INESAD
Testing policy alternatives for reducing deforestation

The *Institute for Advanced Development Studies* (INESAD) is generating policy evidence with simulation tools to help combat deforestation in Bolivia.

SETTING THE SCENE —With more than 50 million hectares of tropical forest, Bolivia is one of the most biodiverse countries in the world. Unfortunately, it also has one of the highest levels of deforestation – approximately 300,000 hectares of forest is lost each year to agricultural expansion, producing roughly 150 million tonnes of CO_2 emissions, or 15 tonnes for each Bolivian citizen. While agricultural yields in Bolivia are very low compared to neighboring countries, agricultural land still contributes much more to the country's Gross Domestic Product than forests, on a per-hectare basis, thus creating strong motivation for private interests and government alike to expand the agricultural frontier. However, the forest also has non-economic value, such as hosting millions of unique species and helping to protect against the impacts of climate change.

These large expanses of forest, high deforestation rates, low agricultural yields, and a biodiverse habitat make Bolivia a prime candidate for participating in the international mechanism *Reducing Emissions from Deforestation and Forest Degradation* (REDD+). This mechanism is still under negotiation, but the main idea behind it is to use market and financial incentives to reduce greenhouse gas emissions from deforestation and forest degradation in developing countries. However, Bolivia has strongly and repeatedly rejected a mechanism based on carbon emissions trading and offsets, and has instead started developing an alternative mechanism which assumes a much more holistic view of forests and the communities that live within them. The Institute for Advanced Development Studies (INESAD) saw an opportunity to use its considerable expertise and experience in the area of forests and climate change to work with the Bolivian government and other key stakeholders to explore alternative policy options for reducing deforestation.

WHAT INESAD DID —With the help of the Think Tank Initiative and other organizations[1], INESAD developed an innovative set of quantitative simulation tools to test the socio-economic and environmental impacts of various policy incentives for reducing deforestation in Bolivia. The two tools – OSIRIS-Bolivia (Open Source Impacts of REDD+ Incentives Spreadsheet for Bolivia) and CISS-Bolivia (Conservation Incentives

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[1] *Particularly Conservation International, London School of Economics and Ecosystem Services for Poverty Alleviation (ESPA).*

Spreadsheet for Bolivia) – contain detailed and systematic information about the causes of deforestation throughout the country. INESAD used the tools to simulate the multidimensional impacts of different types of incentives such as REDD+ payments for the reduction of CO_2 emissions, payments for conservation (incentives offered to landowners in exchange for managing their land to provide an ecological benefit) and taxes on deforestation. The results indicate that the mechanism proposed by Bolivia (combining conservation payments with taxes on deforestation) provides considerably larger and better distributed benefits to the Bolivian population than REDD+ payments, while achieving almost the same environmental benefits in terms of reduced deforestation, emissions and biodiversity loss.

An additional tool that INESAD developed is the educational game SimPachamama[2], which simulates the behavior of a small community on the agricultural frontier and has the player explore options for simultaneously reducing deforestation and poverty in a forest community. The player assumes the role of the mayor, who has to implement policies that improve human well-being as much as possible without destroying the environment. The simulation runs for 20 years, allowing users to learn about the effects of different policies and the trade-offs that policy makers face while trying to reduce deforestation.

THE OUTCOME —INESAD applied its policy simulation tools to help design Bolivia's alternative mechanism for reducing deforestation, the *Joint Mitigation and Adaptation Mechanism for the Integral and Sustainable Management of Forests*. The strong technical arguments provided by the tools also helped the Bolivian government negotiate financial support for the development of this mechanism. For example, UN-REDD has promised USD 1.1 million towards developing the alternative mechanism while the Danish Embassy has committed more than USD 26 million in support of it. Due to INESAD's expertise in this area, the Danish Embassy contracted INESAD to coordinate the development of a USD 40 million *Support Programme for Integral and Sustainable Management of Forests and Energy in Bolivia* that will run from 2014 to 2018. This coordination work included more than 100 meetings with key stakeholders in the Bolivian government, civil society and other donors in Bolivia, as well as the elaboration of dozens of background studies. INESAD was also hired to develop the institutional framework for a new public body, the *Plurinational Authority of Mother Earth*, which is responsible for controlling and monitoring deforestation nationwide. In addition, INESAD staff drafted the supreme decrees for the *Plurinational Fund of Mother Earth*, which is the financial mechanism to support this new entity.

[2]*For further information please see:*
http://www.inesad.edu.bo/simpachamama/

For more information on INESAD, visit http://inesad.edu.bo/index.php/en/

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