraints, and randomly assign them to one of the following interventions:

**Partial-enrollment contract:** Landowners in this group will receive the standard contract, where they decide which subset of their land they want to enroll in the program. The rationale for partial enrollment is to lower barriers to participation. Unfortunately, this feature creates a large scope for inframarginal payments (payments for the protection of a forest parcel that would have been protected even without the financial incentive) and thus increases the program costs. The contract is for one year, instead of the five years that the program usually lasts.

**Full-enrollment contract:** Participants in this group will be required to enroll all their forest land in the program to minimize inframarginal payments (payments for the protection of a forest parcel that would have been protected even without the financial incentive). This change is expected to lead to fewer people enrolling in the program, but more forest preserved per dollar spent on payments. Because of fixed costs, the overall cost-effectiveness of the program could either increase or decrease.

The pilot will be implemented in one municipality of Selva Lacandona (Chiapas). Researchers

do not expect this pilot to have statistical power to detect differences in deforestation impacts and the evidence will only apply to individually-held, not communal lands. The initial survey and enrollment will occur during April and May 2021. Deforestation in Mexico typically occurs from April to August; payments will be made from April to May 2022. The research team will conduct a follow-up survey in April and May 2021.

## Results and Policy Lessons

Project ongoing. Results forthcoming.

## Sources

<sup>[1]</sup> OCDE, “Poverty and Climate Change Reducing the Vulnerability of the Poor through Adaptation,” accessed March 12, 2021, <http://www.oecd.org/env/cc/2502872.pdf>.

<sup>[2]</sup> Conafor 2010, Inventario Nacional Forestal y de Suelos. Información Básica Forestal basado en la Cartografía de Uso de Suelo y Vegetación Serie IV escala 1:250,000 de INEGI.

<sup>[3]</sup> Jocelyn Soto, “Deforestación, ¿qué es, quién la causa y por qué debería importarnos?,” Greenpeace México, accessed March 12, 2021, <https://www.greenpeace.org/mexico/blog/4074/deforestacion-que-es-quien-la-causa-y-por-que-deberia-importarnos>.

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