

Action needed now to save forest area the size of India

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Credit: Institute of Physics

An area of forest the size of India will be lost by 2050 unless carbon pricing and anti-deforestation policies are put in place.

That is the primary finding of a new study carried out by researchers from the Center for Global Development, Washington, DC, and the University of Wisconsin-Madison, published today in *Environmental Research Letters*.

They analysed detailed satellite-based maps of annual forest loss between 2001-2012, along with information on topography, accessibility, protected status, and potential agricultural revenue to project future emissions from [deforestation](#) in a business-as-usual scenario. They then estimated the emissions that would be avoided if governments that oversee tropical forests enacted domestic carbon pricing policies or strong anti-deforestation measures.

Lead author Dr. Jonah Busch, from CGD, said: "Our results showed that Earth stands to lose 289 million hectares of tropical forest between 2016 and 2050 if no action is taken. The loss of this amount of forest would release 169 billion tons of CO₂ to the atmosphere, which is one-sixth of the remaining planetary carbon budget."

The study found a carbon price of \$20/tCO₂ would avoid 923 MtCO₂ of emissions from tropical deforestation in 2020.

Co-author Jens Engelmann, from the University of Wisconsin-Madison, said: "While this is toward the low end of the range projected by earlier studies, it is still 4.5 times the MtCO₂ available at the same price in the European Union, and 55 times the 17 MtCO₂ available at the same price in California —two regions with carbon pricing policies already in place.

"However, carbon pricing is not the only way to achieve a reduction in deforestation. Governments of forested countries could reduce emissions from deforestation by implementing restrictive policies, as Brazil did very successfully in the Amazon. In fact, from 2004 to 2012, [deforestation rates](#) in the Amazon reduced by between 60 and 80 per

cent."

The study shows that if all tropical countries brought in restrictive anti-deforestation policies with equivalent effectiveness to those in the Brazilian Amazon, one-third of emissions from [tropical deforestation](#) from 2016-2050 would be avoided—a greater amount than the one-quarter of emissions that would be avoided from a carbon price of \$20/tCO₂.

Dr. Busch said: "Unlike carbon pricing, restrictive policies could be brought in without having to set up new institutions for assigning and monitoring land users' [emission](#) rights, which could be complicated or expensive across much of the tropics because of unclear property rights over forest lands. Additionally, restrictive policies could have lower budgetary costs than carbon [pricing](#)."

"However, because restrictive policies would push opportunity costs onto current and would-be land users, they lack the ability of [carbon](#) payments to create winners from the [policy](#) as well as losers. Combining restrictive policies with [carbon pricing](#) allows for even greater emission reductions while achieving a desired distribution of winners and losers from policy."

Mr Engelmann added: "Whichever route is taken, it should be taken soon. Our projection of future deforestation in the absence of effective policies is eye-opening, and emphasizes the need for effective action so that land can play a significant role in reining in growing increases in atmospheric CO₂."

More information: Jonah Busch et al. Cost-effectiveness of reducing emissions from tropical deforestation, 2016–2050, *Environmental Research Letters* (2017). [DOI: 10.1088/1748-9326/aa907c](https://doi.org/10.1088/1748-9326/aa907c)

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