Tropical forest loss

24 June 2020

New UD study shows that tropical forest loss is increased by large-scale land acquisitions

UNIVERSITY OF DELAWARE

IMAGE: UD ASSISTANT PROFESSOR KYLE DAVIS HAS PUBLISHED A NEW STUDY THAT LOOKS AT WHICH TYPES OF LARGE-SCALE LAND INVESTMENTS MAY BE ASSOCIATED WITH INCREASES IN TROPICAL DEFORESTATION. DAVIS IS PICTURED

In recent years, there has been a rise in foreign and domestic large-scale land acquisitions--defined as being at least roughly one square mile--in Latin America, Asia, and Africa where investing countries and multinational investors take out long-term contracts to use the land for various enterprises.

In some cases, this leads to the creation of new jobs for local communities, and governments often welcome these investments as a means to promote the transfer of technologies and the inflow of capital. But the investments can also have adverse outcomes for local people, who rely on the acquired areas for food and

income but have no legal claim to the land, and the environment-- as the land will likely need to be converted to serve its intended use.

An international group of researchers led by the University of Delaware's Kyle Davis has recently published a study in *Nature Geoscience* to see which types of large-scale land investments may be associated with increases in tropical deforestation. They found that investment types focusing on establishing new tree plantations -- where an area is cleared of existing trees and planted with a single tree species that is harvested for timber -- as well as plantations for producing palm oil and wood fiber, consistently had higher rates of forest loss than surrounding non-investment areas.

The study's findings show that large-scale land acquisitions can lead to elevated deforestation of tropical forests and highlight the role of local policies in the sustainable management of these ecosystems.

Analyzing land deals, forest cover

Researchers used a georeferenced database of more than 82,000 land deals -- covering 15 countries in Latin American, sub-Saharan Africa and Southeast Asia -- with global data on annual forest cover and loss between 2000 and 2018.

They found that since the start of the century, 76% of all large-scale land acquisitions in the Global South -- an emerging term which refers to the regions of Latin America, Asia, Africa and Oceania -- can be attributed to foreign land investment. These land acquisitions covered anywhere from 6% to 59% of a particular country's land area and 2% to 79% of its forests.

The information came from the Global Forest Watch database run by the World Resources Institute as well as other sources such as government ministries, which provides information for thousands of individual investments that show the exact area, boundary and intended use.

"This collection of datasets on individual land investments provided me with information on the exact area, boundary, and intended use of each deal. I then combined these data with satellite information on forest cover and forest loss to understand whether large-scale land investments are associated with increased rates of forest loss," said Davis, assistant professor in the Department of Geography and Spatial Sciences in UD's College of Earth, Ocean and Environment and the Department of Plant and Soil Sciences in UD's College of Agriculture and Natural Resources.

Environmentally damaging, globalized industries

With regards to the environmental damage done by oil palm, wood fiber and tree plantations, Davis said a lot of it has to do with the ways in which those products are grown.

"Investments to establish new oil palm or tree plantations seem to consistently have higher rates of forest loss, and that makes sense because basically, you have to completely clear the land in order to convert it to

that intended use," said Davis. "If you want to establish a tree plantation or a palm oil plantation in place of natural vegetation, you've first got to cut down the forest."

For the other investment types, such as logging and mining, however, the results were much more mixed. Logging investments, in fact, served a small, protective role where the rates of forest loss in logging concessions were slightly lower than the rates of forest loss in surrounding, comparable areas. Davis attributed this to the specific requirements for the logging industry where only trees of a certain size or species can often be harvested.

These large-scale land acquisitions are now widespread across the planet, which was caused largely by rising globalization and the world's increasing interconnectedness.

"There's been a rapid increase in land investments in recent decades due to growing global demands for food, fuel, and fiber," said Davis.

He pointed to the global food crisis in 2008 when many import-reliant countries realized they were vulnerable to food or resource shortages. To help offset that vulnerability, they have pursued investments abroad to expand the pool of resources available to them in case another large-scale shock occurs.

Government information

Davis emphasized the importance for governments to provide detailed information on land investments, to ensure that these deals were carried out transparently and to allow researchers to objectively assess their effects.

He also said that by performing this comparison across different countries, it makes it possible to start identifying specific policies that are more effective in protecting forests.

"If you see deals in one country that aren't leading to enhanced forest loss but the same type of investment in another country is accelerating deforestation, then this suggests that there are opportunities to compare the policies in both places and leverage what's working in one country and adapt that to another context," said Davis. "But it also clearly shows that countries will inevitably experience deforestation should they seek to promote certain investments such as palm oil, wood fiber, and tree plantations, which we found were consistently associated with increased forest loss."

Source: https://www.eurekalert.org/pub_releases/2020-06/uod-tfl062320.php