REDUCING EMISSIONS FROM DEFORESTATION AND FOREST DEGRADATION

103: Implementing REDD: Managing, Measuring, Monitoring

Having defined REDD and outlined the major issues, how do we describe what actually needs to be done to achieve it? Implementing REDD will involve:

- **Managing** forests sustainably
- **Measuring** forests differently and
- **Monitoring** results accurately

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MANAGING: Forest Management for REDD

To achieve reduced greenhouse gas emissions from forests, we need to manage them more efficiently than before. This does not simply mean protecting forests from all external forces, but can also mean extraction of forest resources without reducing the forest carbon stocks.

Forest protection: In some forest areas, exclusive protection may be the only way of conserving carbon stocks. In remote places, far from villages and human activity, this is a fairly straightforward task. However, where forest protection means that local people have to give up using forests for their livelihoods, it becomes more complicated. In these cases, local people must be motivated to participate in forest protection through clear incentives, or REDD will not be possible.

Sustainable forest management: In many forest areas, where local people rely on forest products on a daily basis, it is impossible to implement complete forest protection. So REDD strategies must **balance** the needs of local people with the conservation of carbon stocks. This balance must be **sustainable** in the long-term. If the REDD strategy results in no net loss of carbon from the forest, or an increase in carbon over time, this can be termed 'sustainable forest management'.

MEASURING: Forest Inventories for REDD

Many countries already have the institutions and capacity to measure how the size and quality of forests changes over time, by conducting regular national forest inventories. However, all countries will need to adjust the way they conduct their forest inventories in order to collect the data necessary to calculate emissions reductions for REDD. Accurate inventories involve several different activities:

- **Forest Plot Sampling** – to find out how carbon stocks in forests change over time
- **Remote Sensing** – satellite images to show changes in forest area and forest quality
- **Ground Truthing** – measuring trees and forests by hand
- **Data Collection and Management** – putting all this information together and making it available

Forest Plot Sampling

Sample plots are used by foresters to find out exactly how trees and forests change over time. If we take very detailed measurements in these plots we can use them to make 'models' of these trees and forests over time. We can take more simple measurements in other forest areas and use the models to work out more detailed information. Different models are needed for each kind of forest (e.g. dry lowland forest, wet mountain forest) in the country. REDD means that we will need to take more measurements from sample plots, to put carbon into these models.

We will also need to set up sample plots to measure forest degradation, by looking at how existing forest management practices affect forest carbon stocks This will involve collecting new types of data in forest sample plots, such as the density and weight of dried wood samples.

Remote Sensing

Remote sensing is the use of photographs and other technologies which tell us about a place without us having to actually visit it. With forests this usually means the use of

satellites. As well as using cameras, satellites can now use advance technology to detect changes in temperature, soil type, water content and even chemical content of trees. The technology is improving all the time and is also becoming more affordable.

Remote sensing images are very important for REDD because they allow us to compare images from the same forests over time and detect changes.

Ground Truthing

Even though remote sensing images can provide a lot of information, it is important to actually visit the forest. Ground truthing can be combined with forest plot sampling. By visiting several places in the forest, we can verify characteristics such as the forest class, structure and species present, and discover patterns of forest degradation that we may not have been able to see from remote sensing images.

Data Collection and Management

Who will collect all this data from forest plots and ground truthing? Local communities can be ideal data collectors. Without very much training, they can collect very important data, such as the number of trees, species of trees, and the diameter of trees at breast height. Communities located close to forests are also able to monitor forest plots frequently – the more data is collected, the more we can understand if deforestation and degradation is being reduced.

In collecting forest data, every country has two main responsibilities: managing the data and making it available for everyone. Managing the data will require a reliable data management system and specially trained staff to operate it. Third parties such as forest departments, communities, and civil society groups may also wish to use the data for their own work.

MONITORING: Monitoring REDD Results

We cannot collect data only once – the results of managing and measuring forests for REDD must be monitored on a continuous basis. For example, if a healthy tree one year is cut down the next year, we would not know unless the situation was monitored. In order to monitor effectively for REDD, countries must choose standards for monitoring, and have their results verified by an independent third party.

Standards: There are national and international standards for monitoring REDD. The Intergovernmental Panel on Climate Change (IPCC) has three levels of monitoring, in which each country can choose a level based on the amount of information they have about their forests.

- Tier 1: Countries don't have their own information and use global forest data
- Tier 2: Countries have some information on forest types and area
- Tier 3: Countries have detailed information about forests, collected by local people

It is important that countries choose monitoring standards they have the ability to implement, and that will be able to detect changes in the forest over time.

Independent verification: Under REDD, a country calculates the amount of greenhouse gases that have been reduced, and then makes a claim to receive a certain amount of REDD credits. This claim must be verified by an independent third party who will review the data and calculations to prove a country's claim is both credible and accurate.

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Regional Community Forestry Training Center for Asia and the Pacific (RECOFTC)
PO Box 1111
Kasetsart University
Bangkok 10903, Thailand
Tel: +66 (0)2 940 5700
Fax: +66 (0)2 561 4880
Email: info@recoftc.org
Website: www.recoftc.org