



Reducing emissions from deforestation and degradation

Background

In the context of climate change, the mitigating effects of forests (covering around 30% of the world's land area) are well understood and acknowledged globally. The IPCC Fourth Assessment Report and other studies estimate the release of CO₂ from the effects of land use changes on plants and soil carbon at around one-third of the total global anthropogenic CO₂ emissions (IPCC 2007a). An oft-quoted estimated figure of emissions from deforestation globally in the 1990s is 5.8 GtCO₂/yr.

Given that forest can be both a source as well as a sink, the world should strive to reduce emissions by sources and/or increase removals by sink in the forestry sector. REDD aims at reducing emissions arising as a result of deforestation as well as degradation. A/R aims at increasing the removal of CO₂ (sequestration) from the atmosphere by way of afforestation and reforestation. And of course, the general idea of sustainable forest management, or SFM, is to manage the available forests to meet the societal needs in the long run. Taken together, the combined efforts could optimize climate change concerns, ecological concerns, conservation concerns, livelihood concerns, and societal needs for timber, fibre, and bioenergy.

Both the Stern Review and the IPCC Working Group on Climate Change Mitigation concluded that mitigation efforts targeted to reduce deforestation rates and degradation present the greatest benefit because of the size of the source as well as the cost-effectiveness (Stern 2007; IPCC 2007b). Also, the Bali Action Plan decided upon during the UNFCCC (United Nations Framework Convention on Climate Change) Conference of Parties at its thirteenth session states that enhanced national/international on mitigation of climate change should include, among others, consideration of *Policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of carbon forest stocks in developing countries* (UNFCCC 2007).

The combined efforts in REDD, A/R, SFM could optimize climate change concerns, ecological concerns, conservation concerns, livelihood concerns, and societal need for timber, fibre, and bioenergy.



Estimating and monitoring GHG emissions from deforestation, degradation, and afforestation/reforestation

South-South cooperation in estimating and monitoring GHG emissions would be more cost-effective.

The net emissions from the forestry activities combined should be calculated at the national scale and should be based on the historical baseline.

In the international climate forums, discussions on REDD have focused primarily on the methodology for estimating and monitoring emissions from deforestation and degradation. While it is agreed that reliable, accurate, and cost-effective measurement of tropical deforestation is possible with satellite remote sensing and is being used extensively in many developed countries, these technological and methodological capabilities for monitoring deforestation can be transferred to developing countries to reduce the cost of monitoring deforestation. Among the developing countries, India is considered a pioneer in forest cover monitoring. Forest cover is assessed on a biennial cycle, which is based on digital interpretation of satellite imagery and intensive ground truthing and accuracy assessment. India could also help build capacities of other developing countries in monitoring their forest cover (and thus deforestation and afforestation/reforestation) in a framework of South-South cooperation, with financial support from developed countries.

Monitoring degradation requires use of high-resolution satellite imagery; increasing the cost of monitoring. On the other hand, it could be carried out with more extensive ground truthing, which can be comparatively less expensive and also could provide employment to local forest-dependent people, who can be trained to participate in field surveys and forest inventories (along with the forest department). Engaging forest-dependent communities for monitoring activities would have the added benefit of mobilizing their support for forest protection.

Positive incentives for REDD, A/R, and SFM

Given the technology and methodological capacities, each country should be able to develop a national forest inventory that accounts for deforestation, degradation, afforestation/reforestation. The host country could be provided a positive incentive, in the form of annual payments, to compensate for maintaining the forest cover and for increasing the flow of carbon sequestration.

Understanding that there are varying national circumstances, the UNFCCC could create different financial instruments for the range of different actions that a would-be host country can implement. Some of the suggested funds are Reducing Deforestation Fund, Stabilization Fund, and Forest Conservation Fund. These should reflect the value of natural, old growth forest stands as well as new afforested (plantations) areas. Also, a fund to address the challenges of would-be host countries could also be developed by the UNFCCC to help host countries build capacities and implement these projects.

Forest-dependent communities and sustainable development

Around the world, it is being increasingly felt that forests have to be managed in partnership with the forest-dependent communities (and other stakeholders) as opposed to having a centralized administrative structure (such as the forest department). Associated policy issues of forest rights and land tenure are also being (not always successfully) addressed. Operationalizing any REDD mechanism would definitely have to take the current ongoing policy debates into consideration. Communities that traditionally have been the stewards and users of the forests have to be involved in developing any REDD scheme to get their buy-in. And the REDD schemes have to ensure that the monetary benefits (of carbon

credits) reach those who have been the custodians of the forests. The implementation of any schemes would depend heavily on the institutional and governance structure in the countries that would participate in the schemes.

Remarks

The world requires a multi-pronged approach to address climate change concerns. Addressing forestry issues (REDD, A/R, SFM) would help us to approach a desirable level of carbon concentration at a quicker pace. One should also take into cognizance the fact that forests are susceptible to climate change and could lose their ability to adapt to climate change at some high level of carbon concentration in the atmosphere, resulting in reduction in their mitigation potential.

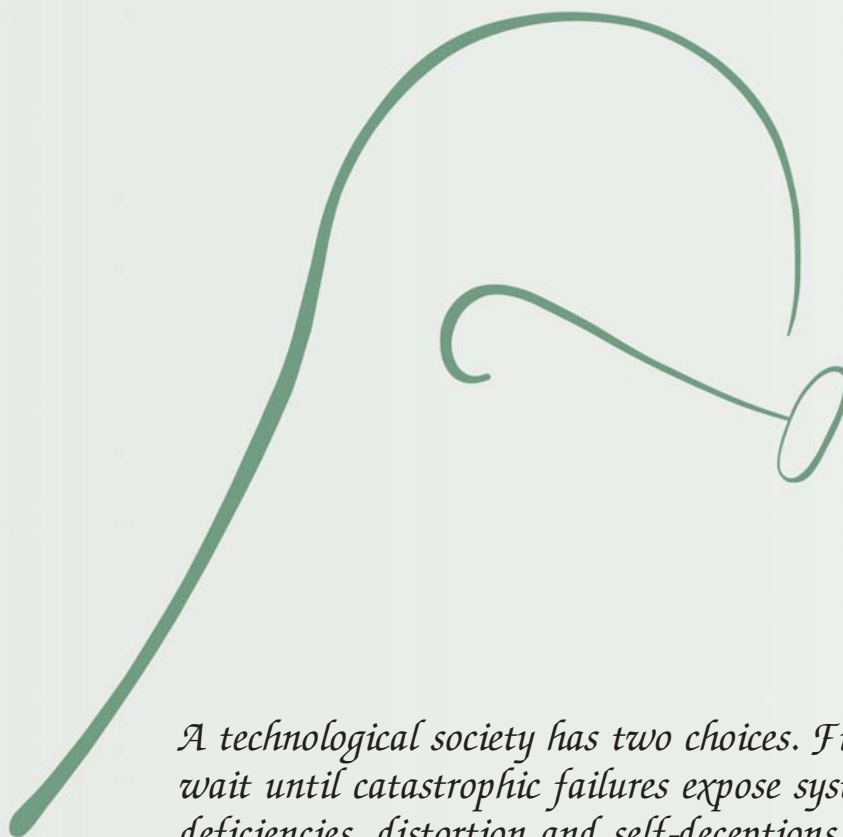
Institutional and governance issues in the forestry sector also need to be addressed for achieving sustainable development.

It is globally agreed that there are multiple, complex underlying causes of deforestation and degradation. These vary from local pressures to agricultural demands to international trade aspects. It should be noted that while stopping deforestation and degradation is easier said than done, the achievement of sustainable development depends on how these forestry and related institutional and governance issues are addressed holistically.

Another facet of our long-standing concern, in general, is the demand on the natural resources for and as a result of development. With time, development has evolved to include sustainability, which, in turn, is presently evolving towards inclusion of low-carbon/carbon-neutrality. While the discussions would rage on for sometime before consensus is reached, many of these issues would become slightly easier to address if the demands (as a result of both population growth as well as increasingly carbon-intensive lifestyles) are moderated.

References

- IPCC (Intergovernmental Panel on Climate Change). 2007a. **Climate Change 2007 – The Physical Science Basis**. Working Group I Contribution to the Fourth Assessment Report of the IPCC.
- IPCC (Intergovernmental Panel on Climate Change). 2007b. **Climate Change 2007 – Mitigation of Climate Change**. Working Group III Contribution to the Fourth Assessment Report of the IPCC.
- Stern N. 2007. *The Economics of Climate Change: The Stern Review*. Cambridge: Cambridge University Press.
- UNFCCC (United Nations Framework Convention on Climate Change). 2007. Report of the Conference of Parties in its thirteenth session held in Bali in December 2007.



A technological society has two choices. First it can wait until catastrophic failures expose systemic deficiencies, distortion and self-deceptions...

Secondly, a culture can provide social checks and balances to correct for systemic distortion prior to catastrophic failures.

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