Seeing the wood for the trees

Negotiators in Copenhagen are poised to direct carbon finance to efforts to reduce deforestation and degradation. They must avoid the mistakes made at Kyoto, and acknowledge advances in understanding forest carbon, say **Sandra Brown** and **John Kadyszewski**

Forestry issues have returned to a position of importance in global discussions of how to address climate change. In the US, they appear prominently in the climate bills introduced in both the House of Representatives and the Senate, and they are expected to be a vital component in any post-2012 international climate change agreement.

The return of forestry to the climate talks will re-open many past debates and is sure to re-ignite old controversies. Fortunately, the global forestry community now has a broader and deeper understanding of the role of forests in the global carbon cycle, along with considerable experience in the development and testing of carbon crediting methodologies and protocols and in the design and implementation of projects.

The current international forestry discussion is focused on reducing emissions from deforestation and forest degradation – known as REDD – and the role of conservation, sustainable forest management and enhancement of forest carbon stocks in developing countries. Deforestation and forest degradation, a result of land-use changes such as cropland and pasture expansion, infrastructure development, unsustainable logging, and planned and unplanned forest fires, account for around 18% of global greenhouse gas (GHG) emissions. However, that figure is only part of the story, underestimating the impact of forest loss in the developing world.

In many countries outside the OECD, the major source of emissions has been, and continues to be, deforestation. In Indonesia, which has large coal-fired power plants, a significant oil economy, many diesel generators supplying power off the main grid and considerable fuel needs for transportation among the islands, the largest single source of annual emissions is from deforestation. That is one reason why Indonesia led the call to include REDD in the Bali action plan agreed at the 2007 UN Framework Convention on Climate Change Conference of the Parties that the country hosted.

The goal of the discussions around REDD is to create a monetary value for the carbon stored in forests under threat of deforestation or degradation, allowing developing countries to, in simplified terms, be paid to protect forests rather than cutting them down or allowing them to be degraded. Financial incentives would, in theory, encourage developing countries to find climate-friendly ways to improve the lives of their citizens and protect the rich biodiversity of tropical forests, among other goals.

The issue of avoided deforestation and degradation was famously omitted from the 1997 Kyoto Protocol. Several major environmental groups labelled it a "licence to pollute", that would see industrialised countries simply pay poor tropical countries to protect existing forests while continuing to emit GHGs. Nothing would be gained, it was said, except permission to continue business as usual.

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The problem with that view is that it removed from the Protocol any incentive to reduce the emissions caused by deforestation and degradation and the associated impacts on people and the environment, including flooding caused by run-off from deforested hillsides, rising sea levels around tropical islands and loss of habitat for endangered species. Understanding of this issue has changed, as many organisations now see that deforestation and degradation are a substantial and ongoing source of global emissions, and one that we could, at low cost, address with potential benefits for land and people. There is now a broad-based constituency that sees REDD projects as not only legitimate but essential to a post-2012 climate regime.

Avoided Deforestation Partners (ADP) is one group formed to promote REDD projects in the global carbon market. ADP estimates that stopping deforestation in the eight countries most responsible for global deforestation emissions would cost a minimum of $15 billion annually. The group believes that if worldwide carbon policy were focused on stopping deforestation, leverage provided by the private market would help significantly in financing sustainable forest protection.

Nonetheless, organised opposition to forestry projects has reappeared with familiar arguments and tactics. Kyoto included non-REDD forestry projects – providing carbon credits for afforestation and reforestation – but they were created as a separate type of project. Kyoto forestry credits are temporary and aren't fully fungible with other types of credits. As a result, almost none have been transacted. Similar treatment is being suggested for REDD projects – and would be likely to have the same chilling effect. If REDD credits in the compliance carbon markets of North America, Europe and Japan are not fully fungible with other types of credits, they will attract few buyers.

For investors considering REDD, a vital issue concerns how the market will be divided between command-and-control initiatives – that is, agreements between national governments – and market mechanisms. The American Clean Energy and Security Act of 2009 (ACESA), also known as the Waxman-Markey bill, could have a significant effect on private-sector investment opportunities in REDD projects, depending on the form it ultimately takes. The bill, passed by the House in June, requires that revenues from the auctioning of 5% of US emissions allowances through 2025 are used to achieve cumulative supplemental emission reductions from REDD in developing countries of at least 6 billion tonnes of carbon dioxide by 2025.

As written, the bill would see the US help build capacity in and enter into bilateral agreements with individual countries, helping them reduce emissions from deforestation and forest degradation – countries will make a mitigation commitment to end deforestation within 20 years after they enter the programme – in exchange for payments. The bill has the potential to make the US the major buyer of REDD project offsets.

Other countries, most notably Norway, have also shown interest in government-to-government agreements for REDD. Exactly how these agreements will interact with market mechanisms remains unclear. There is general recognition of the need for sub-national pilot projects to set the stage for national programmes and the

need for private capital to augment public investment in REDD projects. However, if countries with large deforestation rates agree to reduce those rates under some kind of a treaty commitment, it could take tonnes out of the private offset market.

In the US, analyses carried out by various public and private institutions show inclusion of REDD to be an important factor affecting the cost of future compliance with proposed carbon reduction targets. The Environmental Protection Agency and the Congressional Budget Office both project significantly higher costs of compliance without REDD. A widely cited McKinsey study estimates that REDD could contribute almost a third of the 2020 lower-cost reduction potential.

Despite growing acceptance, REDD projects face challenges. One key obstacle will be capacity. Although substantial progress has been made in building the base of knowledge about the design of forestry projects, many governments have not created the necessary national frameworks for projects to advance. The need for skilled local people and organisations to develop national and sub-national baselines (against which crediting would take place) and to carry out effective measurement and monitoring will be far greater than current supply.

A second obstacle stems from questions of land ownership. In many developing countries, land ownership and tenure are very unclear, especially in areas where there has been limited development. National governments often control forest land, yet ownership may be complicated by competing claims from regional and local governments, private individuals and companies, and indigenous peoples. Markets won't recognise credits for REDD unless the seller has undisputed rights to sell and there is confidence that the governance and judicial system is willing and able to recognise and enforce agreements.

For project proponents seeking to register offsets on the American Carbon Registry, a voluntary carbon offset programme, the ability to demonstrate clear and uncontested title has often proved difficult. In a market-based system, the ownership challenge will be addressed country by country. Countries that make the most progress in clarifying land tenure and ownership and land-use issues will attract the most investors. Countries with laws, and a track record of enforcing them, will be the places where private-sector investors have the highest confidence to undertake carbon-offset projects.

The risk of emissions after an agreement is signed presents a third obstacle. In general, there are two parts to this concern, leakage and permanence. Leakage involves the risk that emissions from deforestation or degradation will still occur, either in the protected landscapes themselves or in similar land types elsewhere. A government or private company might agree to protect 100,000 hectares of rain forest in one location, only to see an equivalent logging or agricultural project occur in another part of the country or another nation altogether, resulting in no net carbon sequestration. National baselines and monitoring systems can alleviate these concerns, but they still pose a real risk.

Permanence concerns the risk of conscious or unplanned emissions in the target area. A national government might, sincerely and in good faith, agree to protect its forests and accept payments for doing so. What happens years later if, for example, an election or revolution brings to power a different government that decides to negate previous agreements? Or if a natural disaster such as a hurricane or accidental fire destroys a protected forest?

For the private sector, the way to address permanence and leakage is risk analysis and insurance – risk analysis first, because risk is going to be project- and country-specific. Winrock International has pioneered ways to estimate and address risk for REDD and continues to work with a variety of partners, especially insurance providers, to specify and quantify each type of risk. The insurance industry has experience with many categories of REDD risk, and is equipped with the tools to address risk over long time frames. For example, losses from storms and fires affect other sectors, as does political risk. The application of risk-management tools will improve and become more cost effective as insurance providers become more familiar with REDD.

Can carbon markets help finance the alternative?

One area in which great progress has been made over the past 15 years is the development and dissemination of methodologies to set baselines, measure and monitor carbon stocks and any changes in carbon stocks, and to verify whether forests remain intact. Winrock International has been working since 1993 on perfecting robust, transparent and cost-effective carbon-measurement methods, as well as remote-measurement systems that often obviate the necessity of sending teams to survey forests on the ground. Techniques using satellite and three-dimensional aerial photography allow monitoring not just of overall forest cover, but also of the quality of the forest, even to the point of revealing the cutting of individual trees. Aerial surveying is less suitable for extremely rugged forests with great differences in elevation, but such forests are at less risk of deforestation and degradation than more accessible areas.

Another area of progress is the ability to identify forested areas under threat. Winrock has also developed methods, based on factors such as proximity to roads, agriculture, and urban areas, as well as topography, which can predict with high confidence threats to a particular area from deforestation and degradation. This provides another tool to assure that project risks and benefits are measurable from the national to the project scale.

REDD projects, with their associated issues including land ownership, leakage, and permanence, cannot happen in the dark. If investors are to be involved in this arena, they must have the confidence that what they're buying is real, and has been measured and is verifiable. The science and the tools are here to provide that confidence. EF

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