

Business opportunity in protecting tropical forests: NUS study



Burnt woodland is seen next to an oil palm plantation following fires near Banjarmasin in Indonesia's South Kalimantan province in September 2019. Investing in a forest plot for the purpose of conservation saves it from being cut down for other uses, such as for agriculture or factories. For every unit of carbon dioxide stored by a forest saved from destruction, one carbon credit can be sold. PHOTO: REUTERS

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The 19th century brought on the Gold Rush. Now, amid growing global consciousness of the need to tackle climate change, the commodity in vogue is carbon.

A new study by researchers in Singapore has found that safeguarding the planet's natural "carbon sponges" can be big business.

If about 1.55 billion ha of tropical forests (almost the size of Russia) under imminent threat of being cleared are saved from the axe, these plots could generate returns of more than US\$46 billion (S\$61 billion) a year through the sale of carbon credits, say the researchers from the National University of Singapore's (NUS) Centre for Nature-based Climate Solutions.

In this model, tropical forests essentially pay for their own conservation – and help to line the pockets of "carbon prospectors".

"Businesses are increasingly in-

terested in nature-based carbon credits both as an offsetting mechanism to meet their climate goals and as a new type of commodity for investment and trade," Professor Koh Lian Pin, lead author of the study, told *The Straits Times*.

"For these reasons, people need to know where to source quality carbon credits. Our carbon prospecting science helps to address that need," added Prof Koh, who is director of the NUS centre.

COMMODITY DU JOUR

Investing in a forest plot for the purpose of conservation saves it from being cut down for other uses, such as for agriculture or factories.

This means the land cannot be used to produce physical goods such as crops for food or items like clothing, but is instead left to stand to do what it does best: Soaking up carbon dioxide (CO₂), the main culprit driving global warming.

Trees take in CO₂ through photosynthesis and store the carbon in their trunks, leaves and roots, as

well as in the soil, keeping the planet-warming gas locked away from the atmosphere.

As more countries and companies become aware of the need to slash their emissions, the natural ability of forests to soak up CO₂ opens up a business opportunity. Instead of cutting their own emissions, governments and firms may be willing to pay others to do so on their behalf.

For every unit of CO₂ stored by a forest saved from destruction, one carbon credit can be sold.

The study assumed that a forest conservation project could be established at a cost of about US\$25 per hectare of land, with a yearly maintenance rate of US\$10 per hectare. These funds could be used for project design, governance and planning or hiring of guards to prevent illegal logging, said Dr Zeng Yiwen, a senior research fellow at the NUS Centre for Nature-based Climate Solutions and a co-author of the study.

Based on the prevailing carbon price of US\$5.80 per tonne of CO₂

for the first five years, with a 5 per cent yearly price appreciation for the next 25 years, this amounts to a profit of US\$46 billion a year, the researchers found.

Dr Zeng said the price used in the calculation was the average price of carbon globally for avoided deforestation projects between 2006 and 2018, recently reported by Forest Trends' Ecosystem Marketplace. The carbon savings work out to about 1.8 gigatonnes a year – or about 5 per cent of global emissions, he added.

WHERE IS THE CARBON?

The study looked at the three tropical forest regions of the world – across the Americas, Africa and the Asia-Pacific.

Of the three, the Asia-Pacific is considered to have the highest number of profitable forest carbon sites, the study found.

Forests in the Asia-Pacific region are among the most productive in the world, and have large amounts of carbon accumulated both above ground and under. But they also

face a high deforestation risk – highlighting the urgent need to avoid carbon emissions through forest protection.

Only forests deemed to be at high risk of deforestation can qualify to be a source of carbon credits. Otherwise, money is going into conserving a forest that was not meant to be cut down in the first place – akin to paying to fix something that is not broken. In the climate discourse, this is known as the element of "additionality".

Existing forest conservation projects elsewhere have come under fire for this.

For example, news site Bloomberg reported last December that its investigations uncovered that environmental group The Nature Conservancy was taking credit for preserving trees in the United States that are in no danger of destruction, and that there were concerns the group was facilitating the sale of meaningless carbon credits to corporate clients.

But there were also limitations to the scaling up of forest conser-

vation sites.

For one thing, unless the carbon price goes up significantly – by up to 10 times the amount researchers used for the study – many forest preservation projects would not be viable as the cost to manage the land would be more than the potential returns, the researchers said.

Moreover, even for projects that are profitable, the lure of other more lucrative land uses (such as for agriculture in Brazil and Indonesia, or hydrocarbon exploration in the Democratic Republic of Congo) could pose barriers to forest conservation.

The scientists say that while forest conservation projects are economic activities that could benefit the bottom line and the global climate, they should be done in tandem with other emission-reduction activities.

THE SINGAPORE LINK

Closer to home, there are at least two large-scale forest preservation sites in Indonesia that generate carbon credits. These are run by Indonesian companies Rimba Makmur Utama and Rimba Raya.

When asked what the obstacles to developing more of such projects were, Dr Arief Wijaya, senior manager of forest, climate and the oceans at think-tank World Resources Institute Indonesia, said one challenge was unclear government regulation.

"Even in the latest government regulation derived from the most recent Omnibus Law, the government has not explicitly mentioned the use of forest estate land for restoration ecosystem business," he told ST.

Moreover, he noted that the Indonesian government is hesitant to see other companies similar to the firms behind the two existing projects develop their business in Indonesia.

Dr Arief said: "One reason is that if jurisdictions or private sectors are able to trade forest carbon credits from their regions or concessions, this may reduce the carbon emissions potential generated from Indonesian forests."

He noted that forest conservation projects used for the sale of carbon credits should also benefit the communities living in and around these habitats.

"Otherwise, any forest conservation project may face potential challenges such as social conflict and could lead to project failure," he said.

Singapore had earlier identified carbon services – which include the trade in carbon credits – as a "bright green spark" for the economy as it seeks to recover from the economic fallout of the Covid-19 pandemic.

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