

Is Forest Management Improving in the Tropics?

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Tropical forests are (i) a repository of biodiversity, providing habitats for more than 50% of the earth's plant and animal species; (ii) an important sink for carbon stores, providing many goods and ecosystem services; and (iii) a critical contributor to the livelihoods of more than 1.5 billion people. Of these 60 million people – mainly indigenous groups – are totally dependent on forests; while 350 million are highly dependent, and 1.2 billion are dependent on agro-forestry resources.

Yet forests are under pressure. The most reliable sources – the 2005 Forest Resources Assessment of the Food and Agriculture Organization (FAO), the International Tropical Timber Organization (ITTO) 2005 Report on the Status of Tropical Forest Management and the Millennium Ecosystem Assessment (MEA) 2005 – all indicate that tropical forests are among the earth's most threatened ecosystems, with deforestation rates estimated at nearly 25,000 ha a day. The sector has an image of lawlessness and is particularly threatened by human activities (e.g., uncontrolled logging and collection of fuel wood, fires, conversion into agricultural land and depletion of ground water) and climate change. As a result, tropical forests are losing capacity to provide basic goods and services that are key to human livelihoods. The MEA gives a quite accurate indication of the pressures on the “terrestrial biomes,” including tropical and sub-tropical forests, resulting from soil and climatic conditions as well as human impacts.

Drivers of Change in Forest Management

A number of forces act on forests individually and collectively. The trends related to these forces are not yet clearly understood. Analysis of tropical deforestation in Africa, Asia and Latin America and the Caribbean has identified four *proximate causes* of deforestation, namely: (i) infrastructure development, (ii) agricultural expansion, (iii) wood extraction and (iv) other factors, including (a) pre-disposing environmental factors: (e.g., land characteristics), (b) biological drivers (e.g., fires, drought and pests) and (c) social drivers (e.g., war, social disorder and economic shocks).

Five clusters of *underlying driving forces* that shape the proximate causes are: (i) demographic factors, (ii) economic factors (iii) technological factors, (iv) policy and institutional factors and (v) cultural factors. Analysis has shown no universal causal link that can explain tropical deforestation. Rather, it is determined by combinations of proximate causes and driving forces that are specific to time and place.

International Policy Dialog on Forests

Recognizing the need to address the proximate causes and underlying forces driving deforestation, the international community has engaged in numerous processes to

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advance the cause of sustainable forest management (SFM). Currently, the United Nations Forum on Forests (UNFF) serves as the main intergovernmental platform to foster dialog and forge a common understanding of SFM. As a result, seven thematic elements have been identified as a basis for defining SFM and developing indicators to monitor progress. Moreover, a holistic approach to SFM has been agreed upon.

It is generally recognized that forest management is at distinct stages of development in different countries around the world, and the tropics are no exception. Despite recurrent deficiencies, the ITTO 2005 survey noted significant progress towards SFM, since the initial survey carried out in 1998. Recent innovations in SFM and ecosystem approaches are resulting in forests being managed as part of the broader social-ecological systems in which they exist. Case studies from Central America, Africa, Asia and the Pacific provide a wealth of international examples of innovative practices. Many countries have established and are starting to implement new forest policies that contain the basic elements of SFM. More forests have been given some security by commitment as Permanent Forest Estates (PFEs) for production or protection and are being managed in a sustainable way. Leading countries include Malaysia, which now has at least 4.8 million ha under SFM, Bolivia with 2.2 million ha, Peru with 0.5 million ha, Brazil with 1.4 million ha, the Democratic Republic of Congo with 1.3 million ha, Gabon with 1.5 million ha and Ghana with 0.25 million ha.

Innovation and the Search for Excellence

In a growing number of cases, forest stakeholders and managers are successfully designing and testing innovative solutions to the challenges they face in managing the forest resources under their stewardship. These innovations can be grouped under several thematic clusters, ranging from the legal, policy and institutional frameworks (with a focus on community organizations) to the evolving role of the private sector. The following sections summarize progress in these areas, largely as a result of investments in capacity development.

Forests and governance. Across the tropics, a new generation of institutions is emerging that has the capacity to manage across jurisdictions (from the subnational to international level) and deal with forest problems in an integrative, holistic and participatory way.

At the sub-national level, where forests are predominantly managed by community based organizations (CBOs), institutional innovations have led to greater decentralization and empowerment of local governments and communities in the management of forest resources. The aim of these institutions is to create new livelihood opportunities for forest-dependent people, empower local people, ensure equity and broad-based participation in decision-making and management and recognize traditional ownership patterns and institutions. Strengthening resource security or providing property rights was necessary for making a difference. FAO case studies of exemplary forest management in Asia and the Pacific have documented a number of examples, in which forest degradation, poverty and social unrest have been successfully addressed through innovative institutional reforms. Similarly successful examples of decentralization in

Latin America and the Caribbean highlight the importance of municipal governments in forest management (for example, in Bolivia, Brazil and Nicaragua) and the role they play in orienting government policies and donor projects.

At the national and supra-national levels, the most important innovation is the development and application of criteria and indicators (C&I). These have helped set standards for forest certification by government regulatory systems, international agencies and forest certification groups. The ITTO estimates that on about 10.5 million ha of tropical forests sustainable production practices are certified by independent forestry organizations.

On a cautionary note, though, it is important to point out that many countries continue to suffer serious losses of tropical forest or have not been able to make significant progress towards SFM. Nigeria, Cote d'Ivoire, the Philippines, Cambodia, the Democratic Republic of Congo, Liberia and many other are cases in point.

Enabling policies and legal frameworks. Malaysia offers a vivid example of a country that has developed an effective and sound policy and legal framework for the management of its tropical forest resources. Key to its success is the statement of a clear vision and political commitment to ensure the continuity of forest product flow, while conserving complex ecosystems rich and varied in flora and fauna. Key elements in this success include (i) development of a national forest policy that provides a common approach towards forest management, (ii) strengthening of various forest departments for forest resource planning and management, (iii) use of advanced technology for survey and logging monitoring, (iv) development of downstream industries with a focus on value adding, (v) granting fiscal incentives and full tax exemption under the pioneer act, (vi) formulation of Malaysia-specific C&I based on revised ITTO C&I and (viii) development of internal assessment procedures for assessing SFM based on C&I.

It is also important to note that commercial banks, investment funds and pension funds have recently become interested in investing in SFM because of the profitability of high-value tropical forestry (including both investment in monoculture plantations and natural forest management).

Knowledge generation and application. Over the past few decades, a wealth of new knowledge and technologies have been generated, drawing from lessons learned from field experiences as well as national and international research programs. These cover all the multiple facets of SFM (biological diversity, forest health and vitality, productive functions of forest resources and protective socio-economic, legal, policy and institutional frameworks), and they have developed new methodologies and generated much new scientific knowledge.

By way of illustration, we will highlight progress made only in the forest management and use sector. The new multiple-use management approach is gaining ground, as it reflects a paradigm shift from conventional, single-purpose forest management towards

more integrated approaches to technical, socio-economic, ecological and cultural enhancement.

Adaptive Collaborative Management (ACM) is another new methodology used to promote community forest management and help ensure that the rural poor obtain greater benefits from forest resources. This involves collective action, collaboration among stakeholders and social learning, with strong emphasis on studying the process, capacity building and extension of knowledge.

Reduced Impact Logging (RIL) systems are currently being developed in Brazil and other countries in response to concerns over the ecological and economic sustainability of harvesting natural tropical forest stands. RIL uses an array of best harvesting techniques that reduce damage to residual forests, help maintain regeneration and protect biological diversity and may provide low-cost options for maintaining carbon sinks and forest conservation benefits. RIL systems are an integral part of the certification initiatives. It has been demonstrated that RIL can be more profitable than conventional logging, reducing by 12% the overall cost per cubic of wood produced. The profitability of RIL is not universal, however, and depends on local conditions. In Malaysia opposite results were obtained.

A key innovation in Non-Timber Forest Products (NTFPs) management has been the development of a formal certification process spearheaded by the Forest Stewardship Council (FSC). NTFPs encompass a broad range of products (such as gums, resins, fruits, nuts, medicinal plants, fungi and weaving/construction materials), which are managed for many different objectives. NTFP harvest generally has limited negative impacts on forest ecosystems and generates an array of social and economic benefits, particularly to community forest operations. While SmartWood has so far been the NTFP certification leader, several other FSC certifications are beginning to incorporate NTFPs into their assessment and are designing and implementing the required internal systems. Successful cases of certification in Latin American and the Caribbean include medicinal plants, forest tea and Brazil forest nuts.

Challenges

There are many of these, some of which are outlined below:

Continuous pressure on forest resources. The pressure is prompted mostly by increased demand for high-value timber and pulp and paper (mainly driven by emerging economies in China, Brazil, India, South Africa and South-East Asia) and for food, fiber and bio-fuels, driven by population increase in developing countries.

More active engagement with the private sector. Private sector investment in the forest sector in developing countries is seven times greater than the combined total overseas development assistance (about US\$1.5 billion) for the forest sector. This fact makes engaging the private sector essential for the promotion of socially and environmentally sustainable forest sector development.

Research. Since forests cover 30-40% of the earth's land area and provide essential ecosystem services, continuous scientific investigation will be needed to (i) better understand upstream/downstream continuity among and between ecosystems, (ii) improve modeling, prediction and decision-making support and (iii) master the economics of SFM. A particular challenge will be to improve methodologies for quantifying the economic value of the ecosystem services of the tropical forests and apply these values adequately in land-use decision making that drives forest change, both within and outside the forest sector. It will be important to bring these values into markets, cross-sectoral decisions and macro-economic policy making processes. More research will also be needed to support current development of effective markets for the environmental services of forests, such as biodiversity, carbon sequestration and watershed protection.

Engineering New Partnerships

Innovative partnerships among and between the various interest groups are essential for successful implementation of SFM. Following are some examples of innovative partnerships:

Rainforest Challenge Partnership: This global network of “learning landscapes” across the humid tropics involves two leading conservation organizations – the World Conservation Union (IUCN) and World Wide fund for Nature (WWF) – and two international research centers – the Center for International Forestry Research (CIFOR) and World Agroforestry Center (ICRAF) – working with local communities, district authorities, development organizations and others to share and adapt concrete strategies for reducing poverty and conserving unique forest ecosystems in the tropics.

Forest Law Enforcement and Governance partnership (FLEG): This is a multi-donor trust fund established at the World Bank in 2004 to support regional ministerial processes with other donor agencies, non-governmental organizations, research institutes, the private sector and other stakeholders.

The Global Environment Facility (GEF): Established as a result of the 1992 Earth Summit, the GEF is a funding mechanism to forge cooperation and finance actions that address major threats to the global environment. The GEF is a “financial mechanism” for four international treaties (UNCBD, UNFCCC, UNCCD and SC on POPs). SFM concerns have been addressed mainly through the GEF Operational Programs on Biodiversity and Land Degradation. Key partnership initiatives include the:

- Forest Alliance, in which the GEF, World Bank and WWF work toward a situation by mid-century in which representative, well-managed protected forest areas – along with responsibly managed forests outside protected areas – support environmental values while meeting human and economic needs.

- Critical Ecosystem Partnership Fund (CEPF), involving the World Bank, Conservation International, the GEF, the government of Japan and the MacArthur Foundation.
- UNDP-GEF Small Grants Program for Operations to Promote Tropical Forests.

Conclusion

A close look at progress made towards SFM and the current challenges facing the forestry sector indicates that solving problems does not necessarily require huge additional investments. Much more can be achieved by (i) enhancing national and international governance through the development of appropriate institutional and managerial structures and frameworks (with two priority objectives: improving property rights and use-right regimes and eliminating illegal logging and corruption); (ii) paying increased attention to the livelihoods of forest-dependant people through the establishment of people-centered management structures that enable forest shareholders to capture the direct economic value of forest products and also through the promotion of payment for environmental services schemes; and (iii) building partnerships with the private sector, whose contribution to achieving long-term SFM goals is vital. To achieve those objectives, it will be essential to assign direct economic value to forests.