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forestry

research findings for development policymakers and practitioners

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Monitoring forest resources in Malawi

People who use forest resources can play a vital role in managing and monitoring these resources. Despite this, they have been consistently ignored by government forestry departments in many countries.

Research by a Center for International Forestry Research collaborator from Bunda College of Agriculture, in Malawi, examines a co-management scheme in the Chimaliro Forest Reserve, a protected area in north Malawi. Under this scheme, villagers monitored the natural resources in the reserve in return for the right to use non-timber forest products (NTFPs) and hang beehives for honey.

The co-management scheme experienced several problems. The initial plans were made without the involvement of local villagers, so enthusiasm was limited. Three management committees were established, each responsible for an area of the reserve. These areas were covered by a forest management plan developed by researchers from the Forestry Department. However, it soon became clear that committee members were benefiting more than the villagers they were representing.

The co-management scheme experienced several problems – for example, the initial plans were made without the involvement of local villagers, so enthusiasm was limited

In response, villagers began an Adaptive Collaborative Management process to change the pattern of forest management and monitor what was actually happening in the reserve. However, each committee worked individually on its own area of forest. As a result, the collaborative monitoring process continued to have problems, including honey theft, illegal tree felling and mistrust between groups.

After a period of further monitoring and feedback, a coordinating committee was established that included members from all three management committees. This proved to be the solution, with resource management becoming more participatory. The coordinating committee had the authority to stop people stealing resources. It also formed the basis for a Participatory Forestry Resource Assessment, which produced information and knowledge for better forest management in the reserve.

The research shows:

- The earliest management plans did not work well because they did not involve local people.
- The subsequent participatory assessment was an improvement, because people could share their knowledge; for example, beehives were moved to better locations to increase honey production.
- With the involvement of local villagers, a clear understanding emerged of which resources needed monitoring, and in which places. Different management and monitoring techniques were used for resources in different ecological areas of the reserve, such as mountain slopes and pastures.
- Forest patrols and management institutions both improved significantly through the participatory approach. For example, they have used information about the effects of different management techniques to set targets for sustainable beekeeping and honey production.

This case study shows that involving local people in monitoring forest resources improves resource management. This approach increases understanding about how resources are changing, why the changes are happening and the possible impacts of this. The researcher concludes:

- Local people must have some control of resource monitoring processes. Collaborative monitoring can shift the emphasis of development and conservation programmes and make them more relevant to local needs and situations.
- It is important to be clear about the overall purpose and final use of information collected through monitoring. Without this, people become confused about the aims of monitoring resources.

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Economic arguments for protecting wildlife sanctuaries in Cambodia

The Cambodian Government recently increased its support for protected areas, including two important wildlife sanctuaries. However, the management of these two sanctuaries depends on support from donors and non-governmental organisations. There is an urgent need to develop more sustainable sources of funding.

The Phnom Aural and Phnom Samkos wildlife sanctuaries are located in Cambodia's Cardamom Mountains. They are covered mostly by evergreen forest that is rich in biodiversity.

Research from the International Institute for Environment and Development, in the UK, assesses the economic value of the ecological services that these sanctuaries provide in their protected state – the 'protection scenario'. This is compared with the costs and benefits of converting land to agriculture and illegal logging – the 'non-protection scenario'.

About 30,000 people live in the two sanctuaries, relying on subsistence agriculture, raising cattle and collecting non-timber forest products (NTFPs) for their livelihoods. These communities are among the poorest in Cambodia. Plans for different land use zones have been developed for both sanctuaries in a participatory process involving local people living in the sanctuaries. The sanctuaries are threatened by economic concessions granted by the Government for logging and commercial agriculture.

Overall, the value of the protection scenario is slightly higher than the non-protection scenario. This is mainly because the global value of carbon storage through forests is particularly high at present. However, the value of unsustainable timber harvesting is also high, reflecting the increase in timber prices over the last two years. NTFPs, agriculture and sustainable forest management have relatively low monetary value compared to harvesting timber, but they are important for local livelihoods.

The researchers reviewed the finances of the two sanctuaries and considered options for addressing the shortfall in funding:

- Options such as payments from tourism and permits for hunting and angling have little potential in the short or medium term.
- The Cambodian Government is unlikely to provide additional funding due to pressure on public finances, regardless of the economic arguments for doing so.
- The Government has not always been open about how it has used previous funding.

The best long-term option is to develop and trade in carbon credits. At present, carbon credit schemes under the Clean Development Mechanism and the Kyoto Protocol are only available for new forestation projects. However, due to growing global interest in preventing deforestation, a pilot scheme for existing forests is likely to receive funding in the build-up to the 2012 renegotiation of the Kyoto Protocol.

Even if funds are available from this source, they will not be sustainable without strong governance and an open and accountable framework. The researchers recommend that policymakers:

- improve coordination between the government and other agencies involved in managing the sanctuaries to avoid competition for funds
- develop a national conservation strategy that will be the basis for identifying and setting priorities
- identify and prevent any threats to the sanctuaries, including logging, unregulated mining and plans to create hydro-electric dams
- enable the private sector to develop appropriate economic activities to ensure local people can earn an income
- monitor global developments on preventing climate change, in particular schemes to raise carbon credits for standing forests.

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Carbon storage in Mexico

Markets for ecosystem services are being promoted across the developing world. These markets have developed amidst claims that people need economic incentives to conserve ecosystems and their services. However, these markets must be designed and implemented in ways that are fair to local people.

Ecosystems provide critical services for the functioning of natural and human systems, for example cleansing, recycling and renewing biological resources. Markets for ecosystem services aim to generate payments from people who benefit from the goods and services provided by ecosystems. When creating such markets, planners must make sure that the benefits are fairly distributed (equity) and that everyone involved accepts the processes and outcomes (legitimacy).

One ecosystem service is the storage of carbon in trees and forests. Since the 1990s, the United Nations Framework Convention on Climate Change (UNFCCC) has encouraged companies from developed countries to fund reforestation activities across the rural developing world. Research from the Tyndall Centre for Climate Change Research in the UK considers the Fondo Bioclimático pilot project in Chiapas, Mexico.

The Fondo Bioclimático project, registered in 1997, has contracts to grow forests over the next thirty years. It now involves 650 farmers from 33 communities in Chiapas State. Focusing on two ejidos (areas of common land), Yalumá and Rincón Chamula, the research shows:

- Internal struggles over property rights in the Yalumá ejido mean there has never been strong collective action for managing common forests.
- The participation of the Yalumá people was initially limited, because the project was affiliated with a regional organisation which local people did not support.
- Carbon forestry in Yalumá included individual holdings, but appeared to favour richer households with land available for tree planting.
- The shared history of migration in the Rincón Chamula ejido creates strong social cohesion, leading to active management of forest resources.
- Women were not involved in making decisions and they were less interested in the project than men when it moved away from development-oriented objectives to a narrower focus on tree planting.
- The transfer of knowledge about the project has been limited to community representatives, though this may help to reduce misunderstandings.

Payments from the carbon project have been insufficient to encourage better forest management plans. However, they have improved welfare in both communities. The authors conclude that:

- Ecosystem service markets can be based on both individually owned property and shared, common property; informal rights and voluntary contracts are often sufficient for markets to work.
- The success of carbon storage as an ecosystem service has created a demand that is less focused on development. Unless equity and legitimacy are made central to planning and implementation, existing inequalities between community members will be reinforced.

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Can certified timber reduce conflict in developing countries?

Trade in illegal timber is a major threat to global security. It directly funds armed combatants in many conflicts around the world. It also encourages deforestation, which causes climate change and environmental degradation, leading to further conflicts over resources. Could timber certification help to end the illegal timber trade and reduce conflict?

Timber certification involves evaluating, monitoring and labelling wood production according to how sustainably it is managed along the whole production chain, from planting to the finished product. It has been proposed as a way to address both climate change and armed conflict.

There are two international timber certification schemes: the International Organization of Standardization (ISO) 14000 series for environmental management systems, and the Forest Stewardship Council (FSC) labelling scheme. Some countries are also developing national schemes, a process led by Malaysia and Indonesia.

In recent years, revenue from the illegal timber trade has financed national and regional conflicts in Cambodia, Burma (Myanmar), the Democratic Republic of Congo (DRC), the Ivory Coast, Liberia and Sierra Leone. Many of these countries also suffer badly from the environmental damage caused by deforestation and climate change. Research from the University of Bradford, in the UK, considers the likely impact of timber certification on these countries. It finds that:

- The greatest timber sustainability and conflict problems exist in the Asia-Pacific region and Africa, but together these regions contain only 7 percent of the world's certified forests.
- Since 1998, the trade in illegal timber from the DRC has helped to fund a conflict that has killed between 3.3 and 4.7 million people, the greatest loss of life since the Second World War.
- Certification is rapidly becoming a standard requirement for timber suppliers in the developed world, which demonstrates the increasing demand for certified products.
- No certification scheme is globally recognised, not even the ISO 14000 or FSC labelling.
- National laws can contradict international certification standards.
- Certification often fails to consider other land uses (such as agriculture) which may affect forest management.

Timber certification should be increased in Asia-Pacific and Africa, as this could reduce the likelihood of armed conflict and contribute to economically, socially and ecologically sustainable development. To be successful, however, there is a need to coordinate newly formed national policies at the international level and create partnerships between governments, timber trade organisations and importing countries.

Successful timber certification also requires:

- greater collaboration between forest-dependent communities and the different sectors that influence forests
- effective land tenure systems that provide access to forests for local communities
- tighter regulations in both producer and consumer countries, and across commercial sectors, for example shipping laws that make transporting illegal logs more difficult
- access to global funds for post-conflict countries to supplement domestic sources of funding such as tax revenues, or conservation fees
- international efforts to promote the importance of buying legally produced timber.

Revenue from the illegal timber trade has financed national and regional conflicts in Cambodia, Burma (Myanmar), the Democratic Republic of Congo (DRC), the Ivory Coast, Liberia and Sierra Leone. This picture shows logging in the forests of Myanmar.
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Logging in the forests of Madagascar
© Julie Maher, 2005

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Payments for ecosystem services from tropical forests

Payments for ecosystem services (PES) from tropical forests have high potential for sustainable forest management (SFM) and conservation, through giving greater value to forests than less sustainable land uses. However, PES will only succeed with fair property rights, good governance and supportive policies from outside the forestry sector.

Research by Forest Trends, USA, supported by FRR, a division of the IDLgroup in the UK, has been assessing the potential of PES schemes in tropical forests.

Ecosystem services from forests include:

- climate change mitigation through carbon storage and sequestration (the removal and long-term storage of carbon dioxide from the atmosphere)
- watershed and hydrological services, such as improved water quality and reduced soil erosion
- the conservation of biodiversity and landscape beauty.

PES mechanisms involve voluntary, conditional agreements between one or more sellers and buyers of these services. Currently, the focus is on carbon trading, through which organisations in industrial countries that emit greenhouses gases (such as carbon dioxide) can partially offset their emissions. They can do this by paying forest managers in developing countries (including communities) for carbon stored in natural forests (avoided deforestation) or sequestered from the atmosphere by planted trees.

Regulatory forest carbon trading is complex, both technically and politically, and avoided deforestation has been excluded from the Kyoto Protocol. The impetus for inclusion of avoided deforestation or Reduced Emissions from Deforestation and forest Degradation (REDD) in the Protocol has grown since the Stern Review in 2006 highlighted its importance. The challenge for the United Nations Framework Convention on Climate Change is to develop a workable and politically acceptable REDD mechanism for the post-Kyoto regime from 2013. But there is great controversy over how to achieve REDD and many challenges to overcome.

Voluntary carbon markets are more flexible than regulatory forest carbon trading and have greater potential to benefit poor people

Meanwhile, voluntary carbon markets have increased rapidly. These are more flexible in terms of forest carbon trading and have greater potential to benefit poor people. Mexico's 'Plan Vivo' model is one of several initiatives and is now being applied in several African countries.

PES are developing rapidly, but significant challenges remain:

- Payments may benefit rich people more than poor. For example, potential developers and degraders of forests are more likely to benefit from avoided deforestation than communities that conserve forests.
- REDD programmes will create important pro-poor opportunities, but much will depend on how governments decide to reduce deforestation.
- Powerful groups with vested interests can dominate new opportunities by taking advantage of poor governance and weak property rights for communities.
- The transaction costs of entering PES markets are very high for poor communities.

The researchers conclude:

- PES should be integrated into holistic approaches to SFM and conservation that include improved governance, secure property rights for ecosystem service suppliers and effective regulation and monitoring.
- Early PES experiences show that improved tenure security, social capital and local empowerment tend to be the main benefits for the poor, even if these are indirect benefits.
- REDD has most potential, due to the international commitment to tackling climate change, but faces major technical, political and equity challenges.
- Appropriate support from governments, donors and non-governmental organisations will continue to be vital to ensure effective and equitable outcomes from PES mechanisms.

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