RECOFTC
THE CENTER FOR
PEOPLE AND FORESTS

DECODING REDD: Addressing and Assessing the Second 'D'

An Asia-Pacific Perspective

Available scientific literature indicates forest degradation emissions are of a similar magnitude to those from deforestation. The potential for further emissions from degradation is an especially pressing concern in the Asia-Pacific region, where many forest areas are intertwined with highly populated areas and intensive timber harvesting. Including forest degradation in a reduced emissions from deforestation and forest degradation (REDD) mechanism will be crucial to ensure that both the Asia-Pacific and global forest sectors realize their full potential to mitigate climate change.

As part of an effort to distill available knowledge and experience on REDD within the region, 11 participants from seven Asia-Pacific countries convened at a RECOFTC-hosted workshop on 4–5 May 2009 to discuss options for incorporating degradation into national REDD baselines. Discussions also highlighted the importance of local people and decentralized forest management systems in addressing and assessing forest degradation in the context of REDD.

Key Conclusions

- Including forest degradation in REDD is both feasible and essential for effectively combating climate change.
- Assessing forest degradation will be more complex and costly than assessing deforestation alone and will require additional resources to develop human and technological capacity in the region.
- In addressing forest degradation, countries should involve local people, improve forest governance, and build on existing efforts to promote sustainable forest management.
- Community forestry and other decentralized forest management systems will be central to national efforts to address forest degradation, and can mobilize many local stakeholders to assess degradation and monitor carbon stocks.

USAID
FROM THE AMERICAN PEOPLE

R.A.F.T
Responsible Asia Forestry and Trade

The Nature Conservancy
Protecting nature. Preserving life.

FOREST DEGRADATION

Forest degradation is one of the key, unresolved topics in the debate on reaching an agreement for a REDD mechanism at COP15. The following issues are central to the outcome of this debate and for determining how REDD policy will be implemented:

Defining Degradation: There is currently no globally agreed, operational definition for forest degradation. This hampers efforts to recognize and measure its impacts as any definition used under REDD will affect estimates of the magnitude of degradation's contribution to overall greenhouse gas emissions. Workshop participants agreed that in the context of REDD, forest degradation should be defined as a measurable, human-induced decline in the carbon stock in areas that remain as forest, over a specified time period.

Magnitude of Degradation: Forest degradation is ongoing in all Asia and Pacific countries, regardless of whether forest cover is declining, has stabilized, or is increasing. In some countries with high forest cover, forest degradation may catalyze deforestation and further emissions. In countries with lower forest cover, degraded forests are less threatened from forest conversion. In all these situations there is considerable potential to restore carbon stocks.

Assessing Degradation: Degradation affects a forest's overall condition much more subtly than does deforestation. Understanding the extent of these impacts requires detailed and direct measuring and monitoring methods. There is concern among some countries about the cost and complexity of these methods.

Addressing Degradation: Forest degradation can only be addressed if forest governance systems and markets provide appropriate incentives for sustainable forest management and if the rights of all stakeholders, especially local forest users, are clear. In each country, the direct and underlying causes of degradation need to be identified to ensure that regulations and incentives favor sustainable forest management rather than continued forest loss and degradation.

The Significance of Degradation

Globally, selective timber harvesting is estimated to contribute 30% of total emissions from tropical deforestation. The Asia-Pacific region has the world's highest rate of emissions per hectare in selectively logged forest areas. This is because the density of high-value timber species is much greater in this region than in Africa or Latin America, which results in more intensive harvesting. Local people also use and degrade forests, often through collecting fuelwood, construction timber, and non-timber forest products. FAO's 2005 *Global Forest Resource Assessment* indicates that over a third of biomass removed from forests is in the form of fuelwood for subsistence purposes.

Due to these factors, forest carbon loss from degradation in the Asia-Pacific region is likely to be high, and greater than any other region in the world (Figures 1 and 2).

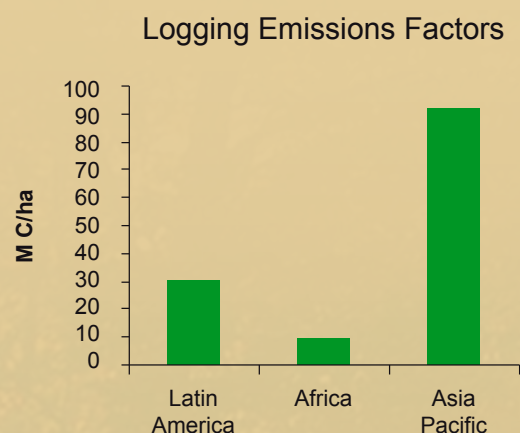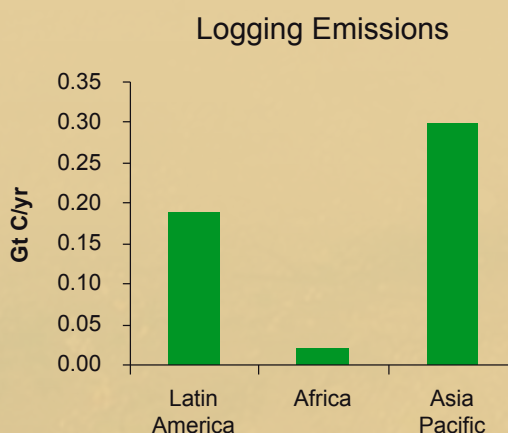**Figure 1: Logging Emission Factors for Different Regions**

Figure 2: Total Annual Emissions from Logging Operations

Figures 1 and 2 are a synthesis from available literature provided by Dr. Bronson Griscom, The Nature Conservancy.

For countries in the Asia-Pacific region, the inclusion of degradation in national REDD baselines is highly desirable. This will increase the potential to generate revenue from REDD, and help the forest sector to realize its full potential in the mitigation of climate change.

The Feasibility of Assessment

Monitoring and assessing forest degradation will be more complex and costly than monitoring and assessing deforestation alone. However, cost-effective methodologies are becoming more widely available. While some forms of degradation remain challenging to measure, report, and verify (e.g. fuelwood harvesting), some major forms of degradation (e.g. selective logging) are easier to assess. New remote sensing technologies are becoming available that can assess changes in forest quality using 'free imagery'.

The Role of Local People

In areas where remote sensing methods become viable, extensive 'ground truthing' will still be necessary to calibrate remote sensing data and to maintain sample plots. Engaging communities and local people to collect and process this information is a proven and successful method for assessing carbon stocks.

The idea of community carbon accounting has been examined in some detail through the Kyoto – Think Global Act Local (KTGAL) project implemented by the International Centre for Integrated Mountain Development (ICIMOD) and partners. The KTGAL research in India and Nepal demonstrates that community carbon accounting methods can establish accurate reference levels and carbon stock changes for forest degradation at the site or project level. Making use of local knowledge and labor also overcomes resource constraints, such as the lack of funds and specialists.

ADDRESSING DEGRADATION

A summary from the workshop discussions on strategies to reduce forest degradation in the Asia-Pacific region is provided below.

Drivers of Degradation

Direct Causes: The immediate drivers of forest degradation vary widely by country. Poorly managed timber extraction was cited as a factor in many countries, with commercial timber harvesting significantly contributing to degradation in high forest cover, wood producing countries. In subsistence economies, shifting cultivation, construction timber, fuelwood extraction, and uncontrolled fires are important immediate causes of degradation.

Underlying Causes: In Asia-Pacific countries, the underlying drivers of degradation are similar. Forest governance is seen as a particular challenge as is the political lack of will to implement policies and regulations that give priority to effective forest conservation and management. Rural poverty and population pressure are identified as root causes of degradation, particularly where shifting cultivation and fuelwood extraction are its direct causes.

Underlying these issues is the failure of national and international markets to recognize the full value of forests. Markets recognize the value of timber and some other physical products, but give less value to standing forests. They do not generally recognize the environmental services provided by forests in a way that leads to tangible income for either developing countries as a whole, or for key forest stakeholders within these countries.

Strategies for Reducing Forest Degradation

Implement Existing Policies: The drivers of forest degradation indicate a fundamental need for reform in both policy and practice to address governance issues, remove market distortions, and reward sustainable forest management. Many countries in the region already have progressive legislation on forest tenure, decentralization, and/or sustainable forest management. The key challenge is to effectively implement these policies. In this respect, financial and human resource shortages, and attitudes that undervalue the importance of natural forests, need to be addressed.

Improved Forest Management: Reducing waste in harvesting and processing timber has considerable potential to reduce degradation-related emissions and even costs. Reduced Impact Logging (RIL) and forest certification should be incorporated into national REDD implementation frameworks. The financial incentives for widespread implementation of these proven practices are currently lacking. Incorporation into REDD could provide such incentives.

Involving Community Forestry and Local People

Workshop participants noted the success of community forestry in reducing and reversing forest degradation in a number of countries including Nepal, Papua New Guinea, and Guatemala. In some cases, certified community-based commercial forest areas have significantly lower degradation rates than areas under strict government protection. Engaging local people as forest managers can have a significant impact on forest degradation in the Asia-Pacific region, especially where countries already have a regulatory framework for community forestry in place.

Community forestry's strengths for addressing forest degradation include:

- Effectively providing social and environmental services.
- Providing strong incentives to manage resources sustainably, particularly in areas with high use of forest products for subsistence purposes, and where communities are able to sell timber. Combined with the proximity of communities to the forest resource, this results in the rapid and efficient suppression of illegal activity, and enables fire control.
- Facilitating the development of inter-community networks and financial mechanisms that can provide a basis for equitable benefit sharing and poverty alleviation.
- Providing improved local organization and governance.
- Controlling leakage at the inter-village level.

ASSESSING DEGRADATION

Workshop discussions on methods to monitor, measure, and account for forest degradation in the context of REDD are summarized below.

Incorporating Degradation into Baselines

The greater the forest cover, the greater the gains can be made from including degradation in carbon stock assessments. But how great are these gains? The World Agroforestry Centre's (ICRAF) research in Indonesia found that even in areas of relatively sparse forest cover, including degradation can increase the accounted emissions by more than 50%. In the high forest cover areas of East Kalimantan, the estimate of emissions has increased more than three-fold. This demonstrates that there is a significant difference between accounting with and without forest degradation.

Availability of Information

Assessing changes in forest carbon stocks requires data not only on biomass, but also on forest resource use. Few developing countries have the capacity to reliably assess changes in forest biomass, and even fewer have undertaken efforts to do so. Comprehensive carbon stock assessments require the mobilization of significantly greater human and financial resources than are currently available through either national budgets or international REDD readiness programs.

It is also difficult to accurately determine baselines and reference levels without specific historical data on forest degradation. Consolidating existing data and interpreting satellite images using new analytical methods can help overcome these limitations. Creating reference levels for degradation will rely on integrating analyses of satellite imagery with ground inventories of current forest biomass and resource use. The ICRAF Total Accounting Framework provides a model for this and is currently being used in five tropical countries.

Community Carbon Accounting

Building on a presentation that demonstrated the feasibility of community carbon accounting, workshop participants analyzed this alongside approaches that employ specialist inventories and remote sensing. They concluded that community-based approaches for forest carbon assessments have several intrinsic benefits over inventories by specialists. Community-based approaches are more cost-effective per unit of work, can access a much larger pool of human resources, minimize nonlabor costs due to proximity to the resource, and utilize local knowledge of forest resources and patterns of use. In addition, community carbon accounting promotes local ownership of the information generated and assists the implementation of transparent and equitable forest governance.

One drawback is that community-based approaches will incur high initial transaction costs due to the need for comprehensive capacity-building programs and establishing efficient systems for pooling and processing data. This may delay the start of practical monitoring work. The consistency and reliability of information generated will inevitably be lower than that from specialist inventories, but this will be largely offset by the extensive coverage, providing that independent external verification processes can be rigorously applied.

Although remote sensing technology is essential for the practical large-scale assessment of forest degradation under REDD, a methodology that relies more on locally generated ground-based information has several advantages. The difficulties posed to remote sensing techniques by cloud cover and hilly terrain can be overcome. The techniques can produce consistently high resolution information on forest quality. The methods are also immediately accessible to developing countries and are less sensitive to technical failures. However, there is a greater need for verification and calibration of locally generated data to account for risks of falsification and to make information compatible with international standards.

Participants agreed that the most suitable approach was a hybrid model that integrated community resource assessment and monitoring with a more technologically sophisticated national approach. Under this model, an initial baseline map generated from remote sensing would be refined using ground-based information from permanent and temporary plots, as well as information on resource use patterns. This would promote:

- More efficient ground truthing in terms of cost-effectiveness and area coverage.
- Partnerships between local communities and specialist groups to strengthen capacity and reduce costs.
- Local community commitment to, and understanding of, REDD.

RECOMMENDATIONS FOR POLICY AND IMPLEMENTATION

Participants proposed the following recommendations for climate change negotiators at the international level, and for national-level policy-makers.

Key Messages for the International Level

• Forest degradation needs to be included within national REDD baselines in order for carbon stock assessments and reference emission levels to accurately reflect the level of emissions from the forest sector. This is particularly important in areas with high forest cover, which stand to lose the greatest amount of carbon through degradation.

• Assessing forest degradation for REDD will require more resources than would be required for a deforestation-only mechanism. Adequate human resources for intensive ground-based monitoring will necessitate the mobilization of local communities and financial resources for the capacity building of these and other forest sector stakeholders.

• A hybrid approach to forest carbon accounting—combining remote sensing technology with community-based carbon accounting—is best suited for the accurate long-term assessment of emissions from forest degradation.

• Regional bodies such as the Association of Southeast Asian Nations (ASEAN) can align definitions of forest degradation, baseline development methods, and methods for assessing forest carbon stocks across countries. Regional collaboration can also address supra-national drivers of forest degradation and international leakage.

• International guidelines for addressing and assessing degradation under REDD must be robust and evidence-based. However, they must also be sufficiently flexible to allow for different country circumstances.

Additional Messages for the National Level

• Including degradation within national REDD baselines will act as a powerful incentive for state and nonstate actors to implement and improve existing regulations for practicing sustainable forest management. Local and indigenous sustainable forest management practices should be analyzed, documented, and recognized as strategies to reduce forest degradation.

• In countries where large-scale timber extraction is the major direct cause of forest degradation, logging companies stand to be significant beneficiaries of the inclusion of degradation in national REDD baselines. However, they will only be able to do so if they are able to demonstrably improve their management practices through the application of RIL and certification systems.

• Inter-departmental communication, collaboration, and awareness of the impacts of external actors on the forest sector are required at national and regional levels. A REDD mechanism should recognize and reward private- or government-driven energy substitution projects that reduce the need to collect fuelwood and to produce charcoal.

• Effective REDD implementation strategies will require equitable benefit-sharing systems based on the recognition of the role of local stakeholders in achieving emission reductions. National regulatory frameworks should be developed and implemented that recognize and promote community-based forest management and tenure systems.

DECODING REDD
2009 WORKSHOP SERIES

As an international organization focused on people and forests, RECOFTC is concerned with the impact of forest policies and practice on the livelihoods and well-being of forest-dependent people.

Together, RECOFTC and The Nature Conservancy-led Responsible Asia Forestry and Trade (RAFT) program are building a network of government and civil society representatives from Asia and the Pacific to develop and share knowledge and emerging experience on this important climate change strategy.

In 2009, the 'Decoding REDD' workshop series will focus on unresolved issues, feeding expert knowledge and opinion into national climate change strategy discussions, and into key UNFCCC meetings leading up to December's COP-15, where final decisions on REDD will be made.

For further information please contact Ben Vickers, RECOFTC climate change focal point ben@recoftc.org or visit the website www.recoftc.org

DISCLAIMER: The findings of this workshop represent the group as a whole, not necessarily reflective of individuals, their respective organizations or RECOFTC, USAID and TNC.

THE CENTER FOR
PEOPLE AND FORESTS

RECOFTC