

conservation

research findings for development policymakers and practitioners

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Saving traditional knowledge from the 'biopirates'

Indigenous peoples' traditional knowledge about the use of natural resources is vital for conserving biodiversity. This knowledge is now under threat from intellectual property systems and globalisation. A new legal framework is needed to protect traditional knowledge.

Traditional knowledge has helped to develop millions of crop varieties, along with techniques for sustainable agriculture and resource use. A report from the International Institute for Environment and Development in the UK examines the threats to traditional knowledge, emphasising the need to rethink the legal status of this knowledge.

Giving traditional knowledge better legal protection will help to secure the cultural and economic future of indigenous and local communities. It will also sustain their knowledge base of biological diversity and natural resources. The Convention on Biological Diversity (CBD), signed in 1992 and ratified in 1993, requires member countries to maintain traditional knowledge systems and encourage the sharing of benefits from their use. This policy has fallen short of these goals, however.

Instead, traditional knowledge has been used by technologically advanced countries to develop commercial products, such as pharmaceuticals, herbal medicines, seeds and cosmetics. Commercial users often use patents to establish intellectual property rights (IPRs) over a resource. This means that they have exclusive market rights over their 'discoveries', while the contribution of indigenous peoples – the innovations and resources used to develop the product – go unrecognised. This is sometimes called 'bio-piracy' because commercial users rarely seek prior and informed consent from communities or share commercial benefits with them.

The CBD is developing an international system to protect traditional knowledge and share benefits from the use of bio-genetic resources, but there are significant obstacles:

- IPRs are designed to protect commercial inventions and mostly grant individual and exclusive rights.
- Traditional knowledge is mainly for subsistence and is mostly held by groups, not individuals or companies.
- More than 35 countries have introduced laws to encourage companies to share benefits with communities. However, these are largely ineffective because they are not enforceable in industrialised user countries and do not

recognise communities' rights over biological and genetic resources.

The CBD process has not fully involved indigenous peoples or local communities. It risks undermining their rights if it develops a legally binding regime that only recognises their rights over traditional knowledge, but not over the associated bio-genetic resources that these groups have developed and conserved.

Faced with both 'bio-piracy' and a rapid loss of knowledge and culture, indigenous and farmers' organisations are calling for broader protection that incorporates the many aspects of traditional knowledge systems, such as bio-genetic resources, territories, culture and customary law. Such an approach, which focuses on the protection of 'collective bio-cultural heritage', would depend on:

- acknowledging local communities' indigenous and customary rights over their traditional resources and territories
- strengthening community natural resource management, and customary laws and institutions
- strengthening collective land tenure as the basis for local control over traditional knowledge and resources (for example by introducing indigenous-managed Bio-Cultural Heritage Areas)
- improving community access to genetic resources held outside natural territories, for example in gene banks and botanic gardens
- actively involving indigenous and local communities in negotiations on traditional knowledge, perhaps through the United Nations Permanent Forum on Indigenous Issues.

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Banishing the Biopirates: A New Approach to Protecting Traditional Knowledge, Gatekeeper Series 129, IIED: London, by Krystyna Swiderska, 2006 (PDF)

www.iied.org/pubs/pdf/full/14537IIED.pdf

IIED Project Summary: *Protecting Community Rights over Traditional Knowledge*

www.iied.org/NR/agbioliv/bio_liv_projects/protecting.html



Green aid

Using General Budget Support for environmental benefits

Many donors are changing the way they deliver aid resources and contributing more directly to developing country budgets. However, there is a real risk that environmental considerations will be left out of these new aid delivery systems. This is a concern, given the strong links between poverty and the environment, especially with the increasing threat of climate change.

In recent years, there has been a shift from aid support for individual projects to more integrated mechanisms, including General Budget Support (GBS) to fund national Poverty Reduction Strategies (PRSs). The aim of these more integrated mechanisms is to coordinate donor activities and build stronger partnerships with developing country governments. However, neither donors nor developing country governments tend to prioritise environment issues in their budgeting: for example, PRSs give limited attention to environmental issues.

Research from the Overseas Development Institute in the UK examines how donors might include environmental objectives in these new aid systems. Governments have a significant role to play in environmental management, but this role tends to be less clear than in other areas of their work. The institutional set-up of the environmental sector is often weak, and the technical and analytical capacity for addressing environmental opportunities and challenges is limited.

GBS is well suited to promoting environmental objectives for several reasons, including:

- Environment issues can be brought into national policy processes as a development and growth opportunity, rather than a constraint on these (for example, through heightened consideration of payment for environmental services schemes).
- Increased funding through the national budget can reduce the financial pressure on environmental agencies.
- Sector Working Groups (SWGs) can raise the profile of environmental issues across different sectors: environment-specific SWGs are already operating in Tanzania and Mozambique.
- The increased transparency of GBS processes can also be applied to environmental decision-making.

For these opportunities to be realised, environmental issues need to be incorporated effectively, right across government activities. Donors also need to recognise that the impact of budgetary support on the environment can be limited by the existing policy framework and political interests. They therefore need to promote environmental considerations

Governments have a significant role to play in environmental management, but this role tends to be less clear than in other areas of their work

through other aid mechanisms as well as GBS.

Key recommendations for donors include:

- clarify institutional structures and their environmental responsibilities, for example through Public Environmental Expenditure Reviews to analyse environmental financial resources
- promote policy debates amongst different groups, for example through SWGs, although their policy influence must first be secured
- build analytical skills and resources within environmental agencies through technical cooperation (this was done by the UK Department for International Development in Tanzania)

case study

Involving local people in conservation in Uganda

People living close to National Parks in Africa often disagree with park conservation strategies. This can lead to conflict between park managers and neighbouring communities.

Whilst National Parks focus on conserving natural resources, neighbouring communities focus on making use of the natural environment to generate income and provide food. This results in struggle and resistance, with neighbouring communities using whatever power they have to challenge and resist park rules.

Research from the Institute of Development Policy and Management in the UK looks at Mount Elgon in eastern Uganda. During the years of conflict in Uganda, neighbouring communities encroached into the forests for agriculture and grazing, often bribing conservation officials. By the 1980s, much of the forest was degraded. In 1993, the Ugandan government declared the region a National Park, focusing on laws to enforce biodiversity conservation, recreation and scientific research.

In the mid 1990s, this approach changed to include participatory management strategies. This approach includes members of neighbouring communities in the management of National Parks, so that the needs of both parks and communities can be met whilst protecting the natural environment. Strategies include environmental education, sharing revenues from Parks (such as ecotourism), and agreeing conditions for resources access agreements, such as hunting concessions.

However:

- Previous differences in values between park managers and

neighbouring communities were not negotiated or resolved.

- Park managers sought to use both old (law enforcement) and new (participatory) strategies to prevent local people from pursuing their own development activities. Communities responded by continuing to resist park management rules.
- The Mount Elgon experience demonstrates the difficulties of achieving participatory park management. To successfully integrate neighbouring communities into National Park management, the researchers suggest:
- A focus on conservation cannot be imposed onto neighbouring communities if they are unwilling to accept it. If imposed, resistance to, and tensions with, park authorities will continue.
 - Power imbalances between park managers and communities must be recognised and balanced so that the needs of both groups are represented equally.
 - It is essential that all neighbouring communities have equal voice in participatory management, and discussions are not dominated by the most powerful groups.
 - Close monitoring will help to prevent the use of bribes, bargaining and self-interest in participatory park management.

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'Confronting Conservation at Mount Elgon, Uganda' *Development and Change*, 37(5), pages 1093–1116 by Linda Norgrove and David Hulme, 2006

- strengthen public demand for better environmental outcomes, for example by supporting civil society environmental movements
- strengthen developing country representation in international environmental negotiations through targeted assistance.

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Changing Aid Delivery and the Environment: can General Budget Support be used to meet Environmental Objectives? ODI Briefing Paper 17, ODI: London, by Neil Bird and Lidia Cabral, 2007 (PDF)
www.odi.org.uk/publications/briefing/bp_aid_delivery_march07.pdf

Payments for environmental services

Lessons from CAMPFIRE in Zimbabwe

There is increasing support for using payments for environmental services (PES) to lessen poverty and promote conservation. The Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) shares many features with PES schemes. What can these schemes learn from CAMPFIRE?

PES schemes reward people, either with cash or in-kind benefits, to manage their land in ways that will secure environmental services. These services include maintaining biodiversity, storing carbon and protecting watersheds. They differ from more conventional integrated conservation and development approaches by making payments directly and conditional on the level of environmental service achieved. PES schemes are therefore generally more cost-effective and have less complex institutional arrangements than other approaches.

A study by researchers from the Center for International Forestry Research in Indonesia and the International Institute for Environment and Development in the UK reviewed the evolution of CAMPFIRE in Zimbabwe over its first 12 years, to see what lessons there might be for PES.

Under CAMPFIRE, Rural District Councils (RDCs) are granted the authority to market wildlife on behalf of the people living in their area. Concessions to hunt or photograph wildlife are sold to safari operators who, in turn, market these to mainly foreign sport hunters or eco-tourists. The RDC passes on to communities 50 percent of the revenues and other benefits

received from the sale of concessions. It keeps the balance to fund wildlife management and its own activities. As RDCs have become short of cash, delays in payment and occasional underpayments have become more frequent.

Between 1989 and 2001, CAMPFIRE generated over US\$20 million for the participating communities, 89 percent of it coming from sport hunting. Although 37 districts have the authority to market wildlife, only 12 regularly generate revenue this way. Performance varies with wildlife resources, human population density, local institutional arrangements, and governance.

CAMPFIRE provides some useful lessons for emerging PES schemes.

- Organisational structures and institutional arrangements should develop alongside the functions that they are designed to serve, not be fixed ahead of them.
- PES schemes should remain flexible to accommodate inevitable changes in objectives and functions.
- Allow for diversity: communities vary in environmental and social settings, as well as in the level and nature of external support.
- Recognise institutional complexity and

work within it; for example, by building on traditional decision-making rather than displacing it.

- Do not be distracted by the complexity of measuring direct causal connections between payments, land use change and indicators of ecological functioning.
- High uncertainty increases transaction costs. Exhaustive monitoring of the links between payments, land use changes and management may become counter-productive by raising costs more than benefits.

Three issues remain unresolved:

- The optimal scale of decision-making and management (small) is at odds with the size of viable wildlife production areas (large).
- Overlapping jurisdictions among different authorities and interest groups complicates the organisation of such schemes.
- The lack of clearly defined property rights and strong tenure among individuals and communities weakens responsibility and concern for resources in the long-term.

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CAMPFIRE and the Payment for Environmental Services, International Institute for Environment and Development: London, by Peter G H Frost and Ivan Bond, 2006 (PDF)
www.ied.org/pubs/pdf/full/15503IED.pdf

Reducing poverty through wildlife tourism

Tourism is the fastest growing sector in the South African economy. The government's tourism policy recognises the potential to reduce poverty and has national guidelines for responsible tourism. When applied, the guidelines increase the benefits from tourism for people who were disadvantaged under apartheid, and for communities in tourist destinations.

The tourism industry is very competitive, and it is difficult for disadvantaged groups and communities to get involved. However, there is a wide range of tourism products and services. This diversity means that tourism has the potential to contribute to poverty reduction. It provides opportunities for different people to earn a living, including workers in the informal sector and women. Tourism also provides opportunities for small businesses, since the customer (the tourist) comes to the product, reducing costs for producers.

Research from the International Centre for Responsible Tourism compared the economic impacts of four tourism businesses in and around the Kruger National Park. The research demonstrates

how much each business contributes to poverty reduction and how they might increase their impact.

Three of the four businesses are privately owned, and the other is parastatal (meaning owned wholly or partly by the government). All offer accommodation within a conservation area, with standards ranging from basic to luxury, as well as wildlife viewing excursions. The communities near to the businesses all have low rates of employment and high levels of poverty.

The research, involving community members and the businesses, shows:

- Most employees of the private businesses live locally. The majority of people want to work locally in rural areas (rather than moving to cities) and are interested in working in tourism.
- In one community, tourism has lifted about four percent of the local population out of poverty. This has effectively doubled the proportion of local people living above the poverty line.
- All of the businesses collect donations and/or give a percentage of their turnover to community projects, most notably environmental education. Donations from tourists provided most of these funds. Most community members did not feel that they were dependent on tourism, largely because they saw few benefits from it. They also identified several key barriers to greater involvement in tourism. These include a lack of education, training and information

about employment opportunities, and few opportunities to provide goods and services to tourism businesses.

For more poor people to benefit from tourism in the region, these businesses could:

- make employment opportunities more equal by advertising employment vacancies openly, rather than asking existing staff for recommendations
- help local people to develop goods and services that meet the needs of the tourism industry, for example through micro-credit or training to local entrepreneurs
- buy more local agricultural produce
- target money from tourist donations and development funds at education and training, to reduce barriers to entering the tourism industry
- assess their local economic impact and make plans to improve it, using their initial data as a baseline against which to measure change.

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'Nature-Based Tourism and Poverty Alleviation: Impacts of Private Sector and Parastatal Enterprises In and Around Kruger National Park, South Africa', *Current Issues in Tourism*, 10(2-3), pages 255-277, by Anna Spenceley and Harold Goodwin, 2007

Restoring mangroves

A positive economic option

In the past 50 years, around one third of the world's mangrove forests have been lost to urbanisation, agriculture, aquaculture, commercial forestry and changes in water quality. Policymakers have recently begun to realise the importance of mangroves for fisheries and coastal protection. As a result, mangrove reforestation programmes are becoming popular throughout Asia.

There has been little research into how replanting mangroves affects the lives of people living around them. To address this, the University of Wales, Bangor, in the UK in collaboration with the Southeast Asian Fisheries Development Centre Aquaculture Department (SEAFDEC/AQD) carried out a study in Aklan province of Western Visayas, the Philippines. The study looked at the direct economic benefits from a reforested mangrove system to local people, and compared these with natural mangrove systems and aquaculture ponds.

The study site is considered to represent best practice in mangrove reforestation. Mangroves in the area had largely been destroyed for firewood and construction and converted to other uses. The reforestation programme aimed to increase stocks of fish and wood and stabilise the shoreline.

A cooperative of local families, Kalibo Save the Mangrove Association (KASAMA) was given tenure of the land by the government, and carried out the reforestation work. United Services Welfare Assistance Group (USWAG), a

non-governmental organisation, runs a small ecotourism park for visitors to the mangroves. Close collaboration between the local government, KASAMA and USWAG was an important factor in the project's success.

The research shows:

- Almost all people involved in fishing believed that mangroves were important for protection against typhoons and as nurseries for young fish and shrimp.
- About two thirds of fishers were also convinced that mangroves increased fisheries production.
- Fishers who fished exclusively in the mangroves were most aware of their benefits and most willing to pay to protect them, even though they earned the least of all fishers.
- Around half of the fish and molluscs caught in the mangroves were eaten locally, indicating their importance for food security.
- As well as fishing incomes, people can make money from visitor fees to the park and sustainable timber harvest.

The study showed that the replanted mangroves can produce as much fish as aquaculture ponds and natural mangroves in the Philippines. Other services, including protection from typhoons and food security, were also considered important. Local people recognised their value and would not sell them for conversion to ponds even if they were the owners.

There are several implications for coastal reforestation projects in the Philippines and elsewhere:

- Mangroves are often undervalued but



A Kenyan woman taking part in a Mangrove Rehabilitation Project, Mida Creek, carries seedlings for planting

Fred Hoogervorst/ Panos Pictures

can produce as much fisheries income as aquaculture ponds. Revenue from tourism and timber can increase economic benefits further.

- Planting costs for initial reforestation are low compared with potential returns, but represent significant financial outlay for local people. Projects may need external funds to get started.
- Alongside economic benefits, mangroves provide coastal protection and food security. The 2004 Asian tsunami has put coastal reforestation high on the list of priorities for Southeast Asia, and mangroves are actually more effective in protecting against typhoons than other options, such as coconut plantations.

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'Are Mangroves Worth Replanting? The Direct Economic Benefits of a Community-Based Reforestation Project', *Environmental Conservation*, 33(4), pages 335-343, by Mark E.M. Walton, Giselle P.B. Samonte-Tan, Jurgenne H. Primavera, Gareth Edwards-Jones And Lewis Le Vay, 2006

useful websites

Convention on Biological Diversity
www.cbd.int

Eldis Resource Guide – Environment
www.eldis.org/go/topics/resource-guides/environment#

Envirolink
www.envirolink.org

Fauna and Flora International
www.fauna-flora.org

International Centre for Responsible Tourism
www.icrtourism.org

Millennium Ecosystem Assessment
www.millenniumassessment.org

SEAFDEC Aquaculture Department, Phillipines
www.seafdec.org.ph

United Nations Environment Programme
www.unep.org

World Environment Centre
www.wec.org

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