



Conservation

MAGAZINE



Do Trees Grow on Money?

After years of failed attempts to merge market economics with rainforest conservation, the US\$60 billion carbon market might finally be the ticket. That is, if money is all it's going to take.

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The long-held orthodoxy about rainforests has taken it as read that they are worth more alive than dead. Worth more not just to science, to the planet's biodiversity, and to our sense of wonder about nature, but also as cash in hand for the inhabitants of the forests. It is one of the dogmas of the day that good conservation and good economics go hand in hand and that people who destroy their forests are doing themselves, as well as the rest of us, a bad turn. But is it true? And what would it mean if it were not true? What if the world as a whole had a great amount to gain from protecting rainforests but, in terms of cash at least, the inhabitants of the forests did not?

In the most famous study, which set the template for much of the discussion about “sustainable development” at the Earth Summit in Rio back in 1992, Charles Peters of the New York Botanical Gardens found that almost every piece of the Amazon rainforest in Peru contained

hundreds of valuable species. In 1989, he valued the annual harvest at US\$650 per hectare—more than twice its value as either timber plantation or cattle pasture.

The conclusion was obvious. Most rainforests were worth more to locals intact than if they were cut down. Peters' findings have been widely cited ever since. Among other things, they gave a huge push to the idea of creating “extractive reserves,” areas of rainforest protected from logging and dedicated exclusively to the harvesting of nuts, fruits, wild rubber, plant medicines, and other natural products.

In places this has worked. But suspicion has grown that some ecologists have been guilty of wishful thinking and cherry-picking their data. The romance of the fecund rainforest was most elegantly debunked by anthropologist Ricardo Godoy of Brandeis University in Waltham, Massachusetts, who in 2000 published the first detailed household inventory of the fruits of a rainforest. Godoy sent teams of students into a remote region of eastern Honduras in Central America to catalog what Indian villagers harvest from their forests and to ask what that harvest fetches at market.

His two-year study of 32 households in two villages deep in the Tawahka Anthropological Reserve found that the annual harvest of fruit, fish, wild game, medicinal plants, firewood, and construction materials from a typical hectare of rainforest was worth a measly US\$20—less than one-thirtieth of the value found in Peters' Amazon study.

This was a shock for conservationists, but not for Godoy. As he pointed out, few of the previous studies undertook actual inventories of harvested products. They had “focused on what [the researchers] saw as the potential value of the forest, rather than what was actually being taken.” Nor did they ask how the harvesters in remote jungles would get their products to market, even supposing there was a market.

Rural people chop down the forests “because they are poor and stuck with a nearly worthless asset,” said Godoy. “If the forest produced high economic value to these people, they would not be poor.”

A whole cavalry of ecologically minded capitalists has tried to change this gloomy prognosis by upping the value of the forest's fruits. For instance, the Body Shop in the U.K. and Ben and Jerry's in the U.S. have developed international markets for forest products. Forest campaigners have created extractive reserves and hope that “bio-prospectors” might save the day by buying the rights to comb forests for plants to cure cancer or provide valuable chemicals. And in a few places, ecotourism has taken off.

But it has to be said that, eight years on, most of the jungle looks more like Godoy's world than that of Peters. Godoy was never saying that the forests should be allowed to disappear. Far from it. His message was that “tropical rainforests are worth more for their global than for their local value.” And that means, if the world wants to save the rainforest—as it should—then it will have to pay for it.

Now, the money might finally be on the table. A bold move at the U.N. climate change

conference in Bali last December could thrust rainforest conservation into the US\$60-billion global market in carbon offsets. Ton-for-ton, economists reckon, preventing deforestation is the cheapest option for keeping carbon dioxide out of the atmosphere. In other words, what was once an expensive proposition now looks like a hell of a good deal.

Named REDD (Reducing Emissions from Deforestation and Forest Degradation), the new initiative could form a key part of the package of measures that will replace the Kyoto Protocol in 2013—this time with the U.S. most likely on board. With almost one-fifth of global carbon emissions coming from forest loss, the benefit for both the world's climate and rainforests could be huge.

REDD is the brainchild of Kevin Conrad, son of U.S. missionaries in Papua New Guinea. After graduating from Columbia Business School in New York, he began advising Papua New Guinea's prime minister, Sir Michael Somare, on ways to make money out of conserving his country's rainforests through the sale of their carbon storage capacity. REDD was first proposed by the governments of Papua New Guinea and Costa Rica at an international climate meeting in 2005. It has quickly gained traction, especially after the influential 2006 report on the economics of climate change by Sir Nicholas Stern, the British former chief economist at the World Bank. Stern identified avoided deforestation as the cheapest means of stemming carbon dioxide emissions. A two-thirds cut in emissions from deforestation could be done for around US\$5–10 billion a year—roughly half the price of preventing a similar loss of emissions from western power generation. No wonder everyone, from western industrialists to environmentalists and developing world governments, is falling over himself to join in. When Conrad, as head of Papua New Guinea's delegation to the Bali climate conference, formally proposed that detailed negotiations on the scheme begin, he found there was virtually no opposition.

The next step is to hammer out a plan to bring to the climate change conference in Copenhagen in 2009, where the post-Kyoto deal is set to be struck. Two strategies are on the table. One would make outright cash payments through conventional government-to-government aid programs, such as USAID, for efforts to reduce rates of deforestation. The grants would be controlled by donor countries and could be funded by a levy on the existing carbon market, by which Western industrialists meet Kyoto targets partly by investing in cheap clean-energy and anti-pollution projects in developing countries. An alternative, market-driven strategy, favored by Conrad, would allow countries avoiding deforestation to earn carbon credits and sell them directly into the global carbon market.

The potential difference between the cost of avoiding deforestation and the sale price of the resulting carbon credits suggests that there could be huge profits made in this trade. But not everywhere.

A year ago, when a small group of experts at the Woods Hole Research Center in Falmouth, Massachusetts—including rainforest ecologists Daniel Nepstad and Claudia Stickler—started crunching the numbers, the Amazon rainforest came out looking like the bargain rack. In a report presented to climate negotiators in Bali in December, they argued that hundreds of millions of tons of carbon dioxide can be locked up in the Amazon in return for compensation of less than US\$5 a ton, less than a quarter of the current price of carbon credits. Speaking in Bali, Nepstad

said that price would be enough to compensate ranchers, who typically pocket only around US\$500 a year for every hectare of former forest, and to “double the salary of every smallholder and rubber tapper. If we took deforestation to zero in ten years, the cost would peak at US\$1.5 billion a year.”

When the team ran the numbers for other parts of the world, the price tag was much higher. A similar job in central Africa, says Nadine Laporte, also of Woods Hole, would cost somewhat more because the population density is greater. Paying a household to stop slash-and-burn farming might cost US\$300 to US\$1,000 a year, which works out at US\$20–65 per ton of carbon dioxide. Compensation might need to be higher still in southeast Asia, where there are more people living in the forests and where the profitability of alternative land uses, such as palm oil, are higher.

The danger of an open market system is that it would save forest where it can be done most cheaply, rather than where it might be most needed for conservation or indeed for human livelihoods. Also, an open market would inevitably reward today’s rainforest despoilers. Traditional forest dwellers, the ones most in tune with their environment, would by definition be ineligible for compensation. If you are not currently destroying forest, how can you be paid compensation for stopping?

A huge practical issue for REDD is preventing forest despoilers from taking the money for protecting one piece of forest and simply moving the bulldozers and chain-saw gangs into the neighboring forest. Conrad says the solution is to establish national “baselines” of deforestation. Countries would receive compensation only after forest loss fell below that line.

But what baseline? The most obvious would be historical. But most national deforestation rates go up and down according to markets and political vagaries. In Brazil, deforestation rates doubled between 1990 and 2004, then fell by two-thirds until mid-2007 and have since been rising again. Meanwhile, deforestation rates are falling in most of southeast Asia as the natural forests disappear. Should countries be compensated for promising not to fell forests that don’t exist?

One of the world centers of expertise in the study of rainforest economics and the drivers of deforestation is the Center for International Forestry Research (CIFOR), based at Bogor in Indonesia. Many researchers at CIFOR are concerned that negotiators are forgetting about these drivers in their naïve pursuit of REDD. They believe that, unless the incentives to destroy forests are tackled, then any program to stop deforestation will either be impossibly expensive or will fail altogether. In fact, they fear REDD could create its own perverse incentives for deforestation. CIFOR’s director, Frances Seymour—a development economist who has previously worked for the World Wildlife Fund and World Resources Institute—wonders that during the period when REDD is being set up, countries would have a direct financial incentive to accelerate their national rates of deforestation, in order to raise their baseline and qualify for greater compensation later.

Many tropical governments at the meeting in Bali clearly saw REDD as a new supply of cash. Unwilling to make hard choices, they hope simply to harvest that cash without tackling the

economic incentives that still drive deforestation. For instance, the Indonesian state of Riau on the rainforest island of Sumatra is competing for pilot REDD projects while maintaining land-use plans that foresee massive continued forest clearance. Another unresolved concern is that the Indonesian government believes rainforests that are cut down and replaced with monocultures of acacia or eucalyptus for manufacture of pulp should qualify as REDD schemes because they maintain forest cover—something that would be inimical to conservationists.

The idea that REDD could be a huge boon for the forest-dependent poor might be fine in theory. But would it work out in practice? “What happens if you give a family a few hundred dollars and tell them to stop farming?” asks Simon Counsell at the Rainforest Foundation in the U.K., a forthright campaigner for rainforest dwellers. The answer, he says, is that they will either starve, or carry on cutting down the forest, or move elsewhere.

He is not alone in fearing that forest dwellers could lose out. Douglas Sheil is a British rainforest ecologist with long experience in the Borneo and East African jungles with CIFOR. He says that, if practical politics are anything to go by, the poor won’t see the money. In the worst-case scenario, REDD could become an instrument to take the forests away from their traditional inhabitants. The danger is that even people with largely sustainable methods of living in the forests will be demonized as forest destroyers and their land will be handed over to companies that promise to protect the forests.

In this light, REDD looks like a new gloss on an old problem, says Sheil. “The buzzwords have changed, but I think the basic concerns have not. A major issue is still the degree to which local people’s needs and concerns are considered and accounted for in managing the forests.” Agreeing, Seymour fears REDD’s reputation going into meltdown after a few well publicized examples of indigenous people being thrown off their land. If history is anything to go by, the losers are most likely to be the poor.

Godoy no longer follows the debate, but on this account his insights on scientists’ inflated notions about the true economic value of the forests to their inhabitants still seem relevant. And the fate of the inhabitants of the Tawahka reserve is troubling. After Godoy’s study, the Honduran government took away many of their rights in the name of the environment. It declared the whole region a biosphere reserve and gave control over it to the state Forestry Development Corporation. The area had “great economic potential as far as biodiversity is concerned,” it declared. But whatever wealth is there, the Tawahkans are unlikely to be getting their hands on it. Fruits of the forest? You can almost see them canoeing into town to buy chainsaws. The story of Tawahka sounds eerily like a blueprint for the pessimists’ worst nightmares about how REDD could work around the world: annexing the rainforests from their inhabitants in the name of conservation and protecting the climate.