

# forestry

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## Floods and forests – integrating flood management

**M**assive floods regularly devastate people living in Asia's lowlands. Many scientists blame the high occurrence of floods on the destruction of upland forests by farmers and loggers.

Many people worldwide believe that flooding events have increased over the past century as forests are depleted. According to common understanding, forests soak up excess water in upland areas, preventing floods in lowland areas. However, recent research by the United Nations Food and Agriculture Organization and the Center for International Forestry Research shows that many of these beliefs are not based on scientific fact.

Flood damage is usually measured in terms of economic losses. With economic growth, increased infrastructure development and rapidly growing floodplain populations, financial

losses from floods have increased. Floods are therefore perceived to be more severe than in the past, but in physical terms there is little or no evidence of increased severity of floods over the past century. However, a failure to understand the relationships between forests and floods can lead to inappropriate policies, including:

- forced relocation of poor communities from uplands
  - logging bans and restricted access to forest resources
  - supporting costly reforestation schemes that may have little impact on reducing flooding.
- The causes of flooding often cannot be attributed to specific human actions or natural processes, but are affected by several factors:
- Many forest soils can reduce water runoff, through infiltration and water storage. This minimises local flooding when rainfall is relatively low. However, large destructive floods generally occur after massive rainfall over wide areas. At these times, forest soils become fully saturated and water runs off, as it does from other land.
  - Soil degradation, for example through erosion and compaction, means that water runs off more easily. Logging can cause this, but road building, infrastructure development, inappropriate farming and overgrazing often lead to much higher levels of soil degradation.
  - The negative impacts of logging can be reduced by good practice, such as better

road construction, the use of appropriate equipment and halting operations during periods when forest soils can easily be disturbed.

- Urban growth on floodplains and engineering efforts to control flooding (such as dikes and levees) reduce the opportunities for flood waters to spread naturally to temporary wetland 'storage' areas.

Upland forests can help to reduce the severity of small-scale, localised flooding, but have limited impacts for mitigating large floods. Upland farmers and loggers are easy targets for blame. Instead, policymakers should improve the effectiveness of flood management. The research

Many people believe that flooding events increase as forests are depleted. However, recent research shows that these beliefs are not based on scientific fact

recommends that policymakers:

- Consider scientific knowledge about rivers and flood frequencies alongside social and economic considerations, such as where people live and how they cope with floods.
- Plan flood protection and coping strategies over large areas, including across geographical and political borders.
- Improve watershed management to encompass all contributing factors (including mining, road construction, fisheries and urban development) not just agriculture and forestry.
- Move away from traditional engineering solutions (such as dams and levees) and work with natural processes. For example, it is useful to provide incentives for wetland conservation, which can absorb some excess flood water.

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*Forest and floods: drowning in fiction or thriving on facts?*  
RAP Publication 2005/03 Forest Perspectives 2, Food and Agriculture Organization and the Center for International Forestry research, 2005 (PDF)  
[www.cifor.cgiar.org/publications/pdf\\_files/Books/BCIFOR0501.pdf](http://www.cifor.cgiar.org/publications/pdf_files/Books/BCIFOR0501.pdf)



## Bringing legality to the timber trade

**T**imber producing states are under international pressure to guarantee that their production is legal. This requires verification systems. However, the different interests of the many groups involved in the timber trade mean that designing such systems is difficult. It is important to learn from the experience of other sectors and approaches.

In recent years, there have been several efforts to reduce illegal logging and the illegal trade of forest products, particularly in tropical regions. This is partly driven by concerns about the depressive effects on timber producers in developed countries, but also by the view that illegal forestry is bad for governance and trade, and harmful to the interests of poor people in developing countries. European donors agree on the need for verification systems that provide definitions of legally produced timber and guarantee that each stage of production is secure. The European Union Forest Law Enforcement, Governance and Trade Action Plan aims to promote the legal timber trade.

**In many countries, it will be difficult to introduce a verification system that is accepted by all parties because of the numbers of groups involved, their relationships and differing interests, the risks involved and the institutional cooperation required**

However, in many producer countries, it will be difficult to introduce a system that is accepted by all parties. This is because of the numbers of groups involved, their relationships and differing interests, the risks involved and the institutional cooperation required. Research from the Overseas Development Institute, UK, uses the experience of international processes (such as the Nuclear Non-proliferation Treaty, the UNFCCC, CITES, Food Standards Agencies and the Kimberley Process for diamonds) to explore some of the principles required for creating an effective verification system.

Designing a verification system for the timber sector would require interested parties to move beyond technical and forest-specific issues and consider political structures and institutional relationships. The author identifies

several important elements:

- an institutional setting that welcomes different groups and interests
- the separation of political and technical decisions
- a supreme authority that has the confidence of the public and the groups involved
- incentives for timber producers to comply with regulations
- incentives to discourage producers from moving to countries that are not covered

by legal agreements

- independent monitoring of the verification system.
- Ultimately, there are risks involved that threaten the success of verification agreements, not least because the financial incentives for timber producers to stick to the legal trade may be very limited. There is a danger that the environmental and developmental objectives central to such a system will be displaced by business interests. The author recommends that policymakers:
- realise that verification requirements vary according to the interests of those involved and the objectives of the system
  - view verification as a complex process of investigation and validation that needs wide participation, rather than as an act of technical inspection
  - design verification systems in a way that strengthens public governance: this means that as much emphasis should be put on the interactions between groups as on their individual activities
  - ensure that information about verification processes is produced independently and made publicly available.

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*Designing Verification Systems for the Timber Trade: learning from International Processes*, Forestry Briefing No. 8, Overseas Development Institute, by David Brown, 2005 (PDF)

[www.odifpeg.org.uk/publications/policybriefs/forestrybriefings/FB8\\_final\\_web.pdf](http://www.odifpeg.org.uk/publications/policybriefs/forestrybriefings/FB8_final_web.pdf)

## Illegal logging and forest livelihoods

**F**orest-dependent poor people often struggle to uphold their claims to resources in the face of discriminatory legal frameworks and powerful private forestry companies. Are efforts to enhance governance in the forest sector helping to support poor people in claiming their legal rights or working to further marginalise their interests?

Tropical forests in developing countries are often owned by the nation state. This means that state officials are responsible for managing forests and enforcing forestry laws. However, the private timber industry – both national and international – is often very powerful in isolated forest areas. This can lead to widespread illegality in forestry activities which cause social and environmental problems, especially for poor people living in or near forests.

Research from the Overseas Development Institute, UK, examines efforts to curb illegal logging in tropical forests. In a high-value sector such as tropical forestry, the social and economic rights of poor people depend on the application of human rights principles. These include non-discrimination, equal treatment, democratic participation and accountability by large organisations and businesses. However, the legal

[www.id21.org](http://www.id21.org)

frameworks that govern forest sectors often work against poor people. The research shows:

- Upholding laws that do not support local rights can increase injustices. State agencies often enforce forestry regulations that work against poor people. In these cases, law enforcement can become a process of criminalising poor forest dwellers and users.
- Government and industry officials often feel that the interests of poor forest users conflict with the objectives of forest management and commercial exploitation, and often overlook laws that protect local people.
- In some countries such as Papua New Guinea and Malaysia, the justice system has protected local people and set strong legal precedents. But poor people also face significant barriers in accessing the justice system.

Development assistance to forestry is increasingly focused on illegal logging, with a series of international initiatives launched under the movement for Forest Law Enforcement, Governance and Trade. These exist to protect human rights and promote sustainable forest management. But even these initiatives do not always improve the welfare of poor people or strengthen their rights.

There is no guarantee that strengthening law enforcement will improve the situation for poor people. The challenge is to link law enforcement with reforms of the legal

system. These reforms must focus on forest tenure rights, because most poor people who are dependent on forests lack these completely. The research recommends:

- Poor people must be able to claim their rights to land and forest resources. Donor assistance must balance enforcement strategies with the development of institutional mechanisms to help poor people to uphold their claims.
- Such institutions must be designed so that poor people can use them easily.
- Reforms in the forest sector must be integrated with reforms in the justice sector.
- Policymakers should place a high priority on overseeing the activities and commercial interests in the forestry sector, and use their power to act when poor people's rights are infringed.

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*Public Goods and Private Rights: the illegal logging debate and the rights of the poor*, ODI Forestry Briefing No. 9, by Adrian Wells, Cecilia Luttrell, David Brown and Neil Bird, 2006 (PDF)

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## Woodcarving

### Linking livelihoods to natural resource based enterprises

**Woodcarvings are popular souvenirs bought by tourists visiting Africa, Asia and Latin America. Carvings provide income for local people and add value to local wood resources through carving, sanding and innovative design.**

In 'Carving out a Future', by the Centre for International Forestry Research (CIFOR) and the 'People and Plants Initiative' (WWF, UNESCO and Kew), researchers examine the international woodcarving trade and the links to rural livelihoods, deforestation, biodiversity and conservation, forestry and forest policy. The book highlights the need to promote sustainable rural livelihoods and the efforts to promote fair trade in woodcarving. It also identifies some common elements that link the diverse carving traditions:

- Almost all carvers are men.
- The highest diversity of carved items is made by settled farming societies, rather than by nomadic pastoralists or hunter-gatherers.
- Woodcarving has become increasingly commercialised, particularly since the 1950s. Many carvers make carvings for local use, often with ritual significance, but also for tourists in other styles.
- Carvers use few plant species, because they need wood with specific requirements, such as close grain, tensile strength and resistance to cracking or insect attack.

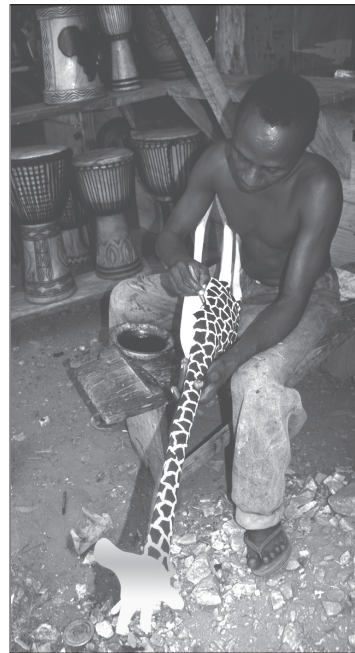
The scale of woodcarving enterprises is huge. The island of Bali in Indonesia

exports US\$ 100 million of carvings each year. India has a woodcarving export industry worth US\$ 65 million, with 50,000 people involved in a single centre in Saharanpur. In many places, money from woodcarving makes a significant contribution to household incomes:

- In Oaxaca, Mexico, sales of alebrije carvings contribute about US\$ 2,500 per year to carver households, improving access to education and health care.
- In Kenya, woodcarving involves over 60,000 people, providing significant household income for about 300,000 dependants.
- In Bushbuckridge, South Africa, woodcarving provides around US\$ 500-2,000 per year per household, representing about 80 percent of household income.

Woodcarving does not always enable people to overcome poverty. In rural Zimbabwe, woodcarving offers very low returns and it is seen as 'last resort' employment. Declining resources can also be a problem and this trend needs reversing, for example ensuring sustainable supply of raw material.

However, in most places woodcarving has the potential to improve livelihoods for millions of households. It can actually lift households out of poverty. Policies



**A woodcarver at a roadside stall near Accra, Ghana adding value to wood resources by decorating a carved giraffe.**

*A B Cunningham/Ethnoecology Services.*

must provide supportive frameworks and targeted assistance to maintain the woodcarving industry. There are three key issues for policymakers:

- Quality: making the best use of quality wood. Compared to other uses, woodcarving gives considerable value to wood (for example, compared to the value of wood used as charcoal).
- Diversity: ensuring that the market is not

saturated with lots of similar products and maintaining cultural diversity in carving design, offering creative ideas for the future.

- Sustainable use of wood resources: no wood means no work.

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*Carving out a Future: Forests, Livelihoods and the International Woodcarving Trade*, People and plants conservation series, Earthscan: London, edited by Anthony Cunningham, Brian Belcher and Bruce Campbell, 2005

## Improving microfinance for small-scale forest enterprises

**A lack of access to microfinance is a problem for many small-scale forest enterprises. Microfinance institutions must develop new methods to deliver their services successfully in remote, rural locations.**

Work done by small-scale forest-based enterprises includes processing and marketing raw forest products. These enterprises face many problems including a shortage of raw materials due to the overuse of natural resources, small and insecure local markets to sell their products, limited access to larger markets and fierce competition within these markets. A lack of appropriate technology is a further barrier to the development of these enterprises.

Small-scale forest enterprises require microfinance to buy inputs such as fertiliser and equipment and to pay for insurance. However, research from Forestry Department of the Food and Agriculture Organization

shows that access to efficient microfinance is the major constraint for small-scale forest enterprises. They have problems getting money from microfinance schemes, due to the risky nature of their activities and their remote locations.

Institutions providing microfinance must make significant changes to their services so that they are available to small-scale forest-based enterprises. Research from the Parbat district of Nepal highlights important factors for developing successful microfinance initiatives:

- local entrepreneurs who are well motivated and prepared to take risks to begin micro-enterprises
- entrepreneur microfinance groups who can share skills and training, and help small-scale enterprises to overcome constraints
- business development services, including skills development, technical and managerial support, technology transfer and market promotion
- microfinance services responding to local demands
- accurate monitoring and business counselling services after a microfinance enterprise is established.

For microfinance institutions to be successful in rural areas, government and donors must develop approaches that best meet the

needs of each location. They should consider local constraints to accessing microfinance and existing financial services in an area. Policy lessons to develop microfinance services include:

- offer a range of different finance options to meet different local needs
- create policies that ensure local economic stability, such as land tenure and property rights
- raise awareness of microfinance services, for example through literacy, numeracy and skills training for women, indigenous and disadvantaged groups
- provide technical assistance so that microfinance institutions can meet the needs of small-scale enterprises
- focus on providing microfinance to rural households that run small-scale enterprises, rather than credit for buying tree crops and larger-scale forest enterprises.

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*Microfinance and forest-based small-scale enterprises*, Food and Agriculture Organization, Paolo Spantigati and Anna Springfors, 2006 (PDF)  
<ftp://ftp.fao.org/docrep/fao/008/a0226e/a0226e00.pdf>

## Non-timber forest products in peri-urban areas

**Non-timber forest products (NTFPs) are an important source of income for rural people. However, NTFPs can also generate income for poor people living in urban and peri-urban areas. This opportunity is often overlooked.**

The extraction, processing and marketing of NTFPs provide income in rural areas when other sources, such as agriculture or animal husbandry, are scarce. But these activities are also a central source of income for poor people living in peri-urban areas in the northern Bolivian Amazon. Many of them seasonally migrate to the forest to generate income through NTFP collection, in addition to earnings derived from work in urban-based processing plants for NTFPs.

Research by the University of Freiburg, Germany, and the Center for International Forestry Research argues that NTFP policies focus on rural people and fail to appreciate the potential of NTFPs to reduce poverty in urban and peri-urban environments. Key findings from research in peri-urban neighbourhoods in the northern Bolivian Amazon include:

- NTFPs play an important role for poor people as there are fewer barriers to this work than other types of work.
- A quarter of household income in peri-urban households is generated through

work in rural areas, particularly the extraction of Brazil nuts, palm hearts, timber and some agricultural labour.

- Ex-forest dwellers that migrated to urban areas feature prominently among those who depend on NTFP activities, and their involvement in the extraction and processing of NTFP is a precondition of their economic survival in towns.
- It is mostly men who seasonally migrate to collect NTFPs; their spouses may accompany them or remain with their children in town.
- It is mostly women who generate substantial amounts of household income through work in an urban-based processing plant for Brazil nuts or palm hearts.
- Children of rural-urban migrants can benefit from the migration process through access to better educational and health facilities in urban areas.

In peri-urban neighbourhoods, NTFP activities are not dominated by the poorest households and do not always indicate that the workers suffer from debt or extreme poverty. It is an income-generating strategy used by people from all backgrounds, though educational background is a strong determinant for the extent to which people depend on NTFPs. The lower it is, the higher the absolute and relative weight of NTFP-based income.

There are many other reasons for the strong links between peri-urban households and the forest. People have social and

cultural bonds with it and they seek to earn money when other income sources are scarce and/or when NTFP prices are favourable.

It is important for NTFP policies to consider the rural-urban continuum underlying NTFP supply chains, involving both urban and rural households. The researcher suggests that:

- Rather than focusing on rural NTFP users, it is crucial to account for NTFP-based employment and income opportunities

along different segments of the supply chain. Different opportunities exist for poor rural and urban people to become involved in the extraction, processing and marketing of NTFPs.

- Researchers must also consider the importance of secondary benefits of the whole range of NTFP activities, such as education for children whose families have migrated to urban areas.

**Policies for non-timber forest products focus on rural people and fail to appreciate the potential to reduce poverty in urban and peri-urban environments**

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'Making the Best of Two Worlds: Rural and Peri-Urban Livelihood Options Sustained by Non-timber Forest Products from the Bolivian Amazon' *World Development*, 33 (9), pages 1473-1490, by Dietmar Stoian, 2005

## useful websites

Asia Forest Network  
[www.asiaforestnetwork.org](http://www.asiaforestnetwork.org)

Centre for International Forestry Research  
[www.cgiar.org/cifor](http://www.cgiar.org/cifor)

Food and Agriculture Organization – Forestry Department  
[www.fao.org/forestry/index.jsp](http://www.fao.org/forestry/index.jsp)

Forest Trends  
[www.forest-trends.org](http://www.forest-trends.org)

ODI Forest Policy and Environment Programme  
[www.odifpeg.org.uk](http://www.odifpeg.org.uk)

People and Plants Initiative  
<http://peopleandplants.org>

ProForest  
[www.proforest.net](http://www.proforest.net)

United Nations Forum on Forests  
[www.un.org/esa/forests](http://www.un.org/esa/forests)

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