



Paying to save trees

## Last gasp for the forest

A new climate treaty could provide a highly effective way to reduce carbon emissions by paying people to not cut down forests

IN THE south-eastern corner of the Brazilian state of Amazonas, in the municipality of Novo Aripuanã, there is thick forest cover—for now. But as new, paved highways are driven into the trees, illegal loggers inevitably follow. At the current rate of deforestation, around one-third of the forest in Amazonas will have been lost by 2050, releasing a colossal 3.5 billion tonnes of carbon dioxide into the atmosphere.

Novo Aripuanã is the site of a novel response to this threat: the Juma Sustainable Development Reserve, an area of 600,000 hectares (1.2m acres) bordered by two highways. This is a nature reserve with an unusual twist: local people will be paid to prevent the trees from being cut down. Each family in the area has been issued with a debit card. Regular inspections will ensure that the trees are still standing: as long as they are, families will have 50 reais (\$28) a month credited to their accounts.

These funds come from the rich world, where governments and companies that cannot reduce their own emissions cheaply are prepared to pay others to reduce emissions on their behalf (as “carbon offsets”). Not cutting down trees in endangered areas prevents emissions that would otherwise have occurred, which gives untouched forest huge financial value—and provides people who live in the forest with

an incentive to preserve it.

This idea is known as “avoided deforestation” or “reducing emissions from deforestation and degradation” (REDD). At the moment REDD is not so much a plan as a collection of proposals and some working schemes, like Juma. The fate of the forests in Brazil, Indonesia, the Philippines (pictured above) and elsewhere around the world could hang on the success of this approach. But there will need to be substantial international commitments to reduce global emissions to create demand for the carbon offsets that REDD schemes can provide. This means a lot hangs on a deal being struck in December in Copenhagen, where countries will meet to negotiate a new climate treaty.

### Burning problems

Amid concern that progress towards a new treaty is slipping, Ban Ki-moon, the secretary-general of the United Nations, hosted a summit in New York this week to encourage nations to agree to carbon-reducing policies. REDD was high on the agenda, and governments and the private sector were urged to start investing in such schemes. There has also been talk of wrapping up carbon offsets into “forest bonds” to interest pension funds.

Preventing deforestation is potentially

one of the simplest ways to reduce global emissions. At the moment, carbon emissions from deforestation account for some 18% of global greenhouse-gas emissions, more than all the world's trains, cars, lorries, aeroplanes and ships combined. Reducing deforestation and land-degradation will be vital if temperature increases are to be kept to within safe levels (generally assumed to mean no more than about a 2°C increase). Some argue it would be a quicker and cheaper way of reducing emissions than many alternatives, such as weaning the world's vehicle fleet off fossil fuels, forcing people to cut back on energy use or switching to low-carbon forms of power generation, such as wind farms and nuclear power. All those things will be necessary too, but they will take a long time, will require new technologies and cause controversies of their own.

Paying people to not chop down trees looks easy by comparison. It does not depend on any elaborate or costly new technology and is likely to be able to garner the required political support. Achim Steiner, the head of the UN's environment programme, thinks avoided deforestation should be an easy thing to sell. As well as reducing carbon emissions, keeping forests standing also protects soil from erosion, improves the quality of water, helps regulate rainfall and ensures biodiversity. “How on earth can we not afford to make this work?” he asks.

But if it is to work, REDD must address the failings of the UN's Clean Development Mechanism (CDM), which forms part of the Kyoto protocol, the 1997 treaty that aims to curb greenhouse gases. Since 2006, the CDM has allowed developing countries to sell carbon offsets, known as



credits, for adopting green technology: switching an entire village to energy-saving light bulbs, for example, or planting lots of trees. The CDM has been criticised, however, for allowing countries to sell credits even for dubious things like building dams. There are also concerns about enforcement. And the Kyoto rules do not allow countries to sell offsets from avoided-deforestation schemes. Planting new trees qualified, but refraining from cutting down existing ones did not.

REDD raises further concerns of its own. One of the main criticisms of it is that some rich countries might, in effect, outsource the tricky business of reducing carbon emissions to the developing world, by buying carbon offsets and continuing with business as usual at home. Some also wonder if the promised amount of carbon reduction could be so large. Gilberto Câmara, head of Brazil's National Institute for Space Research (which monitors deforestation from space), thinks that REDD's capacity to deliver global emissions cuts is being oversold. Based on his analysis of Brazil, which accounts for 40% of the world's deforestation, he says there is no way the world can cut 18% or so of emissions through avoided deforestation. This figure is based on outdated estimates of the rate of deforestation, which has fallen dramatically in Brazil in recent years, he says.

This highlights another problem with REDD: it is hard to say how much deforestation there would have been anyway. Benchmarking REDD schemes against existing data, which can be out of date with higher rates of attrition, would give an exaggerated impression of their effectiveness, overstating the volume of emissions that had been prevented and causing rich countries to pay too much.

Nicholas Stern, a British economist and author of a report for the British government which put avoided deforestation on the climate agenda in 2007, says the exact amount by which emissions can be reduced is not terribly important. "It actually doesn't matter whether it is 15% or 20%—the point is that it is big," he says. What if Dr Câmara is right and avoided deforestation can reduce emissions only by, say, 10%? "I suspect it is not that low, but 10% is still a big slice," says Lord Stern. "The point is to get the mechanisms going and the funding at a serious level."

A further difficulty is that countries that have already taken effective action to prevent deforestation, such as Costa Rica, will be unable to benefit from a REDD scheme; it would, paradoxically, end up rewarding the worst offenders, since they would have the greatest scope to mend their ways, and get paid to do so. Various proposals have been put forward to pay retrospective rewards to such well-behaved countries.

Provided these problems can be overcome, what would REDD cost? Again, hard

and fast figures are difficult to come by. The cost of setting up and running REDD schemes is unclear, and successful efforts to reduce deforestation would probably drive up timber prices, which might then make it necessary to pay more to prevent deforestation. Estimates for the cost of halving the rate of deforestation (and therefore reducing global emissions by as much as 9%) range from \$7 billion to \$28 billion a year. These costs do not include the initial set-up process, during which appropriate enforcement mechanisms would need to be put in place in leafy-but-dodgy countries.

If avoided deforestation is to work on a global scale, it will need to involve Indonesia and Congo, countries where corruption and mass deforestation go hand in hand. So REDD projects will require reporting, auditing and monitoring mechanisms. The advent of low-cost satellite imagery will help, but all this will still be expensive.

### Seeing the wood

Assuming world leaders cut emissions by 20-40% relative to 1990 levels, however, the scale of the investments required would be about right, according to the International Institute for Environment and Development. This British think-tank says the global carbon market will be worth \$118 billion a year, so if 10% of the reduction in emissions was achieved by purchasing REDD offsets, forest-carbon credits will be worth \$11.8 billion a year.

The world has rallied around the idea of REDD with remarkable speed. The UN, the World Bank and governments in several countries, including Australia, Britain and particularly Norway, have already stumped up around \$800m over the past two years to get REDD projects going. Be-

noit Bosquet, head of the World Bank's Forest Carbon Partnership Facility, says early funding is important to allow organisers to get started in anticipation of a new global climate agreement.

Even if the world fails to reach a deal in Copenhagen, REDD schemes like the one in Juma will not grind to a halt. Many countries, notably America, are expected to rely heavily on the purchase of forest-carbon credits as part of their efforts to reduce emissions.

One way to do this is for governments and companies in particular countries to fund REDD projects in other countries directly. The drawback of this approach is that instead of bringing into being a truly international market for carbon credits, it looks rather more like traditional bilateral aid. Such projects would also be vulnerable to political manipulation. For example, if America started bilaterally financing REDD projects it is easy to imagine that the State Department would insist on having a say over which countries should receive funds and which should not. The result could be a kind of arboreal Washington consensus, with an approved set of tree-related economic-policy prescriptions.

Another disadvantage is that different schemes will end up being subject to different rules, regulations and standards, so it will be difficult to compare them. If private-sector investors are to provide capital for REDD schemes, they would much prefer an international trading scheme where credits are fungible across the entire market. Abyd Karmali, head of carbon emissions at Bank of America Merrill Lynch, says such a scheme would set a harmonised standard for forest-carbon credits and might include rules for profit-sharing with indigenous communities or local



Learning in the forest



landowners, monitoring and verifying credits and protecting biodiversity. Without such standards, he says, the result could be "sustainability arbitrage", where project developers and companies flock towards less sustainable schemes that offer cheaper credits.

There are also concerns about market-based schemes. Even though markets could provide much-needed finance for REDD schemes, many people are uncomfortable that they could also yield big profits for investors and landowners. In China, a market-based scheme to encourage companies to phase out a powerful greenhouse gas, HFC-23, produced such enormous windfall profits for some companies that the government felt it necessary to impose a 65% tax, with the proceeds invested in green development projects.

It seems likely, however, that REDD will start off as a series of funded projects, with a market in forest-carbon credits emerging in a few years' time, depending on what happens at the Copenhagen meeting. Many people expect that ultimately both approaches will co-exist.

However they end up working, REDD schemes will still face the question of how to distribute the money they produce. Governments could launch national initiatives to prevent deforestation, selling credits and directing the proceeds to the activities it believes are effective. One advantage of this country-level approach is that any "leakage" of deforestation (where a forest protected in one area shifts deforestation to another) would be easier to control. But governments will need to distribute some of the money on the ground—especially if the locals feel they have every right to cut down their trees.

In Juma, in addition to the payments made directly to local people, proceeds from the scheme also support investment in schools, hospitals, transport, communications and helping people find new, sustainable sources of income. All of this makes REDD look very much like traditional development aid. But Mr Karmali says he would not want to get involved with any REDD project that did not involve local communities and environmental groups. "We can't make the mistake of thinking we have all the answers," he says.

### Watching carefully

Preventing deforestation does not simply involve close monitoring of forests themselves. Mr Bosquet of the World Bank thinks the forces driving deforestation "are mostly outside the forest sector and are the big challenge for REDD." Dr Câmara points out that in Brazil 90% of deforestation is illegal encroachment driven by the desire to make money from timber and agricultural products grown on cleared land, such as soybeans. Rather than paying money to criminals, he says, international traders



Last one standing

should refuse to buy timber, soybeans and beef from deforested land. A number of schemes try to certify that products such as timber or palm oil have been produced without causing deforestation. But so far the results have been disappointing: European consumers are reluctant to pay premium prices for goods made from certified timber, for example.

Palm oil, much of which is produced on land that was once virgin rainforest in Indonesia, is a particular problem. According to a report by McKinsey, a consultancy, if the present rate of deforestation continues, Indonesia will lose 1.1m hectares of forest every year until 2030. A plan to certify palm oil seems unlikely to help. The idea that air travel has environmental consequences is now widely understood, but the environmental consequences of palm-oil-based toiletries are not. Even a big multinational such as Unilever says it can do little to insist that its suppliers do not use palm oil from deforested land, since the power in the market rests with the sellers.

Deforestation is an integrated and multidisciplinary problem, says Mr Bosquet. That means preventing it may involve adopting different strategies in different countries. In some parts of the world, such as Indonesia, this might mean launching efforts to increase agricultural productivity and the use of marginal land in order to reduce the pressure for forest conversion. In other parts of the world it might involve certification or helping people find alternative ways to earn a living.

Land tenure is another big flashpoint for REDD. There are fears that putting a value on forests will lead to land-grabs in areas where property rights are poorly de-

fined and not well protected. In Africa, for example, governments claim ownership of 98% of the forest, but making REDD work will involve recognising the rights of those who live in the forest too. If that does not happen, there is every reason to fear large-scale corruption and human-rights abuses, because it will be far cheaper and quicker to clear people from the forests than to work out a sustainable way for them to stay.

Even though governments have yet to introduce legislation to govern the trade in forest-carbon credits, some private-sector investors have not been content to wait. This impatience brings risks. In Papua New Guinea, landowners have been hoodwinked into paying to get involved in non-existent deals that promised huge returns from "sky money". The local World Wildlife Fund office has even been asked by landowners how the carbon from burning trees will be captured and transported to the capital. International negotiators decry the behaviour of "carbon cowboys", but they have to recognise that private capital can move a lot faster than plodding national and international legislation.

Overshadowing all these discussions is the spectre of the CDM, which has been bedevilled by its lack of transparency and the difficulty of proving that its carbon offsets are genuine. REDD is a big idea that will work only if all these smaller problems are sorted out. It probably will help to prevent deforestation and to reduce carbon emissions, though perhaps by less than some people hope. But it has the potential to tackle such a big chunk of global emissions, and deliver so many other environmental benefits, that it is worth trying.

### Making it work

There are risks for forest dwellers, who must rely on outsiders both to ensure that their rights are protected and to provide an alternative path for economic development. But although REDD poses risks, the alternative—in which deforestation continues as usual—presents even greater long-term environmental and economic dangers, because the world's poor will bear the brunt of climate change.

Doing nothing, in short, would be more dangerous than giving REDD a try. Kevin Conrad, Papua New Guinea's climate ambassador, says financial systems must begin to take account of environmental values "if our economies are to survive". Given that the basic principle of REDD is to establish a financial link between those who will benefit from preserving forests and those who must ensure the forests' survival, it is an economically sound idea. The question is whether the world has the determination to create a system that will work. Some, like the UN's Mr Steiner, say that it isn't rocket science. Others, though, wish it were that simple. ■