

## Selling the forest to save it

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Cloud forest of Cusuco National Park/Julia Galbenu The best way to protect a forest is to make it worth something. A key question facing forest conservationists, therefore, is how do we make a forest worth more in



its pristine state than it could be as a coffee plantation? Carbon trading schemes may provide an answer. Thinking of forests as a source of climate change mitigation for their ability to absorb carbon dioxide has been around since the early 1990s. Yet as we grapple with how to meet the targets outlined in the Paris Climate Agreement, governments and big

companies around the world will need to reduce their carbon emissions. They can go about this in two ways. First, by actually reducing the amount of carbon they emit; and second, by offsetting their emissions by protecting carbon sinks elsewhere in the world. The latter option is where forests come in. While not all forests



act as a carbon sink, the carbon sequestration potential of most forest trees can be measured, quantified and sold off as carbon credits that allow polluting companies to purchase and offset their carbon emissions. And, while they're at it, obtain a desired green stamp of approval. This cash spent on carbon credits can go straight to protecting forest health by

improving ecosystem management, hiring rangers to deter illegal hunting and curbing deforestation. It can also benefit the local community by funding eco-businesses, eco-tourism and improving farming efficiency.

*A researcher with Operation Wallacea collects data for carbon trading projects/Julia Galbenu*

Cusuco National Park in Honduras is one such area that depends on carbon trading for its future. Nestled in a cloud forest with distinctive flora and fauna that change as one climbs higher among its peaks, Cusuco has been named one of the planet's top 50 most irreplaceable areas for biodiversity. Acting as a biological corridor between North and South America, Cusuco is home to some 270 bird species, 93 reptiles and amphibians, 35 bat species and large mammals like the Baird's tapir and mantled howler monkey. Under a carbon trading model, Cusuco (at 55,588 hectares it's roughly the size of Montreal and Saskatoon combined) could be worth US \$3.5 million per year. That's according to Tom Martin, lead scientist at Cusucos's research station and the KTP research associate in tropical forest monitoring at the University of Hull. "This is big money for a small park," he says.

Challenges and limits But with any grand plan for reducing carbon emissions, there are limitations. While the Paris agreement aims to keep global temperature rise below 2°C, the very idea of the using the forest as a bargaining chip to allow companies and governments to continue polluting is something of a loophole. "This pay there, pollute here policy is not how we are going to solve global warming," Martin says. It will do little to reduce the total amount of global carbon dioxide, blunting any effect the mitigation effort may have had. pay there, pollute here policy is not how we are going to solve global warming. On top of these moral ironies are the practical difficulties that arise from selling forests for carbon credits. In order for the plan to work, a forest must contain a minimum amount of carbon, be under threat and benefit from the carbon trading plan. Proving all this requires a lot of people, time and money. Operation Wallacea, a conservation research charity that gives students the chance to study in the field with academic researchers, is one of the few organizations that can provide this data. Yet even for capable organizations like Operation Wallacea, it can take at least a decade to produce the necessary figures. And even when we possess the data, following procedures to use a forest for carbon sequestration is no guarantee of success. Martin described a 2014 case in Indonesia where the government was allocated US \$1 billion to protect the country's forests. To date, US \$100 million has gone towards discussions of how to spend the money; beyond that, nothing. The Indonesian government has "spent very little on actually preventing tropical deforestation," he says. Globally, it's hard to find many success stories, largely because the idea of using forests to suck up excess CO<sub>2</sub> remains largely untested on a big scale. Wytze van der Gaast, a climate researcher at JIN Climate and Sustainability in Groningen, Netherlands, argued in a 2016 paper in the journal *Climate Policy* that forest carbon trading plans had largely failed to gain much traction as a sequestration method. There are "risks and uncertainties," he wrote, that have kept the market small, including how to factor in forest fires and insect infestations, leakages and how long stored carbon will remain in the forest. Meanwhile, many of our most vulnerable and biologically important forests are not deemed suitable for enrollment in any carbon trading program because they cannot store enough carbon. "There is a negative correlation between carbon stocks and endemism," Martin says, referring to the large number of species found in certain forests that are found nowhere else on the planet. Madagascar is a good example of this. Roughly 90 percent of the mammals and birds that live in Madagascar's Spiny Forest are endemic to the region. "But due to low carbon stocks it can't be protected this way," Martin

says. “As such, some of our most threatened species worldwide cannot be protected through carbon trading schemes.”

*A jewel scarab beetle, one of many rare species that call Cusuco National Park home/Andrew Snyder* Poised for growth Yet for forests that can benefit from carbon trading plans, the positive ramifications are huge. At Cusuco in Honduras, it may appear on a map as a national park; but in practice, with no infrastructure, no government funding and only two administrators, these arbitrary lines provide no actual protection from illegal logging and hunting. Each year, more land is lost and more species are hunted to the brink of extinction. National park status means little on the ground without someone there to enforce the rules, and selling the forest for carbon credits will provide the cash needed to make this happen is the first time ever that million dollar funds have been available for mitigating tropical deforestation. The Natural Forest Standard and the United Nations’ Reducing Emissions from Deforestation and Forest Degradation (REDD+) program are two organizations that aim to protect forests through carbon trading schemes. Currently, only a handful of forests are protected in this

manner. But as the market grows and stories of ecological success spread, more companies are likely to invest in carbon trading. “This is the first time ever that million dollar funds have been available for mitigating tropical deforestation,” Martin says. “As such, for tropical forests with high carbon stocks, this is how they will be protected in the future.”

And the market may be ready for such expansion, JIN’s van der Gaast wrote. “Big



steps have been made in improving the methodologies for carbon accounting in forestry projects,” he said, “especially with respect to addressing uncertainties and mitigation risks.” Unlike the early 1990s when the idea of forests as carbon trading mechanisms was still young, forestry projects are now ready to enter world markets as a scalable solution for storing excess planetary carbon dioxide. Carbon trading schemes won’t end global deforestation, if for no other reason than their current, selective nature leaves out many forests that could help in the fight against global warming. Given the complex processes at work in “buying” forests as carbon credits, right now their effect is small. Yet the importance cannot be underestimated. Given time, these plans can have huge global impacts, preserving biodiversity and helping ensure that irreplaceable patches of our planet remain green.

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