Indonesia Discovers Green Gold in Trees

by Oakley Brooks

THE VILLAGE OF Pante Cermin, in Indonesia's Aceh province, on the island of Sumatra, is a simple, hand-to-mouth place at the rainforest edge. Like many poor rural communities in Asia, farmers will gravitate toward whatever activity is paying well. In recent years, it's been logging in the nearby hillsides. Thanks to a brisk trade arising from post-tsunami reconstruction they can earn more than $200—equivalent to a teacher's monthly salary—for each cubic meter of logged wood.

But lately a new buzz is sweeping through villages such as these on Aceh's west coast about a plan that would put the region on the cutting edge of the environmental movement. In March, Merrill Lynch agreed to pay $9 million for rights to the carbon stored in the trees in a third of the 750,000-hectare Ulu Masen forest that stretches out behind Pante Cermin. Part of the first wave of activity in a speculative market which could see rich countries meeting their greenhouse-gas reductions by paying poor countries for forest protection, the cash commitment from a Wall Street bank could initiate a transformation in Indonesia, hitherto known for *deforestation*.

"This is the first time I've seen a bank say we're going to give you money to not cut down a forest," says John-O Niles, with Sydney-based Carbon Conservation, the firm that brokered the deal with Merrill Lynch and the province of Aceh.

Indonesia has in recent years led the world in deforestation, losing an average of 1.8 million hectares a year between 2000 and 2005. But besides destroying some of the most diverse plant and tree beds in the world and habitat for rare species such as the orangutan and the Sumatran tiger, the gases released from Indonesia's logging and burning for agriculture also contribute 6% of global greenhouse gases, according to the 2006 Stern Review on climate change commissioned by the British government. That puts the country third, behind China and the U.S., among nations contributing to global warming.

But in a change of tack, the Indonesian

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government last year pushed for, and won, assurances from the international community that credits from preventing deforestation would be part of the next global climate treaty planned for 2012. (These types of credits are also currently bought and sold on a voluntary basis, typically by companies looking for goodwill.) In the future, developed countries such as the U.S. or the United Kingdom could help meet their greenhouse-gas targets by paying Indonesia and other tropical nations to stop chopping down forests. The theory is that poorer tropical nations need the wealth of felled forests for their livelihood and wealthy nations need better ways to curb their emissions; a transfer of money in exchange for forest "carbon credits" from avoided deforestation could be the answer to both issues.

But it's far from certain if selling these forest credits to wealthy countries will really reduce deforestation in Indonesia and prove a solution for global warming. For one thing, money would have to find its way through the notoriously corrupt government channels to local communities. "The government is pretty big," says Syafi'i, the chief of Pante Cermin village in Aceh. "It would take a long time for money to get here from the West." Even if the money filters down to communities around the forest, it's a tricky process to convert loggers and slash-and-burn farmers into conservationists. The danger is that without successful grass-roots programs, a forest carbon scheme may end up making carbon brokers and bankers rich but leaving the climate and forests worse off. "We don't want to see people selling the carbon credits to companies for good public relations while out in the field the forest management is getting worse," says Elfian Effendi, with Greenomics, an Indonesian forest watchdog group.

So how does it work? To meet national targets set in the Kyoto climate treaty, big polluters in Europe, such as power companies and cement factories, have to either cut their emissions or buy emissions "credits" on the market placed there by other polluters ahead of their targets or by investors who've brokered, for example, renewable energy projects or factory upgrades in developing countries. Currently, the price for buying credits in Europe hovers around $35 per metric ton of carbon.

Under the new forest scheme, a stand of trees would be "converted" into tons of carbon by international auditors. However, the definition of what constitutes "avoided deforestation" (and thus eligibility under the carbon-credit program) is still unclear. A national park that reduces illegal logging by increased enforcement might qualify. A timber company that agrees not to cut land zoned for logging, or a community that reduces logging in its community forest, may also qualify. World Bank pilot programs across the world are searching for acceptable standards and methods to ensure a project is consistent with a country's overall plan to reduce deforestation. That way deforestation isn't simply being pushed around to new areas of a state.

Carbon Conservation sold Merrill Lynch on the likelihood that the project organized in Aceh will meet a new global standard for reversing deforestation. In the Ulu Masen project area, about 60% of the land is slated for legal logging, according to Carbon Conservation's calculations, and illegal logging has been on the rise since the end of the jungle conflict there in recent years. The Aceh provincial government has committed to cancel any logging rights and to halt illegal logging in the area.

"The investors were probably most nervous about illegal logging," says Mr. Niles. "[But] once they saw the real on-the-ground enforcement actions by the governor, they stepped up and made their intentions known with money."

Forest carbon proponents in Indonesia

have few successful projects to point to because the practice is so new. The 10-year-old Noel Kempff Mercado program in Bolivia is one project that worked for forests and developing-world villagers. There, the U.S.-based Nature Conservancy teamed with the Bolivian government and several energy multinationals to buy land slated for logging, turn it into a national park and invest in development in local communities. The halt of logging and slash-and-burn agriculture in the park promised to avoid 5.8 million tons of carbon emissions over 30 years. At the same time, studies showed that while locals lost hunting rights and logging and sawmill jobs, their incomes and well-being improved as money and expertise came in for health clinics, agricultural development and new land titles.

Elsewhere around the developing world, conservation groups have found in the last two decades that payments and in-kind benefits can co-opt both villages and governments into activities such as forest protection and species conservation; they tend to work best with villagers when benefits can be suspended quickly if goals aren't met. Conservation workers in Indonesia describe an openness to similar incentives on the ground level there. "It's often true that locals are the ones holding the chain saws," says Helene Barnes, with Flora Fauna International in Aceh. "But give them a way out and they're willing to take it." And as locals have watched Sumatra and Kalimantan, Indonesia's section of Borneo, deforested over the last decade and a half, the impact of dangerous flash floods in denuded areas has brought new support for forest protection.

Forest projects already have new support in the halls of power in and out of Indonesia. The potential upside of the business—the World Bank has estimated carbon credits could be worth $2 billion in Indonesia alone—has drawn a wave of new expertise and capital intent on making the market work (in addition to locking in carbon-credit options while the price is still low). Companies are being cagey about details, but close behind the Merrill Lynch venture, Sydney's Macquarie Bank has announced a partnership with the nonprofit Flora Fauna International (also active in the Aceh Ulu Masen project) to explore projects to convert forests into carbon credits in Kalimantan, the Indonesian section of Borneo, and the far east region of Papua. Aceh's Governor Irwandi Yusuf also recently inked a deal with London-headquartered brokers Sustainable Forest Management, which is backed by a $200 million investment from Credit Suisse, to form a joint partnership company and explore carbon credits and other green development of the massive 2.8 million hectare Leuser forest in southwestern Aceh. Meanwhile, New Forests, an Australian timber management company, signed an agreement with Governor Barnabas Suebu of Papua to develop carbon sales on three tracts of land in the province.

The three governors of Aceh, Papua and West Papua have enjoyed backing from President Susilo Bambang Yudhoyono and forestry chief M.S. Kaban. At the Bali climate conference last December, President Yudhoyono gathered other governors from around the country and urged them to follow the lead of these "green governors."

But it's not clear that the budding support at the top is enough to overcome the twin threats of corruption and illegal logging in Indonesia. A widening a corruption scandal involving the national Bank of Indonesia has threatened even some in President Yudhoyono's cabinet (Mr. Kaban was implicated). Meanwhile, early climate program budgeting has been questionable; in July, government officials admitted to using $500 million in international loans earmarked for non-forest climate projects to cover the national budget deficit, recently growing due to Indonesia's ongoing subsi-

dies for motor fuel. Nearly everyone involved in the burgeoning forest carbon industry in Indonesia is pushing for funds to bypass the national offices in Jakarta on their way to forest communities and other regional stakeholders.

Police and military crackdowns in places such as Papua have reduced the flow of illegal logs overseas in recent years. But there are still reports of illegal wood flowing through to Chinese finishing mills and then into Western living room floors. And though palm-oil earnings have fallen in half to about $500 per hectare for farmers, environmental watchdogs still worry about a new trend in which government officials at all levels are signing off on the conversion of forest land to new palm-oil plantations, because they sorely need economic development and the new ventures promise new government revenues and payoffs. Indonesia's cloudy title system allows those with the most political power to gain access to new land.

Meanwhile, people continue to flout forestry laws even in Aceh, where Governor Irwandi has a logging moratorium blanketing the province. On a recent day near the West Coast town of Lamno, at a tin-roofed, open-sided mill, workers were pushing large hunks of hardwood through a rotating saw and stacking the finished boards nearby. This was all happening about 10 kilometers from a forest police post, staffed by some of the 1,000 new forest guards hired to enforce the moratorium.

Even with some willingness among people to change behavior, it's not clear that an infusion of cash and new community programming will fundamentally change attitudes toward the forest. European Union and World Bank projects in the 1990s built irrigation canals and offered new livestock for villages on the outskirts of Leuser's national park and another park in Kerinci-Seblat, to the southwest. In most cases, reviews found the projects failed to improve attitudes toward the parks or slow illegal logging. A report by the World Bank suggests the main flaw was not tightly linking the economic benefits to conservation.

And that's where forest carbon projects will have to improve on the past. "We've got to figure out how to make investments here that link people's welfare with continued protection of the forest," says Mike Griffiths, the conservation coordinator for the Aceh provincial government working with Sustainable Forest Management on the new Leuser project. Forest carbon projects will have to do it without making direct payments to villagers: in most cases the carbon credits, even at European prices, only work out to pennies per person per year. Instead, carbon credits need to jump-start new local economies and incentive programs; they'll have to recreate some of the isolated success of the Noel Kempff program in Bolivia, half a world away and on a much broader scale—about 130,000 people live on the edge of the Ulu Masen forest, whereas the Noel Kempff project affected 2,100.

As part of the Ulu Masen deal, Carbon Conservation, local environmental groups and the government plan to put carbon funds toward alternative crops such as rubber, cocoa and low intensity timber. The Leuser team is also exploring high-end safari tourism like that found in African parks and small-scale hydroelectric installations that would encourage locals to protect watersheds to keep the electricity flowing. The success of forest carbon programs will turn on these largely unproven, local programs. But it's going to take time. "This market is not something to rush into," says Mr. Griffiths. "If it's properly established, it's not going to happen in a day. They say you need 25 years to establish conservation ethics in an area." If it's going to be a true solution to global warming, however, forest carbon will have to find answers to its grass-roots problems much sooner.