

The world must address emissions from deforestation urgently, as huge carbon dioxide losses are taking place. The forestry sector offers an important solution.



School children discuss the importance of community forestry in a community in Nepal
(Bhaskar Singh Karky)

Lessons Learned and Future Directions

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Climate change is occurring and its adverse impacts are being felt at an alarming rate across the globe. The main cause for this change is the increase in GHGs – mainly, carbon dioxide - brought about by human activities such as burning of fossil fuels and deforestation. Its effect is being felt globally, including by people of poorer countries and those living in the Himalaya who have contributed relatively little to the GHGs emissions. In fact, by maintaining forest ecosystems on mountain slopes, mountain people are contributing to reducing global atmospheric CO₂ emissions, let alone being paid for by the polluters.

This book highlights the rationale behind reducing emissions from avoiding deforestation if UNFCCC and the KP are to be more fair and effective. Hence, there is a need for the UNFCCC to address emissions from deforestation urgently, as huge CO₂ losses are taking place from the terrestrial ecosystems. However, there are numerous issues and uncertainties concerning what needs to be done in order for the UNFCCC to be able to tackle the problem of reducing emissions from deforestation in developing countries.

Within the last decade, community forest management (CFM) has been promoted in non-industrialised countries as a result of a paradigm shift in common property resource management, from state management by local communities. In the Himalayan region, common property resources such as forests are better managed by local communities than by the state. Degraded forests have started rejuvenating through natural regeneration from stringent protection measures deployed by the locals. But under the Kyoto Protocol, forests in non-industrialised countries are only recognised as sinks and not as sources, and hence avoiding further permanent emissions from deforestation is not credited.

One of the criteria for Clean Development Mechanism (CDM) is to promote sustainable development. Community-managed forests meet this criteria as they are protecting the forest, harvesting forest products sustainably, promoting biodiversity, and enhancing livelihoods. It is ironic however, that community-managed forests do not qualify under CDM, one main reason being the difficulty in accounting for leakage.

This research shows that CFM generates both environmental and social benefits. Environmental services provided by avoiding deforestation include the conversion of forests from a source to a sink, improved watershed management, and biodiversity conservation. Social benefits include providing sources of livelihood for the rural population from CFM. If payment for carbon credit is made to these communities, added

benefits may provide communities relying on the forests incentive to halt deforestation and opt for longer-term benefits that are more sustainable in the long run and those that may enhance their livelihood conditions.

The case studies illustrate that community-based forest management can be a viable strategy for reducing permanent emissions from deforestation, as the data reveal that the mean carbon sequestration rate for India ($3.7 \text{ t ha}^{-1} \text{ yr}^{-1}$), and Nepal ($1.88 \text{ t ha}^{-1} \text{ yr}^{-1}$), are close to $2.79 \text{ t ha}^{-1} \text{ yr}^{-1}$ or $10.23 \text{ tCO}_2\text{ha}^{-1}\text{yr}^{-1}$ under normal management conditions, that is, after local people have extracted various forest products to meet their sustenance needs. This figure translates to US\$ 122.76 $\text{ha}^{-1}\text{yr}^{-1}$ of forested land at US\$ 12 tCO_2 and US\$ 51.15 $\text{ha}^{-1}\text{yr}^{-1}$, if the rates were as low as US\$ 5 tCO_2 . Carbon revenue could be an important income source and financial incentive that will assist communities further in better conservation practices and in promoting local community development.

Revenues from carbon sequestration could be valuable in reducing the opportunity cost in conserving and managing forests. We cannot overlook a scenario of rising land prices and increasing opportunity costs for avoiding deforestation – strong drivers that will pre-empt conversion of forested land to other, more profitable uses. Although revenues generated through carbon sequestration from community-managed forests are not likely to be high, given the small patch of forests communities manage, the incremental benefits may be large enough to encourage better conservation and management practices.

Driving down transaction costs will be important for the local communities to retain the maximum amount of the carbon market value. Complicated procedures will have to be followed to sell carbon in the international market, which means that various costs will have to be borne at different stages. The transaction cost to measure carbon pool in small patches of forests scattered over mountainous terrain would be high. Hence, a generalised baseline should be developed at the national level rather than at project levels, as suggested under the mechanism of Reduced Emissions from Deforestation. This research has shown that local communities can measure effectively and efficiently the changing carbon stock in their forests using standard forest inventory methods, as suggested in the *Good Practice Guide* (IPCC 2003). By involving local forest users in the primary stage where stored carbon have to be measured, it is possible to reduce the cost of carbon measurement. But ways to reduce the transaction cost must be explored in order to make carbon revenues an economic incentive for communities to conserve and reduce deforestation.

The main reason for not including community-managed forests under the Kyoto Protocol was the high risks of leakage from avoiding deforestation. Where deforestation has occurred in the Himalayan region, much of it has been as a result of gradual removal of biomass from the natural forests that exceeds the sustainable production rate. This has been done by communities living in the fringes of forests, extracting forest resources to meet their sustenance needs. This activity raises a fundamental issue of leakage, which the study has not been able to address yet. If Reduced Emissions from Deforestation

(RED) as a mechanism will be used in the post-2012 period, leakage from CFM can be managed and accounted for much more easily than under the existing CDM approach.

The two proposed approaches described by Skutsch, et al. (2007) under RED, taking the baseline at national or regional levels, provide numerous benefits for more effective emissions control but also for a fairer share for those who protect and manage the forests; they ultimately assist in reducing emissions. An approach like this, taken in the second commitment period, will be welcomed by both industrialised and non-industrialised countries.

Though CFM has quite successfully stopped the deforestation trend in the forests of Nepal, second generation issues related to equity in resource use and benefit-sharing among the heterogeneous community members are expected to emerge, with added benefits. If carbon as well as other ecosystem benefits are further added, this will have new implications on benefits sharing.

The Kyoto Protocol sets specified emission reduction targets up to 2012; what reduction commitments will be made after that is not yet known. What sort of international framework will evolve and its implications on non-industrialised countries and their forestry sectors remains uncertain. Also, what the trading price of credits in the forestry sector will be needs to be seen because that will determine if it will be an incentive to reduce deforestation or not. The European Union along with the US and Australia are pushing for countries like India and China to commit to emissions reduction in the second commitment period so that the effort to deal with climate change is more globally consorted. If this happens, India will have to make reduction commitments post 2012. This will have implications on emissions reduction through the forestry sector.

With the incidence of 9/11, global priorities have changed in industrialised countries, and new investments have started flowing towards sectors like security and defense. Climate change has been pushed further down the ladder of priority. How long will the communities managing forests have to wait for the global community to be convinced that CFM practices reduce permanent emissions from the terrestrial ecosystems and is an effective way to deal with climate change? These issues will have to be addressed as soon as possible.