New analysis shows Brazil slows deforestation with land registration program

November 1 2017

Corn fields sit adjacent to forest in the Brazilian state of Mato Grosso. Credit: Lisa Rausch.

Brazil's environmental land registration program has been successful in slowing down the rate of deforestation on private land, according to a new study.

The study is published in the journal *Conservation Letters*. Brazil houses nearly 13 percent of the world's remaining forests, and although its deforestation rate has slowed in recent years, it remains the second-highest contributor to global forest loss. However, Brazil has made substantial progress mapping properties for environmental registration,

known as CAR (Cadastro Ambiental Rural). First with a handful of state-level systems in the Amazon, and more recently with a national rural land registration system known as SiCAR (Sistema Nacional de Cadastro Ambiental Rural).

Deforestation - the removal of a forest or stand of trees where the land is thereafter converted to a non-forest use - contributes significantly to the greenhouse gas effect, one of the leading causes of global warming. The biggest driver of deforestation is agriculture. Farmers cut forests to provide more room for planting crops or grazing livestock.

The program's success provides a potential pathway toward mitigating climate change, said Jennifer Alix-Garcia, an economist in OSU's College of Agricultural Sciences and the study's lead author. The CAR allows landowners a way to demonstrate compliance with environmental regulations and it also provides a mechanism for the government to monitor land-use, she said.

"Brazil was able to implement this program in a region where land tenure is very insecure, which suggests it would be possible in other parts of the world," Alix-Garcia said.

The researchers examined the impacts of CAR registration in the Amazon states of Mato Grosso and Para during the early years of its implementation, between 2006 and 2013, using randomly drawn points from the forested area of the two states. Using registration data and satellite imagery, they calculated that deforestation in the two states would have been 10 percent higher in the absence of CAR registration.

The CAR, now administered through the SiCAR system, is one of a variety of interventions that aims to control deforestation on private lands in the Brazilian Amazon, including improved satellite monitoring, increased enforcement of the 2012 Forest Code, credit restrictions for

areas involved in excessive deforestation, and private sector zero-deforestation agreements.

"Property registration is particularly important for initiatives such as Brazil's Soy Moratorium and Zero-Deforestation Cattle Agreements, which aim to trace supply chains on the ground," said Holly Gibbs, professor of geography and environmental studies at the University of Wisconsin-Madison.

However, the property data is still not available to the public in a comprehensive way, adds Lisa Rausch, researcher at the University of Wisconsin-Madison. This has to change to improve environmental governance by both the public and private sectors, she said.

More information: Jennifer Alix-Garcia et al, Avoided Deforestation Linked to Environmental Registration of Properties in the Brazilian Amazon, *Conservation Letters* (2017). DOI: 10.1111/conl.12414

Provided by Oregon State University