

Fostering the Linkage between Forests and Climate Change

Climate change is projected to significantly alter the composition and possibly the productivity, of tropical and boreal forests, due to changes in the mean, variability and extremes of temperature and precipitation, coupled with an increase in disturbance regimes, i.e., pest outbreaks and fires. Forests and forestry can, however, play a major role in the mitigation¹⁰ of greenhouse gas emissions and in preparing client countries to adapt¹¹ to today's climate variability and long-term climate change.

The economic consequences of climate change are expected to fall disproportionately on developing countries and within these countries, to the poor. Climate change will have its greatest negative impact in the tropics and sub-tropics, with higher temperatures, increases and decreases in total rainfall, more heavy precipitation events, more El-Nino-like conditions and an increase in tropical cyclone wind and precipitation intensities. This will lead to, inter-alia, an increase in floods, droughts and landslides that often affect the poor most of all and plunge them deeper into poverty. Climate change is expected to exacerbate inequities in health status and access to adequate food, clean water and other resources. Although some adaptation is possible, developing countries and especially the poor within developing countries, are unlikely to have the institutional, technical and financial means to adapt.

The role of forests in reducing and preventing risks and vulnerability from natural disasters at local level is well-known and does not require a new agenda. For example, reforestation can help avoid landslides, avalanches and downstream flash floods. Forest products and tree crops are less vulnerable to weather hazards and often provide a cushion for the poor in times of food shortage. In the present strategy, adaptation measures involving forestry are considered as integral part of the proposed poverty reduction strategy.

Of a more controversial nature is use of the capability of forests to sequester carbon and hold it over long periods of time. While the bulk of global carbon emissions come from fossil fuel consumption in industrialized countries, deforestation and subsequent land-use change are also significant, especially in the tropics. In the tropics, forest loss

causes 10 to 30 percent of the global CO₂ releases. Afforestation and reforestation are regarded as an efficient means of sequestering atmospheric carbon. Moreover, conserving and sustainably managing existing natural forests and forest soils, which are very large stores of carbon, will significantly reduce greenhouse gas emissions. If the Kyoto Protocol allows afforestation, reforestation and avoided deforestation to be eligible activities within Article 12 of the Kyoto Protocol, i.e., the Clean Development Mechanism,¹² this could provide new revenue streams to local economies for forest protection and forest management. Industrialized countries, including countries with economies in transition, are already allowed to meet their obligations by trading carbon using afforestation, reforestation and avoided deforestation activities under Article 6, i.e., Joint Implementation. Hence, forests could have a major role in climate mitigation in the near future and the Bank could take a leadership role in the development and facilitation of the market systems that will allow this to happen.

The special report on Land Use, Land Use Change and Forestry of the Intergovernmental Panel on Climate Change specifies the specific role of forests and forestry within the climate change framework. Forestry projects are likely to be as, or more, cost-effective in offsetting carbon emissions than other options and could have a significant impact on sustainable development in many of the Bank's client countries. Taking into account the considerable political uncertainties and controversy that prevail, the Bank needs to consider the perceived value of forests offered within the framework of the UN Convention on Climate Change. As stated earlier, if the 1997 Kyoto Protocol comes into effect and forestry activities are eligible under the Clean Development Mechanism, it will stimulate the development of international markets for carbon credits from forestry through new forest plantations, natural forest management, forest conservation and restoration. However, procedures are yet to be negotiated. To the extent that such trading reduces deforestation, especially tropical deforestation, it will also reduce loss of biodiversity and other local environmental services, such as watershed protection.

If the Kyoto Protocol fails to come into force, or if the Clean Development Mechanism does not recognize forest activities as an eligible source of tradable emissions reductions, there will be far less external financing for forest carbon activities. In the long run, the world's interest in abating greenhouse gas emissions is likely to remain strong

and forests can and should play an important role. Thus, it is imperative that the international community fund forestry activities that reduce net carbon emissions. This suggests that sooner or later, market-like mechanisms are likely to be created to encourage forest-based carbon storage or abatement. Hence the motivation for the World Bank to take a pioneer role in the field of 'carbon forestry' and to continuously engage in the development of forest carbon markets and to develop adaptation measures in forestry.

'A Revised Forest Strategy for the World Bank Group' July 2001.

¹⁰ Mitigation is defined here as human intervention to reduce the sources of greenhouse gases or enhance their sinks.

¹¹ Adaptation is defined as the ability to adjust to climate change (including climate variability and extremes), to moderate potential damages, to take advantage of opportunities, or to cope with the consequences.

¹² The two major flexible mechanisms under the Kyoto Protocol are Joint Implementation (JI), dealing with carbon emission trade in the so-called Annex 1 countries and the Clean Development Mechanism (CDM) dealing with carbon emission trade between Annex 1 countries and developing countries. The role of forests and forestry need still to be specified in the CDM-framework.