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**Timeline**

2021-2022

**Study Status**

Results

**Study Type**

Randomized Evaluation

**Sample Size**

63 farmers

**Research Implemented by IPA**

Yes

## Redesigning payments for ecosystem services to increase cost-effectiveness\*

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**Abstract**

Payments for Ecosystem Services (PES) are a widely used approach to incentivize conservation efforts such as avoided deforestation. Although PES effectiveness has received significant scholarly attention, whether PES design modifications can improve program outcomes is less explored. We present findings from a randomized trial in Mexico that tested whether a PES contract that requires enrollees to enroll all of their forest is more effective than the traditional PES contract that allows them to exercise choice. The modification's aim is to prevent landowners from enrolling only parcels they planned to conserve anyway while leaving aside other parcels to deforest. We find that the full-enrollment treatment significantly reduces deforestation compared to the traditional contract. This extra conservation occurs despite the full-enrollment provision reducing the compliance rate due to its more stringent requirements. The full-enrollment treatment quadrupled cost-effectiveness, highlighting the potential to substantially improve the efficacy of conservation payments through simple contract modifications.

**Keywords:** Deforestation, Payments for Ecosystem Services, financial incentives, contract design, Mexico

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**Academic Paper**

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



Top: Monkeys in protected Lacandona forest. Bottom: Monkey walking in recently burnt forest. ©Santiago Saavedra, 2021

**Researchers collaborated with Conafor, Natura Mexicana, and IPA Mexico to compare full versus partial enrollment of forest in payments for ecosystem services (PES) contracts. PES involves paying forest-owning households to conserve their land. Full enrollment reduced deforestation by 39 percent, increasing PES cost-effectiveness by 4.6 times, showing promise for forest conservation and local livelihoods.**

Deforestation contributes up to 20 percent of global greenhouse gas emissions, primarily driven by agricultural expansion.<sup>1</sup> As the effects of climate change strengthen, it is important to find solutions that can protect forests as carbon sinks while ensuring individuals can maintain their economic livelihoods. One promising program is payments for ecosystem services (PES), which offers forest-owning households cash payments for conserving their forested land. Evidence from Uganda suggests that this can reduce deforestation and forest degradation.<sup>2</sup>

Mexico's national forest commission, Conafor, has operated a PES program since 2003, known as PSA. In PSA's standard contract, households can apply to enroll part of their forested land to conserve in return for payments. The Selva Lacandona region in the state of Chiapas in southern Mexico, where this study was conducted, has the country's largest high-canopy tropical forest and extensive agricultural expansion. Households enrolled in PSA in this area have reduced deforestation<sup>3</sup> and experienced positive economic benefits.<sup>4</sup> However, not all forested land is enrolled and deforestation on non-enrolled land for agriculture remains high.<sup>5</sup> Furthermore, due to PSA budget cuts,<sup>6</sup> discovering ways to improve the program's cost-effectiveness becomes a significant policy priority.

Researchers partnered with Conafor, Natura Mexicana, and IPA Mexico to conduct a randomized evaluation to measure the impact and cost-effectiveness of a new contract that requires PES participants to fully enroll their forested land to receive payments. This would in theory generate additional forest enrolled that was not enrolled in the standard contract, and specifically the forest that was most likely to be deforested without PES. A total of 63 farmers across 5 ejidos (entities with individually-managed plots and communally-managed resources) were randomly assigned to receive either the new full enrollment contract or the standard partial enrollment contract. Researchers measured impacts on deforestation and compliance with the contracts.

Results showed that the new full enrollment contract had a significant positive impact, with farmers reducing deforestation by 39 percent relative to households in the standard partial enrollment contract. This was driven mainly by farmers conserving forests on parcels that they were not planning to enroll if given a choice. Fewer complied with the full enrollment contract (71 percent compared to 94 percent), but total deforestation was lower due to significantly larger averted deforestation per person. As such, full enrollment farmers received nearly double the total conservation payments as standard enrollment farmers, altogether increasing PES cost-effectiveness by a factor of 4.6.

## Sources

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## Implementing Partners





**Natura y Ecosistemas Mexicanos (Natura Mexicana)**

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## **Funding Partner**



**King Climate Action Initiative at J-PAL**