



# The Missing Skill Set in Community Management of Tropical Forests

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Despite an investment of billions of dollars over the past decades in tropical forest conservation, deforestation rates have remained relatively unchanged (Kaimowitz 2000; FAO 2010). As the international community begins a new round of investment, this time through Reduced Emissions from Deforestation and Forest Degradation (REDD) and REDD+ schemes intended to reduce carbon emissions from forest loss and degradation, it behooves scientists and policy makers to learn from the past to spend time and money more effectively in the critical years ahead (Barr et al. 2010). A significant portion of the planet's remaining tropical forests—up to 90% in some regions—are under some form of community ownership (White & Martin 2002). These forests are used, and, in some cases skillfully managed, by tens of millions of indigenous and forest peoples who depend on them for their livelihoods (e.g., Lynch & Talbot 1995; Peters 2000; Porter-Bolland et al. 2012). It should therefore be of concern that over the past 30 years it has become increasingly difficult for local communities to use and manage tropical forests, even those over which they have legitimate claims (Menzies 2007).

The challenges lying ahead for community-based forest management derive from a new shared global reality. Tropical forests are no longer simply landscapes on which forest peoples subsist, derive incomes, and build a shared sense of history and identity. These places are now the focus of considerable national and international attention from a diverse range of governmental, nongovern-

mental, and private-sector organizations, each seeking to exploit or protect the mineral wealth, natural resources, biological diversity, carbon-storage potential, or ecosystem services associated with tropical forests. Although support for indigenous peoples and local communities has grown in conjunction with concern about tropical forests and biological diversity (e.g., 1992 UN Convention on Biological Diversity, 2007 United Nations Declaration on the Rights of Indigenous People), ignorance of indigenous management and traditional silvicultural systems is widespread. Effective forest management by indigenous and local communities is often constrained by increasingly complex, often ineffective, legal, normative, and technical requirements (Arnold & Ruiz-Perez 2001; Alexiades & Shanley 2005; Laird et al. 2010).

In most tropical countries, for example, forestry laws stipulate that community-based exploitation of forest resources have formal management plans that are based on quantitative inventories, growth studies, and permanent systems for monitoring ecological effects of use. Few of the groups we have worked with over the past 30 years, many with extremely sophisticated systems of indigenous silviculture, would be able to meet the technical and bureaucratic requirements of such plans, let alone develop a viable business plan or link their forest products to a reliable network of buyers. The response to this problem is often to seek technical assistance or 'solutions' from outside the region or country. Yet, despite considerable advances in both the quality and quantity of researchers

and resource managers trained each year, there is still a notable lack of professionals with the social, political, and technical skills required to address the specific needs of local resource managers and forest users. Existing tropical forestry training programs and teaching materials are often inappropriately based on the needs, tools, and experiences of forestry in temperate areas and insufficiently attentive to the diversity of social, economic, institutional, and ecological conditions found in tropical regions. A dependency on external assistance and protocols to address local management issues in tropical forests is ironic given the sophisticated resource-management skills and knowledge of many indigenous and local communities.

Although there is no simple or quick-fix approach to address these problems, one area where moderate investment of resources could yield sizeable benefits would be in training a new kind of forest professional, one more directly rooted in local landscapes and local systems of governance. Such interdisciplinary, hybrid professionals would be provided with the basic skills (e.g., forest sampling, resource management, accounting, marketing) and taught the context (e.g., local forest policies, international conservation initiatives) of contemporary tropical forestry as a complement to the traditional knowledge and expertise that they already possess. This integrated and more comprehensive training would allow these individuals to effectively communicate, facilitate a consensus, and apply their skills and knowledge to help and train others to apply for permits, prepare management and business plans, decode elaborate and often inconsistent government regulations, and develop marketing strategies. Enabling closer collaboration with local resource managers, communities, producer organizations, and other relevant social actors would help link professional training with practical on-the-ground problem solving. Their on-going presence would promote continuity and accountability over time. Most significantly, these individuals could enable a 2-way exchange between local and external priorities, perspectives, and practices in ways that inform and guide forest-related policies and external interventions.

Tropical forests in Mexico provide a useful example of the critical need and great potential for multidisciplinary resource managers working in close collaboration with local communities. Although the vast majority of Mexican tropical forests are owned by indigenous and local communities, access to forest resources was restricted exclusively to private or state-owned concessions until the enactment of the Forestry Law of 1986 and its subsequent modifications in 1992 and 1997 (Bray et al. 2005). Over the past 2 decades, local communities have gained the right to exploit and manage their forest resources, which requires the technical expertise to produce and implement a management plan. Less than a quarter of the forest communities in Mexico have been able to do this

(Molnar & White 2001), despite that many have strong and effective local social institutions and norms that relate to forest use and management (Merino Pérez 2004).

In response to this situation, a consortium of academic departments and national and international organizations are developing training programs and promoting direct exchanges between 2 intercultural universities in the states of Veracruz and Guerrero, Mexico. These programs are working to strengthen existing academic offerings, develop new courses in the fields of forest resource and land-use management, document and integrate local management systems, and link training activities to the solution of actual management problems identified by people in collaborating villages and community-based organizations. There are a number of institutional settings (e.g., indigenous and rural universities, technical colleges, and community and producer organizations) where such critically important skill sets and approaches could be developed or incorporated into existing curricula and training programs. Our own work in other regions, including that with Amazonian farmer's (*caboclos*) management of timber resources near the Tapajós River, Brazil (McGrath et al. 2004), and more recently with indigenous harvesters of rattan in Laos and Cambodia, suggests that the model we are proposing is applicable in a wide range of geographical contexts. The recent proliferation of indigenous universities in Latin America or the indigenization of existing universities in other regions of the world creates a remarkable opportunity to institutionalize this process of grounded capacity building, particularly given their mandate and privileged placement for bridging indigenous and scientific world views and skills (Battiste et al. 2002; Mato 2009; Trudgett 2009).

As the international conservation community refocuses its efforts on tropical forests around the world, it should be remembered that effective community forestry and sustainable forest use ultimately depends on local resource users having the appropriate skills and tools to manage the forests themselves. The formation of a new type of community forester and resource manager, one who integrates western science and traditional knowledge and practices, would be an important step in this direction. It would enable communities with viable institutions of environmental governance to adapt to the shifting and demanding interface with external agents, including the state and the market. It would also help reduce dependency on external inputs, draw on local skills and abilities, generate employment, promote community organization and self-governance, and, by bringing the perspectives of local communities into national and international fora, increase the effectiveness of forest conservation and other policy interventions, including those relating to climate change. Most importantly it would help insure that community-owned forests remain in the able hands of those people who have lived in, used, and stewarded them for so long.

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