From Madagascar to Brazil, researchers pick best spots to replant forests

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Researchers have identified swathes of lost tropical rainforests as the best places to replant trees, hoping to redress some of the damage done by deforestation and limit climate change.

A four-year study used high-resolution satellite imagery to pinpoint more than 100 million denuded hectares - from South Sudan to Brazil and India - that would deliver good results if reforested.

"Globally, more than half of the tropical forests in the world are gone - most of that in the last 50 years," said Robin Chazdon, a professor at the University of Connecticut and co-author of the study published on Wednesday in the journal Science Advances.

"These forests provide a huge amount of functioning and services for our planet and people that have gone unappreciated," she told the Thomson Reuters Foundation.

The tropics lost 12 million hectares of tree cover in 2018, the fourth-highest annual loss since records began in 2001, according to forest monitoring service Global Forest Watch.

Of greatest concern, it said, was the disappearance of 3.6 million hectares of old-growth rainforest, an area the size of Belgium, much due to fires, land-clearing for farms and mining.

Environmentalists say protecting existing forests and restoring damaged ones prevents flooding, stores carbon, limits climate change and protects biodiversity.

Researchers looked at which tropical rainforest areas - if replanted - would produce the highest benefits for safeguarding wildlife, curbing and adapting to climate change, and boosting water security.

Other factors included restoration cost, investment risk and the likelihood of restored forests surviving into the future.

The top 15 nations with the largest reforestation hotspots included Brazil, Indonesia, India, Madagascar, Colombia, the Philippines, Vietnam, Myanmar and Thailand.

The six countries with the greatest potential for successful rainforest restoration were all African: Rwanda, Uganda, Burundi, Togo, South Sudan and Madagascar.

More than 70% of the hotspots were found in countries that have already made reforestation commitments under the Bonn Challenge, agreed by nations in Germany in 2011.

That effort calls for 350 million hectares of degraded land worldwide to be restored by 2030.

Some countries, including China, India, Malawi, Cameroon and Ivory Coast, have already launched large-scale tree planting efforts with some success.

But researchers said such efforts often get mixed results due to the types of trees used, quality of plantation cover and its value for protecting native species.

Any decisions about changing land use must fully involve local communities, as reforestation should complement rather than compete with food security and land rights, the study said.

"Restoring tropical forests is fundamental to the planet's health, now and for generations to come," said lead author Pedro Brancalion of the University of Sao Paulo.