

Inequality promotes deforestation in Latin America

January 28 2019



Professor Dr. Michele Graziano Ceddia. Credit: Manu Friedrich

Tropical deforestation is a major contributor to climate change and loss of local and global ecosystem functions. Latin America accounts for a large share of remaining tropical forests, but also features deforestation rates well above the world average. Here, the biggest driver of deforestation is expansion of agricultural frontiers to meet the demands of international markets. Power imbalances and economic inequality have long been assumed to play a role in the processes causing loss of tropical forests. Yet the effects of inequality on the environment remain a subject of scientific debate. Some observers suggest that increasing inequality hinders the collective action necessary to protect the environment. Others suggest that powerful elites concerned about environmental conservation can enable better ecosystem preservation—for example, by mandating large protected areas.

A new study carried out by Graziano Ceddia at the Centre for Development and Environment (CDE), University of Bern, takes a first-ever look at the specific links between different forms of [inequality](#), increasing [agricultural productivity](#), and farmland expansion at the expense of forests in Latin America. The study shows that greater inequality increases deforestation, and less inequality better protects forests in the long-term. The findings have been published in the *Proceedings of the National Academy of Sciences*.

Using productivity gains to protect forests

Increasing agricultural [productivity](#) (output per hectare) has the potential to reduce pressure on remaining forests, sparing land for nature while continuing to meet global food demands. But it can also increase the profitability of farming and incentivize the conversion of more forests to

cropland.

Previous research led by Graziano Ceddia shows that improvement of agricultural productivity alone is not enough to prevent agricultural expansion and deforestation in Latin America. Instead, the institutional context is vital, including environmental policies, rules, and regulations.

"We know that different forms of inequality can significantly impact how environmental laws are formulated," says Ceddia. The novelty of this study is its explicit investigation of the interaction between agricultural productivity, farmland expansion at the expense of forests, and various forms of inequality.

Advice for policymakers

The study examines three different forms of inequality: income, land and wealth. Levels of inequality are higher and longer-lasting in the case of land ownership and wealth. The results of the study suggest that in a hypothetical situation of equality, increases in agricultural productivity would promote deforestation in the short term. But in a longer-term "equality scenario," higher agricultural productivity would actually lead to better protection of forests. The study shows, however, that increases in all forms of inequality ultimately promote agricultural expansion, eroding the potential environmental benefits of greater productivity. The results also indicate that the effect of income inequality is greater than that of land or wealth inequality.

One possible explanation for the findings is that income, land, and wealth inequality hinder the societal cooperation needed to protect forests. It could also be that agricultural expansion is easier and cheaper when land ownership is concentrated in a few hands.

Today, Latin America features some of the highest levels of inequality in

the world. "If we want to ensure that increased agricultural productivity serves to protect [tropical forests](#), then the message to policymakers is clear," says Graziano Ceddia. "More equal distribution of income, wealth, and land ownership is not only fairer, but also an effective means of improving environmental protection."

More information: M. Graziano Ceddia, The impact of income, land, and wealth inequality on agricultural expansion in Latin America, *Proceedings of the National Academy of Sciences* (2019). [DOI: 10.1073/pnas.1814894116](#)

Provided by University of Bern

Citation: Inequality promotes deforestation in Latin America (2019, January 28) retrieved 13 May 2024 from <https://phys.org/news/2019-01-inequality-deforestation-latin-america.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.