

Project *brief*

Thünen Institute of International Forestry and Forest Economics

2021/27a

Is PES stopping deforestation or is it just shifting it?

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- **Results indicate a negligible direct impact of PES on deforestation in SBP areas as changes in deforestation rates before and after PES implementation are only low.**
- **Overall, annual net deforestation in areas with PES is lower than in reference areas without PES.**
- **However, we identified a positive spill-over effect in buffer zones as deforestation rates there have decreased after PES implementation.**
- **Accounting for (positive) spill-over or (negative) leakage effects proves crucial when assessing land use policy instruments.**

Methodology

Payments for Environmental Services (PES) are programs providing financial incentives aiming at conserving forestlands. One such program is Socio Bosque (SBP), it has been implemented since 2008 in Ecuador. We assessed the historical trend of deforestation in SBP-enrolled areas by comparing the development of deforestation before and after SBP introduction. We compared SBP areas against other adjacent areas without SBP and included a sequence of buffer zones around each SBP area. Further we compared the deforestation development in comparable landscapes without PES enrollment more distant to the PES sites. For our evaluation we employed t-test, effect size, and ANOVA analysis.

Results

Between 1990 until 2018, we observed that the average difference in annual net deforestation rates for SBP areas before and after SBP implementation is marginally low (about 0.02 percent points); however, the overall net deforestation rates in these areas are considerably lower than in adjacent reference sites without SBP. Within the buffer zones around SBP areas we observed a linear increasing trend in deforestation as distance from SBP areas increased. Also, we found some evidence of a reduction in their annual net deforestation rates

after SBP implementation (however, in the latter case no statistical difference was found across all buffer zones).

Discussion

In analyzing the historical net deforestation trend in SBP and non-SBP areas, it appears as if SBP was mainly introduced in regions where net deforestation was low and stable anyway, while it rose in comparable reference sites and adjacent areas. Low deforestation in SBP areas and intensified land use in adjacent areas was already present long before SBP was implemented; such behavior would have been maintained even in the absence of financial incentives. Such changes in deforestation therefore may not originate from the implementation of SBP alone, but may be due to some other unaccounted contextual reasons.

Our findings hint at the possibility of positive spillovers in the buffer zones but unless these are markedly visible, the pattern of deforestation remains. Our findings suggest an established balance between the profit-oriented behavior of landowners and a more intense deforestation in adjacent areas. It is therefore challenging to assert that the presence of SBP meets the challenges of additionality and avoided leakage, when SBP-enrolled areas and their neighborhoods are viewed together.

Further Information

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DOI:10.3220/PB1631695981000

Duration

01.2015 - 03.2020

Project-ID

1741

Publication

Gordillo, F.; Eguiguren, P.; Köthke, M.; Ferrer Velasco, R.; Elsasser, P. Additionality and Leakage Resulting from PES Implementation? Evidence from the Ecuadorian Amazonia. *Forests* 2021, 12, 906.

Support

