

FORESTS AND CARBON MARKETS: OPPORTUNITIES FOR SUSTAINABLE DEVELOPMENT

SANDRA BROWN AND TIMOTHY PEARSON
WINROCK INTERNATIONAL

Executive Summary

The motivations for substantive inclusion of forest carbon in greenhouse gas abatement efforts are strong. For starters, forest carbon projects can be implemented immediately and do not need any new technologies, and the science behind estimating their carbon benefits is robust. Secondly, the projects are unique in that they can positively impact the poorest and most disadvantaged people in the world by providing them with needed financial resources. Lastly, forest carbon projects can be used to simultaneously mitigate against and adapt to climate change.

Yet, as of July 2009, forest projects represent just 0.36 percent of all registered projects and just 0.09

percent of annual emission reductions in the Clean Development Mechanism (CDM). To more fully incorporate forest carbon projects and activities into greenhouse gas abatement efforts a number of issues must be addressed including: the fear of leakage; expanding the sphere of project types eligible for crediting beyond just afforestation and reforestation; and relaxing the overly onerous and costly requirements for projects.

However, if at the climate change negotiations in Copenhagen the “enhancement of carbon stocks” is included under the proposed Reducing Emissions from Deforestation and Degradation (REDD+) mechanism *and* if that enhancement is clarified to include

forestation of lands not currently forested, then REDD+ could become a robust alternative mechanism to CDM for realizing the opportunities of forestry to advance climate goals.

Introduction

The Intergovernmental Panel on Climate Change (IPCC) assessment reports clearly show that there is significant potential to mitigate greenhouse gas emissions cost-effectively from changes in how humans use and manage forests. Yet, here we are almost a decade after the Kyoto Protocol was ratified with little adoption of forest carbon CDM projects for compliance by Annex 1 countries for a variety of reasons that will be presented here. What lessons have we learned from the dismal use of forest carbon markets for mitigating emissions and how can we use the lessons in the new discussions ongoing for a post-Kyoto agreement?

The Role of Forest Carbon in the Clean Development Mechanism

Forestry forms one of 15 project sectors under the CDM. However, as of July 2009, forest projects represented just 0.36 percent of all registered projects and just 0.09 percent of annual emission reductions. These statistics alone show a clear failure of forestry under the CDM. Blame for this failure can be shared between the limitations on the use of forestry projects to meeting Kyoto commitments and the limits placed on investment in forestry offsets particularly by the European Union.

A European-wide emissions reduction and trading scheme (the EUETS) explicitly excluded credits from land use, land use change and forestry. The exclusion of forestry projects from the EUETS represents a sub-

stantial barrier to investment. Yet the total market was \$126 billion, and primary and secondary CDM transactions alone totaled \$33 billion outside the EUETS, so although the EUETS exclusion was a limitation on forestry projects, it alone cannot explain the fact that forestry projects represent only 0.1 percent of all annual emission reductions achieved by the CDM. To fully explain the failure it is also necessary to examine the rules governing forestry projects under the CDM.

It was decided at the Conferences of the Parties to the United Nations Framework Convention on Climate Change in 2001 and 2002 that the modalities under which forestry projects have to operate include the following limitations to their potential to contribute to meeting Kyoto commitments:

Project Type

The CDM modalities limit forestry projects to solely afforestation and reforestation (A/R) despite the fact that substantial cost-effective opportunities exist for other activities such as preventing deforestation or changing forest management. Tree planting projects present challenges for project developers because the great majority of costs occur at the beginning of the project with site preparation and planting expenses, yet credits only become available gradually as the trees grow, with the fastest growth likely to occur 10 or more years into the project.

Land Eligibility Criteria

Afforestation/reforestation projects are only eligible in areas that have been continuously deforested since at least December 31, 1989. The purpose is to avoid a perceived perverse incentive to deforest in order to create lands for afforestation and carbon crediting.

When the modalities were completed in 2002, the end of 1989 was 13 years in the past. It is now almost 20 years in the past. An ever greater area that would potentially be available for tree planting is excluded. In addition, it can be challenging to prove the absence of forest so far in the past in the relatively early days of remotely sensed imagery. The alternative approach adopted by voluntary registries is to set a moving 10 year window in which areas are not eligible for tree planting.

Temporary Crediting

Perhaps the greatest damage to forestry under the CDM was caused by the adoption of temporary crediting—driven by the fear that carbon sequestered in trees would ultimately be returned to the atmosphere. Afforestation and reforestation projects, alone among the 15 sectoral scopes under the CDM, are eligible for temporary certified reductions (which expire after 5 to 9 years) or long-term certified emissions reductions valid for up to 30 years but only delivered in segments alongside the growth of the trees. The fact that any offsets derived from forestry projects must be replaced creates a lower class of credits. These credits are not fungible and as such are not attractive to many investors.

The combination of the restrictive modalities and the exclusion from European trading has been fatal for forestry under the CDM and as such the sector has been a failure. Given the inclusion of “enhancement of carbon stocks” (yet to be defined but could include forestation of lands not currently forested) under the proposed REDD+ mechanism, many of these limitations in the CDM would be removed. If at Copenhagen the “enhancement of carbon stocks” is included under the proposed REDD+ mechanism and if that enhancement is clarified to include for-

estation of lands not currently forested, then REDD+ could become a robust alternative mechanism to CDM for realizing the opportunities of forestry to advance climate goals. Many of the existing obstacles under the CDM would be removed because forestation would become part of the REDD+ system of national monitoring, accounting, and reporting. Rolling up forestry into the REDD+ mechanism would avoid double counting and start to set in place a more comprehensive land-based GHG accounting and reporting system in developing countries.

Obstacles to Incorporating Forest Carbon Projects and Activities More Fully in Greenhouse Gas Abatement Efforts

The obstacles to forest projects are significant. The most critical obstacle to incorporation of forest carbon is full fungibility. And the issue at the crux of fungibility is permanence. The non-fungible temporary credits came about because of the fear of the impermanence of forest carbon stocks. An innovative solution adopted by much of the voluntary market is the use of a risk buffer. The more risky a project, the larger the proportion of credits that will have to be set-aside in the buffer account. As a project proves itself through time an increasing proportion of the buffer account is released for sale by the project. The buffer account is held centrally so that across the forest project portfolio sufficient credits exist to cover the risk of failure. Under a post-Kyoto regime, the use of buffers to address permanence should be considered.

The second great concern regarding forest carbon projects is the fear of leakage. Some fear that commercial activities will be displaced or that decreases in marketable products will lead to growth in demand and land use change elsewhere in the country or in

the world. However, leakage is not unique to forest carbon projects and accounting for it in non-forest projects appears to be of limited concern. The risk for leakage due to the displacement of activities can be minimized if the livelihoods and needs of relevant stakeholders are taken into consideration during the project design phase.

A third concern is the need to expand the types of projects eligible for crediting beyond just afforestation and reforestation. The lowest hanging fruit internationally is undoubtedly reducing deforestation, although substantial potential also exists in reducing degradation.

The final barrier to forest carbon is overly onerous and costly requirements for projects. Pragmatism is essential in standards. Projects should be allowed to make decisions that significantly reduce their costs, but are conservative with regard to claimed benefits to the atmosphere. In 2008 and 2009 the Afforestation/Reforestation Working Group of the CDM has taken such an approach to the great benefit of projects. Further pragmatic enhancements can include facilitating the process of aggregator organizations, including allowing additional project threads through time (a program of activities approach). Baselines and proving additionality can be further simplified, where appropriate, through the adoption of performance standards.

Clearly there are substantial barriers to forest carbon projects not least of which is fear and resultant political opposition. However, the science and project experience exists to overcome barriers and, in theory at least, little should prevent forest carbon from playing a full role in climate change mitigation.

Stumbling Blocks at Copenhagen

The main issue around forest carbon and developing countries to be addressed in Copenhagen is REDD+. Although the UNFCCC has held numerous meetings and discussions on this topic for Parties, progress is slow. However, there is widespread consensus that REDD+ must add to, rather than substitute for, deep emission reduction commitments from industrialized countries. That is, industrialized countries must not be able to use significant amounts of REDD+ offsets to meet their mitigation commitments. The urgent need for emission reductions across sectors calls for the development of flexible, adaptive REDD+ financial instruments that put in place incentives that enable substantial reductions, monitored, reported and verified to international standards, without further delay.

The June 2009 meeting of the Ad Hoc Working Group on Long-term Cooperative Action (AWG-LCA) produced a document that presents negotiating text on REDD+ (among other issues) to serve as a starting point for further negotiations prior to the COP in Copenhagen. This text is comprehensive and includes a variety of options that cover how to finance such a mechanism: how Parties should measure, report and verify actions (MRV); how Parties that provide support to REDD+ actions shall measure, report and verify such support; and what institutional and financial arrangements are needed to support REDD+ actions.

The financing options include using a specialized fund established under the COP that is financed by public funds, using of a market mechanism for carbon credits for emission reductions, or using of a hybrid approach of public funds and market approaches. All of these options should remain on the table in order

to maintain flexibility to account for differing national circumstances and enhance participation. As stated in a recent report of an assessment of key options for REDD+ prepared by a team of experts of the Meridian Institute for the Government of Norway, varied and flexible financial instruments that produce adequate, predictable, and sustainable financial resources are required to support REDD+ planning and implementation.

Any form of compensation for REDD+ actions will require the establishment of national reference emission scenarios against which performance of the actions can be measured. Thus the setting of a reference emissions scenario is a critical step. However, no decision has been made yet as to how the reference emission scenario should be set. The following steps for setting such a scenario, as outlined in the Meridian report mentioned above, should be given serious consideration: i) development of procedures based on agreed criteria across all countries; ii) using historical emission rates as a point of departure, with attention to national circumstances such as existing forest cover and income level; and iii) final determination of reference levels should be decided upon by a process analogous to that applied to the AFOLU (agriculture, forestry, and other land uses) sector in developed countries. Decisions are needed with respect to the time period over which historic emissions are estimated. It is strongly suggested by experts that this be on the order of the most recent 10-year period (or less), where good data are available or can be obtained to ensure accurate estimates with a higher degree of certainty. In a market phase, carbon offsets from REDD+ activities will be measured against a reference scenario and money will flow to a country based on performance of their policies and practices measured against this reference scenario, thus the

need to have a point-of-departure that best reflects past emissions.

The Subsidiary Body for Scientific and Technological Advice (SBSTA) is carrying out a program on methodological issues relating to reference emission levels and MRV for REDD+. It is essential that it report on its advice at the COP15 as planned in order to ensure sufficient time for implementation.

Increasing Developing Country Negotiating Capacity

Unlike most developed countries at the COPs, which have a relatively large contingent of experts and advisors on the negotiating team, most developing country Parties generally have very few members on their negotiating team. However, for countries to be better informed and engaged in negotiations, there is a need for increased knowledge and understanding about the basic issues related to REDD+. With limited capacity it will be difficult for a developing country Party to understand the implications for their country of any decision or agreement regarding, for example, how a reference emission scenario should be set, what specific activities will be included in REDD+ or what the cost implications are of monitoring standards. It is advisable to increase the understanding and knowledge of developing country negotiating teams on these topics in order to improve their capacity and confidence to better negotiate for their country at the COPs.

Scottish LTS International's report, "Capability and Cost Assessment of the Major Forest Nations to Measure and Monitor their Forest Carbon," includes an extensive assessment of the state of data and capacity for monitoring forests in 25 developing countries from each of the three main regions. While

providing only a broad picture of each of the countries considered, results of the LTS International report reveal that many countries have significant capacity in remote sensing, especially in Latin America, while capacity in forest inventory methods is generally low. Very few countries have the capacity to estimate carbon emissions and removals based on anything better than the default values given in the IPCC GPG. The most striking lack of overall capacity appears to be among the central African forested countries who have demonstrated virtually no capacity in either forest inventory methods or remote sensing. At the other end of the spectrum, India and China already have sufficient inventory and remote sensing capacity and are likely to require little outside support. Other countries have some capacity in one component but little in the other.

In an attempt to increase the capacity of developing countries in greenhouse gas inventory methods, workshops have been organized by a variety of organizations. For example, the Coalition for Rainforest Nations (CfRN) has held three workshops to enable non-Annex 1 Parties to fulfill the procedural and methodological requirements for a transparent, accurate, consistent, complete and comparable monitoring and reporting systems for the forest sector. They have included topics such as techniques and practices used in establishing national GHG inventory systems; guidance on the procedural aspects of completing a national GHG inventory under the UNFCCC; monitoring land cover change, including the introduction to sound scientific practices of detecting and tracking land cover changes due to deforestation and degradation; and how to measure and estimate carbon stocks and carbon stock changes in forests.

Although the CfRN workshops and related activities will enhance the capacity of those who participated

in them to improve their REDD+ negotiating skills, it is likely too little too late to make a big difference for most developing country negotiating teams at COP15. Most developing countries wanting to engage in REDD+ activities will need enhanced capabilities in technologies in remote sensing applications, in methods for measuring and estimating carbon stocks in key pools, in applying the IPCC GPG procedures, in designing a MRV system, and in developing and implementing national strategies. Although financial resources for such capacity building activities are available under a variety of programs, including the World Bank's FCPF, UN-REDD, and many bilateral agreements, the resources have only just started to flow and most of the efforts are still in the planning stages with little progress on actually building capacity. A concerted and immediate effort to enhance capacity in developing countries, beyond the "talking and yet another meeting phase" is needed to prepare countries for improved negotiating skills and participation in REDD+ activities post 2012.

The types of capacity needed include, for example, training staff of related agencies and ministries to perform the steps for developing their reference scenario, including technical training and acquiring the hardware and software; developing MRV systems; augmenting analytic capability to analyze the costs of REDD+ activities to their economies (including opportunity costs and benefits of regulating forest land use change under a REDD+ mechanism and cost of implementing an MRV system); and training national policymakers on the importance of engaging all stakeholders, including forest dwellers and indigenous peoples, in national consultations. The capacity building activities need to be sustained over several years, through, for example, the provision of secure support to national universities or other national educational organizations—the key is to train a large

number of people to ensure the sustained supply of well trained people in all aspects of climate change mitigation, adaptation and impacts.

Sandra Brown is the chief scientist and director of the Ecosystem Services Unit at Winrock International.

Timothy Pearson is a program officer at Winrock International.

References

- Angelsen, A., S. Brown, C. Loisel, L. Peskett, C. Streck and D. Zarin (2009). "Reducing Emissions from Deforestation and Degradation (REDD): An Options Assessment Report." Prepared for the Government of Norway. Washington, DC: Meridian Institute. Available at: <http://www.REDD-OAR.org>.
- Capoor, K. and P. Ambrosi (2009). "State and Trends of the Carbon Market 2009." Washington, DC: the World Bank. Available at: http://sitere-sources.worldbank.org/EXTCARBONFINANCE/Resources/State_and_Trends_of_the_Carbon_Market_2009-FINALb.pdf.
- CDM Statistics: <http://cdm.unfccc.int/Statistics/index.html>.
- Coalition of Rainforest Nations: <http://www.rainforestcoalition.org/eng/>.
- Hamilton, K., M. Sjardin, A. Shapiro and T. Marcelle (2009). "Fortifying the Foundation: State of the Voluntary Carbon Markets 2009." Ecosystem Marketplace and New Carbon Finance. Available at: http://ecosystemmarketplace.com/documents/cms_documents/StateOfTheVoluntaryCarbonMarkets_2009.pdf.
- Hardcastle, P.D., D. Baird, and V. Harden (2008). "Capability and cost assessment of the major forest nations to measure and monitor their forest carbon." LTS International. Available at: http://www.occ.gov.uk/activities/eliasch/LTS_capability_and_capacity_m&m.pdf.
- Intergovernmental Panel on Climate Change (2003). "IPCC Good Practice Guidance for Land Use, Land-Use Change and Forestry." J. Penman, M. Gytarsky, T. Hiraishi, T. Krug, D. Kruger, R. Pipatti, L. Buendia, K. Miwa, T. Ngara, K. Tanage and F. Wagner (Eds.). Japan: IGES.
- Intergovernmental Panel on Climate Change (2006). "Guidelines for National Greenhouse Gas Inventories." H. S. Eggleston, L. Buendia, K. Miwa, T. Ngara, K. Tanabe (Eds.). Japan: IGES.
- UNFCCC (2001). Marrakesh Accords. Available at: http://unfccc.int/cop7/documents/accords_draft.pdf.
- Voluntary Carbon Standard: <http://www.v-c-s.org/>.